SCOMM

#44:23

HOUSE
JOURNAL SUPPLEMENT

April 20, 1979 Friday No. 44

HCS
SB
63

April 19, 1979

TO: Rep. Terry Gardiner, Speaker
House of Representatives

FROM: Rep. Bill Miles, Co-chairman
House Resources Committee

COMMITTEE REPORT

HCS SB 63 - SUSITNA HYDROELECTRIC PROJECT

During several meetings and the teleconferenced hearing regarding the Susitna Hydroelectric Project, numerous issues were brought up. As many of the issues were technical in nature, the issues raised and findings herewith are submitted for consideration.

1. Energy demand for project is unrealistic

a. The project is to be developed in two stages: Watana on line in 1994 (3.1 billion kwh) and Devil Canyon on line in 1999 (3.0 billion kwh).

b. Battelle[1] indicates an energy demand range for the Susitna market area in the year 2000 of 8 billion kwh to 27 billion kwh annually.

c. The Department of Energy[2] indicates an energy demand range for the Susitna market area in the year 2000 of 8 billion to 20 billion kwh annually (pp. 4.28 - 4.29).

d. It has been suggested that if these load projections do not prove out that the railbelt will have an energy glut that will stimulate unwanted industrialization. This would be precluded by project staggering. In addition, Battelle[3] indicates that cheap power alone will not attract industry (page 22).

2. Economic feasibility is questionable

a. Battelle[1] indicates a year 2000 Susitna energy cost of 26 cents per kwh while the costs for coal, diesel or natural gas generation would range from 64 cents per kwh to 82 cents per kwh.

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b. In present-day dollars, Department of Energy[2] estimates the cost of Susitna power in the year 2000 to be 10 cents per kwh while the most feasible alternative--coal--will cost 16.5 cents per kwh (page 107).

c. The Corps of Engineers[3] studies, in which a number of sensitivity analysis were performed, indicate the project to be economically feasible.

3. Project threatens fisheries and wildlife

a. Salmon do not presently migrate above the proposed dam sites.

b. The Corps EIS acknowledges possible adverse environmental impact but also indicates the "possibility" of an enhancing affect on downstream fisheries.

c. The Phase I studies will provide for extensive analysis of project impacts on the environment. Until such studies are conducted, it is not possible to determine either negative or positive environmental impacts which might result from the project[4].

4. All alternatives have not been analyzed

a. Alternative studies have been conducted by 1) the Bureau of Reclimation, 2) Corps of Engineers, 3) Department of Energy, 4) Battelle, 5) private industry, and 6) the Federal Energy Regulatory Commission. In each case, of all the alternatives reviewed, the Susitna project was found to be the best long range option, and in the event Susitna does not come to fruition, coal-fired steam generation is the next best alternative.

b. Coal-fired plants, however, cost in excess of 10 times the cost of comparable generation capacity.[6]

c. The Fuel Use Act of 1978 and other National Energy legislation regularly reduce the number of alternatives available for use.

5. Corps shouldn't study then build the project

a. If the Corps of Engineers is used for the study, the option remains to use a private firm for construction.

b. The House Resources Committee substitute provides a choice between the Corps of Engineers and a private Engineering firm for the Susitna studies.

c. In that construction financing would likely come from the revenue bond market, prudent conservative investment practices would preclude commitments based on biased analysis.

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6. Why not delay funding?

a. The cost of the studies will increase with inflation.

b. The ultimate cost of the project will increase with inflation and this would be passed along to consumers.

c. Local utilities especially in Anchorage and Fairbanks, are looking for early commitments to major sources of power in lieu of less cost-efficient smaller sources.

d. Approval of contingent funding now would allow necessary winter work to be done later this year and early in 1980. The first year's summer work would follow. Delay would postpone necessary winter work until late 1980... thereby losing not only this summer season but next summer as well.

7. Seismic risk

a. Analysis to date has been based on a design that could protect against an 8.5 magnitude earthquake occurring 40 miles from the project.

b. Corps studies will provide for extensive seismic analysis during Phase I studies.

c. If a private engineering firm conducts the Phase I studies, extensive seismic analysis will be conducted by that firm too. In addition, a private, independent study will be conducted.

FOOTNOTES

1/ Alaska Electric Power - An Analysis of Future Requirements and Supply Alternatives for the Railbelt Region, Battelle Pacific N.W. Laboratories, March 1978.

2/ Upper Susitna River Project Power Market Analysis, United States Department of Energy, Alaska Power Administration, March 1979.

3/ Southcentral Railbelt Area, Alaska, Upper Susitna River Basin Supplemental Feasibility Report, U.S. Army Corps of Engineers, 1979.

4/ Susitna Hydropower Plan of Study, U.S. Army Corps of Engineers, June 1978.

5/ Energy Intensive Industry for Alaska, Battelle Pacific Northwest Laboratories, Sept. 1978.

6/ Electrical Energy Requirements for the Greater Anchorage Area Through the Year 2000, Municipality of Anchorage, Municipal Light and Power, Feb. 1979.

APA

MEMORANDUM
October 21, 1979

TO: Representative Brian Rogers and Representative Hugh Malone, Co-Chairmen of the House Power Alternatives Project Committee
FROM: Mark Wittow MW
RE: Activities of the Committee, Status of Power Alternatives Study

A. Alaska Power Authority's Selection of a private firm to carry out the Susitna Phase I Plan of Study

The committee analyzed the three voluminous proposals submitted to the Authority by Acres American, International Engineering and Harza. Larry Katkin, a geotechnical consultant, was retained by the committee to review the quality of the geotechnical aspects of the proposals. The committee focused on the sections of the study dealing with power market demand projections, power alternatives, environmental impacts and public participation.

Rep. Rogers presented detailed testimony to the board of the Authority. The testimony strongly supported the choice of Acres American for several reasons:

1. Acres possessed the greatest experience with sub-Arctic construction and planned to retain the most experienced firm in Alaska for geotechnical work.
2. Acres planned to spend a greater portion of the budget in-state than any of the firms.
3. The Acres proposal contained the most objective and detailed studies of power market demand and power alternatives.
4. The Acres proposal provided for the most extensive and direct public participation process.
5. The Acres proposal provided for the most expert, objective check on the quality of seismic work.

Concurring with the committee analysis and other testimony, the Board chose Acres to be the firm to carry out the Plan of Study if the Board chooses to have a private firm, and not the Army Corps of Engineers, build the project. The secision on whether to use the Corps or a private firm will be made at the end of this month. (Committee testimony supported the use of a private firm, due to the greater degree of flexibility and control that the state would have.)

B. Basic Study Design

The legislation authorizing the Power Alternatives Study mandated the completion of a $200,000 study discussing the assumptions of the Susitna project and the feasibility of alternatives including coal, natural gas and small hydro.

A complete analysis of the alternatives has been put off until next year, when the Power Authority will have to review all of the available alternatives in detail as part of the Phase I FERC licensing procedure. The committee will attempt a detailed analysis of the power alternatives section of the Susitna Plan of Study at that point. The Committee's efforts to date have focused on the areas where the most serious gaps exist, and the areas where work could most constructively be accomplished before the April 15, 1980 deadline for the report.

Part of the explanation for reworking the structure of the study lies with the demise of the Legislative Research Division. The $200,000 study was originally to be managed by the Division, along with a concurrent appropriation of $150,000 for a study of the in-state use of natural gas. The funding for the Susitna study was not freed up until the August Legislative Council meeting, when you and Representative Malone were appointed to be committee to manage the study. The additional $150,000 appropriation for gas use is still in limbo. Since August, you and I have talked with a variety of interested parties to see what could best be accomplished before April 1980.

The Alaska Power Authority has been receptive to the concerns of the Committee, and we have decided to cooperate with them as much as possible in order to prevent duplication of effort while providing criticisms of their work at the most useful times. The key areas of concern before April will include work in the areas of power market demand projections, conservation, renewable energy sources and natural gas, as well as a broader look at the basic financing and management issues involved in providing power to the Railbelt area.

The Committee will present a report to the legislature on April 15, 1980, as specified in the legislation. However, some of the sections will still be in draft form then. A final report should be presented sometime in May, although additional work will be necessary after that date if the Power Alternatives Study is to continue checking the work of the Power Authority.

C. Specific Study Contracts

1. Power Market Demand Projections -- by the University of Alaska Institute for Social and Economic Research.

The section of the study is being done in cooperation with the Power Authority. They have shared in the design of the contract,

and will participate in the funding. This portion of the study will also serve as the power market demand projection for the Susitna Phase I Plan of Study.

The particulars of the scope of work include methodological review, data collection and updating, economic projections, assessment of interfuel substitution possibilities, electricity use projections, and an assessment of the probabilities of the various scenarios and projections. The Institute will hold a workshop in December to review the assumptions behind the economic projections, and will cooperate with a variety of other Committee consultants.

2. Review of the ISER Demand work

Brad Tuck, an economist with te University of Alaska School of Business, and Energy Probe, of Toronto, will separately analyze and criticize past demand projections as well as the work ISER is undertaking for the committee.

3. Potential of Conservation and Renewable Energy

The Alaska Center for Policy Studies will manage the various portions of this section of the study. The work will include an analysis of the end uses of energy in the Railbelt area, a determination of the potential for energy conservation and the use of renewable energy sources, a discussion of the social, economic and political measures necessary to achieve the conservation and renewable energy potential, and work on conservation legislation for the 1980 session (HB 364). A variety of subcontractors will carry out the specific tasks.

4. Natural Gas

This portion of the study will address institutional limitations on the future use of natural gas for power generation, the future price and availability of gas, the efficiency of gas-fired generation facilities, and the potential for the use of natural gas in direct consumer applications. A proposal by economist Greg Erickson is pending.

5. Overview

This section would address the historical background of the supply of electric power in the railbelt, survey the basic policy questions at stake in the Susitna decision, delineate financing questions and address the decision-making structure for Susitna and other power alternatives. A proposal by economist Arlon Tussig is pending.

6. Soci-cultural impacts

This section would investigate the effect of the construction of the Susitna dam on both the local area and Alaska, and relate those effects to both a historical and anormative context. A proposal by the Arctic Environmental and Data Center of the University of Alaska is pending.

7. Other sections of the study

Additional work is contemplated in the areas of coal-fired generation. A review of the adequacy of Phase I study of environmental impacts is also contemplated.

C. Coordination, Misc.

The committee contacted a variety of consultants both inside and outside the state about possible participation in the study. The consultants with the greatest abilities to address questions in an Alaskan context were selected. Constraints of funding, time and experience prevented the Committee from contacting all possible participants.

The committee is coordinating the study with other legislative committee and administrative agencies who are doing related work.

These other contacts include:

Small Hydro (Renewable Energy) Committee
Rural Energy Interim Committee
House Resources Committee
House Finance Committee
Alaska Power Authority
Division of Energy and Power Development
Division of Policy Development and Planning
Department of Environmental Conservation
Department of Fish and Game

The committee has also kept various public groups apprised of our work.

to Vic

MEMORANDUM

October 9, 1979

To: Representative Brian Rogers
From: Mark Wittow
Re: Progress on Susitna Alternatives Study

1. Organization of the Study

The Committee has developed a rough outline for the plan of study, which works in cooperation with the Alaska Power Authority's proposed Plan of Study for the Susitna Dam. The outline calls for a detailed power market demand study, an analysis of conservation and renewable energy sources, coverage of various geotechnical and engineering questions, and a review of the potential of power from coal, natural gas and small hydro sites. In addition, the Committee will develop "criteria for evaluation" of power alternatives for use by the Power Authority.

2. The Power Market Demand Study

A draft Scope of work has been negotiated with the Institute for Social and Economic Research, in conjunction with the Power Authority.

3. Conservation and Renewable Energy Sources

A draft scope of work has been received from the Alaska Center for Policy Studies. Proposals for various parts of the study have been received from the Fairbanks Federation for Community Self-Reliance, and Richard Seifert, and Energy Probe, MERDI and other consultants.

4. Criteria for Evaluation

A draft proposal has been received From Masoni Assoc., and several other economists have been contacted about possible participation. Arlon Tussig will be submitting a proposal to do an overview of important issues.

5. Supply

except Greg Erickson

No specific contacts have been made on the coal, gas or small hydro questions. The committee will seek the advice of Rep. Miles, who chairs the pertinent legislative committees.

6. Engineering, Technical and Environmental Questions

The Committee contracted with Larry Katkin for a geotechnical review of the APA Proposed Plans of Study. Other architiects and engineers have been contacted about participation in the study. The ARctic Environmental Information and Data Center will be submitting a proposal for a review of downstream effect questions.

7. Coordination with State Agencies

The Committee has been working closely with the Alaska Power

Authority, the Division of Energy and POwer Development in designing the study. The committee has also worked with the Council on Science and Technology, DPDP and the appropriate legislative committees--House Resources, Rural Energy and Small Hydro.

8. APA Hearings to select aPrivate Firm for the Plan of Study

The Committee attended these hearings, analyzed the voluminous study proposals, and offered detailed testimony on the proposals. The committee strongly endorsed Acres American, the firm that was finally selected.

9. Community Contacts

The Committee has talked with several members of environmental and public interest groups who have been involved in the Susitnal issue, as well as other private citizens.

]0. The future

Hire a coordinator (me, hopefully), finalize contracts.

Brian Rogers testimony to APA 9/27

A

(1) Procedure Kudos - more for $

1a) Private vs. corps - local hire, + no need to guarantee

(2) Studies Responsibility of APA (Wielert

(3) Legislature Interest - low cost, adequate power
economic + environmental impacts
safety
[part of a larger energy policy / local jobs
+ financing - legislature role

(4)
Integrity of Planning Process -
conflicts between planner, developer, builder
power market studies should be separated or (2) duplicated
or (3) stringent oversight
} study in 3 discrete segments

4a) Conservation, falling demand in Fb.

(5) Demand projections - ISER + critiques
suggestion of joint effort

(6) Alternative + conservation contract work poor.

(7) Geotechnical - northern experience (no Taps experience)

(8) Transmission lines - risk of failure - answered by yound

B - Comment on 3 firms - Acres led - northern experience
resident hire

C - Legislature Study
- demand
- conservation + renewable energy resources
- oversight

OMB gives go-ahead to Susitna studies

By LAURIE MCGINLEY
News-Miner Bureau

WASHINGTON—For more than a year Sen. Mike Gravel, D-Alaska, tried unsuccessfully to persuade the federal Office of Management and the Budget to give the go-ahead for final design studies on the Susitna hydroelectric project.

Then, a few months ago, Gravel found a lever: The administration wanted to win congressional approval for a proposal that would require state governments to pay the bill for five to 10 per cent of federal water projects. The cost-sharing bill was referred to the Water Resources subcommittee Gravel chairs.

Holding the cost-sharing bill hostage, Gravel demanded action on Susitna. He refused to schedule hearings on the administration's proposal until the Susitna dam issue was settled.

Today, the day after Gravel conducted the first public hearing on the cost-sharing proposal, OMB announced its approval for final Susitna dam studies.

"It was all a matter of seniority," said Gravel. "It was easy enough for me to withhold my support until they did something about Susitna. There are so many problems within your field of vision. You naturally have to pick and choose between them."

OMB's decision, according to Gravel, means the $2 billion Sustina project won't encounter any more opposition from the Carter administration.

"If they lose their enthusiasm for Susitna, it will be just as easy for me to lose my enthusiasm about cost-sharing," he said. "But I don't expect that. We made commitments, and I expect everyone to honor them."

With OMB's approval, the hydroelectric project now can enter the so-called Phase I stage, which includes final pre-construction engineering design, a cost-benefit analysis and an environmental impact statement.

Phase I is expected to take 46 months and cost $25 million. More than $5 million in federal money already has been appropriated for the project and is now in the Alaska Hydroelectric Development Fund.

Gravel said the money would enable the studies to begin. He plans to request an additional $20 million from the Senate Appropriations Committee later this year.

It is still undecided how the federal funds will be used in the two-dam project to be located on the Susitna River between Anchorage and Fairbanks.

"The money either will be used to finance Phase I directly or to guarantee the state's spending for Phase I activities," a Gravel aide said. "We want to find out what path will produce the quickest results."

Under the 1976 Hydrelectric Power Development Act, the enabling legislation for the project, the Army Corps of Engineers would build the dams as a contractor for the state.

The state government would pay for the construction and would own the dams and the power they produce, unlike water projects built by the corps and owned by the federal government.

Under the legislation, the federal government would guarantee the corps' work and would reimburse the state for costs if Phase I produced a no-go decision.

Preliminary project plans call for a 635-foot concrete dam at Devil Canyon and an 810-foot earthfill dam at the Watana site, 31 miles upstream.

The Watana dam would be built first, with a generating capacity of 792 megawatts. Devil Canyon would generate 775 megawatts.

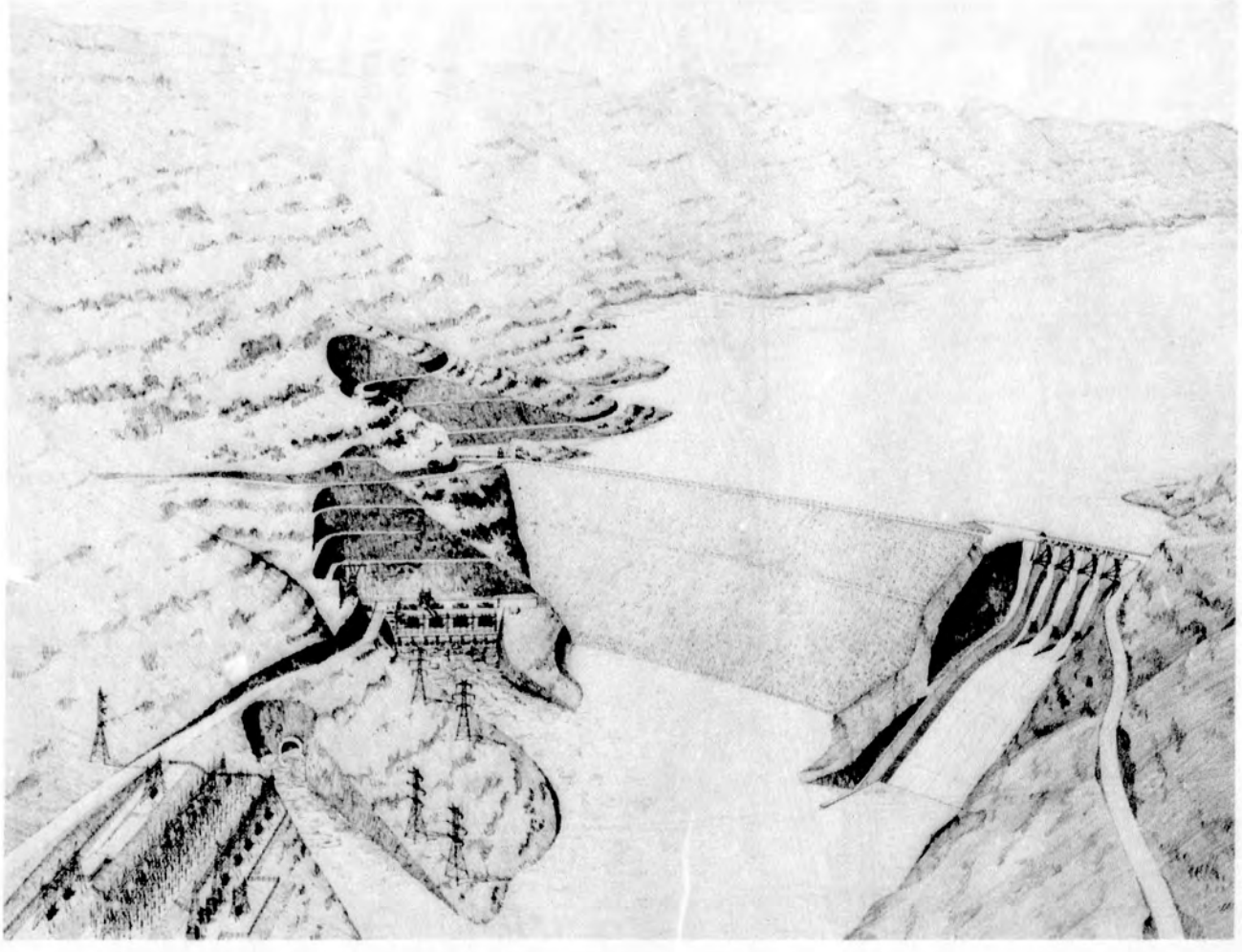
When completed in the early 1990s, the dams are expected to meet about 60 per cent of the electrical demand of the railbelt area, including Fairbanks, Anchorage and Seward.

THE ALASKA POWER AUTHORITY

Susitna Hydroelectric Project
Plan of Study

Presentation by International Engineering Company

September 1979



INTERNATIONAL ENGINEERING COMPANY, INC.
A MORRISON-KNUDSEN COMPANY

Susitna Study Project Team

Project Executive

R. B. Christensen - Vice President

Mr. Christensen, Vice President and Regional Manager/North America, will be responsible for administrative and financial control. He will also maintain close liaison with the management of the Alaska Power Authority. Mr. Christensen has over 25 years of engineering experience and has been the Project Executive for all North American IECO projects since 1974.

Environmental Studies Principal-in-Charge

David H. Blau - Principal - EDAW Inc.

Mr. Blau is an experienced environmental planner and landscape architect with over 15 years of experience, principally in energy related projects. As Principal-in-Charge of Environmental Studies, he will provide direction and guidance to the Environmental Study Group to assure that environmental studies will be carried out in an efficient and orderly manner. Previous projects under his direction include the Environmental Report, Recreation Plan, and Fish and Wildlife Report for the 320-MW Stanislaus River Hydro Project, and the Environmental Report for the Pine Flat Hydro Project in California.

Exhibit "W" Environmental Report Coordinator

John W. Everingham - Associate - EDAW Inc.

Mr. Everingham, a system ecologist who has specialized in urban and rural environmental analyses, will be responsible for the project management and coordination of all aspects of Exhibit W-related studies including work program, work product, scheduling, production, and quality control. As Project Manager with EDAW, he is currently directing the preparation of Environmental Reports for three potential hydro projects in Idaho, as well as a Fish and Wildlife Resource Study for the Wiley Hydro Project on the Snake River.

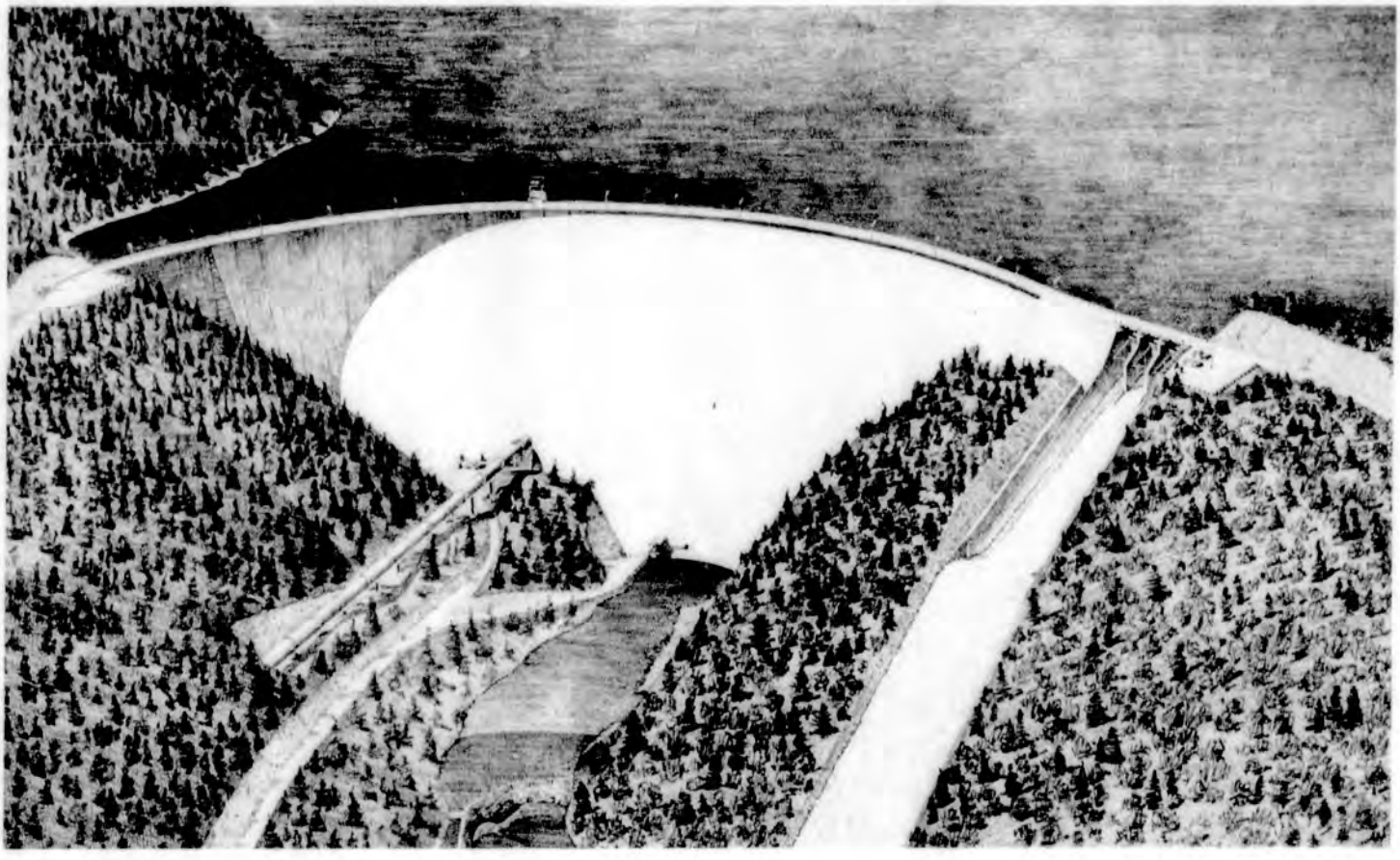
Fish and Wildlife Resources Principal-in-Charge

James E. Hemming - Principal-in-Charge, Biological Services

Mr. Hemming, Principal-in-Charge of biological services in Alaska for Dames & Moore, will be responsible for the project management and coordination of all aspects of the biological studies for Exhibits W and S including input, scheduling, production, and quality control. He has over 17 years of experience in fish and wildlife evaluations. Having worked in Alaska since the early 1960's, he is a recognized expert on Alaskan Wildlife.

A World of Experience

Pioneering in the development of new engineering concepts and designs for dams and related projects is a tradition with INTERNATIONAL ENGINEERING COMPANY, INC. (IECO)... a tradition built on over 30 years of experience in more than 50 countries around the world. Our services for hydroelectric projects include everything from initial studies for site selection and feasibility, through preparing specifications for equipment procurement and final construction drawings, to construction management.



With an inventory of 23 multi-purpose water projects, 50 major dams, 170 km of tunnels, 43 hydroelectric powerhouses, 3000 km of transmission lines and 3 major pumping plants, we at IECO have a world of experience in the investigation and design of major dam and dam-related projects to offer.

INTERNATIONAL ENGINEERING COMPANY, INC.
A MORRISON-KNUDSEN COMPANY

HEADQUARTERS OFFICE
180 HOWARD ST., SAN FRANCISCO, CA 94105
TELEX (ITT) 470040 - (RCA) 278362 - (WUD) 34-376
CABLE INTERENGCO TELEPHONE (415) 442-7300

Management
Project Manager

Eric B. Kollgaard - Principal Engineer

Mr. Kollgaard, Principal Engineer and Chief of the Dam Design Department, will serve as the Project Manager. He will be in full charge of all technical services provided under the terms of the contract. This will include continuous liaison with representatives of the Alaska Power Authority and coordination of the activities of the various study and design groups involved in the Susitna Project. With over 24 years of water resources experience, Mr. Kollgaard has recently served as Project Manager for the Copper Creek Hydroelectric Project, the raising of Ross Dam, and the Windy Gap Water Supply Project.

Deputy Project Manager

Robert W. Retherford - Vice President - Arctic District

Mr. Retherford, Arctic District Vice President and Manager, will serve as Deputy Project Manager. He will be in charge of the Public Participation Program, in addition to his duties as the project management representative in Alaska. Mr. Retherford, who has received numerous awards in recognition of his valuable contribution to advancing engineering in Alaska, has over 25 years of experience in the power industry including design, construction, operations, economics and rate analysis.

Plan Synthesis
Chief Planning Engineer

A. Ragnar Engebretsen - Principal Engineer

Mr. Engebretsen, Principal Engineer with over 30 years of experience, will be in direct change of the Plan Formulation Studies, and the Definitive Project Studies. He serves as Chief Planning Engineer in the Water and Power Resources Planning Department and has been involved in Master Planning Studies in Peru and Bangladesh, water resources feasibility studies in the western United States, and the planning and design of hydro projects in the U.S., Australia, Taiwan, Iceland and Norway.

Preliminary Design
Design Coordinator

Ram P. Sharma - Principal Engineer

Mr. Sharma, Principal Engineer will serve as Design Coordinator. He will be in charge of design input to the Plan Formulation Studies and preliminary design of project features for inclusion in the Definitive Project Studies report. Mr. Sharma has over 27 years of experience in the field of water and land resources development with particular emphasis on the design and analysis of dams, spillways, power intake structures and other major structures associated with water resources projects.

Technical Review Board
Chairman

Archie A. Stone - Executive Vice President, Engineering

Mr. Stone, Executive Vice President, will serve as Chairman of the Technical Review Board. He will be responsible for monitoring the technical development of the project and advising the Project Manager in major decisions. His 30 years of experience in water resource development includes 16 hydroelectric projects for which he served as Design Engineer and Project Manager. Mr. Stone has served in a similar capacity on various other projects including the 12,600-MW Itaipu in Brazil.

Hydrological Studies
Principal-in-Charge

Cyril J. Chan - Chief Hydrologist

Mr. Chan, Chief Hydrologist, has conducted hydrological studies for such major projects as the 12,600-MW Itaipu Hydro Project, the 2,100-MW Itumbiara Hydro Project, and the Nicaragua Master Plan. As Principal-in-Charge he is responsible for evaluating and defining the scope of hydrologic studies required for the project; directing and coordinating the activities of the Task Group Leaders in the study group; and establishing criteria guidelines, and overall technical supervision of all hydrological studies.

Geotechnical Studies
Principal-in-Charge

Joseph S. Long - Chief Geologist

Mr. Long, Chief Geologist with over 20 years of experience in engineering geology, will serve as Principal-in-Charge of Geotechnical Studies. He will direct and review the studies undertaken by the Geotechnical Studies Group to ensure efficient execution and high quality performance of the work. Typical recent hydroelectric projects include the 12,600-MW Itaipu Project, the 2,800-MW Sao Simao Project, and the underground powerhouse and arch dam foundations at the Paute Hydro Project in Ecuador.

Anchorage Support Operations
Principal-in-Charge

Ray S. Samuelson - Deputy Manager and Administrator, Anchorage

Mr. Samuelson, Deputy Manager and Administrator of the Anchorage office, will be responsible for overall coordination of support operations to ensure that the activities are scheduled properly and executed in a timely manner. Support operations under his direction will include: office support; field camps and logistics; permit applications; real estate; surveys and mapping; and other field activities.

International Engineering Company's Project Team for the Susitna Hydroelectric Project Plan of Study is composed of

- IECO, established in 1945, a consulting engineering company specializing in water resources work throughout the world

in association with

- EDAW, Inc. and Dames and Moore, consultants in the environmental sciences, with wide experience on studies for hydroelectric projects and special expertise in the Alaskan region
- Hydrocomp, Inc. specialists in computer based hydrologic analysis

and supported in areas of their particular expertise by

- Cook Inlet Region, Inc./Holmes and Narver Inc.
- University of Alaska's Geophysical Institute, Museum and Institute of Social and Economic Research
- Shannon & Wilson

02-0018 (Rev. 10/76)

STATE of ALASKA

MEMORANDUM

B+M

TO: George Matz, Budget Analyst
Division of Budget and Management
Office of the Governor

DATE: October 31, 1979

FILE NO:

TELEPHONE NO:

FROM: Eric P. Yould
Executive Director
Alaska Power Authority

SUBJECT: Capital Budget Revision

000114

Attached please find revised sections of the Power Authority Capital Budget. A drilling program of the Moonlight Springs aquifer resulted in a determination that the hydroelectric potential does not exist and the project is not feasible. Therefore, Moonlight Springs is removed from the Budget Request.

Information was recently received from the Alaska Village Electric Cooperative and the Alaska Power Administration of potential hydroelectric developments which appear feasible for 9 of 42 AVEC villages surveyed. Funds are requested to perform feasibility assessments of the potential hydroelectric sites for all 9 villages.

In addition, a capital program request for Discretionary Study Funds is submitted to permit flexibility and responsiveness within the authority to initiate reconnaissance studies and feasibility assessments of small alternative energy projects when a critical need is identified.

Attachments:
as noted

APA 10/28

APA will review seismic - nationally recognized

~~[illegible]~~

Decision on Corps vs Private — early Nov

(IECO) 66% of spending to Alaska

1 Determine Needs
2 Develop best plan
3 If Susitna, detail study ⇒ FERC

Approach

CIRI - locations
S. Watana Camp operation

1 Unbiased 2 Staged

Citizen Advisory Panel

Synthesis: Future energy requirements ISER — No new work on alternate sites

Alt energy sources ⇒ hydro, coal gas geotherm wind solar co

GOOD IDEA ⇒ Optimum w/+w/o Susitna

Recommend plan

Energy alternatives → resource, socioeconomic. Downstream effects

Transmission routing (visual) Field work / climat / F+W / Vegetation / Archaeology

Kollgaard ① Q: If at end of 1st stage, Susitna is not most feasible, then what is your role? — what is cost of 1st stage

Retherford Q: Experience in public info + participation?

Engbretsen ② Q: Optimum plan w/+w/o ⇒ different demand assump. — TAKE AVG. - MAX, MIN — How will you establish economic energy comparison

Blau / Houghton Q: Will your downstream impacts include effects on the Susitna tidal flats? How? flow rates + turbidity ~~[illegible]~~ (Use AEIDC modeling also?) (ANS. BY BURKE)

Long ③ Q: Other than Geophys / Shannon + Wilson lab testing, any AK contractors for geotechnical? What permafrost experience does your company have? Will you construct thermal model? Drilling program?

1. CONFLICTS OF INTEREST
   - A. Planner eligible to build dam
   - B. Feasibility study team is planner
   - C. Power plan ~~der~~ contracted to dam builders
2. GEOTECHNICAL
   - A. Thermal model of dam area (pond, thaw bulb)
   - B. Geologic map of dam area
   - C. Details of drilling program
3. ENVIRONMENTAL — IECO 4.1, ACRES 4.9, HARZA 4.8
   - A. Downstream effects
4.
4. ALTERNATIVE ENERGY
   - A. Conflict of interest on demand studies
   - B. Non thermal-fired plants tidal, solar, wind
   - C. Potential for energy conservation

5) Building dam in increments,
   - effect a power supply of tunnel concept.

6) Timing of power market studies - Acres vs. Harza + dam feasibility

DICK

HAR2A

Identify project suitable to Ak power market

Mgr Dwight Glascock Engr Dick Mahar Plan Don Nichol

Mkt Econ Fin George Valland Env Jim Thrall Res Mgr Herb Schl

- Alt Sources – adequately explored?
- Project right size for Alaska
- Seismicity – suggest APA do independent
- Fish + Wildlife –
- Cost estimates – encourage independent review; also more background
- Socioeconomic – look at smaller projects
- Financing – project be sized for market so financable
- Licensing – Small project first while designing larger

Ak-Sinor map drill lab test

⇒ Sr Technical Staff – how much involvement?

- Technical feasibility
- Environmental assessment
- Public participation
- Economics & Financing
- FERC license

Compare w/other sources

Consider more moderate-sized

3 Phase ① Basin planning (9 mos) – is Sus-Hna best source, define project ② Feasibility (15 mos) ③ FERC (3 yrs)

Geotech - subcontract AK firms -
60% effort. 70% effort in AK
Cold Regions Engineering Aspects
(distrib + types of permafrost)

Good

Transmission system
- Criteria for performance + reliability
w/ participation of operating utility
Load flow studies, routes, etc

HARZA

Good — Cold Regions Engineering:
Ice cover
Permafrost

Exhibit U - Power + Energy Utilization

MKT / Economic — Power Market — historic {Resid, Comml — Indust, Natl Def

Financing — Alt Sources of Generation { conventional thermal, other hydro — small-scale

Power System Expansion
Economic Analysis
Financial Analysis

⇒ Most probable alternative is thermal
① Susitna plus thermal ② thermal only
Using Naveen (Gallagher)

GOOD ⇒ Open access to information

① Harza - water resources. Don't design thermal or nuclear projects

Q: Your company is a hydroelectric engineering company. Will this ~~present~~ result in a conflict as you assess alternative sources, including thermal, solar-associated or energy conservation?

HARZA

#2 Q Mr. Harza stated
Your company is a hydro engineering company. What precautions have you taken to ensure the assessment of alternatives — thermal, solar/wind/tidal/geothermal, and energy conservation — will not be biased towards hydroelectric?

#1 Q Mr Hallquist said you would look at optimum energy development of ① Susitna plus thermal and ② thermal only. Will this be undertaken using varying demand and energy conservation scenarios?

Will handle non-thermal alternatives themselves. Experience is that non-thermal are not competitive. Energy conservation / load mgmt have info. Small hydro would be used to replace existing thermal.
What we are doing is evaluating Susitna

ACRES AMERICAN

John Lawrence - proj mgr

Team: R&M / TES / WCC / CIRI-H&N / SAcomon / FMA
Terrest Envir — Wood Clyd — Frank Modlin

good idea — External Review Panels + Environmental Review Panel

extensive northern experience — 5000 mw Churchill Falls/Labrador. 13500 mw North of 49th // 9100 Mw permafrost 7350 mw underground

— DNR, ADF+G down // to APA in hierarchy

Power studies - Woodward Clyde (AK)

Project Mgmt - Frank Modlin Assoc

DNR - in-stream flow studies

Chuck Debelius - formerly from Corps

Objectives: ① Tech, Econ, Envir Feasibility
② Envir ③ License

Power alt: Acres is major hydro alt (Dickey-Lincoln) + Woodward Clyde.

Field exploration - AK experience on location

1/R - proceed or not

$1/m - go/no go w/o geotech, ~~etc~~ envir

Demand projections - Load Forecasts (WCC/ISER), hydro, non hydro alts

Risk analyses

$1/mill, 3m for seismic oversight

New FERC regs

ACRES

Power Studies

Forecast / Growth / Alternatives / Sep

will consider - hydro coal geo, solar, wind, gas-fired turbines

Will use ERTS + low-angle sun

Tunnel Schemes - (w/ Watana)

lesser environmental. Tunnel mt/s used for watana, Same cost as Devil

Recognized furbearers in env. Studies

Transmission lines Churchill 4500 Mw line

Good status reporting / public participation

Acres - consulting engrs (1100 people)

Lots of North American projects (Canadian)

hydro / power + energy / industrial

Responsible (Churchill) - power contracts + grading

Salomon - #1 in revenue bond / power projects public.

Brina Kessel Frank Orth/Socioeconomic ADF+G Mammals/Fish

WCC involved in ~~Bradley~~ Beluga Coal Studies

for Kenai Boro (Nuke, Solar, Geoth, Coal

Since if private, state financing (or thru ~~state~~)

Q: Methodology of alternatives study. ~~How will you decide the least-cost method over time to provide power?~~ What experience does ~~WCC~~ Woodward Clyde have in decentralized alternative energy sources? How will you determine the potential effect of energy conservation methods?

Q Do you foresee problems in obtaining needed quantities of earth materials if not tunnel plans? ~~Will your geotechnical~~

Range of load forecasts for dif/ scenarios
Consider all alternatives
No experience in FERC large-scale licensing
Watana is the major site.
Start financibility (3½-$6.1 bn) planning early.
follow load growth, customers, risks of marketing, defaults, outages, etc.
Confident we can obtain financing
70% in ~~State of AK~~
Use (genl. elect) model
Consider Railhead @ Gold Creek – only access

House Approves $8 Million For Susitna Feasibility Study

JUNEAU (AP) — The House Resources Committee has approved an $8 million conditional appropriation for Susitna dam feasibility studies.

The measure now goes to the House Finance Committee.

The bill, as amended by the resources panel, would appropriate $8,178,000 to the governor's office for the first of the four-year studies for the two massive dams on the upper Susitna River. But the money couldn't be spent unless Sen. Mike Gravel was successful in getting federal repayment should the dams not be built after an Army Corps of Engineers study, or unless a "reasonable alternative program" was created for a private firm to do the studies.

Should the bill clear the full House, it would go back to the Senate for approval or rejection of House changes.

The draft bill initially before the resources panel would have appropriated the funds to the Alaska Power Authority. But the committee changed the measure to give the money to the governor.

Rep. Bill Miles, D-Anchorage and co-chairman of the committee, also sent a number of committee findings along with the bill, including information on questions raised about whether the dams' power output would be needed.

The bill (SB63) also would appropriate $150,000 to help line up a private firm to possibly start the studies.

It took little time for the committee to approve the bill Wednesday. Most of the debate on the issue took place in a long Tuesday night meeting.

"All the utilities would like to have a decision on Susitna as soon as possible," Eric Yould, executive director of the power authority, told committee members.

Yould urged the lawmakers to speed up the decision. But environmentalist spokeswoman Virginia dal Piaz said she feared the decision to spend $8 million on feasibility studies was actually a decision to build the dams, and questioned whether the need for the dam's power output had been adequately studied.

The committee turned down a proposed mendment by Rep. Hugh Malone, D-Kenai, for an additional $200,000 study into alternatives to the Susitna project.

Before "committing railbelt consumers to a multi-billion dollar project," the state should study whether it is "probably as good as the next best alternative," Malone said.

Yould said the power authority would wait and see if Gravel was able to line up federal financial backstopping for the studies. The federal guarantee, which was cut from the last Congress in the heat of the Alaska land debate, would require use of the Corps of Engineers for the studies.

But if the federal legislation is not obtained, Yould said "there are a number of private engineering firms that have the capability of doing a project of Susitna's magnitude."

If a private firm does the studies, then the $25 million figure could be lowered, Yould said. A private firm would only have to present information to the Federal Energy Regulatory Commission, which would then do the actual writing of the environmental impact statement, he said.

The ultimate test for the feasibility of the project would be whether Wall Street was willing to to finance revenue bonds for actual construction, Yould said.

Construction costs for the dams have been estimated between $2 billion and $3 billion, with the first dam ready for use in about 15 years.

The committee debated whether smaller coal-fired plants or the huge hydro project could provide cheaper power in the future.

Yould argued that dams have long lives, and he cited lower electricity costs for Northwest states already using a high percentage of hyrdo power.

But Ms. dal Piaz said the "need for the large amounts of electric power that will be provided by the Susitna River dams project has not been demonstrated."

Antiquities Suit Will Be Heard Monday

Times Juneau Bureau

JUNEAU — Alaska's lawsuit against the Antiquities Act will come alive in hearings before U.S. District Court Judge James von der Heydt in Anchorage Monday, Attorney General Avrum Gross said.

The judge has kept the state's suit on hold pending congressional action on the Alaska lands issue. He allowed President Carter's 1978 with- [illegible] res under

Weekend Session Possible

Times Juneau Bureau

JUNEAU — The Eagle River delegation in the Legislature has canceled hearings tentatively planned for this weekend because of

Backers Of Fish Tax Lower Rate

JUNEAU (AP) — Backers of a new raw fish for Alaska apparently have decided to lower their proposed taxation rate.

The Alaska Senate has passed a bill that would put an across-the-board 6 percent tax on raw fish. The measure (SB132) is now in the House, where amendments are expected.

Senate President Clem Tillion, R-Halibut Cove, says a new proposal under discussion would put the tax at 4½ percent for most species. As an encouragment for on-shore facilities, Tillion said floating processors would be taxed at 6½ percent.

Tillion said the pollock tax would remain at 1 percent and the tax would be set at 2½ percent for developing fisheries.

But Tillion cautioned that he was just relaying the proposal apparently worked out by House Speaker Terry Gardiner.

Gardiner declined to comment on the new proposal.

Meanwhile, Rep. Al Osterback, D-Sand Point and co-chairman of the House Resources Committee, expressed opposition to the newly proposed tax structure.

He said he was amazed that Tillion and Gardiner "are supporting such a radical tax increase to fishermen, without, at least, a study to review present fish tax laws and to determine what revenues are needed."

The Turkish ferry Uskuda capsized in the Sea of Marmora during a storm in 1958 and 361 lives were lost.

STATE OF ALASKA
THE LEGISLATURE

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

LEGISLATIVE AFFAIRS AGENCY

MEMORANDUM April 4, 1979

SUBJECT: General obligation bonds for Susitna Phase I (Work Order No. 6999)

TO: Representative Brian Rogers
Representative Hugh Malone

FROM: Billy G. Berrier, Director
Division of Legal Services BGB

A difficult question arises under Section 8 of Article IX, Constitution of the State of Alaska, which provides:

> "SECTION 8. No state debt shall be contracted unless authorized by law for capital improvements and ratified by a majority of the qualified voters of the State who vote on the question. The State may, as provided by law and without ratification, contract debt for the purpose of repelling invasion, suppressing insurrection, defending the State in war, meeting natural disasters, or redeeming indebtedness outstanding at the time this constitution becomes effective."

The phrase "for capital improvements" is an unusual limitation on the power to issue general obligation bonds. (This limitation does not apply to enterprise revenue bonds because of the specific exemption in Section 11 of Article IX.)

Our court has not had before it that section of the constitution. Section 9 of Article IX which is the political subdivision lending section and which also contains the limitation that general obligation bonds be "for capital improvements" has been before the court. Section 9 provides:

> "SECTION 9. No debt shall be contracted by any political subdivision of the State, unless authorized for capital improvements by its governing body and ratified by a majority vote of those qualified to vote and voting on the question."

In City of Juneau v. Hixson, 373 P.2d 743, (Alaska 1962), the constitutionality of the issuance of general obligation bonds of the city to provide land to the state as a site for its capital without cost to the state was before the court. The court decided the case solely on the constitutional question of whether or not the bond issue was for a capital improvement. It held the proposed bond issue was not for a capital improvement as required by Section 9 and enjoined issuance and sale of the bonds. The court in that case stated:

> "The convention did more than substitute a new term -- it adopted a concept. We believe that it would be unwise for this court to attempt to provide an abstract definition of 'capital improvements'. We have concluded that it is beyond human ability to permanently circumscribe with mere words at a given point in time, a concept which, though limiting in one aspect, is otherwise intended to provide a broad, permanent and continuing authority for municipalities to finance present as well as unforeseeable future needs.
>
> The trial court was correct in holding that the bond issue herein was not for a capital improvement. Assuming for the moment that the expenditure of the money could accomplish the desired objective, the end product would lack most of the attributes usually associated with the completed public project for which general obligation bonds have been sold. No permanent asset in the form of real or personal property would accure to the city. The property acquired by the proceeds would be donated to the state. No thing of value would remain the property of the city. No improvement of general use or service to the taxpayers of the city would have been created by the expenditure. No tangible security for the bonded indebtedness would have been created -- in fact, the total security would have been reduced by the removal of some seven acres of downtown property from the city's tax rolls."

The court then held:

> "Improving the welfare and prosperity of its residents and eliminating economic insecurity are legitimate laudable purposes, but we do not believe they can be financed on borrowed funds under the circumstances of

this case. If accomplished, the purposes would without doubt be improvements, but they would not be capital improvements."

The question of whether a project was a capital improvement was again before the court in Wright v. City of Palmer, 462 P.2d 326 (Alaska 1970). In that case the city proposed to issue general obligation bonds for the purpose of encouraging industrial development within the municipality. The mechanism contemplated was that the city would issue its general obligation bonds and use the proceeds for purchase of a site and the construction of a manufacturing and processing facility within the city. The facility would then be leased to a corporation for a period not less than 20 years which was the maximum permissable maturity of the bonds with the rental being fixed in an amount so that the total costs of the project, including amounts necessary to amortize the bonds would be payable as rent. Numerous conditions for economic benefit of the city were also to be included in the lease. Under this arrangement title to the property remained in the city and on termination of the lease, the right of possession of the property would be in the city. The court held that the bond issue and plan of expenditure did not violate the capital improvement requirement of the constitution stating:

"It is argued that in City of Juneau v. Hixson, 373 P.2d 743 (Alaska 1962), this court laid down a strict test of what constitutes a 'capital improvement,' rendering that term synonymous with 'public works of a permanent character.' Because an industrial development project is not clearly within that category, it is said that the plan before us must fail.

We do not read the Hixson case so narrowly. There we struck down a bond issue because no capital improvement would have resulted from the expenditure of the proceeds. The vice in the Hixson case was that raw land would have been acquired with the proceeds and would then have been donated to the State of Alaska as a proposed capitol site. As a result of the plan, the City of Juneau would have been left with no tangible asset in place of the indebtedness. Furthermore, the State of Alaska had entered into no agreement for and had not otherwise shown an interest in the acquisition or use of any capitol site.

> By contrast, in the case before us the City of Palmer will own a tangible asset. The plan is that the indebtedness shall be retired out of the rental money received over the life of the bond issue. The land and building fulfill the definition of 'capital improvements' which was stated in the Hixson case as being 'associated with value represented by real or personal property in some form and with relative permanency.' 373 P.2d, at 747. There is here no giving away of the asset. On the contrary, the city's real ownership of the structure should increase as the years of rental payment go by. Even if the tenants should default, the building probably would be susceptible to a number of other beneficial uses. We conclude, therefore, that the bond issue and the plan of expenditure does not violate the capital improvement requirement of our constitution."

As mentioned earlier these cases construe Section 9 of Article IX relating to bonding by political subdivisions of the state not Section 8 of the article relating to bonding by the state itself. It is not uncommon for courts to construe powers of local governments more strictly than powers of the state. Nevertheless, the key phrase is identical and the purpose appears identical. Logic indicates the courts would construe both phrases as substantially identical in meaning. In my opinion, the court would adopt the reasoning in these cases in construing Section 8.

A feasibility study by definition does not of itself result in a capital improvement. While in this instance a tangible physical asset, the dam, is contemplated, the end product of the study would not be a dam but a "firm basis for recommending for or against construction of the project." (Army Corps of Engineers Plan of Study). No capital asset owned by the state would be acquired. If, in fact as in this instance, a capital asset is not being acquired, the statement in Hixon that "if accomplished the purposes would without doubt be improvements, but they would not be capital improvements" applies.

In my opinion general obligation bonds issued to pay costs of the feasibility study of phase one of the Susitna project would be a violation of Section 8, Article IX of the Constitution of the State of Alaska.

In answer to the general question whether general obligation funds may constitutionally be issued to finance feasibility studies, it is conceptually possible that a fact situation could arise in which financing a feasibility study would necessarily result in a capital asset of the state being created although this seems unlikely. Each situation must be evaluated on the facts of that situation.

BGB:nem

SENATE JOURNAL

ALASKA STATE LEGISLATURE

ELEVENTH LEGISLATURE - FIRST SESSION

JUNEAU, ALASKA Friday January 19, 1979

Fifth Day

Pursuant to adjournment, the Senate was called to order by President Tillion at 10:06 a.m.

The roll call showed all members present except Senator Sackett who was excused from a call of the Senate today.

The prayer was offered by the Chaplain, Danny Plotnick, Lay Rabbi of the Juneau Jewish Community.

Senator Colletta moved and asked unanimous consent that the journal for the fourth legislative day and Senate and House Supplement No. 2 be approved as certified. Without objection, it was so ordered.

INTRODUCTION AND REFERENCE OF SENATE RESOLUTIONS

SENATE JOINT RESOLUTION NO. 6 by the Rules Committee by request of the Governor, SJR 6

> Relating to the Alaska Power Authority, the Phase I environmental, economic, social and engineering studies of the Susitna Hydroelectric Project, and the incurring of indebtedness for Phase I,

was read the first time and referred to the Resources Committee and the Finance Committee.

Governor's transmittal letter accompanying SENATE JOINT RESOLUTION NO. 6 follows:

SJR 6

"January 18, 1979

President of the Senate
Alaska State Legislature
Juneau, Alaska 99811

Dear Mr. President:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a resolution relating to the Alaska Power Authority, the Phase I environmental, economic, social and engineering studies of the Susitna Hydroelectric Project, and the incurring of indebtedness for Phase I.

Sincerely,

Jay S. Hammond
Governor"

INTRODUCTION AND REFERENCE OF SENATE BILLS

SB 63 SENATE BILL NO. 63 by the Rules Committee by request of the Governor, entitled:

"An Act making a special appropriation for the Alaska Power Authority for the Susitna Hydroelectric Project; and providing for an effective date."

was read the first time and referred to the Resources Committee and the Finance Committee.

Governor's transmittal letter accompanying SENATE BILL NO. 63 follows:

SB
"January 18, 1979 63

President of the Senate
Alaska State Legislature
Juneau, Alaska 99811

Dear Mr. President:

Under the authority of art. III, sec. 18, of the Alaska Constitution, I am transmitting a bill making a special appropriation to the Alaska Power Authority for the Susitna Hydroelectric Project.

Last year the Legislature passed House Committee Substitute for Senate Joint Resolution 50 amended House which authorized the Alaska Power Authority to sell bonds necessary to finance the completion of the Phase I studies which would lead to a determination of the environmental, economic, social and engineering feasibility of the Susitna Hydroelectric Project. Included in that resolution was a provision which made such a bond sale contingent upon the passage of federal legislation which would provide a federal guarantee of the bonds and allow reimbursement to the State if the project was determined unfeasible. Because the last Congress failed to pass this guaranteeing legislation, the Legislature no doubt wishes to reassess its prior action.

It is Senator Gravel's intention to resubmit his proposal to Congress, in order to continue with the previously contemplated schedule for the completion of Phase I studies. Nevertheless, it is necessary to consider other interim financing alternatives because federal authorization would come too late to do geological, biological and engineering tests during the 1979 summer season. The possibility of a one year delay must be carefully weighed along with the many uncertainties surrounding a project which I believe will prove to meet the three pertinent criteria by which all such projects should be adjudged; is it environmentally acceptable, economically feasible and do the majority of the people desire it.

Several weeks ago, upon the recommendations of the Alaska Power Authority, I agreed to submit a request for funding sufficient to keep current evaluation studies on track. Subsequently, developments attending imposition of the Antiquities Act and projected revenue losses have, of course, raised additional questions.

Regardless, in fulfillment of that commitment, I am submitting for your consideration a supplemental appropriation request in the amount of $8,178,000. These funds will be used to guarantee the sale of the necessary bonds to finance the first year of the Phase I studies. I have been informed by the Alaska Power Authority of the necessity for positive action on this

SB 63 proposal by approximately mid-February if the Corps of Engineers is to mobilize contractors and move equipment to the study sites before breakup. However, legislative approval of this supplemental request is only one of a number of actions which must be taken if the studies are to proceed on time. In addition, the Corps must receive approval by the federal Office of Management and Budget to enter into an agreement by which the State finances its activities in regard to the project. Approval must also be received from village corporations which have lands adjacent to the project sites, and finally, the Internal Revenue Service must sanction the complex financing arrangement which the APA has proposed.

Due to the obvious complexity of the situation, including the possibility of complete State financing of the entire $25 million study effort should the Congress fail to adopt Senator Gravel's proposal, I request that you take the earliest opportunity to consider this appropriation and its companion resolution in order to satisfy yourselves that this is the proper way to proceed on this project.

Sincerely,

Jay S. Hammond
Governor

CONSIDERATION OF THE CALENDAR

CITATIONS

Senator Colletta moved and asked unanimous consent that the Citation - In Memoriam - Clarence Kramer - by Senators Meland and Ziegler, be approved. The Senate approved the Citation unanimously and it was referred to the Secretary for transmittal to the House.

Senator Colletta moved and asked unanimous consent that the Citation - Honoring the Memory of Ann Stevens - be sponsored by all Members of the Senate. Without objection, it was so ordered.

Senator Colletta moved and asked unanimous consent that the Citation - Honoring the Memory of Ann Stevens be approved. The Senate approved the Citation unanimously and it was referred to the Secretary for transmittal to the House.

UNFINISHED BUSINESS

President Tillion appointed the following members to a Special Committee on Electoral Reform:

Senator Kelly, Chairman
Senator Fahrenkamp
Senator Malcahy

SPECIAL ORDERS

Senator Kerttula moved and asked unanimous consent that he be excused from a call of the Senate, January 22. Without objection, Senator Kerttula was excused.

Senator Sumner moved and asked unanimous consent that he be excused from a call of the Senate, January 22. Without objection, Senator Sumner was excused.

ANNOUNCEMENTS

Budget & Audit	Rm 423, Capitol	1:30 p.m., 1/20
Resources SB 51, SJR 5 SB 21, SB 14	Rm 207, Capitol	1:30 p.m., 1/22
Judiciary SJR 2, SB 7, SB 28, SB 52	Rm 209, Capitol	1:30 p.m., 1/23

ADJOURNMENT

Senator Colletta moved and asked unanimous consent that the Senate adjourn until 10:00 a.m., January 22. Without objection, the Senate adjourned at 10:21 a.m.

Peggy Mulligan
Senate Secretary

January 1979

SR 20160-D
Fairbanks
99701

Dear Brian

From reading the News-Miner, it sounds as if the Susitna study funds are not ~~get~~ dead for this year. If they are resurrected, I thought you might like the following information.

The justification for the project is based on 1) increasing population 2) increasing per capita consumption of electricity and hence 3) increasing load demand (annual and peaking). Projections for these three factors were made in 1974 by the APA and, with some modification, seem to be still used by Susitna advocates. Therefore justification for the project can be validated by looking at the five years of data that now exists relative to these projections. When this is done, some interesting things appear, such as

Population – FNSB	1974	1978	avg. annual change
Actual	58,007	60,845	+1%
Projected	—	67,230	+3%

Energy / Customer (CMUS & GVEA)

Actual			
• Residential sector	12,110 kWh	10,152 kWh	−3.5%
• Commercial sector	73,621 "	83,156 "	+2.5%
• Total customer	23,367 "	21,295 "	−1.9%
Projected			
• Residential sector	—	12,753	+7.0%
• Total customers	—	24,608	+7.3%

Annual Load Demand			
Actual	343.8 million kWh	429.3 million kWh	+4.6%
Projected	330.0 " "	550 " "	+10.7%

Regarding the annual load demand, it interesting to see how accurate the projected rate of increase is.

Projected			Actual		
1978	550	mill kwh	1978	429.3	mill kwh
1974	330	"	1974	343.8	"
projected increase	220	"	actual increase	85.5	"

~~220 ÷ 85.5~~

$$85 \overline{)220.00} \quad 2.57$$

In other words, the APA forecast in only five years had an error of 257%. Considering that 1979 doesn't look much different, energy consumption wise for Failure, their marginal error should become even greater.

I hope you can use this information to prevent a lot of expense for a useless study. [The state doesn't need to spend $25 million to determine that the project, as presently described, is a loser.]

Sincerely
George Wolf

Alaska Conservation Review
Fall '76 with 79

The Soft Path . . .

AN EXCITING CHALLENGE FOR ALASKA

by George Matz

Two hundred years ago, an Englishman named Adam Smith laid the foundation for the Industrial Revolution when he published *Wealth of Nations*. Essentially, this lead to an economic era based on the exploitation of nonrenewable resources rather than renewable resources. Today, this exploitation extends to virtually every corner and pocket of the earth.

The Energy Crisis of 1973, followed by a sequence of other resource crises, has brought industrial societies face to face with the realities of the law of diminishing returns. All but the most staunch industrialists now recognize that changes are needed. A more renewable post-industrial society must be forged.

It was another Englishman, E. F. Schmucher, who described the foundation for a post-industrial society when he published *Small Is Beautiful* in 1973. Schmucher called his concepts intermediate technology although most people now refer to them as appropriate technology or a.t. The thrust of a.t. is almost the opposite of industrialization in that it emphasizes development which tends to be of a smaller-scale, less complex, labor-intensive and less disrupting to the environment. It also relies on resources which are local and renewable. That does not ignore, however, that some products of industrialization are beneficial and have no acceptable alternative.

Amory Lovins, with his publication of "Energy Strategy: The Road Not Taken" in *Foreign Affairs* (Oct. 1976), has put Schumacher's thesis into more technocratic terms by referring to a.t. as the "soft path" and energy/capital-intensive industrialization as the "hard path." As a result, the terms a.t. and soft path are often used interchangeably by many of its advocates.

Every society needs a challenge to which they can respond. Consequently the concepts of Schumacher, Lovins and others have been spontaneously and enthusiastically endorsed by many throughout the world.

Alaska is no exception. A.T. advocates in Alaska see it as a means by which the state can go from a pre-industrial to post-industrial society without having to contend with the environmental and cultural desecrations that usually come from industrialization. In fact, Alaska may be the barometer by which to gauge the acceptance of a.t., nationally and perhaps internationally.

Why Alaska? A simplistic answer is that old adage "if it works here it will work anywhere."

But there is more. In essence, Alaska has all of the reasons to follow the soft path and few justifications to even consider the hard path.

To delve into this, we need to look at some of the key features of Alaska. As we all know, Alaska is a large state with nearly all of its population in widely dispersed clusters. This argues against the development of large centralized electrical power generating facilities with interties throughout even portions of the state (i.e. proposed Susitna hydroelectric project) but favors alternative energies that are community oriented (i.e. windpower).

Alaska's physiography is one of contrasts. There are vast areas of the state which are flat, mountainous, wet, dry, cold, temperate, windy, calm, etc. Each of these conditions require a custom made human environment rather than some assembly line package from the lower-48. Often, standardized products do not work very well in Alaska.

Alaska's infrastructure, both institutional and physical, is not highly developed. Choosing the soft path requires adoption not change. We don't have to rework a lot of obsolete laws or public projects. Thats an especially important point.

By virtue of statehood and Prudhoe Bay, Alaska is a wealthy state. Its land and revenues provide a generous public resource for its residents. Consequently, the state is in a position where it can afford to experiment with a.t. projects, yet not sacrifice vital public services. Also, the soft path may provide the best approach for Alaskans to perpetuate their public nest egg.

Relative to what is left in the lower-48, Alaska has vast renewable resources, but most are thinly spread. A sustained yield harvest of these resources may often limit resource utilization to small-scale, decentralized projects.

Alaska has some vast concentrations of non-renewable resources, but the high cost of labor, energy and transportation often makes exploitation uneconomic. Of course, the government can intervene and subsidze much of the risk and costs (i.e. Delta barley project) but that runs counter to public sentiment. Alaskans have been firm in demanding that development pay its own way.

Advocates of (d) (2) often state that Alaska represents our first and last chance to do it right; to establish land management systems which protect a significant portion of Alaska's wildlife, scenic, wilderness and cultural values. What few have stated however is that Alaska also has the opportunity "to do it right" with business management systems. For example, most Native regional corporations, which are beginning to play a significant role in the states economy, have demonstrated a social conscious for their respective region. They tend to make a distinction between being profitable and maximizing return-on-investments. A corporation that is concerned only with ROI can not afford to internalize diseconomies or intangible social costs.

If Alaska is to follow the soft path, its greatest resource will be its people. Alaskans, by tradition, are resourceful, self-reliant people who know the land and who tend to dislike big government, big business, or big labor. They insist on having control of their own destiny. Such attitudes are a good match with the spirit of a.t.

From what has been said it may sound as if Alaska is a natural for the soft path. It is, but there are significant barriers. There are strong pressures from outside and even from within to have Alaska become part of the world economy, to increase our level of import and export. To do so requires a social and economic infrastructure which comfortably interfaces with standardized industrial operations rather than an infrastructure which is tailor made to the land and its people. In other words, industrialization requires that the land and its people change even more than the accelerated changes that have already been stimulated by the trans-Alaska pipeline.

What has not been fully realized is that change to an industrial society is one of following a well worn path. There are 49 other states that we can look at as examples. By contrast, the unblazed soft path requires imagination and leadership. Its a new era of pioneering.

Alaska is now at a crossroads; to follow or to lead. Our choice will determine whether Alaska will be the last frontier or the lasting frontier.

Introduced: 1/19/79
Referred: Resources and Finance

Funding Information:
General Fund: $ 8,178,000
Other Funds: -0-
$ 8,178,000

IN THE SENATE

BY THE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

SENATE BILL NO. 63

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act making a special appropriation to the Alaska Power Authority for the Susitna Hydroelectric Project; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. The sum of $8,178,000 is appropriated, subject to the conditions set out in sec. 2 of this Act, from the general fund to the Alaska Power Authority for the purpose of providing a reserve for revenue bonds to be issued by the authority to finance Phase I feasibility studies of the Susitna Hydroelectric Project.

* Sec. 2. The appropriation in sec. 1 of this Act is conditioned upon (1) repayment, of the full amount appropriated, to the State of Alaska when it is no longer required, due to the availability of other funding, for the purpose specified; and (2) payment of any earnings on the amount appropriated in sec. 1 to the State of Alaska.

* Sec. 3. This Act takes effect immediately in accordance with AS 01.-10.070(c).

amend
Sec. 2/ approval by the federal gov't of ~~payment~~ funding for the study
Sec. 3/ This act takes effect after the repeal by UAA

4/17/79 Susitna / House Resources

Yould

(1) number of studies of alternat-

(2) excess demand - will not attract industry, too many other costs

(3) load projections - all studies to date state Susitna power will be fully utilized when it comes on line backed by utility projection

(4) Project will be staged
Watana - ~~B~~) 6.9
Devil's Canyon

1.9
~~2.8~~

". . . come under scrutiny by NEPA . . .

- what is ~~NEPA~~ ? I thought it was an act?

EPA signoff needed

area - selected by 6 Native Villages
overselected by Cook Inlet

Chatterton - wants State to have title to land, not draft agreement.

DNK - wanted value for buying, need results of study
Have agreement for access
Will have to buy them out - cheaper now than later, but maybe zero later.

Private Sector's plan of study - less than 8 million.
FERC will write EIS

Will not be able to spend 8 million until ~~[illegible]~~ Oct 1

I'd like to do some encumbering of that 8 million myself.

Malone - prefer out-front direct app. to revenue bond approach

Should appropriate money for independent economic analysis

appropriate 8.17 million to Governor.
let him make decision for Plan B

~~Oversight Committee - No~~
Fed guarantee may be essential for financing

Susitna

The proposed Susitna dams site feasibility study is another example of government's habit of wasting taxpayers' money to obtain bits of irrelevant information. Such a study would make sense only if it promised to provide some information essential for making a sound decision. If, for example, the proposed project were well conceived and soundly thought out, and the only preliminary question remaining was that of the physical suitability of the site, then the study would be worthwhile. Such is not the case, however, with respect to the Susitna dams project. With a few minutes' thought it becomes obvious that:

(1) the project makes no economic sense;
(2) it's not needed;
(3) it's downright harmful; and
(4) there's very little chance of the feds' giving it to us for Christmas.

The current advertised cost is $2.6 billion. As these things go, it's safe to say that the final tab would be substantially higher: probably $3 billion or more. Even a low simple rate of interest of, say, 10%--one that barely stays ahead of inflation--would mean an annual cost of about $300 million for interest alone. That comes to about a thousand dollars a year for every man, woman, and child in the railbelt. To repay the principle over the life of the dams would, of course, require much more. (How much more can't be determined with any certainty, since nobody can predict how long a high dam on a glacial river in earthquake country would last.) Then, if one actually wanted electricity, instead of to just have a couple of dams to look at, the costs of operation, maintainence, and distribution would also have to be added on. This isn't a very promising path to cheap light bills.

It's often assumed that if a lot of electrical generating capacity were available the railbelt would bloom into a major industrial center. While that's certainly a possibility, it doesn't necessarily follow. That assumption is a version of Say's Law, which says that supply creates its own demand. Though that law has been useful in economic theory, it obviously has its limitations if one tries to apply it too literally to a particular enterprise, since in the marketplace merely producing something doesn't guarantee that it can be sold at a profitable price. Location decisions are based on a complex of considerations. Electrical generating capacity is a significant factor for only certain industries. Aside from the question of whether those industries would be desirable neighbors, there's little evidence that lack of generating capacity is their limiting factor at this point.

Another assumption that's often made is that money spent, no matter how wastefully, somehow stimulates the economy and adds to the general welfare. This isn't very sound reasoning, since it ignores opportunity costs. In a finite world, resources allocated to one use are not available for another. For a true evaluation of an enterprise, the benefits attributable to it must have deducted the benefits that could have been derived from the best available alternative use for the resources. While private enterprise in a free market is subject to this discipline, public works projects are able to sidestep much of it by assigning dollar values to intangibles that are claimed as social benefits, and by using a lower-than-market rate of

interest when figuring costs. Much of the public confusion about this stems from the fact that the benefits, in the form of the thing built, the payrolls, etc. are concentrated and visible; whereas the costs, in the form of taxes, inflation, and environmental degradation are diffused and hidden.

It's a shell game that governments have been putting over on us for a long time now. It only works as long as the con artists are few and slick, and the suckers are numerous, gullible, and have real, hard-earned money to keep putting up. There are indications that the marks are catching on. This is cause for either alarm or hope, depending on how we react to our enlightenment. If many of us try to indulge the fantasy of ourselves becoming successful cons, then we're in for hard times. If, on the other hand, we call off the game and start insisting that those in positions of trust behave responsibly, then maybe there's hope.

The assertion that this project is vital to our well being; that without it we'll freeze in the dark, or at least stagnate, and maybe slip back to the stone age, doesn't stand up very well to close scrutiny.

Most estimates of projected electrical demand are grossly overstated. Electricity is a specialized form of energy that is only needed for certain tasks. Low grade uses such as water heating, space heating, and cooking are handled more efficiently by other forms. Then, too, much of the electricity that is used for appropriate tasks is wasted by sloppy habits and inefficient appliances. This pattern of misuse and waste has come about, in large part, as the result of pricing policies utilities have had in the past that served to encourage consumption.

To meet the real needs of the future, utilities have available any number of options for increasing generating capacity in increments at the proper time and place. We have ample supplies of hydrocarbons to meet our immediate needs and to give us time to develop the technology needed to move from our present system to a sustainable one. Oil and coal will play their part, and natural gas is especially promising as a transition fuel. It is clean burning, abundant, and its appliances and distribution system can later be used with methane and hydrogen.

Alaska's energy potential for the more distant future must be one of the highest on the planet. It would be hard to imagine a more energized environment than a tectonically active peninsula of great relief, interposed between the arctic highs and the storms of the North Pacific. The technology for tapping into this is still embryonic, but it seems reasonable to believe it's going to develop. And if it does, a huge, centralized dam and transmission line complex would be a cumbersome fossil; serving only to remind future generations of our shortsightedness. For it's not likely they'll thank us if we, while standing at the threshold of a new era, insist on burdening them with an inflexible 19th century solution to a 21st century problem.

If this dam project were only a foolish waste it would be bad enough, but it goes beyond that. It's a wounding of the life sustaining systems of the whole region. The richness of the life in the

waters off Alaska and on the land itself is dependent on the complex, intimate interaction between the land and the sea through the rivers and streams. If we're going to live here, we must be careful to nurture this process, and to certainly avoid needlessly interfering with it. Every time a stream is carelessly blocked by logging slash, every time sewage or poisonous chemicals are allowed to escape into the living waters, every time silt is allowed to choke spawning gravels, the system that sustains us is put under a little more stress. Damming a major river represents a crippling blow. Such an act could only be excused if done out of dire necessity.

Money spent by summer visitors is an important part of Alaska's economy. People are lured north by the promise of something different from their everyday surroundings. Wildness is the most important part of that difference. Man-made attractions are a dime a dozen, but real wildness is rare. When the highest mountain and the wildest river of a continent are found within sight of each other, one can only hope mother nature's pearls aren't wasted.

The pattern in the past has been to build anything, no matter how wasteful, unnecessary, or harmful it might be, so long as the federal government could be conned into paying for it. That may be harder to pull off in the future. For the new perception of Alaska that has emerged in the lower 48 over the past few years, coupled with the economic winter coming on, may make the lambs reluctant to come to their fleecing. Concerning this project, if the feds won't cough up a few paltry millions for the feasibility study, it's unlikely that they'll later fork over billions to build it. More likely, in fact, would be constituents tarring and feathering any lower-48 congressman who voted to fund a multi-billion-dollar project whose only beneficiaries were what were seen as a handful of oil-rich boomers.

Actually, the bill to fund the study should be more properly titled, "The Alaska Power Authority Bureaucrats' Lifetime Employment Security Act." The plan seems to be to use these studies to keep the scheme alive; and then, in a few years, some time when we're feeling flush from gas pipeline construction and there's a lot of oil and gas revenue flowing into the state treasury, to slip a big construction bond issue by us.

Soapy really should give those boys a few more lessons. They think big enough, but they lack style.

Frank Ivy

Box 81116
College 99708

rec'd 4/6/79

dal Piaz ~~ILS Rodding~~ file

April, 1979

Concerns About the Susitna Hydro-Project

1. The projected energy demand used by the Army Corps of Engineers is totally unrealistic.

The need for the large amounts of electric power that will be provided by the Susitna River Dams Project has not been demonstrated. Total residential industrial electrical energy consumption in the railbelt area was about 1.9 billion kilowatt hours (KWH) in 1977. The two Susitna dams will produce 6.9 billion KWH, over 3-1/2 times the amount of energy needed to meet 1977 consumption. The Army Corps of Engineers has continued to use the highly inflated and unrealistic growth projections made by the Alaska Power Administration (APA) to justify the Susitna project. [Public involvement in APA's (a federal bureaucracy) projections has been conspicuously lacking, and APA has commonly manipulated statistics to suit their needs and bolster their arguments for excessively large future energy demands.] For example, when APA has projected energy demands for the Alaska railbelt (i.e., the Anchorage-Fairbanks area), they have included the energy needs of the Kenai Peninsula and of the military. In fact, the power needs of the Kenai Peninsula will primarily be met by the Bradly Lake hydro-project. The military in Alaska has always generated its own power in the past and very probably would not use a centralized, highly vulnerable energy source such as Susitna, in the future.

The APA's projected growth patterns include a doubling to tripling of railbelt population in less than 20 years and a continued annual increase in per capita energy consumption of 3% or more per year. These projections result in energy demands of four to ten times present needs by 1995. The most recent trends in population growth and energy conservation in Alaska make such projections totally unrealistic. In fact, statistics from Golden Valley Electric Association (GVEA), the major commercial utility in the Fairbanks region, show that their per customer energy consumption is declining in Fairbanks. During the past three-year period, GVEA residential and commercial/industrial per customer usage has declined at average rates of 12.5%/year and 5.5%/year, respectively. Statistics from Anchorage utilities and from APA show that the annual increases in per customer usage have tapered significantly in the Anchorage area over the past three years. Total energy consumption in the Fairbanks area actually declined in 1978. Present energy consumption in Fairbanks is running considerably below what had been projected for this community in the Corps of Engineers' initial feasibility study.

The Corps of Engineers has overestimated future power needs before. This occurred when justifying the construction of the Snettisham dam near Juneau. The dam was built by the Army Corps of Engineers and is administered by the Alaska Power Administration. Although brought on line in 1973, the Juneau Power Utility is buying only one-fifth of the total capacity of the project. Consequently, the cost of power to the utility company is over twice the rate the Corps originally anticipated. Because of the slow growth in load, in order to cover the interest rates on the bonds that funded this project, it is expected that the price will again be increased in 1985 by 75 to 80 percent. With a much bigger project such as the Susitna, such a mistake would be a financial disaster.

No matter what the increase or decrease in energy consumption will be, the Susitna Project will not come on until the turn of the century. Utility companies will be required to build new power plants to meet the needs before the Susitna could come on line. Susitna power then represents an enormous glut of energy. In order to make the project economically feasible, the Corps will have to find a way to sell the excess power. Their proposed solution is rapid industrialization and the introduction of some highly energy intensive industries to the railbelt. Some of their proposals are a bauxite processing plant, a uranium enrichment plant, mineral processing plants, coal gasification plants, liquid natural gas plants, oil refineries, etc. Not only is this highly speculative (coal gasification plants are not yet a reality), but such industrialization is totally incompatible with the expressed opinions of the majority of Alaskans who do not desire rapid large-scale industrial growth. The Susitna project, in fact, represents a de facto imposition of an accelerated growth plan upon Alaska which is totally contrary to Alaska's desire for planned growth and control over their future. No consideration appears to have been given to the impact which doubling and tripling the population in less than 20 years will have on land use in the railbelt area and the large increase in hunting pressure in the surrounding region and throughout the State, nor to the environmental impact of such large industrialization to the railbelt area.

2. The economic feasibility of the Susitna project is highly questionable.

Even when using the Corps' very conservative cost estimate of $2.6 billion, economic feasibility has been judged as marginal. The Susitna project would involve two dams, each one larger than the Hoover Dam. The project would be the biggest and most expensive ever attempted by the Corps. It would also be the first large-scale hydro-project ever attempted by the Corps in a subarctic region, an environment notorious for its engineering difficulties. Compounding the engineering problems is the fact that the dam sites will be located in a highly active seismic region. Dealing with such problems can easily lead to significant cost overruns on the project.

The Office of Management and Budget (OMB) has shown that if the Susitna project has a cost overrun of as low as 30%, the benefitcost ratio would be less than unity, making the project economically unfeasible. The Snettisham Dam in Juneau, Alaska, had a cost overrun of 36%, over and above inflation, and it was a much smaller project. A study made for the U.S. Senate showed that large custom engineering projects, such as Susitna, have cost overruns, over and above inflationary costs, of between 50 and 500%. In Alaska the best cost estimates for construction of the oil pipeline, based on all the final environmental stipulations, was $2.5 billion. The end costs were $9 billion, a cost overrun of 300%.

Several additional hidden costs have not yet been brought up or discussed by the Corps. For example, the Susitna project is going to be a highly centralized source of electrical energy. The major metro area,

Not for Distribution

Susitna Summary

[redacted]

3/5/79

Re: SJR 6 and SB 63 - Susitna Hydroelectric Project

HISTORY

The Susitna project has a complex history. Ironically, it was originally proposed by the Bureau of Reclamation as an alternative to the Ramparts dam project proposed by the Army Corps of Engineers. The Ramparts vs. Susitna struggle stalemated both projects until some/most of the rivalry between the two competing federal agencies was resolved with a reorganization of responsibilities in 1962. The original estimated cost was $498 million in 1961, and the project purpose was clearly to expand population and industrialize the railbelt area.

Requests for Susitna studies were reopened in 1972 by Stevens, Gravel and the Alaska Legislature. The Corps requested study funds for FY 74, but the Office of Management and Budget disallowed the funds. In January, 1974, Gravel arranged for $50,000 in federal monies to update the Corps feasibility study. In the same year an Alaska Power Authority study reaffirmed the project feasibility and desirability, and the Legislature passed a supporting resolution.

Tony Motley chaired an ad hoc review task force which issued recommendations in early 1976. I have not read the recommendations which were part of a February 18, 1976, report to Hammond, but apparently Motley wanted a mechanism established so that state and local government officials could participate with federal officials in the dam design and review.

In 1977 the Alaska Power Authority contracted with the Army Corps of Engineers for a Plan of Study. The $100,000 contract work was done last year while Gravel attempted to amend the Water Resources Act (PL 94-587) so as to provide a federal reserve of $25 million to repay/pay the state for Phase I feasibility studies. The amendment failed, caught in the D-2 scramble. So the appropriation this year is meant to take the place of federal funds originally envisioned as initiating the project.

BASIC (AND SIMPLISTIC) DESCRIPTION OF THE PROJECT

The plan, as described in the Corps Plan of Study, is for a two-dam system: 635 ft-high concrete thin arch dam at Devil Canyon; 810 ft-high earth fill dam at Watana, with 365 miles of transmission line to Fairbanks and Anchorage. The dam would deliver 75% of its electricity to Anchorage, 25% to Fairbanks. It would be capable of developing 6.1 billion kilowatt hours annually, "roughly triple the energy consumed in Anchorage and Fairbanks in 1974." The Alaska Conservation Society points out that that means roughly five times the electrical energy consumed in those areas. The cost would be $2.6 billion, with operations to begin in 1994.

PHASE ONE FEASIBILITY STUDIES

The Phase One feasibility studies (toward which the $8 million appropriation would go) would cost a minimum of $24 million, with some estimates going to $40 million, over a 46 month period. It has three parts:

1. Preliminary screening: would re-examine "the best plan" for the project already identified in 1976 and other possible damsites and dam combinations and heights. Cost: $4.3 million, time: 7 months.

2. Detailed feasibility studies which would concentrate on the best plan identified in step one. It would yield "firm basis for recommending for or against construction of the project, whether Federally funded, State supported under Section 203, or totally financed by the State of Alaska." Cost: $16.7 million, time: 25 months.

3. Detailed design studies of any dams, power houses, access roads, transmission lines and substations. Cost: $3.1 million, time: 14 months.

CONCERNS/ISSUES

1. Lack of an effective oversight/disinterested review. The Corps is doing the feasibility study on the project which means a minimum of 15 years employment for the Corps, if it is built. There was a $300,000 appropriation last year for Legislative Affairs to review the Corps work; Greg Erickson will testify on the problems he has with that enabling legislation.

2. Lack of examination of alternatives for providing energy. The Susitna project was proposed as an alternative to Ramparts, yet no real examination has been done of alternatives to it.

3. Concern about whether the market for so much power now/will exist, or whether the project in itself will force industrialization and development which might not otherwise have taken place.

4. Geological risks. The dam is presently sited for construction on an earthquake area.

5. Financing.

First, the way the resolution and appropriation bills are now worded we are committing ourselves to financing "the cost of the Phase I feasibility studies," that is, to $24-40 million. The amount of the appropriation, $8 million, is only for the first year of Phase I.

Payback: The Legislature passed a similar supportive resolution last year, but it was conditional on the amendment of the U.S. Water Resources Act so as to provide a mechanism for federal payback/pay of the feasibility studies. The Gravel amendment failed, and even under the proposed amendment, payback would have occurred only if the project proves feasible.The current bills do not make state money conditional on federal payback provisions.

Next, there are some major concerns about the total project financing. The feds are phasing out large hydroelectric projects. The Office of Management and Budget has already turned down federal funds for Susitna studies, both in 1974 under the Ford administration and, have issued a detailed request for more information about the project before giving any final approval to Corps participation. The Corps response has not yet been submitted to OMB. Yould testified in the Senate that federal funds for project construction are unlikely, especially because it benefits relatively few people for such a large amount of federal money.

Next, there is apparently some problem about the ability of the Alaska Power Authority to issue revenue bonds for the project. Yould has applied to the Internal Revenue Service for an exemption, allowing APA to issue project bonds, but there has been no ruling yet. We need more information about this area. Establish a reserve using public money is limited to a one year period, according to IRS code.

Budget breakdown: the committee has not been provided with a budget breakdown beyond the major categories for the first year only. This issue is important because the Dept. of Fish and Game has expressed its concern that the amount allotted for biological studies is very inadequate. Skoog writes that the budget level "will, however, sorely impair the level of technical and professional sophistication needed to determine feasibility," and consequently result in our not meeting the requirements of federal law, i.e. the National Environmental Policy Act and the Fish and Wildlife Coordination Act, and thus result in litigation. Skoog says the biological studies budget should be $5,158,000 while the Corps has allotted $2,264,000.

Next, the way the resolution and appropriation bills now read, there is no reporting mechanism, nor reporting requirements, although we're asking Legislative Affairs to do a review. Erickson will probably speak to this on Wednesday.

6. Land ownership. Most of the area has been designate a wild and scenic river, but also has been selected by six village corporations and the Cook Inlet Regional Corporation as part of the native lands to be conveyed this August. Tindell, BLM, will speak Wednesday on the status of the lands. This situation is complicated because neither BLM nor the Corps has done a "wetlands" survey yet, and both are charged with protecting "wetlands." We need to find out what the results of such a survey would be for the project. Also some concern has been raised over preservation of Subsistence and Alaskan life styles of both native and nonnative residents from Talkeetna to Nenana.

7. Risks to moose, birds, salmon.

APA Board Meeting 3-30-79

Yould, John Hinton from 1st SW

MacGuire (Rutherford - intertie feasibility
Stone - Int. Engineering - private sector vs. Corps

Status with Internal Revenue Service in D.C.

meeting 3/26 - IRS - Wayne Johnson / Hinton, McCall, Whitford
4 other IRS members / Gravel's aide, Yould

IRS - must assume one fund, no arbitrage

Y → general - should forget IRS, finance in way other than revenue bond

---

Cost of direct funding slightly less than acceptable IRS alternatives (20%)

Some chance of turning IRS around

(Yould's rec: delay withdrawing ruling until IRS answers Gravel's letter
don't want IRS ruling finalized

passed by Board motion

/

Webber - Gov's Task Force - alternatives - 8 in opp - not favored
4 in opp - least popular
bond issue - interim
want wants something to happen this year.

(rec.) → 100,000 study financial feasibility
state financing
private industry
to assist APA in studying
/other methods of accomplishing
NOT Alternative study

[Gov. favors
GO bond referendum for whole study
enabling legislature - interim loan to general fund to APA
(if election is favorable)
Adm. of election
intangibles - legislature
Adm. - GO bond election, legislation

Special election.

Gould's concern - would bring out special interests and not a cross-section of Alaska

Gould - interim app to FOG to get environmental studies going
1 million a year

Gould - Corps time-scale for drilling stretched. Might be able to shorten

Q - state doing it without DJ help?
APA / private engineering firm DOT service

Private consulting firms more sensitive to revenue bond market

If healthy growth during 80's - project will be easier
hard to finance without federal guarantees
feds - will reinsure only if project
is economically, not financially feasible

GO bonds v. direct app.
money in one lump, voters have crack at issue.

draft agreement - provides for payments to Natives
for use of lands / environmental studies

Gould's - biological study - 1m

Native,	100,000	
APA	100,000	for private alt.
APA	100,000	adm

1.3 m. request for Susitna

if GO bond issue

Susitna

Would - Would do study - advice from environmental groups

will be done out-of-house

Q - study expensive (more than 100,000)
~~stud~~ may not be in time frame to influence voters

legislation - wording of bond proposition
bonding - for $ only, not to whom
Corps or private / or discretion of APA

also need interim financing (app. 2 million?)
til bonds are sold

Motion:
APA introduce to leg. & recommend a bill
(a) authorizing special election for GO bond for Phase I study
(b) interim financing until bond sale
(c) leg. appropriate $1.3 million for continuation biological, environmental studies

loan to be repaid by GO if it passes

I will get revised cost estimate from Corps

PASSED

return letter to me — Susitna file

479-3703

Terry Reichardt
SR 20263
Fairbanks, Ak 99701

March 20, 1979

Brian Rogers
Pouch V
Juneau, Ak 99811

Dear Brian:

First, I want to thank you for the hearing in Fairbanks on the Haul Road and for your valuable time afterwards. We tremendously appreciated it. I would like to have written sooner but have been too bogged down with deadlines on other things. I was very dissappointed and surprised to see Parr's bill come out of Finance, but I do appreciate the efforts that you put into stopping it. If you have any ideas on other things that we might do to stop it or ammend it, please let me know.

Secondly, I want to ask for your help on the Susitna Dam Feasibility Study appropriation bill. Such a committment to the project as this bill makes seems to be a real put-down to the many people who have been working very hard toward a complete energy plan for the State. Such a plan would look at all of our needs and at ALL the possible sources of energy for those needs, including conservation.

Many of us are currently guessing that the cost of the Feasibility study will be around 47 million dollars. A good study of energy alternatives probably wouldn't cost a fourtieth of that price. When it seems that there are so many economic, social and environmental risks with the Susitna project, it would appear that we would have nothing to lose and everything to gain by doing an alternative energy study first.

I'm sure that you already have a fair amount of information on the Susitna, but I wonder if you are aware of some of thesepoints.

The Office of Management and Budget claimed that if the project has more than a 30% cost over-run, the benefit-cost ratio will be less than unity and the project would not then be economically feasible. The Snettisham Dam had a cost overun of 36% and it is a much smaller project than the Susitna. Most large projects have cost overuns between 50 and 500%. The oil pipeline had a cost overun of 900%.

The Corps used an inflation rate of 6 to 7%. The Capital Move Study used an inflation rate of 8%. The real inflation rate is 9 to 10%. Somebody should ask the Corps why they used such a low rate.

APA's projected energy needs for the railbelt include the Kenai Peninsula and the military. In fact, the Bradley Lake Project should assuage much of the Kenai's energy demand. The military has always generated its own power and will most likely continue to do so. It would not wish to be dependent on such a centralized, vulnerable source.

Snettisham only selling 1/5 of power but its price what twice Corps projected

The Corps' energy projections for the Fairbanks area have been high so far by 260%. This is because, contrary to their projections, per customer usage in both the residential and the industrial sectors in Fairbanks has been decreasing at a rate of 5.5% per year over the past three years. At the same time, the commercial and industrial sections have been growing by 10%. In fact, last year, the total energy consumption in Fairbanks decreased.

No large-scale hydro-projects have ever been attempted by the Corps in a sub-arctic region before.

Studies have shown that there is an increased use of natural gas for direct home heating in Anchorage, as oppossed to the more common past use of electricity generated from natural gas. This trend is expected to continue.

To construct single, centralized energy sources for this state is contrary to what we consider to be good energy planning today. Rather, energy sources should be decentralized and varied. There are so many alternatives that need to be looked into. What about encouraging the electrically heated homes in Anchorage to heat directly with natural gas, which use the federal government would approve of? The use of natural gas as a source of electricity is only ½ as efficient as using it directly for home heating, cooking, etc. What about insulating the homes in the Anchorage area better. A tremendous amount of energy could be saved this way, for I am under the impression that most of the homes in the Anchorage area are very poorly insulated due to the fact that in the past, energy has been so very cheap. There appear to be a number of other hydro-sites nearer to Anchorage that have not been properly studied past the point of knowing that they are there.

Although many people find it hard to believe, solar power in Alaska is practical and could be used. Other placed in the country that have tried solar as a source of heat have found it to be most economical.

With the Beluga coal fields going to be developed anyway, why should we send it all to Japan? Why not use some of it ourselves?

This project will have to introduce large, energy-intensive industry to Alaska's railbelt. With it, are going to come some big changes for our citizens, much of them in lifestyle. That is a very important consideration to most Alaskans. Alaskans are concerned with lifestyle, perhaps more than citizens of any other state. Before we commit ourselves to something that is going to entail such changes, we should be sure to find out from our citizenry how they feel about it and whether they want such changes.

Finally Brian, there is something that really bothers me about the way this thing has been moving. Did you see the advertisement in the March 10 edition of the Newsminer, paid for by GVEA?

> "The all-important Upper Susitna Hydroelectric Project is in danger of being delayed and possibly killed by no-growth obstructionists." etc.

Why are some groups so panicked at the idea of thoroughly examining this project and the entire energy problem? You would think that they would be enthusiastic about such a move. Why is this panic arising at a time when it is rumored that the Corps is running out of work and desperately needs a job such as this? Why do we find it so very difficult to get information from APA? Why is it that whenever I talked to the Department of Fish and Game in Anchorage, they tell me that they are very worried about this project and see the possibility of some severe fish and wildlife problems. I was told that

they had prepared such testimony for the hearing before the House Resource Committee. However, I have heard rumor that Hammond's Office caught wind of it and, that same day, ordered that such testimony not be given. Consequently, Fish and Game"s concerns were not aired and I know of some very angry staff members in the Anchorage office. Maybe these are the kinds of games that are always played over legislation, or maybe these rumors are off-base, but I find it very discouraging as a citizen, to run into these sorts of things when I am so concerned that everybody look at all the factors possible so that we can make this very important decision a good one.

There are alot of bumper stickers on cars and trucks around town with your name on them Brian, and I recognize many of their owners as people who are concerned that we make good energy decisions. I know that you are concerned about these issues and I sure hope that you can find the opportunity to influence the decision that is made in Juneau this year.

Finally, thankyou for being down there in that endlessly, demanding job. I wish that there were more like you willing to do it.

Sincerely yours,

Terry

Terry Reichardt

P.S. thought you might like to see the enclosed

OMB study - compare Railbelt to outside urban areas

! used industrial levels

QUESTIONS ON THE ECONOMIC FEASIBILITY OF THE SUSITNA PROJECT, ALASKA

PUT FORTH BY THE OFFICE OF MANAGEMENT AND BUDGET

There are a number of areas where additional information on the Susitna Project is needed to provide an adequate basis for assessing its engineering and economic feasibility. These areas are as follows:

1. Watana site geology and test borings

The cost estimates for Watana have been derived without benefit of any test borings at the Watana Site. This is a departure from standard Corps practice, which calls for exploratory drilling at all sites before projects are proposed for authorization. Test borings would provide more reliable data on which to base cost estimates and on which to assess any potential seismic problems. The Watana Site is located near the Susitna fault and also within 50 miles of the Denali fault--an area where major earthquakes have occurred in the past.

2. Contingency estimates

A standard 20% contingency factor was used in arriving at cost estimates. A contingency of 30% could result in reducing the benefit cost ratio to 1. A larger contingency factor could reduce the ratio below unity. The recently completed Snettisham project in Alaska cost 36% more than original estimates, after correction for inflation.

A review of the 20% contingency factor should be undertaken in light of the best existing information on comparable projects and project locations.

3. Area redevelopment benefits

These benefits are a correction for the use of otherwise unemployed labor during construction. Though standard procedures permit this benefit category for power projects, it would seem that such benefits should not be accepted in the Susitna Report because provate development for power purposes would produce equivalent benefits.

An evaluation of the validity of the use of ARA benefits in the Susitna Report should be made.

4. Construction schedule

The 11-year construction schedule for the Watana project, based on preliminary inspection of comparable projects, appears to be on the short side. A longer schedule of 14 years appears more reasonable because of (1) normal slippages and (2) a three-year peak construction wchedule that calls for more work to be put in place on a single site than the Corps has ever accomplished in similar time periods. This should be reexamined and its effects on the project B/C ratio calculated.

5. Supply estimates

The analysis of the without project condition needs to be expanded considerably to clearly analyze the following:

1. Why, with natural gas projected to be in such short supply, the Anchorage utilities have only contracted for 55% of proved reserves or 25% of estimated ultimate reserves.

2. The sensitivity of the analysis to the collapse of OPEC and the cost of shipping oil to the East Coast.

3. The necessity for an Anchorage-Fairbanks intertie at a cost of $200-300 M.

4. Scheduling of powerplants and the reduced risk of building small increments.

6. Demand estimates

The analysis of load growth should be more specific with respect to:

1. Increasing use by consumers; and,

2. Increasing number of consumers.

3. Industrial growth, i.e., where does Alaska's comparative advantage lie outside the area of raw materials and government functions?

7. Sensitivity analysis

Power demand should be subjected to a sensitivity analysis to better assess the uncertainties in development of such a large block of power. The typical utility invests on the basis of an 8-10 year time horizon. The Susitna plan has an 11-16 year horizon in face of risks that loads may not develop and the option of wheeling power to other markets is not available. It should be noted that the power demand for Snettisham was unduly optimistic when it was built. This resulted in delays in installing generators. A similar error in a project the size of Susitna would be much more costly and would have a major adverse effect on the project's economics.

02-001B (Rev. 10/76)

STATE of ALASKA

MEMORANDUM

TO: All Interested Persons

DATE: 3/22/79

FILE NO:

TELEPHONE NO:

FROM: Eric P. Yould

SUBJECT: Board Meeting of the Alaska Power Authority

NOTICE OF MEETING

ALASKA POWER AUTHORITY

PLEASE TAKE NOTICE that the Board of Directors of the ALASKA POWER AUTHORITY will hold a public meeting in the Conference Room of the Department of Administration, Labor Relations Board, 10th Floor of the State Office Building, Juneau, Alaska, on Friday March 30, 1979 at 8:30 A.M. for the purposes of: (1) Review and Approval of Minutes of the March 20, 1979 meeting; (2) Consideration of Actions by the Alaska Power Authority relative to initiation of the Susitna Project Feasibility Analysis; (3) Consideration of State Legislation pertinent to actions of the Power Authority; (4) Internal Operations of the Alaska Power Authority; and (5) Any other Business or Action which may properly come before the Meeting.

DATED AT: Anchorage, Alaska
March 22, 1979

ALASKA POWER AUTHORITY

BOARD MEETING

AGENDA

Juneau, Alaska March 20, 1979

I. Review and Approval of Minutes of February 14, 1979 meeting in Juneau.

II. Susitna Considerations

A. Alaska Power Authority letter to Department of Energy relative to IRS Ruling Request.

B. IRS Ruling Request

C. Susitna Position Paper

D. Susitna Plan of Finance

E. Draft Agreements with Cook Inlet Native Corporations and the U. S. Army Corps of Engineers.

III. Pertinent Legislation

IV. Internal Operations of the Alaska Power Authority.

Eric Yould
H. McCall - First SW
E. Wolford
Colonel Yero - Corps

Would / Board 3-20-78

Would HB 309 Finance

① OMB favorably disposed
→ but has not approved yet

② Native corps / BLM - provided stipulations
tentative agreement ready to be signed

9/78 IRS regulations
APA asked for ruling
IRS said no

3/12 Gravel → state should proceed with direct funding

What can be accomplished this year?
Colonel Fero, Corps - wanted decision by 2/1
(discussing going BLM - no go on perm. cont.
into Devils canyon by road. after breakup base at DC
if natives get land - go into Watana next winter
if not - helicopter operation
How 8.2 million could be spent in first year
survey - 1.2 million etc.
or breakdown into FY 79 - 4.3 - no Watana to 9/79 - no reports yet
FY 80 - 8.6
FY 81 8.5
FY 82 2.4
Would allow environmental studies to get underway
Is Devils Canyon decent site? No drilling has been done.
Can gear program to any funding.
8.2 m for 12 months

"project is still viable with one dam."
DC won't work without Watana

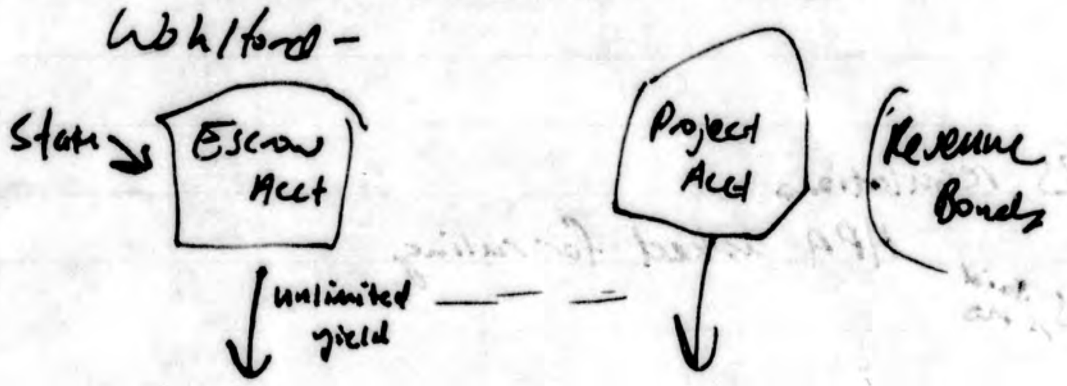
Feel Watana 99% go - need data only for design

—

H. McCall - 1st SW - IRS ruling
"arbitrage" bonds - not tax exempt
if times earn more

IRS - determines if bonds are
Decision - no income from bonds to make the project work
IRS not clear on reasons

Whitford -



any plan which takes advantage of arb. - arbitrage
IRS may permit arb. on project acct
"modified ruling"
project will have no revenue op. franchise - need higher rates for taxable bonds

Much more expensive for state to make direct appropriation
Hoping into federal guarantee (still to be pursued)

ult. judgement - ability of project to be financed in public bond market

IRS told McCall entire plan is an arbitrage

Various options will now be presented to IRS
Congressional legislation may be introduced to correct this.

APA - 3-20-79

Once direct app. begins, can't use revenue bonds

IRS meeting Friday (tent.)

---

position of Adm. (met 3-13-79)

Bob Ward - if direct app., would not want to proceed but don't want project to lose time

want add. options explored private engineering firms

leave app to APA for alternate financing through private contractors

Gov. - wants to hear from APA

Possible options

1. Restructure Revenue Bond Finance
2. Pursue favorable IRS ruling
3. Direct fund to Corps
4. " " " Private Eng. Firm
5. Delay a year
6. Bond Proposition

want to work options through legislative process

1. good to have financing plan, if feds can back up
   staff of APA most favorable to this
2. Resubmit redesigned plan / probably wouldn't win
3. would have to fund full 25 million
4. save time, efficiency but couldn't get ~~$~~ guarantee
5. make section 203 in place before proceeding (Gravel)
   cost goes up - utilities want to know
6. GO for 25 million for vote
   lose year or two
   off-year prone to influence by special interest groups

Miles - on mood of the legislature
many questions
alternatives?
fox (corps) in the chicken coop
too much power?
legislators are listening to those questions
Mood in House; Mood in Senate is go

Col. Yeo - would like to see leg., not Corps or APA
do alternative study
150,000 in budget for alternative
project has been compared to alternatives since 1950's
corp. coal; also gas, oil, other hydropower
use 150 thousand to have alternatives studied,
by someone else

---

primary issue - How to proceed with financing?

How does alternative #1 differ in bill
acc. of interest important point
must hold in acct, not pay back to state
Differences in risks

May have revenue bond problem which could affect
long-term financing
Could price product out of the market
Very sensitive to varying interest rates.

Timing questions now different than gov. consideration

Coal at 7.5%

Equal int. to coal

if coal escalates

Breeder - Wdam only - 8%
W+DC - 9.2%
W only - 8%
W+DC - access of 10%
W - 9%

① proceed by Board - initiate environmental
set out contract for alternatives
Hold rest of program, eg. until next year

loss of momentum.

Corps will be closing Bradley Lake, will have to put equipment back in.

or/ ② Get
Results of IRS, quantification of risks under alt. #1,
then make decision - 10 days after IRS revises

leg. under pressure to decide

PASSED

RECEIVED
OCT 9 1978
BUDGET & MANAGEMENT

RECEIVED
OCT 9 1978
BUDGET & MANAGEMENT

24 Capital Budget Summary

FUNDING SOURCE, YEAR, RANK	PROJECT TITLE (Group Projects by State Funding Source)	PROJECT TYPE CONST	IMPR	EQUIP	LAND	LOCATION(S)	ULTIMATE ANNUAL OPERATING COST	AGENCY Appropriation REQUEST	GOVERNORS BUDGET	LEGISLATIVE ALLOWANCE
G.F										
80-1	Green Lake Hydroelectric Project	X				Sitka	-0-	3,600.0	-0-	
80-2	Swan Lake Hydroelectric Project	X				Ketchikan	-0-	2,000.0	-0-	
80-3	Tyee or Virginia Lake or Thomas Bay Hydro	X				Petersburg/ Wrangell	-0-	2,000.0	-0-	
80-4	Terror Lake Hydroelectric Project	X				Kodiak	-0-	2,000.0	-0-	
80-5	Cordova Hydroelectric Development	X				Cordova	-0-	500.0	-0-	
80-6	IPD small Hydro Demonstration	X				Anchorage	-0-	60.0	-0-	
80-7	Bradley Lake Hydroelectric CORPS	X				Homer	-0-	80.0	-0-	
80-8	Salmon Creek Hydroelectric	X				Juneau	-0-	200.0	-0-	
80-9	Chakachamna Hydroelectric	X				Anchorage	-0-	200.0	-0-	
80-10	Anchorage Energy Pooling	X				Anchorage	-0-	120.0	-0-	
80-11	Mennonite Creek Hydroelectric	X				Port Lions	-0-	90.0	-0-	
80-12	Gartina Creek Hydroelectric	X				Hoonah	-0-	120.0	-0-	
	Gunnak Creek Hydroelectric	X				Kake	-0-			
	Thayer Creek Hydroelectric	X				Angoon	-0-			
	Black Bear Lake Hydroelectric	X				Klawock	-0-			
80-13	Larson Bay Hydroelectric	X				Larson Bay	-0-	80.0	-0-	
	Old Harbor Hydroelectric	X				Old Harbor	-0-			
80-14	Lake Elva Hydroelectric	X				Dillingham	-0-	80.0	-0-	
80-15	Chilkat Hydroelectric	X				Haines	-0-	50.0	-0-	
80-16	Grant Lake & Crescent Lake Hydroelectric	X				Seward	-0-	70.0	-0-	
80-17	Kisaralik Hydroelectric	X				Bethel	-0-	80.0	-0-	
80-18	Assess Kotzebue Hydroelectric	X				Kotzebue	-0-	80.0	-0-	
	Assess Nome Hydroelectric	X				Nome	-0-			
80-19	ALASKA POWER AUTHORITY LOANS	X				STATEWIDE	-0-		3,000.0	
	TOTAL						-0-	11,410.0	3,000.0	

getting $443.2k from contractual in Gov. budget

FUNDING SOURCE		ULTIMATE ANNUAL OPERATING COST	AGENCY Appropriation REQUEST	GOVERNORS BUDGET	LEGISLATIVE ALLOWANCE
	FEDERAL RECEIPTS				
	REQUIRED GENERAL FUND				
	OTHER GENERAL FUND	-0-	11,410.0	3,000.0	
	INTER-AGENCY TRANSFER				
	OTHER (Specify)				
	G. O. BONDS				

CATEGORY Electrical Energy AGENCY Alaska Power Authority PROGRAM Energy Development

24 CAPITAL BUDGET SUMMARY

Introduced: 2/26/79
Referred: Resources

BY HURLBERT, BRANSON, CARNEY, COTTEN, FULLER, GUY, HAUGEN, HAYES, MCKINNON, MALONE, METCALFE, MOSS, MUNSON, O'CONNELL, OSTERBACK, PARKER, PARR, PHILLIPS, RANDOLPH, ROGERS, SCHAEFFER, ZHAROFF AND GARDINER.

IN THE HOUSE

HOUSE JOINT RESOLUTION NO. 24

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to studies of hydroelectric potential in rural Alaska.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS electric rates in rural areas of Alaska where diesel generation is required are abnormally high for many reasons, including

(1) the high cost of diesel fuel compounded by the very high cost of delivery to rural locations;

(2) costs of installing tankage and inventory of fuel for a full year which is often required because of transportation difficulties;

(3) lower thermal efficiencies of small diesel plants;

(4) high costs of repair because of the requirement of air transportation over substantial distances to many locations; and

WHEREAS the United States Army Corps of Engineers has funds available and future funds programmed to perform studies of small hydroelectric projects in small communities under the federal Small Hydroelectric Plants program; and

WHEREAS utilization of hydroelectric power can largely alleviate the special conditions existing in rural Alaska leading to abnormally high costs of electricity; and

WHEREAS sites which may be highly feasible for hydroelectric projects exist in rural Alaska, including the westcentral region, and reconnaissance studies would allow accurate determination of the hydroelectric potential; and

WHEREAS the reconnaissance studies are necessary in order that hydroelectric power may be developed to replace or at least supplement the expen-

sive and wasteful reliance on diesel power;

BE IT RESOLVED by the Alaska State Legislature that the United States Army Corp of Engineers assign the highest possible priority to use of the funds available under the Small Hydroelectric Plants program or other funds which may be available for reconnassiance studies in rural Alaska, including the westcentral region, to define and assess potential hydroelectric sites.

COPIES of this resolution shall be sent to Lt. General John W. Morris, Chief of Engineers, U. S. Army Corps of Engineers; to Colonel George R. Robertson, Alaska District, U. S. Army Corps of Engineers; and to the Honorable Ted Stevens and the Honorable Mike Gravel, U. S. Senators, and the Honorable Don Young, U. S. Representative, members of the Alaska delegation in Congress.

Original sponsors: Gardiner and Freeman

Offered: 3/30/79
Referred: Finance

Funding Information

General Fund	$7,365,000
Other Funds	-0-
	$7,365,000

IN THE HOUSE BY THE RESOURCES COMMITTEE

SENATE CS FOR CS FOR HOUSE BILL NO. 32

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act making special appropriations to the power project revolving fund of the Alaska Power Authority; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. The sum of $3,115,000 is appropriated from the general fund to the power project revolving fund of the Alaska Power Authority (AS 44.56.-170) for costs associated with the Swan Lake hydroelectric project.

* Sec. 2. The sum of $2,000,000 is appropriated from the general fund to the power project revolving fund of the Alaska Power Authority (AS 44.56.170) for costs associated with the Terror Lake hydroelectric project.

* Sec. 3. The sum of $250,000 is appropriated from the general fund to the power project revolving fund of the Alaska Power Authority (AS 44.56.170) for costs associated with the Cordova Power Creek hydroelectric project.

* Sec. 4. The sum of $2,000,000 is appropriated from the general fund to the power project revolving fund of the Alaska Power Authority (AS 44.56.170) for costs associated with the Tyee Lake hydroelectric project.

* Sec. 5. This Act takes effect immediately in accordance with AS 01.10.-070(c).

passed House
will be voted on by Senate this weekend
Committees - to pass

Passed leg., sent read by Governor

Original sponsors: Zharoff, Anderson, Branson, et al

Offered: 4/5/79
Referred: Rules

IN THE HOUSE BY THE RULES COMMITTEE

CS FOR HOUSE JOINT RESOLUTION NO. 30

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to the sale of revenue bonds of the Alaska Power Authority for the Terror Lake hydroelectric generating project at Kodiak, Alaska, and for the Solomon Gulch hydroelectric generating project near Valdez, Alaska.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the State of Alaska has funded a feasibility study for the Terror Lake hydroelectric project in the Kodiak Island Borough through money loaned from the Alaska Power Authority power project revolving fund and the water resources revolving fund in the amount of $520,000; and

WHEREAS the completed study shows that the hydroelectric project is feasible; and

WHEREAS the Alaska Power Authority has submitted to the legislature and to the governor a statement of its recommendations for financing the hydroelectric project, as required in AS 44.56.180(b), and a statement outlining the general design, demonstration of financial feasibility, and maximum amount of revenue bonds necessary for the project; and

WHEREAS according to statements by the authority, it is to finance the project only through the issuance of revenue bonds and may not construct, acquire, or own the project; and

WHEREAS the statements by the authority provide that the project is to be designed, acquired, and constructed by the Kodiak Electric Association under an agreement with the authority which shall provide that the authority

have ownership rights in the project only as may be necessary to secure the payment of the principal and interest on revenue bonds issued for the project; and

WHEREAS the statements submitted to the governor and to the legislature fully satisfy the conditions set out in AS 44.56.180 which must be satisfied before the adoption of this resolution; and

WHEREAS the cost to be incurred in financing the project will require the issuance of revenue bonds of the authority in a presently estimated amount not to exceed $120,000,000; and

WHEREAS it is considered to be in the best interests of the state that revenue bonds of the authority be issued to finance the cost of the project; and

WHEREAS the Copper Valley Electric Association, Inc. has received a Federal Energy Regulatory Commission license for the Solomon Gulch hydroelectric generating project near Valdez, Alaska, and construction has begun on the project; and

WHEREAS initial financing for the project has been secured from other sources but it is considered in the public interest to finance a portion of the project from the proceeds of the sale of revenue bonds of the Alaska Power Authority; and

WHEREAS the Alaska Power Authority has submitted to the legislature and to the governor a statement of its recommendations for financing a portion of the Solomon Gulch hydroelectric project, as required in AS 44.56.180(b), and a statement outlining the general design, demonstration of financial feasibility, and maximum amount of revenue bonds necessary for that purpose; and

WHEREAS, according to statements by the authority, it is to finance a portion of the project only through the issuance of revenue bonds and is not to construct, acquire or own the project; and

WHEREAS the statements by the authority indicate that the project is to

be designed, acquired, and constructed by the Copper Valley Electric Association under an agreement with the authority which shall provide that the authority have ownership rights in the project only as may be necessary to secure the payment of the principal and interest on revenue bonds issued for the project; and

WHEREAS the statements submitted to the governor and to the legislature fully satisfy the conditions set out in AS 44.56.180 which must be satisfied before the adoption of this resolution; and

WHEREAS the cost to be incurred in financing a portion of the project will require the issuance of revenue bonds of the authority in a presently estimated amount not to exceed $20,000,000; and

WHEREAS it is considered to be in the best interests of the state that revenue bonds of the authority be issued to finance a portion of the cost of the project;

BE IT RESOLVED that the Alaska State Legislature approves the general design of the Terror Lake hydroelectric project in the Kodiak Island Borough and the sale of revenue bonds by the Alaska Power Authority in an amount not to exceed $120,000,000 to pay the costs of the project; and be it

FURTHER RESOLVED that the Alaska State Legislature approves the general design of the Solomon Gulch hydroelectric project near Valdez, Alaska, and the sale of revenue bonds by the Alaska Power Authority in an amount not to exceed $20,000,000 to pay the cost of a portion of the project.

Introduced: 2/26/79
Referred: Resources

BY HURLBERT, BRANSON, CARNEY, COTTEN, FULLER, GUY, HAUGEN, HAYES, MCKINNON, MALONE, METCALFE, MOSS, MUNSON, O'CONNELL, OSTERBACK, PARKER, PARR, PHILLIPS, RANDOLPH, ROGERS, SCHAEFFER, ZHAROFF AND GARDINER.

IN THE HOUSE

HOUSE JOINT RESOLUTION NO. 24

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to studies of hydroelectric potential in rural Alaska.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS electric rates in rural areas of Alaska where diesel generation is required are abnormally high for many reasons, including

(1) the high cost of diesel fuel compounded by the very high cost of delivery to rural locations;

(2) costs of installing tankage and inventory of fuel for a full year which is often required because of transportation difficulties;

(3) lower thermal efficiencies of small diesel plants;

(4) high costs of repair because of the requirement of air transportation over substantial distances to many locations; and

WHEREAS the United States Army Corps of Engineers has funds available and future funds programmed to perform studies of small hydroelectric projects in small communities under the federal Small Hydroelectric Plants program; and

WHEREAS utilization of hydroelectric power can largely alleviate the special conditions existing in rural Alaska leading to abnormally high costs of electricity; and

WHEREAS sites which may be highly feasible for hydroelectric projects exist in rural Alaska, including the westcentral region, and reconnaissance studies would allow accurate determination of the hydroelectric potential; and

WHEREAS the reconnaissance studies are necessary in order that hydroelectric power may be developed to replace or at least supplement the expen-

sive and wasteful reliance on diesel power;

BE IT RESOLVED by the Alaska State Legislature that the United States Army Corp of Engineers assign the highest possible priority to use of the funds available under the Small Hydroelectric Plants program or other funds which may be available for reconnassiance studies in rural Alaska, including the westcentral region, to define and assess potential hydroelectric sites.

COPIES of this resolution shall be sent to Lt. General John W. Morris, Chief of Engineers, U. S. Army Corps of Engineers; to Colonel George R. Robertson, Alaska District, U. S. Army Corps of Engineers; and to the Honorable Ted Stevens and the Honorable Mike Gravel, U. S. Senators, and the Honorable Don Young, U. S. Representative, members of the Alaska delegation in Congress.

Energy costs

(A copy of the following was submitted as a Letter to the Editor).

P.O. Box 73312
Fairbanks

Representative Bill Miles
Co-Chairman, Resources
Pouch V
Juneau

Dear Representative Miles:

I was sorry to hear, via the teleconference call on Susitna appropriations, that your Energy Policy Committee had "self destructed." I thought that the booklet you published explaining the issues and options facing our state as we formulate an energy policy was an excellent start at citizen participation in this important area of public policy. I firmly believe that an informed citizenry is essential today for rational energy planning. After land, energy is the issue which most directly affects Alaskans. The ways we obtain it, how much we use, and the trade-offs we make to get and use energy has much to do with the kind of life we are allowed to live in this state. For these reasons I had high hopes for the Energy Policy Committee. I certainly hope that it can be revived, or can rise again in some similiar form.

Nowhere is the necessity for energy planning more obvious than in the Susitna hydro project. From the teleconference the other day you no doubt learned that there is quite a diversity of opinion on the desireability of large-scale generation facilities for Alaska.

It's apparent to nearly everyone that Alaskans need power. More specifically, we need warm homes, ho water, and transportation. As I see it, the task of the Legislature is to investigate how we might get these desired things with the least cost possible.

The benefit of the Susitna hydro project is clear: electricity for our homes, if we happen to live in the railbelt area. The cost of this electricity will be far-reaching. Among the costs are:

Reduced credit rating for Alaska (which means we may have to choose between state funded development projects)

The loss of thousands of acres of land, and the resources on or under that land

Increased cost of electricity, per kilowatt hour

Changes in our way of life

This last point needs some clarification. I believe that Susitna will invite drastic changes in our lifestyle by virtue of the fact that the project will produce more electricity than we will immediately be able to use. This is especially true considering that since the oil crisis people have been learning to get by with less energy, conserving the energy they do use. This trend is unmistakeable, and tends to make suspect old growth forecasts which comfortably predict ever-increasing demand at a more or less predictable level. If we accept that Susitna will produce more power than we can immediately consume we need to ask what will become of the excess.

Electricity is a power source that can't be stored. Once produced it needs to be used. I'm afraid that Susitna will undeniably create the "need" for industry in the railbelt, in much the same way that inflated growth projections are creating the need for Susitna. The trend of consumptive habits could just as easily swing the other way. A commitment by the state to put an equivalent amount of money into conservation of energy could result in foreclosing the necessity of having to bring Susitna on line.

I believe that the state ought to be fostering an attitude of conserving energy, rather than proposing to build a facility which will encourage overconsumption. As much of the rest of the country has discovered, perpetuating the myth of abundance is, in the end, a cruel joke.

There's little doubt that we could have all the electricity our homes could consume—and then some. I urge you to work to find out the answer to the more important question; are Alaskans willing to pay for it.

Sincerely,
Mark Baumgartner

Cabins lost

Let's be sure

SR 20263
Fairbanks

Dear Editor:

I am writing about an advertisement that was placed in the March 10th paper by GVEA. The ad claimed that the Susitna Hydropower Project is being delayed by "no-growth obstructionists." I think it is very sad that we have come to the point when groups such as GVEA feel compelled to divide all interests into the good guys and the "no-growth obstructionists." Is this the basis on which our state-wide decisions are to be made?

The people that I know who are concerned about these dams (each one bigger than the Hoover or Coulee) are physicists, engineers and geologists who would not look kindly at being called "no-growth obstructionists." And the delays being caused on this project mostly seem to be due to APA and the Army Corps of Engineers' not having done their homework.

So far, the Army Corps' projections for Fairbanks appear to have been too high by 260%, the financial viability of the project is questionable and the bill itself has been found to be in violation of an IRS law.

I am thankful that a few people in Juneau are concerned about how our money is spent. I would think that GVEA would also be concerned that we not committ ourselves to a project that could end up driving our energy costs up instead of down.

Before we commit millions of dollars to the first phase of this many billion dollar project, let's take a really critical look at what our needs are and what all our possible solutions to them are.

These huge dams are like quicksand. Once you get in you can't get out. That's fine if we want to be in, but we'd better be sure. If GVEA, APA and the Corps really know what they are talking about and are convinced that these dams are the answer to our problems, then they shouldn't mind the questions that are arising. Instead of lobbying with inflammatory dogma, they should be answering the questions and presenting facts. If they can't, then they should go back and do their homework.

Sincerely yours,
Terry Reichardt

FL N-M
3·21·79

1, 1979

Look closely at hydro proposals

Celia Hunter

The Susitna Dam project is presently undergoing intensive resuscitation efforts by local business interests, GVEA, the Hon. Mike Gravel et al. Those of us who are labeled as 'stumbling blocks to progress' might not be forced into so negative a stance if the advocates of measures authorizing projects which impact heavily on the public interest would be more critical and demanding of facts and honest evaluations of costs vs. benefits. The typical attitude of the promoters of such schemes is: "Don't confuse me with facts. My mind is made up."

Even to plead for time in which the true facts can be assembled, and the long-range consequences assessed is suspected of being mere obstructionism. It would be interesting to go back through recent history and to document the instances where projects hastily conceived and executed have resulted in environmental and financial catastrophe.

I think of one off-hand: the Teton Dam. Opposed early on by critics who pointed out that the geologic formations created hazards to such a dam, it was pushed through to completion in total disregard for these factors, and finally gave way, with terrible consequences in human lives lost, farms and other investments destroyed, and a huge bill for clean-up and restitution incurred.

The casualness with which the boosters of the Susitna Dam project dismiss the earthquake hazard of the Susitna fault lying only five miles below the dam site brings echoes of other equally vehement protestations about the safety of other construction operations. We can believe what we want to believe, but such an attitude has its problems—trouble is, it's always the public that pays, not the promoters. We pay for the building and financing, and we pay over and over again for the unwise use of scarce resources, whether financial, or wildlife, or environmental or human.

Alaskans today are massing support for moves away from being controlled from afar, but this movement seems to be highly selective, aimed only at the federal government represented by the National Park Service and the U.S. Fish and Wildlife Service, the supposed 'preservationist' agencies. Meanwhile the Trojan horse carrying subjugation and total dependency on outside forces is being wheeled into their midst, where it is greeted with cries of joy and celebration. How can anyone with any understanding of the implications such an enormous project brings with it fail to comprehend the inevitable loss of personal freedoms and the economic and energy options we forego from such a move?

We would have all our eggs in one basket. It has been pointed out repeatedly that such total dependence on an integrated system is a major weakness in the Lower 48, witness the disastrous New York City blackouts, and less massive but equally threatening power failures elsewhere in the country. Amory Lovins, and many other energy experts argue logically and persuasively for development of a system of smaller, self-sustaining power supplies, which insure communities against such calamities. We need to study carefully our options for providing additional power in small increments, including an assessment in depth of some 30 smaller hydroelectric power sites within the railbelt area.

The power from a Susitna dam may be virtually all surplus to local needs when it comes on stream many years from now. Our present and future power needs must be met somehow by smaller incremental units in the meantime, and these in themselves may prove quite sufficient to handle our power demands, especially as increased prices slows projected requirements. After all, one reason given by GVEA for cancelling Healy No. 2 was that electrical power use here had failed to reach projected demands.

The message I'm attempting to convey here is simple: let's look before we leap. And especially let's look before we take hard-to-come-by tax dollars to shore up a faltering project which its chief sponsor, Sen. Mike Gravel, admits has "tenuous economic viability" (story in News-Miner 3/13: "IRS ruling called threat to Fairbanks power plans.")

That "tenuous economic viability" is sufficient cause to reject the Susitna Dam project. In addition to that fundamental issue, we have the slipperiness of projected power demands, primarily developed by a self-serving agency, the Alaska Power Authority, which is overstepping its original charge when created, and is now planning and promoting power development projects in general, and the Susitna Dam in particular. Alaska desperately needs to do some comprehensive planning of realistic energy needs and resources, rather than jumping from one crash program to another, attempting to bail out a faltering economy with enormous public works programs, such as the Susitna Dam.

We need more time—and by we, I mean the Alaskan citizen and taxpayer—before we buy into the Susitna Dam, whether for $8 million, or $25 million, or to be saddled with the entire cost, which undoubtedly will escalate out of sight due to cost overruns as these projects inevitably do. We need to take a hard look at the effects such a quantum jump in available energy will have on individual independence and self-reliance, as well as its effects on our communities.

Furthermore, I object to my rural electrification association—GVEA—buying newspaper space to promote state financing support of this project. It's easy to label the opposition as "no-growth obstructionists" as they do in their ads—sounds great and gets instantaneous positive reaction from some local residents—but it takes more than labels to determine what the public good really is. Let's get the facts—first!

Corps holds out hope for Susitna

JUNEAU (AP)—Although funding has bogged down, the U.S. Army Corps of Engineers says it still can accomplish a full year of Susitna River dam studies beginning about May 1.

But the Corps says lack of snow cover will not permit ground access to one of the two sites proposed for the hydroelectric dams.

Meanwhile, top state officials huddled here Tuesday in an effort to resolve federal roadblocks to the state's financing method for the $25 million feasibility study.

The officials reached no decisions, other than to return to the Internal Revenue Service and hope for a more favorable ruling.

Alaska Power Authority officials earlier told the governor and Legislature that this year's proposed "phase one" feasibility studies would be in jeopardy if the project wasn't started before breakup.

But Corps Col. Jim Fero outlined a new work schedule at the meeting.

"We feel the project is salvageable for this year, just by re-arranging our schedule," he said.

The future of the studies is still uncertain, with both the administration and the state House waiting to see if financing problems can be straightened out before throwing support behind continuing the studies this year.

The project has been on hold since IRS recently informed the Alaska Power Authority that it couldn't use an $8 million appropriation from the Legislature to back the sale of revenue bonds to pay for the studies.

The power authority's directors, plus lawmakers and other officials, met to debate what to do about the four-year study for the $2.6 billion project in the wake of the IRS ruling.

The $8 million appropriation had the support of Gov. Jay Hammond and had already cleared the Senate at the time of the ruling. But House Resources Committee Co-Chairman Bill Miles, D-Anchorage, told the power authority meeting that the House has numerous questions about the proposal and has adopted a "show me" attitude.

State Transportation Commissioner Robert Ward told the meeting that the governor's Susitna task force was unenthusiastic about pushing the dam studies appropriation through the Legislature if the revenue bonding plan falls through.

"If direct appropriation is the only alternative, there was reluctance expressed that the task force would not want an $8 million appropriation to compete with other capital needs this year," he said.

But he said the new work plan presented by the Corps, and the

(See SUSITNA, page 7)

3.21.79 FL: N-M

SUSITNA . . .

(Continued from page 1)

possibility that some revenue bonds still might be used for the project are important considerations in the administration's view.

Tax consultants said the initial IRS ruling didn't necessarily preclude a modified financing plan, and they believe tax-free bonds may be allowed to pay for at least part of the studies.

The power authority discussed alternatives for getting the study money—including simply writing a check to the Corps or private engineering firm—but decided to wait for about two weeks while tax experts talk again with IRS.

The Bureau of Land Management is apparently going to let the Corps haul equipment to the Devil Canyon site on an old Bureau of Reclamation trail, Fero said.

Devil Canyon site is about 20 miles from the other dam site—Watana—and equipment and people could be ferried between the sites, he said.

JUPITER . . .

(Continued from page 1)

ı bond
ıtion
allot?

ARY SHINOHARA
ɔau Bureau Chief

A special election this voter approval of an 25 million general ıd sale for Susitna dam tudies was proposed y the Hammond on and the Alaska ity board.

is legal doubt that a ation bond sale can be dies without knowing actual project will ı Condon, deputy state ıeral, told The Daily

DOUBTS that you can study a matter when w if the project is going ondon said. He said the ıave to be decided by a

authority board voted ecommend the special r it became clear that d not approve an earlier ance the studies with evenue bonds.

ıld, power authority rector, said he and tax net with IRS officials in Monday in an attempt to compromise but the ials were unrelenting in ion to the plans.

WARD, state Transportartment commissioner ber of the governor's sk force, said the ion supports the special posal assuming it is looked upon favorably ature.

esources Committee ill Miles said he thinks has a chance of passing re. "It's such a major mething so important to nd Southcentral," Miles

e spectre of tripling gas uthcentral and fuel shor-1980s make continuation studies an important legislature.

President Clem Tillion e dam studies, but said like the idea of a special

rather just appropriate I think $4 million would the first year of the hase I study program for " Tillion said.

n to the special election,

inued on Page 2)

•Dam bonds

(Continued from Page 1)

the Power Authority board also decided to ask the legislature for an appropriation of about $1.3 million, primarily for biological studies which will take a full four years.

CHUCK BEHLKE, board chairman, said it is believed that at least that amount of work must be performed this year to keep the $2.6 billion hydropower project on schedule. Lost time is big dollars on this project, he said.

Engineering feasibility studies, which had also been proposed this year, can probably be speeded up once voters approve the general obligation bonds, Behlke said.

U.S. Army Corps of Engineers, which carried out initial dam studies before its funding ran out, believes the engineering work cannot be expedited enough to keep the project on track, Behlke said, but traditionally such work can be compressed, he said.

U.S. Sen. Mike Gravel, D-Alaska, is working for congressional approval of legislation that would have the federal government pick up the tab for the feasibility studies. If the federal government does that, the studies would have to be performed by the Corps of Engineers. The Power Authority board is not committed to using the Corps, however.

ations

Kevin's side

March 9, 1979

Dear Editor:

I feel it's unfair of your newspaper to state that my letter on the Susitna project was "not the first time Harun has used stationery with a borough letterhead." I did not use a borough letterhead to write on Susitna. What in fact I did, was express my concerns on Susitna as one Borough Assemblyman, using the borough as a typewritten return address.

I consider it one of my roles on the assembly to speak out on issues which affect our community. I've done this on countless issues, ranging from the Department of Transporation's harrassment of local homesteaders to the Army Engineers prohibitions on local wood cutting. My stands on these issues have not received as much prominence.

Enclosed is a copy of my letter on Susitna feasibiity studies which I'd like to request you to publish.

Some borough assembly members have chosen to "lobby" for their personal views by traveling at taxpayer expense to Palm Springs, Honolulu and Juneau. I prefer to express my concerns by mail and at my own expense.

Very sincerely,
Kevin Harun

(Editors Note: The following is the letter Assemblyman Kevin Harun sent to Juneau.)

Fairbanks North Star Borough
Box 1267
Fairbanks, Alaska

Dear legislator:

I am hoping you have the guts to stand up and choose a different energy path for Alaska than that chosen by the lower 48.

I know the Susitna hydropower project may seem attractive, because with one fell political swoop this project appears to provide a solution to our urban electrical needs. Hydropower projects can certainly have many positive benefits, but Susitna is not our only hydro possiblity. By committing such a large expenditure to feasibility studies for Susitna is to make a tacit committment to this project. For not only would approval of this large feasibility study neglect the study of decentralized alternatives (of which there are dozens), but his study would also commit us to the project if we ever wanted our state money back.

Susitna is the largest hydro project ever proposed by the Corps of Engineers in the history of the United States. At a time when many urban and rural Alaskans are seeking to maintain the freedoms of decentralized governmental and economic systems, Susitna provides a large force to centralize power production in the railbelt area. Many of us are trying to develop our resources and communities in such a way that we can engender greater self-sufficiency rather than plugging into more centralized ways of living.

And who will benefit primarily from this project? The Alaska Power Authority and the Corps have used grossly inflated growth projections to justify this project. The lowest growth pattern cited by the APA projects a quadrupling of energy usage per capita over the next 15 years. While this estimate seems extremely unrealistic, our local utilities will still have to construct new power plants to meet what needs exist before Susitna comes on line. When Susitna comes on line, existing power plants would not be dismantled. The net result will be large amounts of excess power to attract highly energy intensive industries to the railbelt. Rather than attracting such large energy intensive industries, we should be developing smaller-scale decentralized industries to promote local self-sufficient economies.

Sure, hydropower is good, but Susitna is too easy of an answer. I strongly urge you to look at energy alternatives with the same vigor as Susitna is being pursued. I urge you to vote no on the Susitna feasibility study.

Very sincerely,
Kevin Harun
Borough Assemblyman

A. News 3-21-79
p. 1

Susitna Dam plan turnabout

By ROSEMARY SHINOHARA
Our Juneau Bureau Chief

JUNEAU — The U.S. Army Corps of Engineers did a turnabout Tuesday, saying it can accomplish a full year of Susitna River Dam studies beginning around May 1, even though the lack of snow cover will not permit ground access to one of the proposed dam sites.

Those involved in the dam studies told the governor and legislature earlier this year that a year's work would be in jeopardy if the project was not begun before the spring thaw.

COL. JIM FERO of the Corps of Engineers outlined a new work schedule Tuesday, and said, "We feel the project is salvageable for this year, just rearranging our schedule."

The future of the $25 million study project is still in a muddle, however, with both the administration and the state House waiting to see if financing problems can be straightened out before they renew support for continuing the dam studies this year.

The project has been on hold since the IRS nearly two weeks ago informed the Alaska Power Authority that it could not use an $8 million appropriation from the legislature to back the sale of revenue bonds that would pay for the studies.

THE POWER authority's board of directors met Tuesday to debate what to do about the four-year feasibility study for the $2.6 billion hydropower project in the wake of the IRS ruling.

The $8 million appropriation was half-way through the legislature at the time of the ruling, and had the support of the governor.

Robert Ward, commissioner of the state Department of Transportation, told the power authority board Tuesday that the governor's Susitna task force was unenthusiastic about pushing the dam studies appropriation through the legislature if the revenue bonding plan falls through.

"IF DIRECT appropriation is the only alternative, there was reluctance expressed that the task force would not want an $8 million appropriation to compete with other needs for the capital this year," Ward said.

But he said the new work plan presented by the Corps of Engineers Tuesday, and the possibility that some revenue bonds still might be used for the project are important considerations in the administration's view.

"The administration supported it once, and I don't know why they wouldn't again if these elements fall into place," he said.

TAX CONSULTANTS for the power authority say the initial IRS

(Continued on Page 20)

Index

Rain

Rain today, letting up for a while in the afternoon and continuing again tonight and Thursday. High today near 40. Low tonight near 35. Outlook for Friday is mostly cloudy and cooler. More weather information on Page 20.

•Susitna Dam plan

(Continued from Page 1)

ruling did not specify what part of the state plan was unacceptable, and they believe tax-free bonds may be allowed to pay for at least part of the studies.

Representatives of the power authority are hoping that Sen. Mike Gravel, D-Alaska, will be able to set up a meeting for them with top IRS officials late this week or early next week.

The power authority board discussed about half a dozen alternatives for obtaining funds for the studies, but finally decided to wait another 10 days to two weeks while tax experts explore the situation with the IRS.

FERO TOLD the board that the Corps, given the money, would be able to keep the studies on schedule in spite of the spring thaw because the federal Bureau of Land Management is apparently going to allow an old bureau of reclamation trail into the Devil's Canyon Dam site to be upgraded and used to haul equipment in.

The Devil's Canyon site is 20 miles from the Watana site, and the equipment and people could be ferried from one site to the other, Fero said.

Access over land would not be allowed to the Watana site because it is a roadless area and is subject to restrictions under the wilderness provisions of the BLM Organic Act.

FERO PRESENTED an alternative plan for spending only $4.3 million this year. He said if that plan is followed, the engineering studies would not be kept on the "critical path" for completion on time, but environmental studies would.

He also said it would permit the Corps to find out if Devil's Canyon is an appropriate site for a dam. "There's never been a hole drilled there." About three holes need to be drilled at the site to see if the rock is suitable for the huge hydropower project, he said.

Holes were drilled at the Watana site last winter, and it appears to be "a very sound site," Fero said. "At Watana, we feel we're a 99 percent go."

But Fero emphasized his belief that the project could not be kept on schedule if only $4 million is spent this year.

Gravel, Stevens clash again over d-2

By LAURIE McGINLEY
Of Our Washington Bureau

WASHINGTON — Accusing Sen. Ted Stevens of breaking a pledge to remain neutral, Sen. Mike Gravel Tuesday said Stevens had persuaded a coalition of 20 western senators not to endorse Gravel's Antiquities Act repeal bill.

But Stevens angrily disrupted both claims, contending he had never agreed to remain neutral and had not tried to discourage the coalition from backing the bill.

"THE COALITION wanted to know my opinion and I told them," Stevens said. "And that was it. I did not meet separately with any of its members on this issue."

Gravel's bill would greatly reduce the president's powers under the 1906 Antiquities Act, the law used by President Carter. It would be retroactive to mid-October, thus nullifying the president's Alaska withdrawals.

Though he supports the bill "in principle," Stevens opposes its introduction now, fearing it would detract from efforts to get an acceptable Alaska lands bill.

GRAVEL HOPED to pick up the western senators' support because of the vast tracts of federal land in western states. The coalition's endorsement would have meant an automatic 20 co-sponsors, enough to "really get this thing moving," he said.

Now, Gravel said, he will have to solicit each senator for his individual support.

The Alaska Democrat made his pitch for the coalition's backing at a traditionally off - the - record meeting last Wednesday, five days after he and Stevens reportedly struck a tenuous peace agreement at a summit conference in Anchorage.

ACCORDING TO a tape recording of the meeting Gravel made available to a reporter, the senator told his western colleagues the president could "thwart the will of Congress" on water policy or other projects by simply creating national monuments.

Replying to a question from coalition co-chairman, Sen. Paul Laxalt, R-Nev., Stevens said, "If the bill at all waters down our attempts to get an acceptable d-2 bill through Congress, I'm opposed to it."

The Republican senator said his goal was "to get this blasted land issue settled". He pointed out

(Continued on Page 20)

(Continued from Page 1)

that once a d-2 bill is enacted, the Antiquities Act withdrawals are "dead."

SEVERAL senators voiced support of the concept of Gravel's bill, but like Stevens, questioned the timing and its chance of passage right now.

In an interview Tuesday, Gravel claimed he left the meeting convinced the coalition would endorse the bill. He said a day or two later after he sent the documents to Laxalt's office, the Nevada senator told another senator the coalition had decided not to back the bill because "Stevens had made it a partisan issue."

But Tuesday, through his press secretary, Laxalt denied that he had blamed Stevens. "The coalition decided to stay out of it because the senators can't agree," the press aide said, "so I guess it's as much Gravel's fault as Steven's. If both could agree to defer action on the Antiquities Act repeal bill, the coalition would back that. If they would agree to go with the bill, the coalition would back that."

THE DISPUTE about the western coalition once again points up the differing recollections the two Alaska senators have of the recent meeting in Anchorage, where they met with Gov. Jay S. Hammond and several state legislators about d-2 strategy.

According to Stevens, Hammond, and Reps. Terry Gardiner, Sam Cotten, Joe Hayes, Sally Smith, and Sen. Mike Colletta, the leaders decided passage of the d-2 bill introduced by Rep. Jerry Huckaby, D-La., was the state's first priority.

In addition, said a letter circulated by the officials, "no one will take any action, including efforts toward a repeal of the national Antiquities Act in the House, that is detrimental to the state's priority strategy of passage of the Huckaby bill or a better version of the Huckaby bill . . ."

But Gravel Tuesday said the state's first priority should be repeal of the Antiquities Act, "so people won't lose their jobs this summer."

Improved Alaska lands legislation is the second priority, he said. Any other strategy is "preposterous," he claimed.

REGIONAL BUREAUS

(JUNEAU) -- THE HOUSE RESOURCES COMMITTEE WAS TOLD TODAY (TUESDAY)

JB25
UNBX SE29
UNBX

ALASKA ALASKA

SUSITNA DAMS

(JUNEAU) -- A KENAI LAWMAKER SAYS THE STATE SHOULD INVESTIGATE ALTERNATIVES BEFORE COMMITTING ITSELF TO THE PROPOSED TWO-POINT-SIX BILLION DOLLAR SUSITNA HYDROELECTRIC PROJECT.

HUGH MALONE TODAY (MONDAY) CALLED FOR AN INDEPENDENT EVALUATION OF OTHER ENERGY POSSIBILITIES BEFORE; IN HIS WORDS; ''THE TAXPAYERS GO ON THE HOOK FOR TWO-POINT-SIX BILLION.''

THE HOUSE RESOURCES COMMITTEE STARTED HEARINGS ON A SENATE-PASSED BILL TO PROVIDE EIGHT-MILLION DOLLARS IN STATE FUNDS FOR FEASIBILITY STUDIES ON THE DAMS. THE HEARINGS WILL CONTINUE THIS WEEK.

MALONE SAYS FURTHER STUDY COULD DETERMINE IF THE SUSITNA PROJECT IS BETTER THAN THIRTY OTHER IDENTIFIED HYDROELECTRIC SITES; USING POWER GENERATED FROM THE BELUGA COAL FIELDS OR ANY OTHER ALTERNATIVES.

MALONE - HOUSE SPEAKER IN THE LAST LEGISLATURE - SAID THAT LEGISLATURE INTENDED STUDY OF THE ALTERNATIVES.

ENVIRONMENTALIST JIM BRENNAN URGED A YEAR'S DELAY IN THE FEASIBILITY STUDY FUNDING. BRENNAN IS PRESIDENT OF THE ALASKA CENTER FOR THE ENVIRONMENT; BUT SAYS HE WAS SPEAKING AS A CONCERNED CITIZEN.

HE SAYS LAWMAKERS SHOULD WAIT FOR COMPLETION OF A CORPS OF ENGINEERS STUDY ON THE PROJECT. HE SAYS THAT STUDY COULD PROVIDE A NEWER COST ESTIMATE AND ANSWER OTHER QUESTIONS.

JM 3-5

JB26
UNBX SE29
UNBX

ALASKA ALASKA

Gravel - 3/12/79

Would → Corps → possible federal guarantee
→ private - no fed support
can it for this year

Gravel - I can get guarantee eventually / grandfather right

By IRS refusal - project is economically unfeasible
triggers federal payback mechanism
Ruling limits ability of Authority.
IRS ruling on technique for Susitna

IRS - doesn't want see state app. put into pot for securing project
want bonds secured by project
Are trying to shut down revenue bond market

New scheme - direct app. to APA, then to Corps

Legislature FY79 8m / FY80 7½m
(budget timing out of phase)

Gov's Task Force - Hold back a year & see what happens

Gravel - $ needed for momentum

economics only question

Susitna's problems - new financing device - controversial

(Tenn. project under attack)

Zm - tax exemption doesn't matter
for full project, affects project's viability

Need economic evaluation before deciding on project - should go

tax exemption (IDB)

hydro projections → gas line

(Carter's supposed to be on your side)

Gravel - timing of payback - up to two years

Momentum on Susitna

Gravel's idea - watching the way the Corps were used in Saudi Arabia

local utility decisions

(Gravel is fully behind project - wants to see it going)

("National environmentalists have put this on their hit list."

⇒ "They'll get it any way they can.")

Kertulla - environmentalist tradeoffs - wanted Devils Canyon during Ramparts

Gravel - they always look to next approach

site's only one would se for hydro

⇒ "bowels of gov't strewn with greenies."

RECEIVED OCT 9 1978 BUDGET & MANAGEMENT

RECEIVED OCT 9 1978 BUDGET & MANAGEMENT

24 Capital Budget Summary

FUNDING SOURCE, YEAR, RANK	PROJECT TITLE (Group Projects by State Funding Source)	PROJECT TYPE				LOCATION(S)	ULTIMATE ANNUAL OPERATING COST	AGENCY Appropriation REQUEST	GOVERNORS BUDGET	LEGISLATIVE ALLOWANCE
		CONST	IMPR	EQUIP	LAND					
G.F										
80-1	Green Lake Hydroelectric Project	X				Sitka	-0-	3,600.0	-0-	
80-2	Swan Lake Hydroelectric Project	X				Ketchikan	-0-	2,000.0	-0-	
80-3	Tyee or Virginia Lake or Thomas Bay Hydro	X				Petersburg/ Wrangell	-0-	2,000.0	-0-	
80-4	Terror Lake Hydroelectric Project	X				Kodiak	-0-	2,000.0	-0-	
80-5	Cordova Hydroelectric Development	X				Cordova	-0-	500.0	-0-	getting $43.2K from contractual in Gv. budget
80-6	IPD small Hydro Demonstration	X				Anchorage	-0-	60.0	-0-	
80-7	Bradley Lake Hydroelectric CORPS	X				Homer	-0-	80.0	-0-	
80-8	Salmon Creek Hydroelectric	X				Juneau	-0-	200.0	-0-	
80-9	Chakachamna Hydroelectric	X				Anchorage	-0-	200.0	-0-	
80-10	Anchorage Energy Pooling	X				Anchorage	-0-	120.0	-0-	
80-11	Mennonite Creek Hydroelectric	X				Port Lions	-0-	90.0	-0-	
80-12	Gartina Creek Hydroelectric	X				Hoonah	-0-	120.0	-0-	
	Gunnak Creek Hydroelectric	X				Kake	-0-			
	Thayer Creek Hydroelectric	X				Angoon	-0-			
	Black Bear Lake Hydroelectric	X				Klawock	-0-			
80-13	Larson Bay Hydroelectric	X				Larson Bay	-0-	80.0	-0-	
	Old Harbor Hydroelectric	X				Old Harbor	-0-			
80-14	Lake Elva Hydroelectric	X				Dillingham	-0-	80.0	-0-	
80-15	Chilkat Hydroelectric	X				Haines	-0-	50.0	-0-	
80-16	Grant Lake & Crescent Lake Hydroelectric	X				Seward	-0-	70.0	-0-	
80-17	Kisaralik Hydroelectric	X				Bethel	-0-	80.0	-0-	
80-18	Assess Kotzebue Hydroelectric	X				Kotzebue	-0-	80.0	-0-	
	Assess Nome Hydroelectric	X				Nome	-0-			
80-19	ALASKA POWER AUTHORITY LOANS	X				STATEWIDE	-0-		3,000.0	
	TOTAL						-0-	11,410.0	3,000.0	

FUNDING SOURCE				
FEDERAL RECEIPTS				
REQUIRED GENERAL FUND				
OTHER GENERAL FUND	-0-	11,410.0	3,000.0	
INTER-AGENCY TRANSFER				
OTHER (Specify)				
G. O. BONDS				

CATEGORY Electrical Energy AGENCY Alaska Power Authority PROGRAM Energy Development

24 CAPITAL BUDGET SUMMARY

00047

ALASKA POWER AUTHORITY
PLAN OF FINANCE

Original Finance Plan - Impact of interest earned on Escrow Fund Returning to the General Fund,

$47,000,000 ALASKA POWER AUTHORITY
REVENUE BONDS

USE OF PROCEEDS

Feasibility Study Funds	$24,092,000
Capitalized Interest (8 years @ 6%)	22,560,000
Cost of Issuance	348,000
	$47,000,000

ESCROW FUND

March 1	Deposits to Escrow Fund (1)	Fund Balance (2)
1979	$ 8,178,000	$ 8,178,000
1980	7,444,000	15,622,000
1981	7,880,000	23,502,000
1982	590,000	24,092,000
1983		24,092,000
1984		24,092,000
1985		24,092,000
1986		24,092,000
1987		24,092,000
	$24,092,000	

(1) From State or Federal appropriations.

(2) Assumes interest earnings on Escrow Fund are transferred to the State of Alaska General Fund and/or to the U.S. Treasury.

ALASKA POWER AUTHORITY
PLAN OF FINANCE
-(CONT'D)

BOND FUND

March 1	Fund Balance*	Interest Earned @ 9% and Transferred to Project Fund
1979	$22,560,000	
1980	19,740,000	$2,030,400
1981	16,920,000	1,776,600
1982	14,100,000	1,522,800
1983	11,280,000	1,269,000
1984	8,460,000	1,015,200
1985	5,640,000	761,400
1986	2,820,000	507,600
1987	-0-	253,800
		$9,136,800

*Fund balance reduced by the interest payments on the Revenue Bonds ($2,820,000 per year).

PROJECT FUND

March 1	Beginning Fund Balance	Less: Funds Expended on Feasibility Study	Plus: Interest Earned @ 9% on Project Fund Balance	Plus: Transfers from Bond Fund	Ending Fund Balance
1979	$24,092,000	$ 8,178,000			$15,914,000
1980	15,914,000	7,444,000	$1,432,260	$2,030,400	11,932,660
1981	11,932,600	7,880,000	1,073,939	1,776,600	6,903,139
1982	6,903,139	590,000	621,283	1,522,800	8,457,222
1983	8,457,222		761,150	1,269,000	10,487,372
1984	10,487,372		943,863	1,015,200	12,446,435
1985	12,446,435		1,120,179	761,400	14,328,014
1986	14,328,014		1,289,521	507,600	16,125,135
1987	16,125,135		1,451,262	253,800	17,830,197
		$24,092,000	$8,693,457	$9,136,800	

ALASKA POWER AUTHORITY
PLAN OF FINANCE
(CONT'D)

ANALYSIS

March 1	Escrow Fund Balance	Bond Fund Balance	Project Fund Balance	Total	Par Excess (Deficiency)
1979	$ 8,178,000	$22,560,000	$15,914,000	$46,652,000	$ (348,000)
1980	15,622,000	19,740,000	11,932,660	47,294,660	294,660
1981	23,502,000	16,920,000	6,903,139	47,325,139	325,139
1982	24,092,000	14,100,000	8,457,222	46,649,222	(350,778)
1983	24,092,000	11,280,000	10,487,372	45,859,372	(1,140,628)
1984	24,092,000	8,460,000	12,446,435	44,998,435	(2,001,565)
1985	24,092,000	5,640,000	14,328,014	44,060,014	(2,939,986)
1986	24,092,000	2,820,000	16,125,135	43,037,135	(3,962,865)
1987	24,092,000	-0-	17,830,197	41,922,197	(5,077,803)

Original Finance Plan - Interest earned on appropriated funds remains in the Project Fund.

ALASKA POWER AUTHORITY
PLAN OF FINANCE

$47,000,000 ALASKA POWER AUTHORITY REVENUE BONDS

USE OF PROCEEDS

Feasibility study funds	$24,092,000
Capitalized interest (8 years @ 6%)	22,560,000
Costs of Issuance	348,000
	$47,000,000

ESCROW FUND

Date	Deposits to Escrow Fund*	Fund Balance	Interest Earned @ 8% and Transferred to Project Fund
3-1-1979	$ 8,178,000	$ 8,178,000	
3-1-1980	7,444,000	15,622,000	$ 654,000
3-1-1981	7,880,000	23,502,000	1,249,000
3-1-1982	590,000	24,092,000	1,800,000
3-1-1983		24,092,000	1,927,000
3-1-1984		24,092,000	1,927,000
3-1-1985		24,092,000	1,927,000
3-1-1986		24,092,000	1,927,000
3-1-1987		24,092,000	1,927,000
	$24,092,000		$13,418,000

* From State or Federal appropriations.

ALASKA POWER AUTHORITY
PLAN OF FINANCE
(CONT'D)

BOND FUND

Date	Fund Balance*	Interest Earned @ 8% and Transferred to Project Fund
3-1-1979	$22,560,000	
3-1-1980	19,740,000	$1,804,000
3-1-1981	16,920,000	1,579,000
3-1-1982	14,100,000	1,353,000
3-1-1983	11,280,000	1,128,000
3-1-1984	8,460,000	902,000
3-1-1985	5,640,000	676,000
3-1-1986	2,820,000	451,000
3-1-1987	-0-	225,000
		$8,118,000

* Fund balance reduced by the interest payments on the Revenue Bonds ($2,820,000 per year).

PROJECT FUND

Date	Beginning Fund Balance	Funds Expended on Feasibility Study	Interest Earned @ 8% on Project Fund Balance	Transfers from Escrow Fund	Transfers from Bond Fund	Ending Fund Balance
3-1-79	$24,092,000	$ 8,178,000				$15,914,000
3-1-80	15,914,000	$ 7,444,000	$ 1,273,000	$ 654,000	$ 1,804,000	12,201,000
3-1-81	12,201,000	7,880,000	976,000	1,249,000	1,579,000	8,125,000
3-1-82	8,125,000	590,000	650,000	1,880,000	1,353,000	11,418,000
3-1-83	11,418,000		913,000	1,927,000	1,128,000	15,386,000
3-1-84	15,386,000		1,230,000	1,927,000	902,000	19,445,000
3-1-85	19,445,000		1,555,000	1,927,000	676,000	23,603,000
3-1-86	23,603,000		1,888,000	1,927,000	451,000	27,869,000
3-1-87	27,869,000		2,229,000	1,927,000	225,000	32,250,000
		$24,092,000	$10,714,000	$13,418,000	$ 8,118,000	

ALASKA POWER AUTHORITY
PLAN OF FINANCE
(CONT'D)

ANALYSIS

Under the above assumptions, the balance in the Escrow Fund would be $24,092,000 at the maturity of the Revenue Bonds, with $32,250,000 in the Authority's Project Fund. If the project is feasible and refunding bonds are sold, the balance in the Escrow Fund ($24,092,000) plus the interest earned thereon ($13,418,000) would be returned to the State or Federal Government, leaving $18,832,000 in the Authority's Project Fund. If the project is deemed unfeasible, the Revenue Bonds will be paid first, from the $32,250,000 in the Project Fund and second, from $14,750,000 in the Escrow Fund, leaving $9,342,000 to be returned to the State or the Federal Government.

	ESCROW FUND	End Fund	PROJECT FUND	TOTAL
3-1-79		22,560	15,914	46,652 (341)
FO	8,178	19,700	12,201	47,563
81	15,622	16,920	8,125	48,547
82	23502	14,100	11,418	49,610
	24,092	11,280	15,386	50,958
		8,460	18,445	
		5,640	27,603	
87		2,820	27,561	54,781
		-0-	32,250	56,342 → 1342 Surplus

ALASKA POWER AUTHORITY
PLAN OF FINANCE

$59,000,000 ALASKA POWER AUTHORITY
REVENUE BONDS

USE OF PROCEEDS

Feasibility Study Funds (Sept. 77)	$24,092,000	
Inflation Adjustment (17 mos. @ .83%)	3,400,000	
Contingency (10%)	2,750,000	
Project Funds		$30,242,000
Capitalized Interest (8 years @ 6%)		28,320,000
Cost of Issuance		438,000
		$59,000,000

ESCROW FUND

March 1	Deposits to Escrow Fund (1)	Fund Balance (2)
1979	$ 8,178,000	$ 8,178,000
1980	7,444,000	15,622,000
1981	7,880,000	23,502,000
1982	590,000	24,092,000
1983		24,092,000
1984		24,092,000
1985		24,092,000
1986		24,092,000
1987		24,092,000
	$24,092,000	

(1) From State or Federal appropriations.

(2) Assumes interest earnings on Escrow Fund are transferred to the State of Alaska General Fund and/or to the U.S. Treasury.

ALASKA POWER AUTHORITY
PLAN OF FINANCE
(CONT'D)

BOND FUND

March 1	Fund Balance*	Interest Earned @ 9% and Transferred to Project Fund
1979	$28,320,000	
1980	24,780,000	$ 2,548,800
1981	21,240,000	2,230,200
1982	17,700,000	1,911,600
1983	14,160,000	1,593,000
1984	10,620,000	1,274,400
1985	7,080,000	955,800
1986	3,540,000	637,200
1987	-0-	318,600
		$11,469,600

*Fund balance reduced by the interest payments on the Revenue Bonds (2,820,000 per year).

PROJECT FUND

March 1	Beginning Fund Balance	Less: Funds Expended on Feasibility Study	Plus: Interest Earned on Project Fund Balance	Plus: Transfers from Bond Fund	Ending Fund Balance
1979	$30,242,000	$ 7,740,000			$22,502,000
1980	22,502,000	7,444,000	$ 2,025,180*	$ 2,548,800	19,631,980
1981	19,631,980	7,880,000	1,766,878*	2,230,200	15,749,058
1982	15,749,058	1,028,000	1,417,415*	1,911,600	18,050,073
1983	18,050,073		1,083,004**	1,593,000	20,726,077
1984	20,726,077		1,243,564**	1,274,400	23,244,041
1985	23,244,041		1,394,642**	955,800	25,594,483
1986	25,594,483		1,535,669**	637,200	27,767,352
1987	27,767,352		1,666,041**	318,600	29,751,993
		$24,092,000	$12,132,393	$11,469,600	

*Assumes 9% rate of interest.
**Assumes 6% rate of interest.

ALASKA POWER AUTHORITY
PLAN OF FINANCE
(CONT'D)

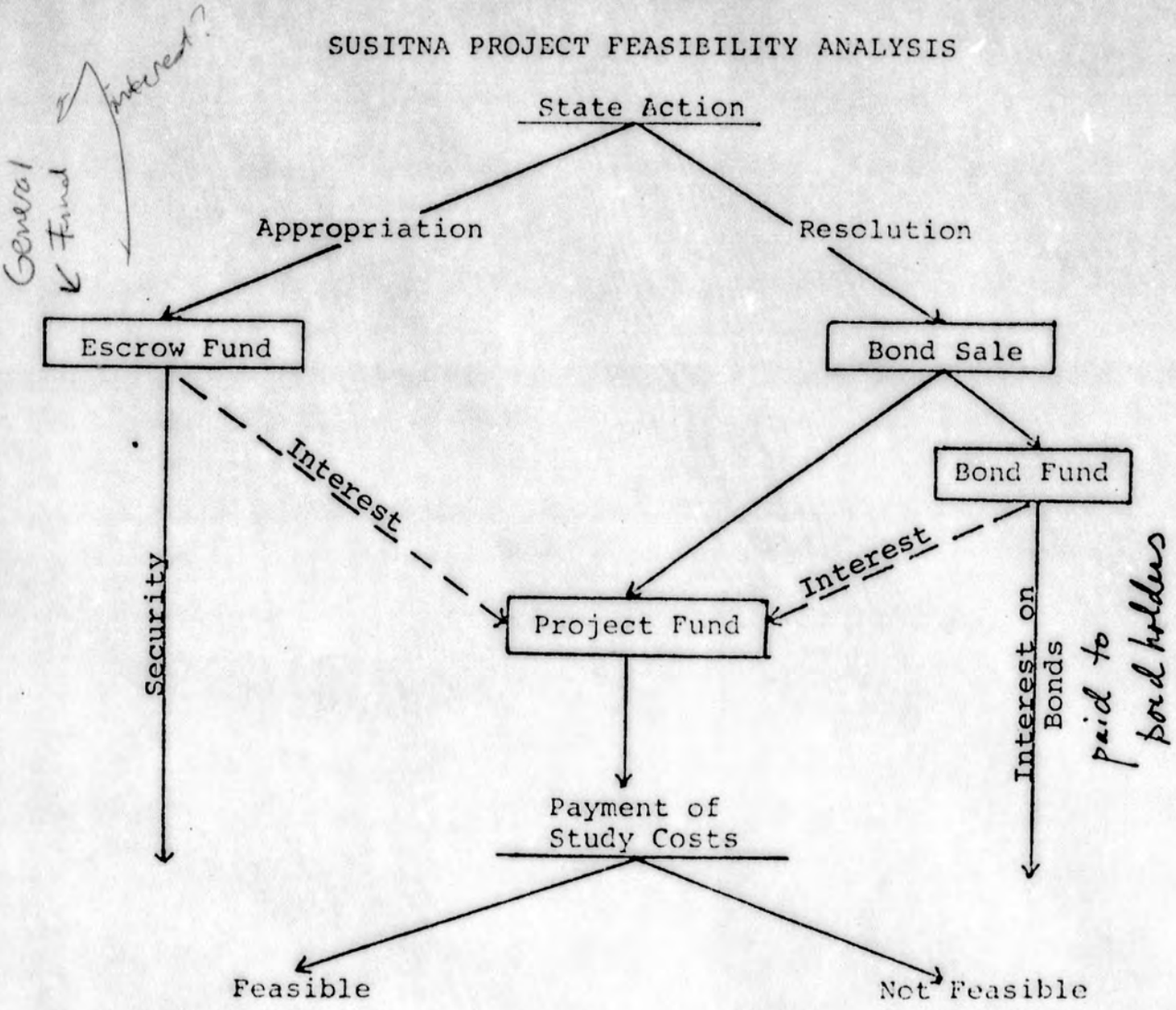
ANALYSIS

March 1	Escrow Fund Balance	Bond Fund Balance	Project Fund Balance	Total	Par Excess (Deficiency)
1979	$ 8,178,000	$28,320,000	$22,502,000	$59,000,000	$ -0-
1980	15,622,000	24,780,000	19,631,980	60,033,980	1,033,980
1981	23,502,000	21,240,000	15,749,058	60,491,058	1,491,058
1982	24,092,000	17,700,000	18,050,073	59,842,073	842,073
1983	24,092,000	14,160,000	20,726,077	58,978,077	(21,923)
1984	24,092,000	10,620,000	23,244,041	57,956,041	(1,043,959)
1985	24,092,000	7,080,000	25,594,483	56,766,483	(2,233,517)
1986	24,092,000	3,540,000	27,767,352	55,399,352	(3,600,648)
1987	24,092,000	-0-	29,751,993	53,843,993	(5,156,007)

APA's plan

PLAN OF FINANCE

SUSITNA PROJECT FEASIBILITY ANALYSIS



Bond Holders Paid from Income of Refunding Revenue Bonds

State Repaid Principal from Escrow Fund and Interest from Balance of Project Fund

Bond Holders Paid from Balance of the Project Funds and a Portion of the Escrow Fund

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State Repaid from Balance of the Escrow Fund after Revenue Bonds are Paid

FIRST Southwest COMPANY

MEMORANDUM

The purpose of this memorandum is to summarize the proposed plan of finance for the funding of Phase I (feasibility study) of the Susitna Hydroelectric Project. This proposal is based on the following basic assumptions:

1. The Authority has no funds of its own to finance the feasibility study.

2. The State is not obligated to finance the feasibility study.

3. No Federal funds for the feasibility study or arrangements therefor have been obtained to date.

4. The Authority has no revenues with which the Bonds may be secured.

The Authority would first request an appropriation by the Alaska legislature of an amount of money at least equal to the projected costs of the feasibility study to be incurred prior to the commencement of the succeeding legislative session. Concurrently with the granting of the requested initial appropriation, the Authority would issue its interim financing bonds (the "Bonds") in an amount which, together with projected interest earnings, is estimated to be sufficient (1) to pay the total costs of the feasibility study during the entire four to six year study period, (2) to capitalize total interest on the Bonds to maturity, and (3) to pay costs of issuance of the Bonds.

The proceeds of the Bonds, less costs of issuance thereof, would be deposited (1) in a Feasibility Study Fund in an amount which, together with projected interest earnings on the Feasibility Study Fund, Bond Fund and Reserve Fund, would be sufficient to pay the total costs of the feasibility study, (2) in a Bond Fund in an amount sufficient to capitalize interest on the Bonds for 8 years, and (3) in a Reserve Fund in an amount not larger than 15% of the principal amount of the Bonds. The Bonds would be term bonds with an 8 year maturity. Interest on the Bonds would be payable semiannually during the term. The Bonds would be callable at any time at par and accrued interest, which would require that the Bonds be sold by private placement directly with commercial banks at a negotiated rate of interest. The monies placed in the Feasibility Study Fund, the Bond Fund and the Reserve Fund would be invested in U.S. Government obligations maturing not later than the date on which such monies are anticipated to be needed. All investment income would be deposited in the Feasibility Study Fund.

The Bonds would be issued under and secured by a Trust Indenture or similar instrument. The Bonds are to be secured by revenues and other funds of the Authority, Federal funds made available for such purpose, refunding bond proceeds, or if necessary,

proceeds of then existing appropriations of the State legislature, appropriately escrowed for such purpose. If the project is determined to be feasible from an engineering and financial standpoint, refunding bonds could be issued.

The initial annual appropriation by the legislature would be placed in escrow with a bank (probably the "lead" bank purchasing the largest portion of the Bonds). The amount placed in escrow would be invested in U.S. Government obligations maturing not later than the dates on which such monies are anticipated to be needed. Interest earnings on the escrow would be used for the same purposes as the monies in the Feasibility Study Fund. Under the escrow agreement, the funds held in escrow would be used first to the extent necessary, to retire and/or redeem the Bonds and second, returned to the general fund of the State if not so used. To the extent Federal funds are not available, each subsequent annual session of the legislature would be requested to appropriate an amount of money at least equal to the costs of the feasibility study to be incurred during the ensuing year. Such annual appropriations would, again, be deposited in escrow and administered accordingly.

The Feasibility Study Fund would be used to pay the costs of the feasibility study as required. However, withdrawals from the Feasibility Study Fund cannot exceed a cumulative amount equal to the balance held in escrow plus the amount of investment income deposited in the Feasibility Study Fund. If Federal Funds are not available, withdrawals of money from the Feasibility Study Fund will continue to fund the feasibility study to the extent the legislature makes appropriations. If such State appropriations or Federal funds are not forthcoming, or if the feasibility study determines that the project is not feasible, the provisions of the Bonds would require the Authority to call the Bonds for redemption. Upon being so called for redemption, the Bonds would be paid first, from the funds available in the Feasibility Study Fund, Bond Fund and Reserve Fund and second, to the extent necessary, from the funds held in escrow. Any funds remaining in escrow would be returned to the State.

The entire structure of the financing of the feasibility study is designed to assure the purchasers of the Bonds that the interest and principal of the Bonds will be paid whether the project is determined to be feasible or not. If the project is determined to be feasible, the principal of the Bonds will be paid from revenues and other funds of the Authority or the proceeds of refunding Bonds. If the project is determined to be not feasible, the principal of the Bonds will be paid by application of the unexpended funds in the Feasibility Study Fund, Bond Fund and Reserve Fund, together with the funds of the State held in escrow. In either case, the interest on the Bonds is paid by application of the interest capitalized out of the proceeds of the Bonds.

The State's exposure is limited to its appropriations held in escrow which, at any given time, consists only of the appropriations made to date. Such limited exposure is contingent upon an unfavorable feasibility report or the inability of the Authority to sell project permanent financing revenue bonds to retire or refund the Bonds or to reim-

burse the State for its appropriations to the extent actually drawn upon by the Authority should the project be determined feasible, and in either event, to the extent Federal funds are not available. The State would have no obligation to continue appropriations.

This plan has been designed to be flexible enough to maintain the time schedule of the Susitna study, while allowing the Federal government to replace the State in this structure at any time.

James H. Kerley, Jr.

11-1-78

Introduced:
Referred:

IN THE SENATE

BY THE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

SENATE JOINT RESOLUTION NO. ____

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to the Alaska Power Authority, the Phase I environmental, economic, social and engineering studies of the Susitna Hydroelectric Project, and the incurring of indebtedness for Phase I.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the Alaska Power Authority under AS 44.56.180 has submitted to the legislature and to the governor a statement outlining the necessary feasibility studies of the project which is planned to be designed, and may be acquired or constructed, by the United States under an agreement providing for ownership of the project by the authority; and

WHEREAS the statement and the Plan of Study submitted to the legislature and to the governor are together considered to in all respects fulfill the requirements contained in AS 44.56.180(b) that the Alaska Power Authority complete a reconnaisance study and submit a financing plan containing its recommendations for financing the Phase I studies, as well as the statements required by AS 44.56.180(c) regarding general design, financial feasibility, maximum amount of bonds and appropriations necessary and its intentions as to whether the authority or the United States should design, acquire, construct, finance and own the Susitna Hydroelectric Project; and

WHEREAS the Congress of the United States, on October 22, 1976, enacted P.L. 94-587, the Alaska Hydroelectric Power Development Act, which Act authorized the Secretary of the Army and the U. S. Army Corps of Engineers to participate in the Susitna Hydroelectric Project; and

WHEREAS the Phase I activities outlined delineate the environmental, economic, social, and engineering studies requisite to informed decision-making; and

WHEREAS the cost to be incurred during Phase I is now estimated to be $25,000,000, but may exceed that amount; and

WHEREAS it is considered to be in the best interests of the State of Alaska to proceed at this time with Phase I of the project through the use of Alaska Power Authority sponsored financing; and

WHEREAS legislative approval of project construction is required if project feasibility and desirability result from the study process conducted under Phase I activities;

BE IT RESOLVED that, based on the plan outlined in the statement of the Alaska Power Authority and the Plan of Study submitted to the legislature and to the governor, the legislature approves the incurring of indebtedness by the Alaska Power Authority in such maximum amount as may be necessary to finance the cost of the Phase I feasibility studies of the Susitna Hydroelectric Project, including interest, and approves an agreement between the authority and the U. S. Army Corps of Engineers providing for the Phase I feasibility studies, including partial design of the project; and be it

FURTHER RESOLVED that Phase I studies must provide for substantive public involvement throughout the study process; and be it

FURTHER RESOLVED that the Legislative Affairs Agency shall conduct or contract for an independent review, in consultation with the Alaska Power Authority, based on existing data, of the economic, financial, biological and geophysical implications of the proposed Susitna Hydroelectric Project, and shall report to the legislature by January 15, 1980.

(c) Before making any loans, except loans made under (f) of this section, from the power project revolving fund, the authority shall by regulation specify the standards for those loans with respect to the following:

(1) criteria regarding the eligibility of borrowers and of types of projects;

(2) standards regarding the technical and economic viability and revenue self-sufficiency of eligible projects;

(3) interest rates and other terms and conditions, and collateral or any other security required for loans; and

(4) other relevant criteria, standards, or procedures.

(d) Any loan made by the authority must be made according to the standards, criteria, and procedures established by regulation under this section.

(e) Repayment of the loans shall be secured in such manner as the authority determines is feasible to assure prompt repayment under a loan agreement entered into with the borrower. The authority may forgive repayment of loans made for reconnaissance studies if the study shows that a project is not feasible. Under a loan agreement, repayment may be deferred for 10 years or until the project for which the loan is made has achieved earnings from its operations sufficient to pay the loan, whichever is earlier.

(f) Projects for which loans are outstanding from the water resources revolving loan fund (AS 45.86) on July 13, 1978 may receive additional funding from the power project revolving loan fund for a term not exceeding 50 years and at an interest rate of not less than three nor more than five per cent a year on the unpaid balance. Repayment of loan principal and interest shall commence on the date of commercial operation of the project funded by the loan or 10 years from the date the loan is granted, whichever is earlier. (§ 1 ch 278 SLA 1976; am § 16 ch 156 SLA 1978)

Effect of amendment. — The 1978 amendment, effective July 13, 1978, added the language beginning "and which shall be composed" to the end of subsection (a), rewrote subsections (b) and (c), redesignated subsection (d) as subsection (e), added present subsection (d), added the present second sentence of present subsection (e), and in the present third sentence of subsection (e), inserted "for 10 years or", substituted "for which the loan is made" for "with respect to which a loan is made," and added "whichever is earlier" to the end. The amendment also deleted former subsection (e), which defined "eligible borrower," and added subsection (f).

Article 5. General Provisions.

Sec. 44.56.180. Assessment, proposal, and construction of projects. (a) The authority shall, for each new project, determine the most appropriate means by which to finance a project which may include, but is not limited to,

(1) the issuance of revenue bonds;

(2) a guarantee of indebtedness by the Alaska Permanent Fund Corporation in accordance with AS 37.13.200;

(3) an appropriation from the general fund; or

(4) any combination of (1), (2), and (3) of this subsection.

(b) Upon completion of the reconnaissance study, the authority shall submit to the governor and the legislature a statement of its recommendations for financing each new project. The financing plan may include a recommendation for a guarantee of indebtedness or a general fund appropriation only when necessary to supplement private financing in order to make a project financially feasible. If the recommended financing for the project includes a guarantee of indebtedness by the permanent fund or an appropriation from the general fund, the legislature must first give its approval by joint resolution before the authority may proceed with the engineering or design phase of the project. The legislative approval required in this subsection may not be considered the approval required under AS 37.13.230 for granting of a permanent fund guarantee.

(c) The authority shall submit a statement outlining the general design, demonstration of financial feasibility, and maximum amount of bonds and appropriations estimated to be necessary for each new project to the governor and the legislature, together with a statement that the authority intends to design, acquire, construct or finance the project itself or that it intends that the project be designed, acquired, constructed or financed by the United States or another person under agreement with the authority which may provide for ownership of all or a portion of the project by the authority or of a right to the capacity of it. If the legislature adopts a joint resolution approving the general design and maximum amount of bonds, the authority shall, in accordance with the terms of the joint resolution, (1) proceed to design, acquire and construct the new project, or (2) agree with the United States or other person for design, acquisition and construction of the project by the United States, for payments to the United States or other person for such design, acquisition and construction, reimbursement by the United States or other person in certain events, and otherwise on the terms and conditions as may be set out in such agreement.

(d) If the new project is to be designed, acquired and constructed by the authority, it shall be designed, acquired and constructed as a public work of the state. For the purpose of this section a new project does not include (1) an addition or modification to an existing project if the total cost of the addition or modification does not exceed $1,000,000; (2) any repair or reconstruction of a project; or (3) any design, acquisition or construction necessary to complete a project for which bonds previously authorized by the legislature have been issued. Any such addition, modification, repair, reconstruction, design, acquisition or construction may be undertaken by the authority without any of the approvals necessary for a new project.

(e) Any power project proposal requiring approval by the legislature under this chapter, except on projects with a complete reconnaissance study on July 13, 1978, together with supporting data, analyses, and

→ Susitna 3/10

Current status (likely)

Will need straight appropriation from legislature
something less than 8 million
— basic point

2 to 3 extra months for competitive work

First Southwest
would

APA attempting to get permission for whole project.

Expert witness to look
Return at end of first year Phase I studies

Alternatives - gas / royalty, heating

Snettisham overcapacity

Pacific Alaska LNG

① Clearly label app. as 1st year
② Companion study
companion

⇒ Ask for first-year report

④ growth rates
⑤ inflation / const.
⑥ overruns
"tilt runs"
envelope of feasibility

Market - not easy to raise $ for project

official $'s - can do it

more - ?

Mark W.

RECEIVED
DEC 18 1978
ALASKA POWER AUTHORITY

LAW OFFICES
McCALL, PARKHURST & HORTON
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G. CHARLES KOBDISH

JOHN D. McCALL (1892-1962)
MILLARD PARKHURST (1906-1973)
CLARENCE E. CROWE (1903-1962)

December 12, 1978

Commissioner of Internal Revenue
Department of the Treasury
Attention: T:PS:T
Washington, D. C. 20224

ALASKA POWER AUTHORITY PHASE I BONDS, SERIES 1979
(SUSITNA HYDROELECTRIC PROJECT)

Dear Sir:

On behalf of the Alaska Power Authority (the "Authority"), a ruling is requested with respect to the above captioned bonds (the "Bonds") regarding the applicability of Section 103(c) of the Internal Revenue Code of 1954, as amended (the "Code"), and Sections 1.103-13 and 1.103-14 of the proposed regulations of the Department of the Treasury pertaining thereto (the "Regulations").

GENERAL

The Authority was created and operates pursuant to AS 44.56.010, et seq., as amended (Exhibit A) and its by-laws (Exhibit B). The Authority is a public corporation of the State of Alaska in the Department of Commerce and Economic Development but with separate and independent legal existence. AS 44.56.020. The Authority is governed by a board of directors constituted pursuant to AS 44.56.030 (the "Board"). The purpose of the Authority is to "...promote, develop and advance the general prosperity and economic welfare of the people of Alaska by providing a means of constructing, acquiring, financing and operating power production facilities limited to fossil fuel, wind power, tidal, geothermal, hydroelectric or solar energy production and waste energy conservation facilities." AS 44.56.070. Pursuant to AS 44.56.080 and 44.56.100, the Authority may borrow money and issue bonds to carry out any of its corporate purposes.

The Authority has determined to undertake, as its first power project, the planning, construction and financing of a hydroelectric power project (the "Project") which it proposes to build on the Susitna River in the State of Alaska. Basically, the Project will consist of a system of two dams - a 635-foot-high concrete thin arch dam at Devil Canyon and an 810-foot-high earthfill dam at Watana, with 365 miles of transmission line.

The magnitude of the Project is such that the minimum estimated time from commencement of the project feasibility analysis for which the Bonds are to be issued (the "Feasibility Study") through completion of the Project is fifteen (15) to seventeen (17) years. The estimated cost of constructing the Project based on the September, 1977 price level index is $2.1 billion. The basic purpose of the Project is to provide a source of hydroelectric energy sufficient to serve the projected needs of South Central Alaska, including the areas of Kenai Peninsula, Anchorage, and Fairbanks, in the most economic manner available.

The initial plan of study for the Project (the "POS") (Exhibit C) was prepared by the Department of the Army, Alaska District, Corps of Engineers (the "Corps") under authority of Section 203 of the Water Resources Development Act of 1976 enacted by the 94th Congress, PL 94-587, Section 203, Oct. 22, 1976, 90 Stat. 2946, to be cited as the "Alaska Hydroelectric Power Development Act" (the "Act") (Exhibit D). Senator Gravel of Alaska proposed an amendment to the Act (Exhibit E) which passed the Senate and passed the House without a quorum present in the 95th Congress. It is anticipated that a similar amendment will be introduced into the 96th Congress, 1st Session. The POS, in effect, presents a program of activities which will constitute the Feasibility Study for the Project. Although the summary of the South Central Railbelt Area Alaska Upper Susitna River Basin Interim Feasibility Report (Exhibit F) provides sufficient data to support the need and economic feasibility of a plan to develop the Project, additional field data and the more detailed Feasibility Study is required. The POS outlines the additional studies required to determine the most cost-effective plan, and its environmental impacts. The estimated cost of the Feasibility Study based on the September, 1977 price level index is $24.1 million. The Feasibility Study is estimated to require 46 months to complete (see pages 2 and 3 of Exhibit C) and, in addition, from approximately one (1) year to three (3) additional years for submission of the report (Feasibility Study) to Congress and authorization of Congress for the Corps to enter into a contract with the Authority to construct the Project, or if the Corps does not proceed with the construction of the Project the Authority will be confronted with the task of contracting with others for the construction. The need for the additional time assumes a favorable Feasibility Study.

PLAN OF FINANCE

Generally, the overall plan for financing the Project by the Authority involves two (2) stages and types of bond issues: first, the captioned Bonds will be issued to finance the costs of

the Feasibility Study and second, assuming the Feasibility Study determines the Project to be feasible, the Authority intends to issue construction Project revenue bonds payable from the revenues of the Project. This ruling request is limited to the questions with respect to the Bonds.

The plan of finance for the funding of the Feasibility Study for the Project, which forms the basis for this request, is predicated on the following facts:

1. The Authority has no funds of its own with which to finance the Feasibility Study.

2. The State of Alaska is neither obligated nor in a position due to constitutional limitations to commit itself over a period of years to finance the Feasibility Study from its general funds.

3. No funds for the Feasibility Study or arrangements therefor have been obtained to date from the United States Government.

4. The Authority has no revenues with which the Bonds may be paid or secured.

5. Full funding for the financing of the Feasibility Study is required by March 15, 1979.

Given the foregoing facts, the Authority will be able to issue the Bonds only with the cooperation and collateral aid of the State of Alaska, and such cooperation and aid must be consistent with the State's constitutional limitations. The Plan of Finance for the Feasibility Study has to take into account the possibilities that the Feasibility Study may show that the Project is not feasible, the State Legislature may not continue appropriations and the Federal Government may not furnish the anticipated funds, and the Authority may not be able to issue Project revenue refunding bonds.

The Authority, through the Governor of Alaska, will first request an appropriation by the Alaska legislature of an amount of money at least equal to the projected costs of the Feasibility Study to be incurred prior to the commencement of the succeeding legislative session. Concurrently with the granting of the requested initial appropriation, the Authority will issue the Bonds in an amount which is estimated to be sufficient (1) to pay the total costs of the Feasibility Study during the entire period prior to the issuance of Project revenue bonds, (2) to capitalize

total interest on the Bonds to maturity and (3) to pay costs of issuance of the Bonds.

The proceeds received from the sale of the Bonds, less costs of issuance, will be deposited (1) in a special fund in an amount estimated to be sufficient to pay the total costs of the Feasibility Study (the "Project Fund") and (2) in a debt service fund (the "Bond Fund") in an amount sufficient to capitalize interest on the Bonds for eight years. The Bonds will be issued as term bonds with an eight-year maturity. Interest on the Bonds will be payable semiannually during the term. The Bonds will be callable for redemption prior to maturity at any time at par plus accrued interest to the date of redemption. The terms, nature and security of the Bonds will require that the Bonds be sold by private placement directly with commercial banks at a negotiated rate of interest. The monies placed in the Project Fund and the Bond Fund will be invested at market rates in U.S. Government obligations maturing not later than the date on which such monies are anticipated to be needed. All investment income therefrom will be deposited in the Project Fund to pay costs of the Feasibility Study.

The Bonds will be issued under and secured by a Trust Indenture or similar instrument. The Bonds will be secured by and payable as to principal from the proceeds of refunding bonds issued as Project revenue bonds if the Project is determined to be feasible from an engineering and financial standpoint, at the end of the Feasibility Study. The interest thereon will be paid out of the capitalized interest in the Bond Fund. If the Project is determined to not be feasible, therefore preventing the issuance of Project revenue bonds for refunding purposes, or if Project revenue bonds cannot be issued for whatever reason, then the Bonds will be paid first from any monies available therefor in the Project Fund and the Bond Fund and, to the extent necessary, from the then existing balance of the appropriations of the Alaska legislature which will be appropriately escrowed for such purpose or from any available Federal funds appropriated for a similar purpose.

The initial annual appropriation by the Alaska legislature will be placed in escrow with a trustee bank. The amount placed in escrow will be invested at market rates in U.S. Government obligations maturing not later than the dates on which such amounts are anticipated to be needed. Investment income therefrom will be deposited in the Project Fund to pay costs of the Feasibility Study. Under the escrow agreement, the funds held in escrow will be used first, to the extent necessary, to retire and redeem the Bonds and second, returned to the State of Alaska if not so used.

To the extent Federal funds are not available, each subsequent an nual session of the Alaska legislature will be requested to ap propriate an amount of money at least equal to the costs of the Feasibility Study to be incurred during the ensuing year. Such subsequent appropriations will also be deposited in escrow and administered accordingly. Based on the favorable conclusions of the South Central Railbelt Area Alaska Upper Susitna River Basin Interim Feasibility Report as to the need and economic feasibility of the Project, the Authority does not reasonably expect to use the appropriations held in escrow to pay debt service on the Bonds.

The Project Fund will be used to pay the costs of the Feasibility Study as required. However, withdrawals from the Project Fund will only be made to the extent the sum of the balance of the appropriations held in escrow, plus the balance in the Project Fund, is not less than the principal amount of the outstanding Bonds. If Federal funds are not available to be used therefor, withdrawals of money from the Project Fund will continue to pay the costs of the Feasibility Study as indicated in the previous sentence. If such appropriations of the Alaska legislature or Federal funds are not forthcoming, or if the Feasibility Study determines that the Project is not feasible at one (1) of the three (3) program decision steps contemplated by the POS, the provisions of the Bonds will require the Authority to call the Bonds for redemption prior to maturity. Upon being so called for redemption, the Bonds and accrued interest would be paid first, from the funds available in the Project Fund and Bond Fund and second, to the extent necessary, from the appropriations held in escrow. Any funds remaining in escrow will be returned to the State of Alaska, and such cooperation and aid must be consistent with the State's constitutional limitations. The Plan of Finance for the Feasibility Study has to take into account the possibilities that the Feasibility Study may show that the Project is not feasible, the State Legislature may not continue appropriations, the Federal Government may not furnish the anticipated funds, and the Authority for whatever reason might be unable to issue refunding bonds. The plan has been designed in a manner that will assure the purchasers of the Bonds that the Bonds will be paid in accordance with their terms regardless of the uncertainties. Due to the constitutional limitations of the State, a commitment cannot be made for payment of the Bonds beyond each current fiscal year. It is possible that federal funds will not be available until and if the Feasibility Study shows the Project to be not feasible. In that event, the proceeds of the Bonds could not be expended until periodic State appropriations are available and escrowed. If the Feasibility Study concludes that the Project is feasible, it is anticipated that the Bonds will be refunded by Project revenue bonds.

To summarize, the entire structure of the financing of the Feasibility Study is designed to assure the availability of the funds required to complete the Feasibility Study and, at the same time, assure the purchasers of the Bonds that the interest and principal of the Bonds will be paid whether the Project is determined to be feasible or not. At such time as the Project is determined to be feasible, the Bonds will be called for redemption or retired and, assuming the ability to refund, the principal of the Bonds will be paid from the proceeds of refunding Project revenue bonds or any other funds of the Authority available therefor. After refunding, any amounts remaining in the Project Fund will be retained therein and applied toward additional costs of constructing the Project. If the Project is determined to not be feasible, the principal of the Bonds will be paid by application of the unexpended funds as described above. In either case, the interest on the Bonds is paid by application of the interest capitalized out of the proceeds of the Bonds.

The Plan of Finance for the Feasibility Study has the added advantages of maintaining the continuity of funds for the Feasibility Study by allowing investment income from investment of the Funds to be utilized in the event that an annual appropriation is delayed, while minimizing the onerous burdens of multiple bond issues to fund the Feasibility Study.

ANALYSIS

Temporary Period

Under Section 1.103-14(a) of the Regulations, the Bonds will not be treated as arbitrage bonds "...solely by reason of the fact that all or a portion of the proceeds of the (Bonds) may be invested in materially higher yielding acquired obligations for a temporary period until such time as such proceeds are used for the purpose...." for which the Bonds are issued.

Section 1.103-14(b)(1) of the Regulations provides that:

> "Original proceeds and investment proceeds of an issue of governmental obligations that are invested in acquired obligations during a three-year period (or the period determined under subparagraph (5) of this paragraph) beginning on the date of issue are invested for a temporary period if the requirements of subparagraphs (2), (3) and (4) of this paragraph are satisfied."

Section 1.103-14(b)(2)(i) of the Regulations provides that "...(A)n amount equal to eighty-five per cent of spendable pro-

ceeds must be expended on the project or projects by the end of the period described in subparagraph (1) of this subparagraph which applies to this issue."

Section 1.103-14(b)(3) of the Regulations, in effect, requires the Authority to incur a "substantial binding obligation" for the Feasibility Study within six (6) months of the date of issue.

Section 1.103-14(b)(4) of the Regulations requires the Authority to proceed with the Feasibility Study with due diligence after incurring a substantial binding obligation.

Section 1.103-14(b)(5)(i) provides:

> "If investments of proceeds do not qualify as investments for a temporary period because the requirement of subparagraph (2)(i) of this paragraph (relating to the expenditure test) is not satisfied, such investments shall nevertheless be considered to be for a temporary period if prior to the issuance of the governmental obligations the issuer demonstrates to the satisfaction of the Commissioner that, on the basis of facts, estimates and circumstances in existence on the date of such issue, a longer temporary period is necessary."

Based upon the fact that the Feasibility Study is the first step in the Project (which may require in excess of fifteen (15) years to complete) and that the estimated time period required to commence the Feasibility Study, complete it, submit the report on the Feasibility Study to Congress, secure the approval of Congress for a construction contract with the Corps and (assuming the Project is feasible) issue refunding Project revenue bonds, is in excess of five (5) years, and could be as long as eight (8) years ,it is submitted that the Authority is entitled to a temporary period for investment of the original and investment proceeds of the Bonds not longer than the earlier to occur of (1) eight (8) years or (2) the earliest practical date on which the Authority may issue Project revenue bonds to refund the Bonds. The Authority will comply with the requirements of Sections 1.103-14(b)(3) and 1.103-14(b)(4) of the Regulations.

Artifice or Device

Section 1.103-13(j) of the Regulations provides:

> "(I)f an artifice or device is employed in connection with the issuance of a governmental obligation, such obligation

will be considered an arbitrage bond within the meaning of Section 103(c)(2). For purposes of this Section, the term 'artifice or device' means a transaction or series of transactions that attempts to circumvent the provisions of Section 103(c), this Section, Section 1.103-14, or Section 1.103-15, -

(1) Enabling the issuer to exploit the difference between tax-exempt and taxable interest rates to gain a material financial advantage, and

(2) Increasing the burden on the market for tax-exempt obligations.

Examples of increased burdens on the market for tax-exempt obligations include selling obligations that would not otherwise be sold, selling more obligations than would otherwise be necessary, and issuing obligations sooner or allowing them to remain outstanding longer than would otherwise be necessary. In no case shall it be considered an artifice or device to invest bond proceeds (or amounts treated as bond proceeds) at a materially higher yield if specifically provided for in Section 103(c)(4)."

It is submitted that the intended application of the anticipated appropriations by the Alaska legislature, and the placement thereof in escrow as the basic if not only, although contingent, security for the payment of the principal amount of the Bonds if the Project is determined to not be feasible, does not constitute an artifice or device. But for the appropriations by the Alaska legislature, the Bonds could not be issued and the Feasibility Study could not be funded.

It is further submitted that neither the total capitalization of interest on the Bonds nor any other element of the plan of finance set forth above constitutes an artifice or device.

RULINGS REQUESTED

Rulings are requested, to-wit:

1. That the Authority is entitled to a temporary period for the Bonds of not longer than the earlier to occur of (1) eight years or (2) the earliest practical date on which the Authority may issue Project revenue bonds to refund the Bonds.

2. The application and escrow of appropriations of the Alaska legislature, the capitalization of interest on the Bonds to maturity, and the other elements of the plan of finance set forth herein or any of them do not constitute an artifice or device.

3. The Bonds are not arbitrage bonds.

SUPPLEMENTAL INFORMATION

The POS indicates that a May 1, 1979 on-site start for the Feasibility Study by the Corps is required with several months of advance notice being necessary to permit initiation of activities precedent to the Feasibility Study. The climatic conditions in Alaska necessitate mobilization of the heavy equipment required for the Feasibility Study during the winter months and the actual commencement of the on-site field work during the warmer months. Should winter mobilization not occur, initiation of the Feasibility Study would be delayed for a year, thus increasing the ultimate cost of the Project. The POS also makes it clear that the successful accomplishment of the Feasibility Study is dependent on timely funding by the Authority. This need is further amplified by the letter of December 8, 1978 from the Corps to the Authority (Exhibit G). In order to meet the parameters set forth in the POS, the Authority intends to authorize the Bonds around February 15, 1979 and issue the Bonds before March 15, 1979. This would require a favorable ruling no later than January 15, 1979. With funds available on or prior to March 15, 1979, the Corps will be able to meet its commencement schedule for the Feasibility Study. Also see Governor--Hammonds letter to Corps dated November 6, 1978 (Exhibit H). Therefore, expedited rulings are requested.

Enclosed are the following supplemental documents:

1. Power of Attorney, Form 2848 (Exhibit I).

2. Letter of the Authority pursuant to Section 6110(c) of the Code (Exhibit J).

If any further information is required or if a conference on this ruling request is required, please contact either the undersigned at McCall, Parkhurst & Horton, 1400 Mercantile Bank Building, Dallas, Texas 75201, Telephone # (214) 748-9501 or Mr. Eric E. Wohlforth, Wohlforth & Flint, Suite 401, 645 G Street, Anchorage, Alaska 99501, telephone # (907) 274-2519.

Very truly yours,

MC CALL, PARKHURST & HORTON

By:

LAW OFFICES
McCALL, PARKHURST & HORTON
1400 MERCANTILE BANK BUILDING
DALLAS, TEXAS 75201
AREA CODE 214 748-9501

HOBBY H. McCALL
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RICHARD C. PORTER
G. CHARLES KOBDISH

JOHN D. McCALL (1892-1962)
MILLARD PARKHURST (1906-1973)
CLARENCE E. CROWE (1903-1962)

December 14, 1978

Director, Individual Income Tax Division
Internal Revenue Service
Department of the Treasury
Attention: T:PS:T
Washington, D. C. 20224

REQUEST FOR EXPEDITIOUS TREATMENT OF RULING REQUEST DATED DECEMBER 13, 1978, SUBMITTED ON BEHALF OF ALASKA POWER AUTHORITY

Dear Sir:

On behalf of the Alaska Power Authority (the "Authority") the above captioned ruling request was submitted to the Commissioner of Internal Revenue. The ruling concerns the applicability of Section 103(c) of the Internal Revenue Code of 1954, as amended (the "Code"), as applied to the Authority's proposed bonds, all as set forth in the ruling request.

This letter is submitted as a request that expeditious treatment be given the ruling request in order that the Authority's project, as set forth in the ruling request, may proceed in a timely fashion. On Page 9 of the ruling request under the heading SUPPLEMENTAL INFORMATION, we have set forth the reasons this request is necessary.

The Authority's bonds are to be issued for the purpose of funding a Feasibility Study to be undertaken by the Corps of Engineers for a hydroelectric power project to be constructed by the Authority. In order to proceed with the project in the coming year, it will be necessary for the Corps of Engineers to commence on-site work on May 1, 1979. The climatic conditions in Alaska necessitate mobilization of the heavy equipment required for the Feasibility Study during the winter months and the actual commencement of the on-site field work during the warmer months. The heavy equipment may only be moved to the site of the Feasibility Study during the winter months, as such

movement would cause unacceptable environmental damage if undertaken once the tundra begins to thaw. Movement of this equipment while the tundra remains frozen will result in no significant environmental impact. Therefore, it is obvious that a delay in the commencement of the project will result if the equipment cannot be moved on-site before the spring thaw.

As explained in the ruling request, the commencement of the Feasibility Study is dependent on the timely funding by the Authority. This need has been further amplified by the letter of December 8, 1978 from the Corps to the Authority and attached to the ruling request as Exhibit G.

In order to commence the Study this year and to meet the parameters set forth in the initial plan of study for the project prepared by the Corps of Engineers, the Authority intends to authorize the bonds around February 15, 1979 and to issue the bonds before March 15, 1979. This would require a favorable ruling no later than January 15, 1979. With funds available on or prior to March 15, the Corps will be able to meet its commencement schedule for the Feasibility Study. We therefore respectfully request that expeditious treatment be given to the ruling request. Please call us collect when the ruling is ready so that we may send someone to Washington to pick it up.

If any further information is required or if a conference on this ruling request is required, please contact either the undersigned at McCall, Parkhurst & Horton, 1400 Mercantile Bank Building, Dallas, Texas 75201, telephone # (214) 748-9501 or Mr. Eric E. Wohlforth, Wohlforth & Flint, Suite 401, 645 G Street, Anchorage, Alaska 99501, telephone # (907) 274-2519.

Very truly yours,

MC CALL, PARKHURST & HORTON

By: J. Charles Goldsmith

bcc: Mr. Eric Yould

SUSITNA HYDROELECTRIC PROJECT

BUDGET FOR CALENDAR YEAR 1979

ACTIVITY CATEGORY	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	TOTAL
SURVEY	$35,000	$460,000	$490,000	$73,000	$1,058,0
HYDROLOGY	73,000	150,000	196,000	130,000	549,0
ENVIRONMENTAL	20,000	22,000	2,000	2,000	46,0
RECREATION	2,000	19,000	2,000	2,000	25,0
PLAN FORMULATION	16,000	30,000	13,000	*******	59,0
POWER STUDIES	10,000	30,000	******	*******	40,0
FOUNDATIONS & MATERIALS	200,000	921,000	1,390,000	320,000	2,831,0
DESIGN	65,000	223,000	116,000	179,000	583,0
REAL ESTATE	5,000	14,000	4,000	*******	23,0
CCULTURAL	5,000	82,000	2,000	2,000	91,0
FIELD CAMP	750,000	500,000	125,000	125,000	1,500,0
REPORTS, REVIEWS PUBLIC PARTICIPATION	5,000	14,000	4,000	******	23,0
BIOLOGICAL	10,000	262,000	649,000	223,000	1,144,0
POWER MARKET STUDIES	5,000	162,000	11,000	28,000	206,0
TOTALS	$1,201,000	$2,889,000	$3,004,000	$1,084,000	$8,178,0

****

Kevin Harun
Borough Assemblyman

FAIRBANKS NORTH STAR BOROUGH
BOX 1267
FAIRBANKS, ALASKA

Dear Sally,

I am hoping that you will work to try to establish a different energy path for Alaska than that chosen by the lower 48.

I know the Susitna hydropower project may seem attractive, because with one fell political swoop this project appears to provide a solution to our urban electrical needs. Hydropower projects can certainly have many positive benefits, but Susitna is not our only hydro possibility. By committing such a large expenditure to feasibility studies for Susitna is to make a tacit committment to this project. For not only would approval of this large feasibility study neglect the study of decentralized alternatives (of which there are dozens), but this study would also commit us to the project if we ever wanted our state money back.

Susitna is the largest hydro project ever proposed by the Corps of Engineers in the history of the United States. At a time when many urban and rural Alaskans are seeking to maintain the freedoms of decentralized governmental and economic systems, Susitna provides a large force to centralize power production in the railbelt area. Many of us are trying to develop our resources and communities in such a way that we can engender greater self-sufficiency rather than plugging into more centralized ways of living.

And who will benefit primarily from this project? The Alaska Power Authority and the Corps have used grossly inflated growth projections to justify this project. The lowest growth pattern cited by the APA projects a quadrupling of energy usage per capita over the next 15 years. While this estimate seems extremely unrealistic, our local utilities will still have to construct new power plants to meet what needs exist before Susitna comes on line. When Susitna comes on line, existing power plants would not be dismantled. The net result will be large amounts of excess power to attract highly energy intensive industries to the railbelt. Rather than attracting such large energy intensive industries, we should be developing smaller-scale decentralized industries to promote local selfsufficient economies.

Sure, hydropower is good, but Susitna is too easy of an answer. I strongly urge you to look at energy alternatives with the same vigor as Susitna is being pursued. I urge you to vote no on the Susitna feasibility study.

Very sincerely,

Kevin

Kevin Harun
Borough Assemblyman

3/7 Susitna

Teleconference - ~~FBX~~

FBX -

Rich Siefert - Water Res - UA - rep. self

1) clean high quality elec.
2) large employment - expensive - fluctuating
3) diversify - impact - employment - ~~etc~~
4) return on investment: $8 million 6,250/person in state 8,330/person
5) go carefully - look at all options

OPPOSE Molly McKannon - Amber River

1) only benefit railbelt area
2) once invest in study - too late to pull out
3) prefer small more diversified power sources

Anch -

FAVOR Bill Mark -

1) State not pursuing energy development
2) Dont want to be at mercy of power pool
3) need adequate affordable elec.
4) Other sources of energy not adequate or too expensive
5) 40% increase in railbelt elec. cost due to environmental stipulations
6) Susitna - most promising source
7) Not affected by world-energy turmoil

FAVOR John Spencer - Representing Anch City Council

1) Council unanimously in favor of Susitna
2) 4000 MW requirement by 2000 AD in railbelt
3) no full cost of Susitna
4) Anch needs more elec by 2000
5) Will produce 1500/4000 MW needed

Susitna
pg 2

Anch - cont

7) $120 Million for coal plant

8) Don't delay - need power soon

9)

~~Ktn~~

Ktn -

FAVOR

Bob Arnold - Ktn Pub Utility

1) Hydro power in gen'l

a) value lies in future - re money & dollars invested when "free"

FAVOR

Don Bowie - Ktn Pub Utility

1) agree w/ Arnold (above)

2) Kt cannot develop (expand) with gas, oil, coal - must be hydro

Hby

FAVOR

Josh Clouder - self

1) support feasibility study - question nature of study - should be discussing funding of study - not necessity of project.

2) Kt should be some independent on local level (?)

Adrek
Hbay

FAVOR

Frank Avek - self (emp by Hby Municipality)

1) Phase I study should answer questions of environmental concern - not citizens

2) Fund Feasibility Study

3) Hydro is renewable - not so coal, oil, gas

4) Study will reveal facts needed to decide

5) 2400/KW Healy } estimates
2000/KW Susitna }

6) Current sources obsolete by time Dam finished + ready

7) Investment for future

Anch -

~~Anch~~

John Nichols - self

A

1) $2.8 Billion 78 dollars (5-10 Billion by time done)
due to cost overruns - too expensive
2) Support study $8 million
3) Delay one year a) D-2
b) Congress may amend Ak. Power Auth
4) Oppose single massive project
5) Encourage smaller projects closer to consumers
6) Other sources are possible - Beluga Coal
7) Support adversary study

Richard Tindell Kendall - Anch Dist. BLM

1) BLM currently owns land in question
2) Titles to Native Corps by Aug 1979 (estimate)
3) Permits required: 404 from Corps - wetlands inventory
letters of non-objection from 7 villages
involved

Hbx

A

Russel Wertz - self (rep. by D. Star Boro)

1) large investment misplaced
2) Money belongs to all Alaskans
3) Current elec. availability is more than enuf Anch & Hbx
4) Excess usage has not materialized
5) Elec. is inherently expensive

Projected Demand 1974-80 550 MW Hbx ↑ 66% from 74 78 consumption 429

2000 4000 MW is hogwash in error by 260%

6) Tenn. Valley Auth in favor of Solar energy
7) Cost overruns should be considered
8) Spinning reserves - inadequate (691.6 MW) only
1/3 of necessity - vulnerable to failure 2 days
in Winter a disaster
9) 600 MW Needed in Railbelt

F

Anch -

Steven Levy - Dir. Pub affairs OMAR

1) Res Development Council favors study
2) No one can currently make intelligent decision
3) ASAP a one year delay ⇒ $200 Million/yr

A

Bo ~~Bassett~~ Bata - self

1) Do not commit $8M
2) lack of concern for small hydro ~~sights~~ sites
3) Popular & attractive project - but should not be basis for decision
4) Expensive white elephant
5) Study will provide momentum - hard to stop
6) Who is responsible for overruns
7) 54 potential sites in South Central Alaska
   ~map to Chatterton

704 -

Carl Benson -

A

1) Project too large
2) Do Al really want major industry in area - pollution potential
3) Pursue alternative studies
4) Don't Rush - it'll snow again next year
5) Funding underestimated - who pays overruns?
6) Bad plan for Term Fund
7) Don't let Corps do Feasibility & Build - conflict of interest

A

Ada Charlton - self

1) likes Teleconference
2) Susitna is beautiful
3) Attitude of gratitude - Damn Dam

TBX -
Cont

A

Terry Leichardt -

1) heavy concerns

a) financial - 30% overrun ⇒ unfeasible

6% inflation too low - really 9-10%

b) glut of energy 3-6 X ⇒

charge a lot or bring in industry

c) If no fed'l $ why use Corps

d) Is it proper solution? Anch will need more power before Susitna done - suggest smaller hydro sites

e) Corps not do study + build - Indepent study include alternatives

f) Industrialization of railbelt may not be what people want

Anch -

A

Mary Evans - Denali Citizens Council

1) concerned with land use in McKinley region

2) financially risky

3) environmentally risky

4) $ spent in study will commit state

5) Hold study for a year + study alternatives

F

Tom Starr - Genl Mgr Anch. Muni. L+P

1) Need Susitna

2) Gas for elec impractical

3) Susitna ⇒ no energy surplus - will save oil + gas

4) High initial cost is cheaper in end - no fuel cost subj. to inflation

5) Coal is only likely alternative ⇒ produces many pollutants

6) Don't need genl study - need specific investigation

Fbx

A Sam Skaggs - Exec. Coord - Ak Federation Comm. Self-Reliance
1) Oppose study - not justified
2) Solar & coal energy should be pursued for railbelt
3) expensive w/ no fed. reimbursement
4) Request gen'l energy study in state

A Mark Baumgartner -
1) energy consumption Railbelt use 1/2 of Susitna output
2) Don't encourage over consumption
3) Energy Policy Committee -

Anch -

A Suzanne Weller - Atty for Trustees for Ak
1) agree w/ Nichols
2) Independent/Adversary study for Susitna
3) Who pays overruns?
4) Fish & wildlife studies needed
5) Project may not be economically feasible

A David Benton - Friends of the Earth
1) Support alternative energy study -
2) Closer to consumer area more practical than one large project

A Fbx -
Mary Lee Guthrie - Ak Con. Society
1) Corps not study & build
2) energy needs will grow & more energy will be needed
3) Don't get in so far can't get out

A Cindy Marquette - self
1) All-elec. Alaska not cost-effective nor desirable
too expensive - too damaging to environment

Hoy - Cont.

3) Use gas for direct heating 1.96 more efficient (effective) than using to produce elec.

4) Postpone til 1980 - study alternate forms of energy & use of gas for heating

5) Project might be totally unnecessary

Anca

David Hogg -

A

1) Jan 75 1.5 ↑40% 2yr 9 mos
9/77 2.1
Now 2.6
Const 84 4.2
By 87 5.88
Billion $

2) Alternative study incl. coal

3) Study fault-line

4) Biological impact - need several yrs cycle

5) Dams will necessitate development + growth

5 more

Mike Erwin - self

A

1) Is it necessary?

2) Pop growth - is it ~~based~~ excessive

3) Per capita use grow?

4) Effect on humans - might be traumatic Rural ⇒ Urban

5) Small scale hydro s/b considered

6) Postpone study & investigate alternatives

A ~~FOE~~ Allen Wicks - self

1) Sanity / Insanity

2) Road to Survival

3) End of Affluence } suggested reading

4) Project is inflationary $ & population

5) Project is a DISASTER - aerial transmission of power s/b developed first

Pat Anderson - self

A

1) Dam will be environmentally devastating

2) Insect studies needed

3) Seek alternative sources of energy

A

Mike Macey - self

1) Study power alternatives

Anch will need power before Susitna

2) Anch + Fbx on one source not recommended => earthquake wouldbe disaster

3) Corp not study + build => adversary study

~~Fbx~~ -

~~Jess Watson~~

Jeff Wilson - self

A

1) Fishery resource - Susitna supports 40% of Upper Cook Inlet salmon supply

2) What's salmon potential above dam - need studied

A

Kevin Haren - Fbx N.S. Boro assembly - self

1) Choose different path than Susitna - its not only possibility

2) Susitna is overbuild

3) Decentralize - not centraliz tailored to local needs

F

Dr John Morris - psychiatrist (probably Represent C of C + labor Union)

1) state should be glad to invest in study

2) Go ASAP

⇒ SUSITNA (Tussig, 3/8) (redacted) for Fund

Corps underestimate interest rates = required by law to use current fed. rate - not as low

Can go all pow

Hungry - small hydro

have more studies

Robert Cross / AEPAdv

Impact - financial aspects

Sensitivity to power price

Demand - making educated guesses
analyzing recent trends
changing use patterns
effectiveness of conservation
population assumptions
per capita trends - see page 46
Dept. of Labor - population figures

effectiveness Anchorage
of
conservation

/ Technique - reduction of growth over time

0.8% growth - Susitna still feasible?

System use loss - under 5%. / analyzed generation, not consumption

Would military buy power from Susitna?
plants old, but no commitment
Using gas for home heating

Elasticity /

Dear Legislator,

What are the problems with the Susitna Hydropower Project?

1. THE NEED FOR SUCH A LARGE PROJECT HAS NOT BEEN SHOWN.

Total electrical energy consumption in the railbelt area (excluding military) was about 1.7 billion kilowatt hours (KWH) in 1976. Energy consumption in the Fairbanks area declined in 1978. These dams will produce 6.1 billion KWH, well over 3 times the amount of energy needed to meet current consumption.

The Alaska Power Authority and the Army Corps of Engineers have used highly inflated and unrealistic growth projections to justify the project. The lowest growth pattern cited by APA, resulted in a quadrupled demand by 1995, a doubling the present railbelt population by 1995, and a tripling of per-capita energy usage by the industrial sector. In light of the most recent trends in population growth, energy conservation and decreased per-capita energy usage in Alaskan industry, these projections seem totally unrealistic.

No matter what the growth rate, local utilities will build new plants to meet needs before Susitna could come on line. Since the generating capacity to meet current demand will have already been met by existing power plants, Susitna power represents an enormous glut of energy.

Such a glut can only result in the introduction of some highly energy intensive industries in the railbelt (bauxite refining plant and uranium enriching plant are a few of the proposals) in order to sell excess power to make the project economically feasible.

2. ITS ECONOMIC FEASIBILITY IS, AT BEST, MARGINAL; AT WORST A TERRIBLE LOSS.

Even when using the Corps very conservative cost estimate of $2.6 billion economic feasibility has been judged as marginal. If we bear in mind the 900% cost overun of the Trans-Alaska Pipeline, the necessary backup generating systems and the costs of environmental damage, we can expect costs to far exceed the projected $2.6 billion.

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Earthquake damage to either dam or over-topping of the dams by tsunami-type waves could cause massive flooding of the lower Susitna and its communities such as Talkeetna and Gold Creek as well as damage to the Parks Highway and the Alaska Railroad. Is the State of Alaska prepared to take the almost inevitable seismic risk in order to secure electrical energy of which the need has yet to be demonstrated?

4. A CARIBOU HERD OF 20,000 ANIMALS WILL BE THREATENED.

The calving grounds for the Nelchina caribou herd are near the proposed impoundment sites. Movement of animals to and from the claving ground could be impeded by the reservoirs. Considerable mortality to the herd could result during the crossings.

In Norway the reindeer have ceased to migrate due to the building of a reservoir. This similar situation could reduce the herd numbers drastically.

The feasibility study itself could adversely effect the caribou herd. The study would build a road to the dam sites, creating access for many people. Ensuing trails could lead people directly into the calving ground. In 1978 close to 3,000 people applied for permits to hunt the Nelchina caribou herd.

5. MORE THAN 20% OF THE STATE'S TOTAL MOOSE HARVEST COMES FROM THE GAME UNIT SURROUNDING THE PROPOSED SUSITNA PROJECT.

The Alaska Department of Fish and Game considers the Nelchina Basin one of the most important game area in the State, providing large numbers of game animals and roadside access for hunters and viewers. A very significant part of fall and winter moose habitat used by moose in this unit would be covered by the impoundments. This could mean a considerable reduction in moose numbers which would limit hunting and viewing opportunities.

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7. THE SUSITNA IS NOT OUR ONLY POSSIBILITY FOR HYDROPOWER.

32 other hydro-power sites in the railbelt area were recently investigated by order of OMB (Office of Management and Budget). This was to provide a cost-benefit comparison of Susitna to smaller-scale projects. We need the information on these alternatives before we get into the Susitna project.

8. THE STATE WILL PROBABLY BE STUCK WITH THE BILL--PAYING $2.6 BILLION OR A LOT MORE.

Right now the Alaska Power Authority and the Governor's office are asking for a direct appropriation from the State for $8.2 million to begin the first part of a $25 million study. Federal re-imbursement for the study seems highly improbable with the current trend in Washington to reduce spending and to cut back on hydroprojects. The federal government has already backed out of any full-scale funding for the dam project because it feels that it benefits too few people. Because of this, Senator Gravel and others in the State are recommending that the financing be through APA (Alaska Power Authority) issued bonds.

The State will have to secure these bonds and the source for this security can only be the Permanent Fund. There have also been suggestions of using the Permanent Fund for direct financing of the project. Added to the idea of using the fund to finance the gas pipeline and the petrochemical industry, this will exhaust the fund for any uses in renewable resources.

9. THE CORPS SHOULD NOT DO THE FEASIBILITY STUDY.

Since the Corps will be doing the planning, design and construction of the Susitna project if the project proves feasible, then it seems highly questionable whether the Corps should also conduct the feasibility study since their future jobs will depend on proving the project feasible. If the study must be done it should be conducted by an outside, independent, unbiased agency and not the Corps.

10. THE STUDY SHOULD BE DELAYED.

The study should be delayed at least until Senator Gravel secures a guaranty of Federal re-imbursement. The Corps has said they need to start before the Spring thaw and therefore need the money immediately, otherwise the study would be delayed until next winter. But just what are the disadvantages of delaying the study until then?

With so many questions unanswered and with information from recent studies not yet assimilated a delay is clearly needed.

What to do

Vote down the appropriation

This will give us the chance to see

1) If Gravel really does succeed in getting federal funding

2) The outcome of the Corps' studies on alternate smaller-scale hydro in the railbelt area

3) What the new projected construction costs will be

4) The final impact statement on the feasibility study

We need a better analysis of Alaska's future energy needs based on realistic and planned growth. We also need to fully examine all our energy alternatives, including solar, coal, wind, geothermal and conservation.

February 26, 1979
Alaska Conservation Society
P.O. Box 88192-College Branch
Fairbanks, Ak. 99708

To Alaskan Legislators:

Alaskans promoting wise resource use are deeply concerned about the decision soon to be made regarding feasibility studies of the Susitna hydroelectric project. In a year when many worthwhile renewable resource development projects are languishing for lack of funding, and when agencies managing resources and caring for our land are starved for operating funds, you are being asked to spend $8 million on studies (which eventually will cost $25 to 30 million) of a project which would produce far more power than we will need. This project will soak up funds every year for decades, funds which could be used to solve our real problems now.

A preliminary look at the Susitna project reveals some worrisome earthquake hazards and risks to extremely important fisheries and recreational resources. These and other concerns are described very briefly in the enclosed information sheet. We hope that you will read about them and investigate the issues yourself.

Sincerely yours,

Robert B Weeden

Robert B. Weeden
President

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Dear Legislator,

What are the problems with the Susitna Hydropower Project?

1. THE NEED FOR SUCH A LARGE PROJECT HAS NOT BEEN SHOWN.

Total electrical energy consumption in the railbelt area (excluding military) was about 1.7 billion kilowatt hours (KWH) in 1976. Energy consumption in the Fairbanks area declined in 1978. These dams will produce 6.1 billion KWH, well over 3 times the amount of energy needed to meet current consumption.

The Alaska Power Authority and the Army Corps of Engineers have used highly inflated and unrealistic growth projections to justify the project. The lowest growth pattern cited by APA, resulted in a quadrupled demand by 1995, a doubling the present railbelt population by 1995, and a tripling of per-capita energy usage by the industrial sector. In light of the most recent trends in population growth, energy conservation and decreased per-capita energy usage in Alaskan industry, these projections seem totally unrealistic.

No matter what the growth rate, local utilities will build new plants to meet needs before Susitna could come on line. Since the generating capacity to meet current demand will have already been met by existing power plants, Susitna power represents an enormous glut of energy.

Such a glut can only result in the introduction of some highly energy intensive industries in the railbelt (bauxite refining plant and uranium enriching plant are a few of the proposals) in order to sell excess power to make the project economically feasible.

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Summary of House Resource Committee Hearing on Sustina Project (SJR 6 & SB 63)

March 5, 1979

1. Eric Yould, Alaska Power Authority

Yould gave a general explanation of the project's history, general finacing provisions and the timetable.

Cotten asked about the questions raised in Weeden's letter, specifically the demand projections xxxx:

Yould: even at an extreme low growth scenario of only .8% ijncreased consumption per year, the project would still be economically viable.

Cotten then asked about the appropriateness of the Corps doing the feasibility study.

Yould: revenue bond market--we have to sell our bonds to conservative, knowledgable investors on Wall st. They wouldn't buy the bonds if they didn't trust the Corps. (praise to wisdom of wall st, amen)

Yould escaped with na further questioning by the committee

2. Hugh Malone

Main question--what analysis of alternatives has been done? Who is making an evaluation of which project is best? Are we sure that this is the best deal? A range of varying costs--what are the nexxt best alternatives?

Would like to see the OMB study of 32 other sites. What is the impact of this projecton the Beluga coal field power plant proposal? Or on other large-scale alternatives such as using royalty gas via an in-state line?

Last year's legislature appropriated $300,000 for the study of alternatives (note--not exactly true), but the study funds were contigent on federal guarantees. The xxxxxxxxxxxt Was made when the state's only commitment was to revenue bonds. I'm not saying that we shouldn't appropriate the eight million, only that we need to look at alternatives.

What are the erfects of the federal administration of the Corps contracts? The OMB wants additional information, befopre its approval.

Signoffs still have to be obtained from the local village corporations. We need to know which ones have anx interest in this land. D2 is a problem, the river has been selected as a proposed wild and scenic river--what are the erfects of that?

Even if the federal backing comes through, if the state decides not to go ahead with the project for our own reasons, we have to pay. and the ratepayers will have to bear the burden of cost overruns.

Agencies promote projects that they are interested in. We should get an independent analysis of the available alternatives; then decide what the magnitude of the state commitment should be. If the legislature provides funding, some sort of interim oversight committee should be set up, with the responsibility for renewing the Corps contract.

"I don't want the ratepayers on the hook." Alternative, incremental power plants may be more economical. Final shot--make sure Fish and Game has adequate money for biological studies.

3. Jim Brennen-as citizen and Alaska Center for the Env.

should delay funds for a year--M OMB dissatisfactions, BLM permits, federal guarantees, possible alternatives are all questions that have not yet been resolved. stressed need to develop decentralized sourcews of power and inevitability of the development of the Beluga coal fields.

4. Roman Motyka--on own behalf, member of geophysical institute, evironmentalist

My concerns--cost overruns, as exemplified by pipeline. Seismic problems. Costs of backup systems. Limitations of bonding. Are demand forecasts backed up by assumptions of a capital move, energy-intensive industry moving into the state? What other options are available?

Eliasonasked the biological concerns, social impact, Zharoff concurred with Eliason's questions.

Carney--conservation groups should make some positive, specific suggestions, instead of always criticizing.

Chatterton attempted to trip Roman up by asking detailed questions about his seismic map and knowledge of the area.

Osterback--are you in favor of coal-fired plants, and coal-mining?

Eliason--are there any historical examples of a dam attracting industry?

5. Dick Logan, for F&G

Susitna supports the Cook Inlet fishery, of extremely high value. Dam also will affect upland habitats of moose, caribou and brown bear.

NEPA requires that ecological questions be addressed--EIS will cover questions, the feasibility studies have to be run to get the answers.

Have effect on caribou migration, possible thermal bloc to salmon spawning. Dams have caused big loss in fish populations, most impact will be downstream from dam. Hatcheries to replace have had varying success.

Osterbeck--what are impacts of alternatives? Logan--pipeline, coal plant would have much less effect than hydro project.

Eliason--what are the effects of flow levels, temperature changes?

Logan--we're able to manipulate the dam outflow to adjust temperatures, rate, can increase fish populations, though increase in salmon is unlikely.

Halford--do you have enough money to do an adequate job? Logan--Yes; we proposed more, but understand it's a tight budget year (for Corps?) will accept what we get.

6. David Hutchins--exec. director of ass. of rural electric coops

strongly support susitna project. recent decrease in Fb power demand not representative of the rest of the Railbelt. Susitna is the best alternative for the region. Healy coal was shelved because of costs associated with the Clean Air Act. Small hydro projects are supplemental, not replacements.

Chatterton--would nuclear power be more cost-effective? Hutchins--don't know. Hutchins also stressed the federal prohibitions on using gas to generate electricity.

Zharoff--thanked everyone for electrifying testimony, keeping committee current on positive and negative aspects, generating discussion. numerous groans.

Susitna Hearing — Resources Committee — 3-5-79 — 3 pm

– SJR 6 SB 63

① Gould - Background - # steps, possibilities
(good basic desc.)
Cotten - Weeden's letter/questions
ⓐ demand projections - backed up by APA Adm, Battelle, USCE
sensitivity study -
low growth of .8% - project still feasible ☆
ⓑ Corps should it be doing feasibility
protection interest in revenue bond market ☆ - challenge

② Hon Malone -
Main question - what analysis of alternatives has been done?
who is making evaluation that project is best?
Are we sure that this is the best deal? cost?
What are next best alternatives?
OMB study of 32 other sites
Impact of this project on coal/Beluga power proposals?
Other large-scale alternatives - North Slope gas
in-state royalty line
cost leg. → $300,000 for study of alternatives
study funds were contingent on federal guarantees
made when state's only commitment was to revenue bonds
not saying we shouldn't appropriate $, let's look at alternatives
Effect, if any of federal adm. of Corps contract?
OMB - wants additional information
Signoffs from village corporations - which have interest?
D2 - Wild & Scenic Rivers selection?
Finally, proposed amendment by Gravel should be in your hands?
1) If state decides to cut off, we pay
2) payment of additional costs - borne by rate payers
Agencies promote projects are interested in - we should
get independent analysis of alternatives
What will

If funding by leg., interim subcommittee will responsibility for reviewing that contract.

"I don't want to see ratepayers on the hook."
alternative increments may be more economical
(One final shot - biological studies F+G)

(3) Jim Brennen - attg., pres. of Ak Center of Env. testifying particularly as consumer of electric power

(2) should delay for a year -
OMB dissatisfactions
BLM permits, etc. - lands
Federal Guarantee
Alternatives not yet assessed / other hydro, Beluga
~~[redacted]~~ alternative sources of power

(4) Roman Motyka - on own behalf (w. IL Geophysical Inst.)
Concerns - re:
Cost overruns
Seismic problems
Costs of backup systems
Bonding - what limitations
Demand - capital more
energy-intensive industry

What other options
Eliason - biological concerns / social impact
Zharoff, too
Carney - Conserv. groups should get positive
Halford - seismic questions
Chair - map questions
~~Del~~ McRock - in favor of coal-fired/mining?
Eliason - other examples of dam attacking - industry
BC

(5) Dick Logan - F&G -
Susitna supports Cook Inlet fishery
upland habitat - moose, caribou, brown bear
NEPA requirements
EIS will address the questions
feasibility studies have to run to get answers
Fuller - questions re caribou
possible thermal blue to salmon migration
Dams have caused big loss in fish
but most impact will be downstream
Carney - Hatcheries successful? probably not

The Rock - should we look at alternatives
Logan - impact of pipeline less than hydro project
Too much power? - not qualified to answer
effects of
Eliason - flows, temperatures
DL - able to manipulate dam outflow
able to increase fish population
The Rock - temperatures
Halford - is their amount enough to do studies
F&G - yes, it's adequate
proposed more "tight budget year"
will accept what we get

(6) David
Hutchison - AK Rural Coop Exec Director
Count 12 members - area
GV, Matt, HEA, ?
strongly support Susitna project
Fb not representative of Railbelt
best alternative for Railbelt region
Healy shelved because of Clean Air Act
Small Hydro project, are supplements, not replacement
Chat - nuclear more cost effective

#

Susitna - basic points

(1) Corps shouldn't do study

(2) Report of OMB study

(3) Small Hydro project,
needs
employment

(4) Needs projection - growth, elasticity

(5) Fish + Game use - bush

(6) Beluga coal fields
heating

Study money lapses June 30 '79
→ should get extention
change wording from independent "advisory"
economic - financial
Corps doesn't have to do anything justifying 8 million

→ Amend resolution p. lines 4 - 9
(bill no?

What happened to OMB study / approval
BLM permits?

Yould + Erickson 3/5/79 10 am

---

(1) #300,000 study by LAA

information available from Corps
need 2 years data collection
Corps will be putting out report in 9 months (required)
will look at other damsites
will confirm that Susitna is best site, will look at coal, etc.
Not as indepth ~~about~~ as final study

48-month = Phase I
Foundation data - 1st 3 year
last year - putting together design for cost estimates

Biological studies
need long life-cycle
Main questions that have been raised
(1) Seismicity
(2) Impact of large bloc of power on Railbelt
(3) " on down-stream fisheries

Only (2) can be done in short term

Will have to sell $47 million worth of bonds to pay for study costs + interest.
Secured by 24 million opp.

(2) Status of OMB's approval
Should find out this week or next
Army has to send to OMB
OMB will take speedy action
unofficial approval
leg approval
Could be stipulated as above

Start-up date changed to April 1 – activities not as extensive

Land has to be conveyed to village corporations
Corps have to have wetlands permit

issuing entire funding now

jobs at stake – if leg. doesn't appove money
(F+G) – 40 people for biology
APA not managing study

APA needs detail on each stage of Phase I
→ see Susitna Hydropower Plan of Study (1978)
$3 million dollar study for OMB (fed. funding)
reaffirmed viability of Watana
not public yet – has to be reviewed
Gregg can see (for a week)

Financing – Authority has no money
[redacted] Feds have app. $6 million → but can use (1978)
security of 6 million → 47 million of bonds → but can only spend according to matching state or federal funds.

If Corps find feasible, and state doesn't →

① Would "most salient point ... one I find most difficult to answer."

If Corps find feasible, financing should be available
If State does not want - pass resolution
Policy decision by state
will not necessarily get the $ back
If Gravel not successful -
get rid of Corps
Would - benefits - getting rid of feds
but can't go to Corps from private, only visa versa
Corps equipment bought for project becomes ABA property.
Without federal legislation
halt or transfer to private is possible

---

checkpoints of Phase I
9-month study - reassessment of economic viability
3-yr. - go or no go
4-yr. - final
as studies progress,

Lando issues

Corps - feasibility only
ADF&G - mitigation needs costs

Economic study.
identify potential
dam sites
optimum water resource; compared

Can't finance anything the Corps doesn't think is necessary / Chena River project

coal plant | FEA gives values of most feasible alternative
Gas almost ruled out
implicit about demand growth, based on Battelle
economics based on APA dam studies - did Snettisham

☆ ⇒ Corps, in 3 million study
sensitivity factor
even if load growth fell to .8% annually,
project will be economically feasible.

① independent study
① social impact
② economics - mainly hydro configuration
not general picture

Gravel: 1% adversary funding
original intent of 300,000

[Rutherford best instate water resources firm]

Call AKPAdm

Yould - aware of complexities
want decision on project soon
utilities need to know

Economics of major coal-fired generation
[redacted] close to Watana
400 Mgw - advantage of coal - meeting
demand in increments

May be forced to go to coal anyways

capital investment in gas plant miniscule compared to coal
but fuel costs are higher

Coal plants could destroy economics of Susitna

Eklutna vs. Beluga, etc. (70¢ ...)

Questions that should be answered by the Alaska Power Authority and the Army Corps of Engineers

1. The Alaska Power Authority (APA) and the Army Corps of Engineers (Corps) has said that the railbelt's present energy consumption is about 2.8 billion kilowatt hours (KWH). We would like to be given the breakdown of energy usage upon which this estimate is based. Specifically we would like the present total and the present per capita electrical energy consumption by 1) residential owners and 2) small commercial/industrial users in each of the three major railbelt communities: Anchorage, Mat-Su, and Fairbanks.

   Our figures, based on the Alaska Power Administration's latest report on Alaska energy consumption, show that the total railbelt energy consumption in 1976 (excluding military) was about 1.7 billion KWH.

2. We would like to know the total sales of each of the major utilities in Fairbanks and Anchorage over the past 3 years (1975-1978), and the percent increase in sales per year for both the residential and the small commercial/ industrial sectors.

3. The Alaska Power Administration, APA and the Corps has said that energy needs in the railbelt area will be four to ten times the present level. We would like to know the basis for these projections.

   Mr. Eric Yould has cited one study conducted by the Institute of Social and Economic Research to confirm these large predictions. ISER's lowest projection resulted in a quadrupled demand for electrical energy by 1995. This demand was based on an annual population increase in the railbelt area of over 4.5% per year, more than four times the present national average. This would result in more than doubling the present railbelt population by 1995. Further, the industrial sector was projected to grow as rapidly as the population and was projected to increase their per capita electrical energy consumption by 5.8% per year. This would result in a tripling of industrial per capita usage by 1995. In light of the most recent trends in population growth, energy consumption and decreased per-capita energy usage in Alaskan industry, we wonder if these projections are realistic.

4. If the demand for electrical energy in the railbelt area grows as rapidly as APA and the Corps suggests, then it would appear that local utilities will be forced to build several new power plants over the next 2 years to meet this need. Many people therefore have expressed fears that, since the generating capacity to meet current demand will have already been met by existing power plants, Susitna power then represents an enourmous glut of energy. Can you comment on how APA envisions integrating Susitna power into the overall power network and whether there will be a need to attract energy intensive industry to use Susitna power?

5. We understand that the Corps is in the final stages of completing a report on a $3 million study they did this past summer for the Office of Management and Budget. We understand that , included in this study is a re-evaluation of total project construction costs and also a study of 32 other potential sites for hydro-power in the railbelt area. We feel that it is essential that the committee examine this report in order to make an intelligent decision concerning the Susitna feasibility study, especially since the other sites may prove more cost-beneficial and could be brought on line much sooner than Susitna. For these reasons we would like the Finance Committee to be provided with either a finished or draft version of this report ASAP. If this can not be done, we would like to know why.

6. It is our understanding that the Corps will be doing the planning, design and construction of the Susitna project if the project proves feasible. If this is the case, then it seems highly questionable whether the Corps should also conduct the feasibility study since their future jobs sould depend on proving the project feasible. Wouldn't it be better to have an outside, independent, unbiased agency conduct the study rather than the Corps?

7. Many people have expressed strong concern over the environmental and geological risks associated with the Susitna project. One of the most prominent of these risks is the seismic hazard. We know the Corps is well-aquainted with the problems of earthquakes and we have one specific question to ask. We understand that reservoirs commonly introduce seismicity. Rather severe earthquakes, up to magnitude 6.4, have accompanied the filling of reservoirs at a number of dams around the world. The Susitna dams and their reservoirs will lie on opposite sides of the active Susitna fault with the upper part of the Devil's

Canyon reservoir actually overlying a portion of the fault. The high loading and water from thse reservoirs could very possibly trigger strain enrgy which has been stored in rocks prior to impoundment.

We understand that there is no way of fully evaluating beforehand the effect reservoir loading will have on the active Susitna fault, and that this can only be done during the actual filling of the reservoir. Our question is this: If the impoundment of water at Watana and Devil's Canyon does cause and increase in the frequency and intensity of earthquakes, what will be the Corps' plan of action, particularly if the public becomes concerned about the safety of the project?

8. Many people have asked why the study can't be delayed until Senator Gravel secures a guarranty of Federal re-imbursement. We know the Corps has said they need to start before the Spring thaw and therefore need the money immediately, otherwise the study would be delayed until next winter.But just what are the disadvantages of delaying the study til then? It seems to us that there is a lot of information that hasn't been assimilated yet and that a delay might not be such a bad thing.

Corps shouldn't do -
need project
to keep their jobs

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OCT 9 1978
BUDGET & MANAGEMENT

RECEIVED
OCT 9 1978
BUDGET & MANAGEMENT

24 Capital Budget

FUNDING SOURCE, YEAR, RANK	PROJECT TITLE (Group Projects by State Funding Source)	PROJECT TYPE: CONST	IMPR	EQUIP	LAND	LOCATION(S)	ULTIMATE ANNUAL OPERATING COST	AGENCY Appropriation REQUEST	GOVERNORS BUDGET	LEGISLATIVE ALLOWANCE
G.F 80-1	Green Lake Hydroelectric Project	X				Sitka	-0-	3,600.0	-0-	
80-2	Swan Lake Hydroelectric Project	X				Ketchikan	-0-	2,000.0	-0-	
80-3	Tyee or Virginia Lake or Thomas Bay Hydro	X				Petersburg/ Wrangell	-0-	2,000.0	-0-	
80-4	Terror Lake Hydroelectric Project	X				Kodiak	-0-	2,000.0	-0-	
80-5	Cordova Hydroelectric Development	X				Cordova	-0-	500.0	-0-	getting $443.4K fr. Corps of Eng. in fy budget
80-6	IPD small Hydro Demonstration	X				Anchorage	-0-	60.0	-0-	
80-7	Bradley Lake Hydroelectric CORPS	X				Homer	-0-	80.0	-0-	
80-8	Salmon Creek Hydroelectric	X				Juneau	-0-	200.0	-0-	
80-9	Chakachamna Hydroelectric	X				Anchorage	-0-	200.0	-0-	
80-10	Anchorage Energy Pooling	X				Anchorage	-0-	120.0	-0-	
80-11	Mennonite Creek Hydroelectric	X				Port Lions	-0-	90.0	-0-	
80-12	Gartina Creek Hydroelectric	X				Hoonah	-0-	120.0	-0-	
	Gunnak Creek Hydroelectric	X				Kake	-0-			
	Thayer Creek Hydroelectric	X				Angoon	-0-			
	Black Bear Lake Hydroelectric	X				Klawock	-0-			
80-13	Larson Bay Hydroelectric	X				Larson Bay	-0-	80.0	-0-	
	Old Harbor Hydroelectric	X				Old Harbor	-0-			
80-14	Lake Elva Hydroelectric	X				Dillingham	-0-	80.0	-0-	
80-15	Chilkat Hydroelectric	X				Haines	-0-	50.0	-0-	
80-16	Grant Lake & Crescent Lake Hydroelectric	X				Seward	-0-	70.0	-0-	
80-17	Kisaralik Hydroelectric	X				Bethel	-0-	80.0	-0-	
80-18	Assess Kotzebue Hydroelectric	X				Kotzebue	-0-	80.0	-0-	
	Assess Nome Hydroelectric	X				Nome	-0-			
80-19	ALASKA POWER AUTHORITY LOANS	X				STATEWIDE	-0-		3,000.0	
	TOTAL						-0-	11,410.0	3,000.0	

FUNDING SOURCE					
FEDERAL RECEIPTS					
REQUIRED GENERAL FUND					
OTHER GENERAL FUND	-0-	11,410.0	3,000.0		
INTER-AGENCY TRANSFER					
OTHER (Specify)					
G. O. BONDS					

CATEGORY Electrical Energy AGENCY Alaska Power Authority PROGRAM Energy Development

24 CAPITAL BUDGET SUMMARY

00047

Introduced: 1/19/79
Referred: Resources and Finance

IN THE SENATE

BY THE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

SENATE JOINT RESOLUTION NO. 6

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to the Alaska Power Authority, the Phase I environmental, economic, social and engineering studies of the Susitna Hydroelectric Project, and the incurring of indebtedness for Phase I.

BE IT RESOLVED BY THE LEGISLATURE OF THE STATE OF ALASKA:

WHEREAS the Alaska Power Authority under AS 44.56.180 has submitted to the legislature and to the commissioner of commerce and economic development a statement outlining the status of the Susitna Hydroelectric Project and the Plan of Study outlining the necessary feasibility studies of the project which is planned to be designed, and may be acquired or constructed, by the United States under an agreement providing for ownership of the project by the authority; and

WHEREAS the Congress of the United States, on October 22, 1976, enacted P.L. 94-587, the Alaska Hydroelectric Power Development Act, which Act authorized the Secretary of the Army and the U.S. Army Corps of Engineers to participate in the Susitna Hydroelectric Project; and

WHEREAS the Phase I activities outlined delineate the environmental, economic, social, and engineering studies requisite to informed decision-making; and

WHEREAS the cost to be incurred during Phase I is now estimated to be $25,000,000, but may exceed that amount; and

WHEREAS it is considered to be in the best interests of the State of Alaska to proceed with Phase I of the project through the use of Alaska Power Authority sponsored financing; and

WHEREAS legislative approval of project construction is required if project feasibility and desirability result from the study process conducted under Phase I activities;

BE IT RESOLVED that, based on the plan outlined in the statement of the Alaska Power Authority to the legislature and to the commissioner of commerce and economic development, the legislature agrees to the incurring of indebtedness by the Alaska Power Authority in an amount necessary to finance the cost of the Phase I feasibility studies of the Susitna Hydroelectric Project, including interest; and be it

FURTHER RESOLVED that Phase I studies must provide for substantive public involvement throughout the study process; and be it

FURTHER RESOLVED that the Legislative Affairs Agency shall conduct or contract for an independent review, (in consultation with the Alaska Power Authority,) based on existing data, of the economic, financial, [biological and geophysical implications] of the proposed Susitna Hydroelectric Project, and shall report to the legislature by January 15, 1980.

?

fiscal note?

Add: The Corps of Engineers and the AkPA shall provide full cooperation to all studies conducted by the LAA

ROBERT W. RETHERFORD ASSOCIATES
CONSULTING ENGINEERS
TELEPHONE 344-2585
P. O. BOX 6410
ANCHORAGE, ALASKA 99502
TELEX: 626-380

26 JANUARY 1979

UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Anchorage District Office
4700 East 72nd Avenue
Anchorage, Ak 99507

RE: EAR-010-9035
AK-017-9025
2920/1791 (013)
REQUEST FOR PUBLIC COMMENT

SUBJECT: Application by the Alaska Power Authority to conduct a feasibility analysis of the proposed Susitna Hydroelectric Project and the environmental assessment of the proposed study activities.

Gentlemen:

I strongly urge immediate approval of the above subject application. I would further suggest that all means available to the BLM be used to facilitate the speedy evaluation of feasibility of the proposed hydroelectric project.

I remember making a similar endorsement, verbally in a public meeting a year or so ago, relating to earlier work on this continuing feasibility analysis. During all this process one gets the feeling that a considerable number of the participants do not appear to understand that there is a vital public interest in the determination of feasibility of the proposed project. On the contrary - there is an apparent desire that the hydroelectric proposal just go away. I do not believe this attitude represents a majority but it certainly deserves attention. I believe the government system is missing something in the assessment process. That "something" is perspective.

It seems to me that right out in front of the public there should be a clear, understandable statement of the reason for considering the action at all, such as the following:

The proposed action is being considered because credible showings have been made that indicate a substantial growing need for electrical energy that could be satisfied by the project that is the subject of the action. These credible showings also indicate that to produce equivalent electric energy the railbelt community systems would have to use other available energy resources as follows:

ELECTRIC ENERGY RESOURCE OF SUSITNA (USE 100 YEARS) - - - 700 BILLION Kwh
OTHER EQUIVALENT RESOURCE USE:
COAL - 585 MILLION TONS
(This would disturb about 18,000 to 20,000 acres of land)
or OIL - 1.5 BILLION BBLS.
(This is equivalent to about 1/6 of the Prudhoe Bay reserves)
or GAS - 11.3 TRILLION CU.FT.
(This is equivalent to about 1/2 of the Prudhoe Gas Field)

I believe that the foregoing statement and its figures are quite revealing as to the nature of the potential hydro-project to be studied. The figures are credible, too, and can be derived from several sources that have considered them in considerable depth.

Why can't this perspective be placed clearly out front so that the public as a whole may have a better chance to grasp the significance of the proposed action? I can't help but think that a better perspective might also develop as to the process of review itself.

Let's get on with the feasibility analysis and let's level with the public on what it's all about!!

Robert W. Retherford

ROBERT W. RETHERFORD

By:
Introduced; Feb. 16, 1979

RESOLUTION NO. A/F 79-1

A RESOLUTION REGARDING FUNDING FOR THE SUSITNA DAM PROJECT

WHEREAS, the energy supply for the entire railbelt area will be seriously deficient during the next 20 years;

WHEREAS, the Susitna Dam project is an integral part of the solution for the above problem;

WHEREAS, the project is viable but will take several years to complete;

WHEREAS, timely funding is now necessary to keep the project on schedule;

NOW, THEREFORE, BE IT RESOLVED, by those attending the Joint Anchorage-Fairbanks local government elected officials conference, Anchorage, Alaska as follows:

That the State and Federal Governments appropriate and expend the necessary funds to keep the project on schedule, and that Congress seek funding for and expedite the project.

PASSED AND APPROVED BY THE FAIRBANKS CITY COUNCIL, FAIRBANKS NORTH STAR BOROUGH, AND THE ANCHORAGE MUNICIPAL ASSEMBLY THIS 16th DAY OF February ,1979.

/s/ William R. Wood
Mayor, City of Fairbanks

/s/ John A. Carlson
Chairman, Fairbanks Northstar Borough

/s/ George M. Sullivan
Mayor, Municipality of Anchorage

/s/ Ernest W. Brannon
Chairman, Assembly

ATTEST:

/s/ Phyllis Eileen Banks
Clerk, (Acting) Municipality of Anchorage

Susitna

① / App. LA for critique of study — amount? language?

$300,000 lodge to 1/80 — access to Corporation

intent: to be used when other study gets underway

extend deadline / see HB 736 // When will critique be done — after or during

Questions — Quarterly reports from

① Power projections — oversupply? — mandated overbuilding

app. 1500 MW 1990

Demand ⟺ price elasticity (sensitivity) Manipulable

② Costs — of project | have to sell below costs

to users during const. | low fixed costs

Reserves

③ Alternatives — small-scale hydro

gas

coal

④ Wild & Scenic Rivers Withdrawals (proposed) — 4 types of expenditure

inflation from 6 3 to 8 million

25 to 40 million

Leg. Resolve #45

⑤ Seismic Data

Council on Science & Technology

Subsidies

Susitna

JSER Electric Power in AK 1976-1995
for House Finance 1976

see Jim Rhode

Anchorage growth rate 9% - 16%

Hydro must be operated at full capacity to be efficient

price of coal and gas

1-6 Susitna Project will not be economical unless AK consumers are relieved of debt service.
federal ownership must cost effective

WHILE IN SESSION:
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FAIRBANKS, ALASKA 99708
(907)456-2037

BRIAN ROGERS
Alaska State Legislature

Feb. 25, 1979

Office of the Commissioner
Dept. of Fish and Game

Could you please send me information on the following questions?

1. The effect of the Susitna Hydroelectric Project on the Nelchina moose and caribou herds.

2. Figures describing the relative importance of the the moose and caribou harvests (take?) in this area. (eg, % of total harvest)

3. The effect of the Susitna Project on the Cook Inlet Commercial and Sport Salmon Fishery.

I realize that some of this information may best be found in existing studies; if so, please feel free to refer me to those works.

Thank you. I would like to have the information as soon as possible.

Mark Wittow

Mark Wittow
Aide to Representative
Brian Rogers

Nancy Lord has this material.
Main problem - # differences in proposals

By Senator Gravel for Leg. Ltr

The state agreed to put up the $100,000. To have that money authorized and appropriated by the Congress would have delayed the project a year.

The clean-up language is part of this year's omnibus water bill, now reported to the Senate by the Environment and Public Works Committee.

In a word, the detailed Phase I study, meant to enable the Corps to give a firm recommendation for or against the Susitna project, is on its way. What remains to be done is to secure the passage of the clean-up language; finish the Plan of Study and pay for it; appropriate the first $6 million of the $25 million revolving fund, needed to guarantee the state's bonds; secure a resolution from the state legislature authorizing the sale of the bonds, and sell the bonds. The Corps says that if it begins next spring, Phase I recommendations can be completed by 1980.

One other facet remains. My original legislation provided for thorough independent critique of each of the segments of the Corps' Phase I report: engineering and design, environmental impact statement, and cost/benefit analysis. This provision was inadvertantly omitted by the House-Senate conferees, and I was unable to have it reinstated in this year's omnibus bill. It is my hope that the state power authority would provide for such an independent critique of the Corps' work.

ADVANTAGES

The Hydroelectric Power Development Act was originally conceived out of necessity: we simply needed an alternative to the traditional financing method, because it was clear the Susitna project could not be financed that way. As it was developed and refined, however, we recognized a number of unexpected advantages that come from the alternative financing method.

A great hydroelectric project could be completed in ten years, not 30 or 40. Not only did this mean power on line more quickly, but it meant lower construction costs. Even the higher cost of Wall Street bonds, as opposed to federal money, would be more than counterbalanced by the savings effected by an optimum construction schedule.

from Gravel's bill

(f) Notwithstanding any other provision of this section, the total authorization to carry out this section shall not exceed $25,000,000.

SEC. 126. The Secretary of the Army, acting through the Chief of Engineers, is authorized and directed to undertake the advanced engineering and design for a flood control project at Milton, Pennsylvania, including, but not limited to, final construction plans at a cost not to exceed $2,500,000.

TITLE II—HYDROELECTRIC POWER DEVELOPMENT FUND

SEC. 201. Section 203 of the Water Resources Development Act of 1976 (Public Law 94–587) is amended to read as follows:

"SEC. 203. (a)(1) The Congress finds that the expeditious development of hydroelectric power generating facilities that are environmentally sound to assist the Nation in meeting existing and future energy demands is in the national interest.

"(2) The Congress therefore declares that the expertise of the Chief of Engineers can and should be utilized, in accordance with this section, for the benefit of local public bodies in the development of projects in any case where the Secretary of the Army determines that 90 per centum or more of the benefits of the project are attributable to hydroelectric power generation when the project is fully operational.

"(b) There is hereby established in the Treasury of the United States a Hydroelectric Power Development Fund (hereafter in this section referred to as the 'fund') to be and remain available for expenditures authorized by this section. The fund shall consist of (1) repayments by non-Federal public authorities of expenditures made from the fund, (2) any appropriations made to the fund, and (3) interest on moneys in the fund invested in accordance with subsection (d).

"(c) There is authorized to be appropriated for deposit in the fund established by subsection (b) of this section the sum of $25,000,000.

"(d)(1) If the Secretary of the Army determines that moneys in the fund are in excess of current needs, he may request the investment of such amounts as he deems advisable by the Secretary of the Treasury in direct, general obligations of, or obligations guaranteed as to both principal and interest by, the United States.

"(2) With the approval of the Secretary of the Treasury, the Secretary of the Army may deposit moneys of the fund in any Federal Reserve bank or other depository for funds of the United States, or in such other banks and financial institutions and under such terms and conditions as the Secretary of the Army and the Secretary of the Treasury may mutually agree.

"(e)(1) The Secretary of the Army is authorized, for any project that meets the requirements of subsection (a)(2) of this section, to

obligate moneys in the fund to pay for, or reimburse expenditures for, the cost of the phase I design memorandum made by a non-Federal public authority pursuant to this subsection. The Secretary of the Army is authorized to enter into an agreement with a non-Federal public authority to pay from the fund the cost to such non-Federal authority of preparing a phase I design memorandum on condition that such non-Federal authority repay such cost to the fund if (A) the phase I design memorandum report demonstrates the feasibility of constructing the project, and (B) the non-Federal authority within three years of the date of completion of the report, is either able to borrow money for construction costs based upon the security of the project or its revenues or actually commences construction of such project. If either of the conditions in clause (A) or (B) is not met, such costs shall be borne by the United States and the report on such project shall be submitted to Congress. The Secretary of the Army is also authorized to accept funds from a non-Federal authority for costs incurred for preparing phase I design memorandum if the Secretary of the Army first agrees with the non-Federal public authority to reimburse such costs from the fund (i) if the report demonstrates infeasibility of the project, or (ii) if the report is feasible, the non-Federal public authority is not able to borrow money to pay construction costs of the project, including the costs of the phase I design memorandum, based on the security of the project or its rev-

enues within three years of the completion of the phase I design memorandum. Payments by the Secretary of the Army from the fund shall be subject to appropriations acts. Payments by the Secretary of the Army under this subsection for phase I reimbursement shall include reimbursement of any interest expense of the non-Federal public authority resulting from bonds or notes such authority has issued to finance the phase I design memorandum and for any other expenses normally associated with the issuance and administration of revenue bond and note financings. Failure to complete a phase I report being prepared in accordance with the provisions of this subsection within a reasonable time in accordance with the schedule fixed in the phase I design memorandum agreement entered into by the Secretary of the Army with a non-Federal public authority due to Federal actions or inactions not primarily occasioned by the actions or inactions of the non-Federal public authority, including, but not limited to, Federal inaction in failing to appropriate at any time amounts necessary to reimburse such costs and expenses in accordance with the schedule fixed in the phase I design memorandum agreement, shall also constitute a determination that such report demonstrates the project is infeasible for purposes of this subsection except that if such project is constructed within five years of the date of such determination of infeasibility, the non-Federal authority shall repay to the fund all phase I costs. The Secretary of the Army shall

Needs appropriations bill

hold and apply any moneys in the fund available for reimbursement of the phase I costs of a particular project of a non-Federal public authority for which the Secretary of the Army has expended non-Federal funds, in accordance with the terms of a phase I design memorandum agreement entered into by the Secretary of the Army with the non-Federal public authority for the benefit of the holders of bonds or notes issued to provide such non-Federal funds. The Secretary of the Army shall transmit a copy of a completed phase I report, including a proposed agreement between the Corps of Engineers and the non-Federal public authority setting forth the terms and conditions for construction of the project, in accordance with the provisions of this section, to Congress and to the non-Federal public authority, not later than thirty days after the date of completion of the report. If the proposed agreement for construction of the project is entered into and approved pursuant to subsection (g) within two years of completion of the favorable report, the project shall be constructed in accordance with subsection (g) if the non-Federal public authority is able to borrow money to pay construction costs of the project, including the costs of the phase I design memorandum, based on the agreement and the security of the project or its revenues within three years after completion of the favorable report. The Governors of the States or their designee may use the phase I design memorandum report prepared in accordance with the provi-

sions of this subsection as they determine necessary to undertake construction of a project by a non-Federal public authority. The United States shall not be liable for the payment of any damages resulting from a non-Federal authority's use of the phase I report and the construction of any project by a non-Federal public authority in connection therewith, other than damages due to negligence of the United States.

"(f) The Secretary of the Army, in accordance with a contract between the non-Federal public authority and the Secretary of the Army, is authorized to construct projects eligible under subsection (a)(2) of this section, including engineering and design, land acquisition, site development, and offsite improvements necessary for construction.

"(g)(1) Prior to initiating any construction work under the authority of this section, the agreement submitted to Congress in accordance with subsection (e) must be approved by resolution of the Committee on Environment and Public Works of the Senate and of the Committee on Public Works and Transportation of the House of Representatives. The non-Federal authority shall pay the full anticipated costs of constructing the project determined by the agreement at the time such costs are incurred, together with normal contingencies and related administrative expenses of the Secretary of the Army and such payments shall be held by the Secretary of the Army for pay-

ment of obligations incurred by the Secretary on a project for construction under this section.

"(2)(A) The United States shall pay all costs over the anticipated costs fixed in the agreement with the non-Federal public authority, if such costs are (i) occasioned by acts of nature, (ii) occasioned by failure on the part of the Secretary to adhere to the agreed schedule of work or a failure of design, or (iii) are necessary to be paid by the United States to permit operation of the project in accordance with the initial determination of feasibility. Payments by the Secretary of such costs shall be subject to appropriations Acts.

"(B) Any Federal funds paid under subparagraph (A) of this paragraph shall be repaid to the Treasury with interest by the non-Federal public authority from revenues received from the sale of power. Payments shall commence following retirement of all bonds issued by the non-Federal public authority for the project. Interest payable under this subparagraph shall be at the rate the Federal Government must pay on such obligations at the time of payment pursuant to such subparagraph (A).

"(h) As used in this section the term 'Secretary' means the Secretary of the Army, acting through the Chief of Engineers.

"(i) This section may be cited as the 'Hydroelectric Power Development Act of 1979'".

For Terry Reichardt

STATE OF ALASKA

JAY S. HAMMOND, GOVER

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER
SUBPORT BUILDING
JUNEAU 99801

March 30, 1979

Ms. Suzanne Weller
Trustees for Alaska
835 "D" Street #202
Anchorage, Alaska 99501

Dear Ms. Weller:

I have enclosed two documents which should largely answer the questions you posed in your letter of March 12. Our comments on your questions are summarized below.

Question:

1. How the Department of Fish and Game plans to cooperate with the Corps of Engineers, the U.S. Fish & Wildlife Service, and the Alaska Power Authority in coordinating studies to be done, and goals to be accomplished during the feasibility study?

Answer: The Department of Fish and Game hopes to insure that the biological studies proposed in the June 1978 Phase I Plan of Study (POS) for the Susitna Hydro Project are carried out. We will be coordinating our activities with each of the above mentioned and other agencies in an attempt to insure that all studies outlined in the POS are conducted and all requirements of State and Federal law are satisfied.

2. What sorts of studies are needed before the feasibility of the dam, from the viewpoint of its effects on fish and wildlife, can be determined?

Answer: The biological investigations proposed in the June 1978 POS identify the basic biological investigations which we believe are necessary and required to assess the feasibility of the Susitna Hydro Project.

a. How much time will be needed to complete the studies? This time estimate should include study planning and analysis.

b. How much money will be required to conduct the studies? If possible, this should be broken down into dollar amounts needed for each year of study?

Answer (a & b): Please refer to the enclosed briefing document entitled "Susitna Hydro Biological Investigations." It includes a commentary on the budgets proposed by ADF&G for the full term 46 month feasibility investigations of the Phase I POS and our views on the need for a five year study in lieu of the shorter, 46 month investigation.

3. In light of past studies conducted in the area, what is the Department's current view regarding potential impacts of the proposed project, on fish and wildlife in the area?

Answer: Please refer to the appropriate section of the "Susitna Hydro Biological Investigations" briefing document and our 1978 report to the U.S. Fish and Wildlife Service, "Preliminary Environmental Assessment of Hydroelectric Development on the Susitna River."

The Department of Fish and Game appreciates your interest in the proposed Susitna Hydro biological investigations. If you have further questions regarding our involvement in the feasibility studies, please contact Thomas Trent, Regional Supervisor of the Habitat Protection Section in Anchorage, telephone 344-0541, extension 133.

Thank you for your inquiry on this matter. I hope this material will prove useful to you.

Sincerely,

Ronald O. Skoog
Commissioner

cc: T. Trent

ALASKA

REVIEW OF

BUSINESS AND ECONOMIC

CONDITIONS

UNIVERSITY OF ALASKA, INSTITUTE OF SOCIAL AND ECONOMIC RESEARCH, JUNE 1977, Vol. XIV, No. 2

ALASKA ELECTRIC POWER REQUIREMENTS

A REVIEW AND PROJECTION

INTRODUCTION

Strong growth of Alaska's economy is causing demand for electric power in the state to grow approximately 12 percent annually, nearly double the historic national average. Meeting this demand in a timely manner, so that a lack of electricity does not act as a brake on economic development, will be a major concern in Alaska for many years to come. At the same time, however, planners, in attempting to meet this demand, must avoid building more power capacity than the future requires, since this could result in an unnecessary waste of capital and resources.

The danger of ending up with too little or too much electrical power capacity emphasizes the need for and the value of properly assessing and projecting electrical demand. Such projections are also important and necessary because of the several years lead time required to efficiently increase generating capacity.

Projecting future electrical demand is a complicated task that requires consideration of many factors. Researchers must look far into the future and attempt to project the rate of economic growth and related population growth for which to provide electrical power. However, economic growth in Alaska will, to a large extent, depend on the level of future petroleum exploration and development, activities that are subject to a large amount of uncertainty. Therefore, before the economist can forecast electrical demand growth, he must first define the limits of this potential petroleum activity and determine how it will affect economic and population growth.

To overcome the complications involved in projecting electrical demand, ISER researchers used a methodology that allows for variability in both the rate of economic growth in Alaska as well as the rate of use by individual customers. In reporting the results of these efforts, this *Review* looks first at recent electrical use trends in Alaska and, second, presents consistent sets of regional and statewide projections of electrical demand through 1995.

The economic computer model used to make the projections presented in this *Review* was developed as part of the Man in the Arctic Program. Funded by the National Science Foundation and the State of Alaska, MAP is directed toward the identification, comparison, and forecasting of the social and economic effects of energy development in Alaska. For a comprehensive description of MAP, see David T. Kresge, "Alaska Growth to 1990," *Alaska Review of Business and Economic Conditions*, 13:1 (January 1976).

ALASKA REVIEW OF BUSINESS AND ECONOMIC CONDITIONS

VOL. XIV, No. 2
June 1977

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HISTORICAL OVERVIEW

Four basic sources supply Alaska's electrical power: (1) private industry, (2) the military, (3) home generators, and (4) utilities. In 1975, the generating capacities of these four sources were distributed as follows:

- Industry—108 megawatts (mw)
- Military—218 mw
- Private home generators (no figures)
- Utilities—738 mw

The first two of these, industrial and military electrical power, are of little interest to us here since they are essentially independent of state population and income levels. And while privately generated power for home use is important because of incomplete utility coverage, its use is declining, and existing programs of rural electrification will continue this trend. Therefore, our primary concern is with the remaining and largest component of electrical power in the state, that generated by utilities. In 1970, approximately 87 percent of Alaska households were connected to electric utilities. Those not connected included villages, households with access to electricity but no desire to consume, and households isolated from any power source or community.

Utility Generation

Utilities presently provide the largest percentage of electricity generated in the state. And, because military requirements will not expand appreciably and population increases will be concentrated in urban areas, utilities in the future are expected to supply an even larger proportion of the state's electricity.

Historic growth rates in electric power sales for the largest utilities in the state, calculated for the period 1965 through 1974, are shown in Table 1. In all regions except the Southeast (see Figure 1), growth has exceeded the long-run national average of 7 percent annually. Individual utilities have experienced much more rapid growth. Of the state's largest utilities, Golden Valley Electric Association in Fairbanks grew most rapidly, in excess of 20 percent annually.

Differences in growth rates of electricity use are only partially explained by differences in the rates of population increase. In addition, the number of electric hookups per 1,000 persons, or hookup saturation, has also been increasing, and consumption per customer has been increasing at different rates in different regions. Hookup saturation percentages for 1974 were:

Anchorage	31.1
Southcentral	32.7
Fairbanks	28.0
Southeast	24.9

Table 2 shows the increase by region in numbers of customers and the average annual consumption per customer in the residential sector; Table 3 gives the same information for the commercial and industrial sectors.

The different consumption levels for electricity vary not only across regions but also from community to community. This is shown in Table 4 for residential customers. In 1974, average sales per

Figure 1. Seven Alaska Geographic Regions

Table 1

Historic Growth Rates of Sales to Final Consumers

Alaska Electric Utilities, 1965-1974

Map Regions and Census Divisions	Electric Utility	Annual Growth Rate (%)	1974 Total KWH Sales to Final Consumers
Region I			(Thousands)
Northwest Alaska			
Kobuk	Kotzebue Electric Assn.	8.90	4,859
Nome	Nome Light & Power	8.57	8,921
	Matanuska Electric Assn. (Unalakleet)	6.39	1,398
	Average	7.86	
Region II			
Southwest Alaska			
Bethel	Bethel Utilities Corp.	21.36	11,948
Bristol Bay	Nushagak Electric Coop. (Dillingham)	9.80	3,565
Bristol Bay Bor.	Naknek Electric Assn.	8.17	4,864*
Kuskokwim	McGrath Light & Power	1.11	1,102
	Average	11.49	
Region III			
Southeast Alaska			
Haines	Haines Light & Power Co.		
Juneau	Glacier Highway Electric (Auke Bay)	7.85	5,352
	Alaska Electric Light & Power (Juneau)	7.03	71,482
Ketchikan	City of Ketchikan Public Utilities	5.66	66,628*
Outer Ketchikan	Metlakatla Power & Light	5.31	16,435
Prince of Wales	Alaska Power & Telephone Co. (Craig)	14.60	1,054
	Alaska Power & Telephone Co. (Hydaburg)	23.27	466
Sitka	City & Borough of Sitka	4.45	29,467
Skagway-Yakutat	Pelican Utility Co.	1.10	Not available
	Alaska Power & Telephone Co. (Skagway)	10.20	3,708
Wrangell-Petersburg	Petersburg Municipal Light & Power	9.25	15,970
	Wrangell Municipal Power Plant	6.75	9,076
	Average	6.54	

(Continued, next page)

Table 1 (Cont.)

Map Regions and Census Divisions	Electric Utility	Annual Growth Rate (%)	1974 Total KWH Sales to Final Consumers
Region IV			
Southcentral Alaska			
Cordova-McCarthy	Cordova Public Utilities	9.36	9,577
Kenai-Cook Inlet	Homer Electric Assn. (Homer)	16.47	92,223
	Homer Electric Assn. (Kenai)	11.36	20,223
	Homer Electric Assn. (Port Graham)	34.47	217
	Homer Electric Assn. (Seldovia)	13.14	3,600
Kodiak	Kodiak Electric Assn. (Kodiak)	8.78	36,528
	Kodiak Electric Assn. (Port Lions)	10.20	1,580
Matanuska-Susitna	Matanuska Electric Assn. (Palmer)	12.43	92,073
	Matanuska Electric Assn. (Talketna)	17.09	plant closed
Seward	Seward Electric System	10.14	14,152
Valdez-Chitina-Whittier	Copper Valley Electric Assn. (Glenallen)	6.83	5,576
	Copper Valley Electric Assn. (Valdez)	12.81	8,464
	Average	11.92	
Region V			
Anchorage			
Anchorage	Anchorage Municipal Light & Power	12.05	350,302
	Chugach Electric Assn.	14.31	516,830
	Average	12.53	
Region VI			
Interior	(No reporting utilities)		
Region VII			
Fairbanks			
Fairbanks	Fairbanks Municipal Utilities	7.06	88,135
	Golden Valley Electric Assn.	20.18	230,618
	University of Alaska	Not available	10,212
Southeast Fairbanks	Alaska Power & Telephone Co. (Tok)	8.69	2,996
	Average	14.11	

SOURCE: FPC data for the period 1965-1974.
*1973 total

customer varied from a low of 1,381 kilowatt hours (kwh) in Fort Yukon to 21,109 kwh in Metlakatla. The statewide average of 8,860 kwh is consistent with the past trend in Alaskan residential usage, which is between 5 and 10 percent greater than the national average.

Factors Affecting Consumption Levels

Regression analysis indicates that electricity price, income, and average temperatures are important determinants of the average level of residential electricity consumption in Alaska.[1] "Heating degree days" are commonly used to indicate the severity of the weather. One heating degree day is recorded each day for every degree Fahrenheit (F.)[2] by which the temperature falls below 65 degrees F. Heating degree days for Alaskan communities are shown in Table 5.

Residential prices for electricity, which are generally a decreasing function of the quantity consumed, show a large variation from community to community within the state. As shown by Table 6, the 1975 cost of 500 kwh per month varied between $13.00 in Anchorage and $131.94 in Deadhorse (2.6 cents versus 26.4 cents for one kwh).

Compared to prices nationally, the average for Alaska is high, but during the decade of the sixties, it fell in real terms and also relatively. The Alaska average in 1960 was 4.32 cents/kwh, while nationally, it was 2.47 cents/kwh. By 1972, the Alaska average was 3.33 cents/kwh. To a large extent, this downward trend reflects the price of electricity in Anchorage, since more than half of the state's electrical consumption occurs in the Anchorage area.

More recently, the downward trend in prices has reversed as a result of increasing costs of fuel, construction, and capital. Changes in fuel costs can dramatically affect the cost of electricity, but these cost changes are not rapidly translated into rate changes. A temporary expedient, which avoids the necessity of a rate hearing, is the automatic fuel cost rate adjustment surcharge, which is added to the base rate as fuel costs increase. Table 7 shows the adjustments on file with the Alaska Public Utilities Commission as of October 1, 1975. These adjustments change monthly.

Prices for commercial and industrial consumers, when different from residential rates, are generally lower and trends have tended to follow those of the residential sector.

ELECTRICAL DEMAND PROJECTIONS

Economic Growth

Because growth in electricity requirements will closely follow growth in the state's economy, electrical demand projections must necessarily be based on economic projections. Institute researchers used the MAP regional econometric model (see Appendix 1) to obtain the economic projection results discussed below.

The MAP computer model (See box, page 1)

[1] Scott Goldsmith, "Future Electricity Requirements in Alaska," paper presented at the Western Economic Association Annual Meeting, San Francisco, June 17, 1976.

[2] In other words, if on a particular day, the temperature dropped to 30 degrees F., or 35 degrees below 65 degrees F., this would amount to 35 heating degree days.

Table 2

Average Annual Residential Electricity Use

Year	Southeast		Southcentral		Anchorage		Fairbanks	
	Number of Customers	Average Annual KWH per Customer	Number of Customers	Average Annual KWH per Customer	Number of Customers	Average Annual KWH per Customer	Number of Customers	Average Annual KWH per Customer
65	9,050	6,067	7,336	4,946	22,110	6,614	8,183	4,804
66	9,291	6,309	6,677	5,726	23,003	7,110	8,170	5,712
67	9,354	6,472	7,792	5,453	23,931	7,246	8,574	6,055
68	9,314	6,865	8,698	5,719	27,437	6,977	9,344	6,569
69	9,570	7,121	9,278	6,187	30,079	7,112	10,023	7,672
70	9,877	7,459	10,800	6,401	33,159	7,641	10,756	8,418
71	10,419	7,593	11,467	7,287	35,056	8,555	11,184	9,515
72	10,995	7,719	11,899	7,773	38,817	8,817	11,487	10,529
73	11,677	7,472	12,617	8,175	39,915	9,273	11,825	11,233
74	11,940	7,623	14,507	8,029	43,453	9,106	13,261	11,597

Table 3

Average Annual Commercial-Industrial Electricity Use Per Customer

Year	Southeast Commercial		Southeast Industrial		Southcentral Commerical/Industrial	
	Number of Customers	Average Annual MWH Usage per Customer	Number of Customers	Average Annual MWH Usage per Customer	Number of Customers	Average Annual MWH Usage per Customer
65	1,608	20.345	*	*	1,575	35.594
66	1,662	21.227	*	*	1,399	41.924
67	1,650	21.932	*	*	1,559	40.880
68	1,657	22.749	*	*	1,703	49.342
69	1,704	22.700	*	*	1,687	58.618
70	1,761	25.117	57	457.912	2,447	49.412
71	1,783	26.515	54	522.870	2,331	56.280
72	1,857	27.607	89	322.101	2,403	54.420
73	1,943	29.440	52	549.442	2,636	54.961
74	1,359	28.852	13	1,401.385	2,839	53.583

Year	Anchorage Commercial/Industrial		Fairbanks Commercial/Industrial	
	Number of Customers	Average Annual MWH Usage per Customer	Number of Customers	Average Annual MWH Usage per Customer
65	3,035	46.997	1,318	25.181
66	3,105	51.790	1,467	23.910
67	3,195	56.794	1,452	25.363
68	3,488	56.865	1,469	33.665
69	3,793	58.475	1,579	35.269
70	4,093	63.260	1,717	62.087
71	4,245	70.804	1,772	69.268
72	4,652	75.654	1,800	69.773
73	4,815	84.714	1,883	73.167
74	5,132	85.395	2,073	71.449

*No customer figures available.

along with two sets of assumptions (limited and accelerated petroleum development) was used to generate two projections of the future level of economic activity in the state. These are not predictions of the level of any particular variable, because future levels for the basic variables cannot be known with certainty. Rather, they are projections which describe the general expected levels of activity, if petroleum development and other basic activities take a certain course.

Results from the two cases are presented in Table 8. Two factors primarily account for the rapid growth observed in both cases. The first is the continued expansion of the petroleum industry, which has had an annual average increase in real gross product of 17 percent since statehood. The second is the continuing important role of state and local government in the economy, stimulated by petroleum revenues.

In the limited case, annual population growth between 1974 and 1990 averages 3.8 percent, employment growth 4.3 percent, real wages and salaries 6.1 percent, and state and local government expenditures 12.2 percent. Accelerated development results in population growth of 4.8 percent, employment 5.2 percent, real wages and salaries 7.1 percent, and state and local government expenditures 13.7 percent.

Alaskan economic growth will be strong even in the limited development case, primarily because of

Table 4

1974 Residential Electricity Consumption by Region and Community

Map Region, Census Division	Utility Locations	(A) 1974 Residential Customers	(B) 1974 KWH Residential Sales by Utilities	(C) (B/A) Annual KWH Sales/Customers
Region I Northwest Alaska				
Barrow	Barrow	377	915,896	2,429
Kobuk	Kotzebue	369	1,553,676	4,210
Nome	Nome, Unalakleet	748	6,454,067	8,628
Region II Southwest Alaska				
Aleutian Islands		---	---	---
Bethel	Bethel	670	2,470,288	3,687
Bristol Bay Bor.	Naknek	190	980,821	5,162
Bristol Bay	Dillingham	301	1,200,571	3,989
Kuskokwim	McGrath	54	97,283	1,802
Wade Hampton		---	---	---
Region III Southeast Alaska				
Angoon		---	---	---
Haines	Haines	596	5,346,132	8,970
Juneau	Auke Bay, Juneau	5,266	35,392,244	6,721
Ketchikan	Ketchikan	3,569[a]	30,957,853[a]	8,674[a]
Outer Ketchikan	Metlakatla	326	6,881,403	21,109
Prince of Wales	Craig, Hydaburg	b	742,597	b
Sitka	Sitka	1,666	11,656,608	6,997
Skagway-Yakutat	Pelican, Skagway	b	1,205,185	b
Wrangell-Petersburg	Wrangell, Petersburg	1,532	9,482,975	6,190
Region IV Southcentral Alaska				
Cordova-McCarthy	Cordova	534	3,159,042	5,916
Kenai-Cook Inlet	Homer	2,023	14,494,954	7,165
Kodiak	Kodiak	1,774	10,596,414	5,973
Matanuska-Susitna	Palmer	1,087	5,940,733	5,465
Seward	Seward	785	4,664,360	5,942

(Continued, next page)

Table 4 (Cont.)

Map Region, Census Division	Utility Locations	1974 Residential Customers	1974 KWH Residential Sales by Utilities	(B/A) Annual KWH Sales/Customers
Valdez-Chitina-Whittier	Valdez	935	3,750,993	4,012
Region V Anchorage				
Anchorage	Anchorage	43,456	395,854,136	9,109
Region VI Interior				
Upper Yukon	Ft. Yukon	130	179,650	1,381
Yukon-Koyukuk	Manley Hot Springs	9	48,764	5,418
Region VII Fairbanks				
Fairbanks	Fairbanks	13,261	153,781,613	11,597
Southeast Fairbanks	Dot Lake, Tok	b	674,870	b
TOTAL		79,062	700,514,344	8,860

SOURCE: FPC reports and Alaska Public Utilities Commission Annual Reports.
[a]1973 figures
[b]Consumption figures not complete

the projected continued growth in the state and local government sectors. The two cases parallel one another closely until 1980, at which time the accelerated development case begins expanding much more rapidly.

Tables 9 and 10 present the projection results for population, employment, and real wages and salaries (which is closely related to personal income) on a regional basis for the two cases. The impact of development does not fall evenly across the regions of the state. A basic indicator of this is the difference in population growth rates among the regions and between cases as shown in Table 11.

In comparison with the projected rate of population increase in the United States of under 1 percent annually, these figures indicate significant population growth.

Electricity Demand Projection Results

Four different sets of electricity-use assumptions (use-intensity scenarios) described in Appendix 2 were developed and combined with the two sets of economic projections (see Tables 9 and 10) to yield, for each region of the state, eight separate projections of utility electricity requirements through 1995. The different use-intensity scenarios reflect different assumptions regarding the future relative attractiveness of electricity as a source of energy. The highest and lowest of these projected requirements for each region were combined to yield the range of values for the state as a whole as shown in Table 12.

One can see in Table 12 that under the most restrictive assumptions regarding limited economic growth and electricity use, the long-run growth rate of electricity demand in Alaska is projected to exceed 8 percent. At the other extreme of accelerated economic development and continued historical rates of increase in electricity consumption, the long-run growth rate for electricity demand approaches 14 percent. Whatever the long-range growth rate actually turns out to be, Alaska requirements are expected to

be considerably higher than the historic national growth rate of 7 percent.

The larger component of variation among the different projections is in the intensity of electricity use rather than in the assumptions regarding economic growth. The long-run growth rate varies between 9.0 percent and 12.9 percent among the use-intensity scenarios within the accelerated economic development case, but only between 11.2 percent and 12.9 percent between economic development scenarios in the highest use-intensity case. The primary reason for this seems to be that the economic growth of the state is projected to largely depend upon state government activity which will grow steadily over the period under either economic growth assumption. This underscores the importance of the average consumption of electricity by the individual in the determination of total demand in a rapidly growing region. Electricity consumption occurs through use of appliances, the purchase of which is a long-term investment. A rapidly growing population means a rapid growth in appliance stocks not only in the residential but the commercial and industrial sectors as well. Type of appliance (gas, oil, or electricity) decisions by these new customers will strongly influence the growth rate of electricity use.

Table 5
Heating Degree Days for Alaskan Communities
20 Year Averages (1955-1974)

	Heating Degree Days (Fahrenheit)
Anchorage	10,960
Annette (S.E.)	7,054
Barrow	20,426
Barter Island (Int.)	20,197
Bethel	13,372
Bettles (Int.)	16,107
Cold Bay	9,885
Fairbanks	14,439
Gulkana	14,250
Homer	10,443
Juneau	9,184
King Salmon (S.W.)	11,701
Kodiak	8,890
Kotzebue (N.W.)	16,171
McGrath (S.W.)	14,667
Nome (N.W.)	14,512
St. Paul Island	11,205
Shemya (S.W.)	9,574
Summit (S.C.)	14,603
Talkeetna	12,024
Unalakleet (N.W.)	14,162
Yakutat (S.E.)	9,711

SOURCE: U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, Environmental Data Service, "Local Climatological Data," various issues, Asheville, N.C., 1974.

A regional comparison of projected electricity requirements is shown in Table 13. This comparison shows that not only is present electricity consumption concentrated in the railbelt area of the state (Anchorage, Southcentral, and Fairbanks regions), but future growth will further concentrate electricity use in that part of the state.

Some indication of the magnitude of electricity requirements for the railbelt area is provided by a comparison of peak demand, measured in megawatts, with the installed capacity of 1,568 megawatts, which would be available from the Devil's Canyon Hydroelectric project proposed for the Susitna River by the Corps of Engineers. Total requirements in the railbelt would exceed this amount by 1995 in even the lowest growth case.

Growth of electricity requirements in Anchorage, which has the most diversified economy in the state, will be most rapid in the long run and relatively insensitive to the rate of economic development statewide. Southcentral growth will be most rapid in the short run and will moderate somewhat over the longer period. The projected range of variability for Fairbanks is larger due to the larger relative impact of direct petroleum-related activity in that community. By contrast, growth in the Southeast is the most stable in the state, showing little variation among projections. This stability largely arises from the lower population growth rate projected for that region. In the other regions of the state, projected growth rates are highly variable, but are below the statewide average, which is strongly influenced by Anchorage. Data for the utilities in these regions are sparse; some communities are still in the process of becoming electrified, so that the largest variation in projections is to be expected for those regions.

Detailed projections of sales and peak demand by region under each set of assumptions are presented in Tables 14 and 15. In addition, underlying assumptions regarding the ratio of consumers to population in each case as well as the average rate of consumption are presented in Table 16 for those regions where the data is available.

Analysis of Table 16 provides some additional insight into the plausibility of each set of projections.

Table 6

Typical Monthly Bills for Residential Electricity

Map Region, Census Division	Utility Location	Minimum Bill ($)	50 KWH Bill ($)	Price per KWH (cents)	100 KWH Bill ($)	Price per KWH (cents)	500 KWH Bill ($)	Price per KWH (cents)
Region I								
Northwest Alaska								
Barrow	Barrow	10.00	10.00	20.0	15.00	15.0	66.00	13.2
Kobuk	Kotzebue	10.00	10.00	20.0	17.50	17.5	67.50	13.5
Nome	Nome	5.00	5.00	10.0	10.00	10.0	50.00	10.0
	Teller		10.00	20.0	20.00	20.0	100.00	20.0
	Unalakleet	10.00	12.00	24.0	18.00	18.0	54.00	10.8
Region II								
Southwest Alaska								
Aleutian Islands	Cold Bay	10.00	10.00	20.0	10.00	10.0	41.00	8.2
Bethel	Bethel	5.00	6.00	12.0	11.00	11.0	44.75	9.0
Bristol Bay	Dillingham	14.00	14.00	28.0	14.00	14.0	50.00	10.0
	Egegik	7.50	7.50	15.0	13.50	13.5	44.50	8.9
Bristol Bay	King Salmon	7.50	7.50	15.0	13.50	13.5	44.50	8.9
Borough	Naknek	7.50	7.50	15.0	13.50	13.5	44.50	8.9
Kuskokwim	Aniak	20.00	20.00	40.0	20.00	20.0	95.00	19.0
	McGrath	5.00	6.75	13.5	12.50	12.5	57.00	11.4
Region III								
Southeast Alaska								
Haines	Haines	5.50	5.50	11.0	7.50	7.5	23.50	4.7
Juneau	Auke Bay	10.00	10.00	20.0	10.00	10.0	35.00	7.0
	Juneau	4.00	4.00	8.0	5.00	5.0	20.80	4.2
Ketchikan	Ketchikan	4.50	6.00	12.0	7.50	7.5	18.25	3.7
Outer Ketchikan	Metlakatla*							
Prince of Wales	Craig	3.30	5.30	10.6	9.80	9.8	37.80	7.6
	Hydaburg	3.30	5.30	10.6	9.80	9.8	37.80	7.6
Sitka	Sitka	5.00	5.00	10.0	5.00	5.0	19.00	3.8
Skagway-	Hoonah	--	5.00	10.0	10.00	10.0	50.00	10.0
Yakutat	Pelican	2.50	3.75	7.5	6.00	6.0	26.00	5.2
	Skagway	3.50	5.00	10.0	10.00	10.0	31.50	6.3
	Yakutat	5.00	5.00	10.0	10.00	10.0	40.00	8.0
Wrangell-	Petersburg*							
Petersburg	Wrangell	5.50	5.50	11.0	9.35	9.4	24.75	5.0
Region IV								
Southcentral Alaska								
Cordova-McCarthy	Cordova	4.00	6.50	13.0	9.50	9.5	27.50	5.5
Kenai-Cook	Homer	7.50	7.50	15.0	8.00	8.0	25.00	5.0
Inlet	Kenai	5.00	5.00	10.0	7.50	7.5	23.50	4.7
	Port Graham*							
	Seldovia	7.50	7.50	15.0	11.50	11.5	33.50	6.7
	Soldotna	7.50	7.50	15.0	8.00	8.0	25.00	5.0
Kodiak	Kodiak	3.00	5.50	11.0	9.13	9.1	24.63	4.9
	Port Lions	9.00	7.00	14.0	14.00	14.0	44.00	8.8

(Continued, next page)

Table 6 (Cont.)

Map Region, Census Division	Utility Location	Minimum Bill ($)	50 KWH Bill ($)	Price per KWH (cents)	100 KWH Bill ($)	Price per KWH (cents)	500 KWH Bill ($)	Price per KWH (cents)
Matanuska-Susitna	Palmer	9.00	9.00	18.0	9.00	9.0	31.25	6.3
Seward	Seward	6.00	7.80	15.6	12.30	12.3	23.30	4.7
Valdez-Chitina-Whittier	Chitina	--	7.50	15.0	15.00	15.0	75.00	15.0
	Glennallen	7.50	8.00	16.0	13.50	13.5	45.50	9.1
	Valdez	5.00	5.00	10.0	9.75	9.8	41.75	8.4
	Paxson Lodge	5.00	8.00	16.0	13.50	13.5	53.50	10.7
Region V								
Anchorage								
Anchorage	Eagle River	9.00	9.00	18.0	9.00	9.0	31.25	6.3
	Municipal	2.00	2.75	5.5	4.25	4.3	13.00	2.6
	Chugach	2.00	2.75	5.5	4.25	4.3	13.75	2.8
Region VI								
Interior								
Upper Yukon	Deadhorse	--	13.20	26.4	26.39	26.4	131.94	26.4
	Fort Yukon	3.00	12.50	25.0	25.00	25.0	85.00	17.0
Yukon-Koyukuk	Bettles	--	12.00	24.0	24.00	24.0	120.00	24.0
	Manley Hot Springs	10.00	12.50	25.0	25.00	25.0	125.00	25.0
	Nenana	7.00	7.00	14.0	13.00	13.0	61.00	12.2
	Tanana	7.80	7.80	15.6	13.00	13.0	61.00	12.2
Region VII								
Fairbanks								
Fairbanks	Municipal	1.80	4.00	8.0	7.50	7.5	22.50	4.5
	Golden Valley	10.00	10.00	20.0	10.00	10.0	37.96	7.6
Southeast Fairbanks	Delta Junction	10.00	10.00	20.0	10.00	10.0	30.38	6.1
	Dot Lake	--	7.50	15.0	15.00	15.0	63.00	12.6
	Northway	10.00	10.00	20.0	13.00	13.0	55.00	11.0
	Tok	7.50	7.50	15.0	13.00	13.0	53.50	10.7
Alaska Village Electric Cooperative (AVEC)		--	10.00	20.0	18.75	18.8	72.75	14.6

*Information not available.

SOURCE: Electric utility rate files, Alaska Public Utilities Commission, as of October 1975. These are the rates on file at the commission and do not include either interim rate increases or automatic fuel cost rate adjustments which increase actual prices paid. For utilities with more than one residential rate, the base rate without specific appliances was reported.

In particular, in the growth-as-usual use-intensity projections, the ratios of residential customers to population and average annual consumption continue to grow quite rapidly. The most striking example of this occurs in the Fairbanks region, where by 1990, assuming accelerated economic growth, average annual residential consumption exceeds 40,000 kwh per year. At present, the typical all-electric home in the Fairbanks area (including space heat) consumes approximately 40,000 kwh. Thus, the unlikely assumption implied for Fairbanks in the growth-as-usual case is that the entire housing stock will, by 1990, convert to all-electric appliances. Also during this period, the ratio of residential customers to population is projected to increase from 28 to over 37 percent. This implies either a drastic reduction in average family size or a substantial increase in the incidence of second homes.

Neither of these implied assumptions appears likely to the author. It seems, therefore, that the growth-as-usual assumptions should not be seriously considered as a possible future growth pattern in electricity consumption.

CONCLUSION

This paper has attempted to delineate the possible range of growth of electricity requirements for the state. The range is wide, both because of the uncertainty surrounding economic growth and also the uncertainty of response by future customers to variables affecting consumption rates. Within the broad range of growth possibilities, however, the variation seems to be between rapid growth of requirements and very rapid growth. Clearly, to adequately respond to this growth with an efficient investment strategy to develop necessary additional capacity is a challenging prospect, given the many options available to the state.

* * * *

Table 7

Automatic Fuel Cost Rate Adjustment Clause Surcharges as of October 1, 1975

Utility	Surcharge in cents/KWH
Aniak Power Company	2.89
Craig (AP&T)	2.06
Egegik (Naknek Electric Association)	4.5
Fort Yukon Utilities	1.082
Golden Valley Electric Association	.5973
Haines Light & Power	1.33
Homer Electric Association	1.32
Hydaburg (AP&T)	2.49
Juneau (AELP)	.48
Kodiak Electric Association	1.34
Kotzebue Electric Association	1.518
Matanuska Electric Association	1.74
Naknek Electric Association	1.5
Northern Commercial Company	1.87
Northern Power and Engineering	1.76
Northway Power and Light	1.63
Nushagak Electric	1.502
Skagway (AP&T)	.35
Tok (AP&T)	1.96
Yakutat Power Company	1.604

SOURCE: Alaska Public Utilities Commission

Table 8

MAP Projection Results for Selected Variables

	Limited Development	Accelerated Development
1974		
Population (x 1000)	350.7	350.7
Employment (x 1000)	159.9	159.9
Wages and Salaries (real millions of 1967 $)	973.9	973.9
Petroleum Production (thousand b/d)	200	200
State and Local Government Expenditures (nominal million $)	793.2	793.2
1980		
Population (x 1000)	456.9	471.4
Employment (x 1000)	219.7	229.2
Wages and Salaries (real millions of 1967 $)	1,506.9	1,586.3
Petroleum Production (thousand b/d)	2,066	2,066
State and Local Government Expenditures (nominal million $)	1,973.3	2,058.1
1985		
Population (x 1000)	547.9	614.8
Employment (x 1000)	265.4	300.9
Wages and Salaries (real millions of 1967 $)	1,970.0	2,260.8
Petroleum Production (thousand b/d)	3,033	4,930
State and Local Government Expenditures (nominal million $)	3,408.8	4,084.4
1990		
Population (x 1000)	641.3	738.0
Employment (x 1000)	312.7	361.4
Wages and Salaries (real millions of 1967 $)	2,506.2	2,919.2
Petroleum Production (thousand b/d)	3,597	7,299
State and Local Government Expenditures (nominal million $)	5,026.1	6,197.1

Table 9
MAP Model Economic Projection Values for Limited Development Case

Population

(Thousands of Persons)

Year	RGN 1	RGN 2	RGN 3	RGN 4	RGN 5	RGN 6	RGN 7	STATE
74	13.499	27.563	48.615	45.283	153.118	8.562	54.020	350.659
75	13.748	27.647	51.466	53.601	163.909	9.967	57.800	378.137
76	14.051	28.042	53.956	56.240	173.753	9.831	59.161	395.034
77	14.226	28.534	54.610	53.252	179.760	9.067	57.867	397.315
78	14.362	28.801	55.765	54.812	187.411	9.386	58.735	409.272
79	14.589	29.078	57.982	57.252	198.372	9.387	59.912	426.571
80	14.919	29.362	61.555	64.246	214.927	9.764	62.154	456.927
81	15.254	29.879	64.112	68.273	225.612	9.798	64.218	477.145
82	15.503	30.192	66.534	71.557	236.992	9.008	65.962	495.747
83	15.621	30.379	67.842	76.951	247.200	8.736	66.938	513.667
84	15.818	30.710	69.595	79.078	259.264	8.670	68.388	531.523
85	16.039	31.125	71.297	78.763	271.972	8.759	69.957	547.913
86	16.234	31.500	72.870	79.301	284.590	8.767	71.415	564.478
87	16.393	31.833	74.182	80.670	297.139	8.795	72.683	581.693
88	16.549	32.160	75.546	81.495	311.223	8.802	73.992	599.767
89	16.699	32.471	76.911	83.251	325.999	8.821	75.352	619.503
90	16.857	32.778	78.427	85.146	342.414	8.875	76.847	641.344

Employment

(Thousands of Persons)

74	4.085	10.654	24.627	17.929	72.475	5.344	24.772	159.886
75	4.471	11.183	27.006	21.492	79.244	8.687	27.542	179.625
56	4.723	11.567	28.624	22.490	84.200	8.279	28.294	188.177
77	4.682	11.626	28.482	20.964	85.874	6.236	26.932	184.796
78	4.766	11.829	29.138	21.502	89.515	6.830	27.336	190.916
79	5.003	12.210	30.709	22.487	95.351	6.862	28.099	200.720
80	5.446	12.830	33.521	25.427	104.854	7.872	29.760	219.712
81	5.693	13.237	35.040	26.847	109.713	7.800	30.781	229.111
82	5.990	13.705	36.848	28.191	115.906	6.125	31.933	238.696
83	6.159	14.036	37.891	30.396	121.570	5.634	32.629	248.313
84	6.344	14.392	39.056	31.173	127.680	5.476	33.449	257.569
85	6.495	14.714	39.999	30.865	133.607	5.546	34.186	265.412
86	6.639	15.036	40.906	30.933	139.613	5.488	34.904	273.520
87	6.755	15.334	41.659	31.851	145.664	5.477	35.531	281.771
88	6.879	15.649	42.477	31.570	152.579	5.439	36.207	290.799
89	7.020	15.997	43.360	32.189	160.037	5.438	36.968	301.010
90	7.185	16.376	44.394	32.883	168.476	5.515	37.849	312.677

Real Wages and Salaries

(Millions of Dollars)

74	24.9	56.5	150.5	102.5	441.1	48.1	150.2	973.9
75	27.7	60.9	168.8	130.3	493.5	82.5	174.9	1138.6
76	29.8	64.4	182.9	138.1	535.0	78.1	183.2	1211.5
77	30.2	66.0	185.9	128.1	556.1	54.4	175.1	1195.8
78	31.4	68.4	194.0	134.1	590.2	59.3	181.2	1258.5
79	33.5	72.1	208.7	142.9	640.0	59.4	190.0	1346.6
80	37.1	77.4	232.6	168.1	716.1	69.4	206.2	1506.9
81	39.5	81.5	247.9	180.6	761.6	69.2	218.0	1598.3
82	42.4	86.0	265.7	192.2	817.7	51.8	231.2	1687.0
83	44.4	89.7	278.4	212.7	871.1	47.2	241.1	1784.8
84	46.7	93.7	292.5	221.0	929.4	46.0	242.6	1881.9
85	48.8	97.6	305.3	220.3	987.2	47.2	263.6	1970.0
86	50.9	101.4	318.1	222.9	1046.8	47.0	274.7	2061.9
87	52.9	105.2	329.9	229.0	1107.9	47.5	285.4	2157.8
88	55.0	109.2	342.6	233.7	1176.7	47.6	296.7	2261.7
89	57.3	113.4	356.1	241.5	1251.0	48.2	309.1	2376.6
90	59.9	118.0	371.3	249.8	1334.6	49.5	323.1	2506.2

Table 10

MAP Model Economic Projection Values for Accelerated Development Case

Population

(Thousands of Persons)

Year	RGN 1	RGN 2	RGN 3	RGN 4	RGN 5	RGN 6	RGN 7	STATE
74	13.499	27.563	48.615	45.283	153.118	8.562	54.020	350.659
75	13.748	27.647	51.466	53.601	163.909	9.967	57.800	378.137
76	14.051	27.042	53.956	56.240	173.753	9.831	59.161	395.034
77	14.387	28.483	55.738	55.478	186.201	9.035	59.081	409.402
78	14.357	28.710	56.059	58.860	190.077	9.352	58.948	416.363
79	14.632	29.040	58.654	61.233	202.266	9.257	60.115	435.196
80	16.055	29.550	62.410	69.002	221.208	10.172	63.032	471.429
81	18.138	30.278	65.145	78.349	236.062	11.291	66.297	505.560
82	20.409	31.006	69.286	88.024	257.630	12.058	70.672	549.083
83	20.601	31.625	72.957	94.871	278.020	11.778	73.391	583.243
84	19.079	32.419	76.424	91.155	294.060	10.166	74.951	598.253
85	18.881	33.225	78.392	89.892	307.794	10.035	76.592	614.811
86	18.610	33.912	80.392	89.975	323.307	9.851	78.212	634.258
87	18.867	34.602	82.150	91.668	340.177	10.031	79.950	657.445
88	19.177	35.267	84.073	93.211	359.740	10.191	81.827	683.484
89	19.289	35.660	86.067	95.613	379.584	10.233	83.718	710.163
90	19.414	35.911	88.027	98.147	400.593	10.305	85.607	738.004

Employment

(Thousands of Persons)

74	4.085	10.654	24.627	17.929	72.475	5.344	24.772	159.886
75	4.471	11.183	27.006	21.492	79.244	8.687	27.542	179.625
76	4.723	11.567	28.624	22.490	84.200	8.279	28.294	188.177
77	5.009	11.995	30.439	22.119	90.473	6.408	28.133	194.575
78	4.835	11.906	29.547	23.213	91.439	6.868	27.660	195.467
79	5.114	12.336	31.373	24.169	97.903	6.682	28.403	205.981
80	6.743	13.147	34.226	27.378	108.429	8.935	30.392	229.249
81	9.326	13.746	35.777	30.844	115.221	11.838	32.079	248.830
82	13.009	14.590	38.613	34.597	126.224	14.241	34.710	275.983
83	13.358	15.430	41.278	37.319	136.987	13.274	36.429	294.075
84	10.514	16.289	43.509	35.614	144.590	8.455	37.114	296.114
85	9.845	16.871	44.248	34.670	149.853	7.845	37.586	300.916
86	9.242	17.526	45.288	34.444	156.764	7.273	38.252	308.797
87	9.470	18.274	46.233	34.896	164.570	7.542	39.062	320.047
88	9.811	19.080	47.393	35.344	174.012	7.804	40.037	333.481
89	9.906	19.558	48.695	36.172	183.844	7.838	41.096	347.108
90	10.031	19.838	49.998	37.061	194.348	7.948	42.176	361.399

Real Wages and Salaries

(Millions of Dollars)

74	24.9	56.5	150.5	102.5	441.1	48.1	150.2	973.9
75	27.7	60.9	168.8	130.3	493.5	82.5	174.9	1138.6
76	29.8	64.4	182.9	138.1	535.0	78.1	183.2	1211.5
77	32.2	68.3	198.8	135.3	586.6	55.3	183.7	1260.1
78	31.8	68.9	196.8	149.8	603.2	59.5	183.6	1293.6
79	34.3	72.9	213.3	158.3	657.4	57.2	192.2	1385.5
80	51.8	79.7	237.5	186.2	740.9	78.8	211.3	1586.3
81	82.7	85.3	253.2	216.6	800.3	107.8	229.1	1775.1
82	125.8	92.8	278.7	247.4	890.9	129.7	255.9	2020.3
83	129.2	100.4	303.9	270.9	982.0	121.4	273.5	2181.2
84	94.5	108.5	326.8	256.6	1052.5	75.3	283.8	2197.8
85	87.1	114.7	338.6	251.0	1107.3	69.4	292.8	2260.8
86	80.3	121.5	353.1	251.7	1175.1	63.7	303.9	2349.4
87	83.8	129.3	367.3	258.2	1251.0	67.0	316.7	2473.3
88	88.9	137.7	383.6	265.2	1231.0	70.2	331.3	2617.9
39	90.7	143.4	401.5	274.8	1435.4	71.2	347.1	2764.0
90	93.0	147.5	419.9	285.2	1537.2	72.9	363.5	2919.2

Table 11

Projected Average Annual Population Growth Rates

	North-west	South-west	South-east	South-central	Anchorage	Interior	Fairbanks	State
Limited Development	1.4	1.1	3.0	4.0	5.2	.0	2.2	3.8
Accelerated Development	2.3	1.7	3.8	5.0	6.2	1.2	2.9	4.8

Table 12

State Electricity Demand Projections Summary

	Thousands of MWH Demanded				Annual Growth Rates Calculated from 1974 (%)				MW Peak Capacity @ 50% Load			
	Limited Economic Development		Accelerated Economic Development		Limited Economic Development		Accelerated Economic Development					
Year	Highest	Lowest	Highest	Lowest	Highest	Lowest	Highest	Lowest				
1974	1,715	1,715	1,715	1,715	--	--	--	--	392	392	392	392
1980	3,909	2,830	4,286	2,941	14.7	8.7	16.5	9.4	892	646	979	671
1985	6,581	4,147	8,358	4,712	13.0	8.4	15.5	9.6	1,503	947	1,908	1,076
1990	10,158	5,975	13,450	6,961	11.8	8.1	13.7	9.2	2,319	1,364	3,071	1,589
1995	15,799	8,765	21,929	10,524	11.2	8.1	12.9	9.0	3,607	2,001	5,007	2,403

Table 13

Summary of the Range of Alaska Electricity Demand Projections, 1985 and 1995

Region		Peak Demand (MW) 1974 (actual)	Peak Demand (MW) 1985	Peak Demand (MW) 1995	Total Energy Sales (Thousand MWH) 1974 (actual)	Total Energy Sales (Thousand MWH) 1985	Total Energy Sales (Thousand MWH) 1995	Average Annual Growth Rates 1975 to 1980	Average Annual Growth Rates 1975 to 1985	Average Annual Growth Rates 1975 to 1995
Anchorage (v)	Lowest	199	538	1300	867	2347	5679	9.9	9.4	9.4
	Highest	199	1104	3515	867	4822	15350	17.5	16.9	14.7
Southcentral (except Anchorage) (iv)	Lowest	62	164	372	282	748	1325	10.1	9.2	7.6
	Highest	62	290	611	282	1701	2791	21.9	17.7	11.5
Anchorage, Southcentral	Lowest	261	702	1672	1149	3095	7004	9.9	9.4	9.0
	Highest	261	1394	4126	1149	6523	18141	18.7	17.1	14.0
Fairbanks (vii)	Lowest	76	144	260	319	602	1088	5.8	5.9	6.0
	Highest	76	297	677	319	1244	2843	12.8	13.2	11.0
Anchorage, Southcentral, and Fairbanks	Lowest	337	846	1932	1468	3697	8092	9.1	8.8	8.5
	Highest	337	1691	4803	1468	7787	20984	17.6	16.4	13.5
Southeast (iii)	Lowest	48	93	141	215	417	634	6.7	6.2	5.3
	Highest	48	112	184	215	505	827	8.7	8.1	6.6
Northwest plus Southwest (i & ii)	Lowest	8	9	10	31	36	44	2.0	1.3	1.6
	Highest	8	21	31	31	86	127	9.7	9.7	6.9
Alaska Statewide	Lowest	393	948	2083	1715	4147	8765	8.6	8.4	8.1
	Highest	393	1824	5018	1715	8358	21938	16.5	15.5	12.5

Note: There are no significant electric utilities in the Interior Region.

Table 14

Projected Net Sales of Electric Utilities to Final Consumers (Thousand MWH)

Electricity Use Intensity Scenario

Electricity Intensity Scenario	Case 1: Growth As Usual		Case 2: Moderate Residential Electrification, Commercial/Industrial Growth As Usual		Case 3: Low Residential Electrification, Commercial/Industrial Minimum Electrification		Case 4: Minimum Growth	
Economic Scenario	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth
Northwest[a]								
1974 (Actual)	15.178	15.178					15.178	15.178
1980	20	24					17	18
1985	24	34					17	21
1990	27	36					19	22
1995	30	37					20	23
Southwest[b]								
1974 (Actual	16.615	16.615					16.615	16.615
1980	28	30					18	18
1985	40	52					19	21
1990	51	69					20	23
1995	63	90					22	25
Southeast[c]								
1974 (Actual)	215.088	215.088	215.088	215.088	215.088	215.088	215.088	215.088
1980	328	338	344	355	340	350	318	326
1985	432	487	443	505	449	502	417	465
1990	529	611	527	617	561	639	523	594
1995	656	777	634	763	713	827	667	768
Southcentral[d]								
1974 (Actual)	282.417	282.417	282.417	282.417	282.417	282.417	282.417	282.417
1980	762	933	717	849	563	612	503	544
1985	1,302	1,701	1,131	1,432	835	966	748	857
1990	1,659	2,178	1,390	1,774	1,087	1,267	987	1,142
1995	2,114	2,791	1,716	2,205	1,436	1,686	1,323	1,545
Anchorage								
1974 (Actual)	867.132	867.132	867.132	867.132	867.132	867.132	867.132	867.132
1980	2,124	2,286	2,012	2,147	1,664	1,723	1,529	1,580
1985	3,734	4,822	3,245	4,076	2,550	2,924	2,347	2,679
1990	6,326	8,637	5,096	6,749	3,910	4,628	3,625	4,273
1995	10,633	15,350	7,982	11,154	6,071	7,416	5,679	6,918
Fairbanks								
1974 (Actual)	318.751	318.751	318.751	318.751	318.751	318.751	318.751	318.751
1980	631	658	598	616	485	495	446	455
1985	1,032	1,244	833	950	650	727	602	669
1990	1,534	1,891	1,090	1,256	861	977	803	907
1995	2,247	2,834	1,410	1,640	1,157	1,334	1,088	1,250

[a]Includes utilities at Kotzebue, Nome, and Unalakleet.

[b]Bethel, McGrath, Naknek, and Nushagak.

[c]Juneau, Ketchikan, Metlakatla, Petersburg, Sitka, and Wrangell.

[d]Includes Cordova, Glennallen, Homer, Kenai, Kodiak, Palmer, Seldovia, Seward, Talkeetna, and Valdez.

Table 15

Projected Electricity Peak Demand (MW)

Electricity Intensity Scenario	Case 1 Growth As Usual		Case 2 Moderate Residential Electrification Commercial/Industrial Growth As Usual		Case 3 Low Residential Electrification Commercial/Industrial Minimum Electrification		Case 4 Minimum Growth	
Economic Scenario	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth	Limited Growth	Accelerated Growth
				Northwest				
1974	3.6	3.6					3.6	3.6
1980	4.8	5.7					4.0	4.3
1985	5.7	8.1					4.0	5.0
1990	6.4	8.6					4.5	5.2
1995	7.1	8.8					4.8	5.5
				Southwest				
1974	4.1	4.2					4.1	4.1
1980	7.0	7.5					4.5	4.5
1985	10.0	12.9					4.7	5.2
1990	12.7	17.2					5.0	5.7
1995	15.7	22.4					5.5	6.2
				Southeast				
1974	48.0	48.0	48.0	48.0	48.0	48.0	48.0	48.0
1980	73.1	75.4	76.7	79.2	75.8	78.1	70.9	72.7
1985	96.3	108.6	98.8	112.6	100.1	111.9	93.0	103.7
1990	118.0	136.3	117.5	137.6	125.1	142.5	116.6	132.5
1995	146.3	173.3	141.4	170.1	159.0	184.4	148.7	171.3
				Southcentral				
1974	61.8	61.8	61.8	61.8	61.8	61.8	61.8	61.8
1980	166.9	204.3	157.0	185.9	123.3	134.0	110.2	119.1
1985	285.1	372.5	247.7	313.6	182.9	211.6	163.8	187.7
1990	363.3	477.0	304.4	388.5	238.1	277.5	216.2	250.1
1995	463.0	611.2	375.8	482.9	314.5	369.2	289.7	338.4
				Anchorage				
1974	198.6	198.6	198.6	198.6	198.6	198.6	198.6	198.6
1980	486.4	523.5	460.7	491.7	381.1	394.6	350.1	361.8
1985	855.1	1,104.2	743.1	933.4	584.0	669.6	537.5	613.5
1990	1,448.7	1,977.9	1,167.0	1545.5	895.4	1,059.8	830.1	978.5
1995	2.435.0	3.515.2	1,827.9	2,554.3	1,390.3	1,698.3	1,300.5	1,584.2
				Fairbanks				
1974	76.2	76.2	76.2	76.2	76.2	76.2	76.2	76.2
1980	150.8	157.3	142.9	147.2	115.9	118.3	106.6	108.7
1985	246.6	297.3	199.1	227.1	155.4	173.8	143.9	159.9
1990	366.6	451.9	260.5	300.2	205.8	233.5	191.9	216.8
1995	537.0	677.3	337.0	392.0	276.5	318.8	260.0	298.8

Load factor: Northwest .53, Southwest .51, Southeast .56, Southcentral .56, Anchorage .55, Fairbanks .53.

System losses: Northwest 10.5%, Southwest 11.6%, Southeast 9.2%, Southcentral 7.4%, Anchorage 10.4%, Fairbanks 11.0%.

Table 16

Projected Residential Consumption Parameters

Electricity Intensity Use Scenario

Economic Scenario	Growth as Usual				Moderate Electrification				Low Electrification			
	Limited Growth		Accelerated Growth		Limited Growth		Accelerated Growth		Limited Growth		Accelerated Growth	
	hookup saturation	kwh/ consumer	hookup saturation	kwh/ consumer	hookup saturation	kwh/ consumer	hookup saturation	kwh/ consumer	hookup saturation	kwh/ consumer	hookup saturation	kwh/ consumer
Southeast												
1974	24.9%	7,623	24.9%	7,623	24.9%	7,623	24.9%	7,623	24.9%	7,623	24.9%	7,623
1980	24.5	8,520	25.9	8,555	27.0	9,137	27.0	9,232	27.0	8,394	27.0	8,422
1985	26.9	9,181	26.7	9,226	27.0	9,690	27.0	10,009	27.0	8,675	27.0	8,808
1990	27.9	9,776	27.7	9,818	27.0	10,008	27.0	10,340	27.0	8,837	27.0	8,972
1995	29.1	10,435	28.8	10,472	27.0	10,296	27.0	10,635	27.0	8,983	27.0	9,118
Southcentral												
1974	32.7%	8,026	32.7%	8,026	32.7%	8,026	32.7%	8,026	32.7%	8,026	32.7%	8,026
1980	37.4	12,896	38.3	14,240	37.0	11,076	37.0	11,422	37.0	9,639	37.0	9,822
1985	40.0	16,771	40.1	19,050	37.0	11,999	37.0	12,502	37.0	10,127	37.0	10,394
1990	40.8	18,961	41.2	21,589	37.0	12,304	37.0	12,801	37.0	10,289	37.0	10,552
1995	42.1	21,448	42.3	24,477	37.0	12,585	37.0	13,075	37.0	10,438	37.0	10,696
Anchorage												
1974	31.1%	9,106	31.1%	9,106	31.1%	9,106	31.1%	9,106	31.1%	9,106	31.1%	9,106
1980	35.8	12,614	36.1	12,931	35.0	11,317	35.0	11,425	35.0	10,010	35.0	10,054
1985	38.1	16,073	39.1	17,605	3.50	12,102	35.0	12,439	35.0	10,331	35.0	10,469
1990	39.9	20,505	40.9	23.090	35.0	12,695	35.0	13,023	35.0	10,573	35.0	10,707
1995	41.3	26,498	42.2	30,704	35.0	13,162	35.0	13,466	35.0	10,794	35.0	10,888
Fairbanks												
1974	28.0%	11,597	28.0%	11,597	28.0%	11,597	28.0%	11,597	28.0%	11,597	28.0%	11,597
1980	31.5	19,112	31.8	19,797	32.0	16,987	32.0	17,235	32.0	12,310	32.0	12,343
1985	34.3	26,816	34.9	30,735	32.0	18,952	32.0	20,278	32.0	12,509	32.0	12,746
1990	36.9	34,801	37.3	40,223	32.0	20,324	32.0	21,723	32.0	12,752	32.0	12,937
1995	39.6	44,585	40.0	52,006	32.0	21,561	32.0	23,002	32.0	12,916	32.0	13,107

Note: The no-growth case assumes no change over time in either hookup saturation or average KWH consumption per customer and is, therefore, omitted.
Hookup saturation is defined as residential customers/civilian population.

APPENDIX 1. THE MAP ECONOMIC MODEL

Growth in electricity requirements will closely follow growth in the state's economy. Projections of the state's future economic growth are provided by the Man-in-the-Arctic Program (MAP) regional econometric model of the state.

Model Description

The MAP model[1] allows the researcher to develop projections of key economic and demographic variables for seven regions of Alaska (Figure 1), based upon a set of assumptions about factors outside state control but impacting the state economy. Researchers constructed the model using multiple linear regression techniques with historic Alaskan data covering the period 1961 to the present.

Treatment of individual industries in the model depends upon whether the industry is basic or nonbasic. A basic industry is one in which the level of economic activity (as measured by employment, wages and salaries, and gross product) is determined by forces outside the Alaskan private economy. The basic determinants of activity in these industries are national and international markets, the physical availability of resources, and federal government policies impacting the state. Industries which fall into this category are mining (including petroleum), agriculture, forestry and fisheries, and manufacturing. Construction industry activity is partially determined by forces external to the Alaska economy and partially by instate economic activity.

The level of activity in nonbasic industries is essentially a function of the amount of income generated instate by both the basic and nonbasic industries. This category includes services, trade, finance, transportation, communications, and public utilities.

Government activity at the federal level is determined by forces outside state control, but state and local government revenues and expenditures are a function of Alaska economic conditions. State population is related not only to employment but also to relative disposable income in the state.

Development Scenarios

In order to project annual economic values using the MAP model, a set of assumptions must first be provided which indicates levels of expected activity within the basic industry sectors. Most important within this set are the assumptions of the petroleum industry, because activity in this industry will have the most impact on economic growth in the state during the next 20 years. This impact will occur both through employment in the petroleum and related industries (such as construction) and through state revenues generated by petroleum exploration, development, and production.

In developing the electric power requirements, two different sets of assumptions were used regarding petroleum industry activities within the state. Each is a consistent scenario describing the level and pace of new discoveries. The average wellhead price of new oil discoveries is assumed to be $5 per barrel in either case. The two cases are known as limited development and accelerated development.

Limited Development. This case represents the minimum expected level of petroleum leasing activity between the present and 1990. In addition to Cook Inlet and Prudhoe Bay, the federal government leases in Lower Cook Inlet and the Gulf of Alaska. In leasing the Outer Continental Shelf (OCS), the federal government effectively determines where state and private, primarily Native, development can occur. Thus, these parties are assumed to develop adjacent areas, and along the route of the oil pipeline. In addition, a gas line from Prudhoe Bay through Canada via the McKenzie Valley is constructed with minimum instate impact. In this scenario, petroleum production increases to 2 million barrels per day (mbd) in 1980 and 3.6 mbd in 1990.

Accelerated Development. This case incorporates all limited development activities. In addition, National Petroleum Reserve Alaska and several other OCS areas are developed through federal initiative. State and private development again follows the geographic lead of these activities. Petroleum development in this case increases more rapidly after 1980 and reaches 7.3 mbd by 1990. The OCS leasing schedule in this scenario is rapid but does not correspond to the schedule of leasing proposed as a part of Project Independence, nor does it include all OCS provinces identified and included in that schedule.

In addition to petroleum development assumptions, assumptions must be made regarding other basic industries. These other industries are assumed to experience mild growth, which does not vary between cases. This does not imply that

[1] See box on page 1.

nonpetroleum basic industries are not important to the future of the state or that there will not be future growth in these industries. Developments in other basic industries will be of central importance, particularly on a community level. However, on a statewide and regional basis, the activities associated with petroleum development will be greater than those of other industries by an order of magnitude—thus, the choice to concentrate on petroleum development.

Finally, policy decisions by the state regarding the disposition of the revenues generated by petroleum development will affect the level of economic activity in the state. State government is assumed to place in a permanent fund 25 percent of recurrent and 50 percent of nonrecurrent petroleum revenues in both the limited and accelerated cases. This reflects the effect which the permanent fund will have on the level of expenditures.

APPENDIX 2. ELECTRICITY USE PROJECTION METHODOLOGY

The level of electricity requirements in future years will depend both upon the number of customers and the intensity of use per customer. These factors will in turn be related to the price of electricity, alternative types of energy available, and the level of income of the potential consumers. In Alaska, as elsewhere, there is evidence of a negative consumption response to price increases and a positive response to income increases. Although the relationship observed is only for one time period and only for the residential type of consumer, it is reasonable to expect that the same qualitative relationship will exist in other years and among other consumer types. [1]

The MAP econometric model projects increases in real wages and salaries (closely related to personal income) but does not provide estimates of the future prices of electricity and other fuels. This is because these prices will increasingly be determined by national and international, as opposed to purely local, market conditions.

Because of this uncertainty both in price and in consumers' response to price as it affects consumption, several sets of projections must be made, each corresponding to a different set of assumptions regarding these variables. Since each set of assumptions is essentially independent of the growth rate of the economy, each of the projections of electricity use is linked to both sets of economic projections (slow growth and accelerated growth). In this way, the projections cover the likely range of requirements for electricity.

The four sets of assumptions are: (1) *no growth*, (2) *low electrification*, (3) *moderate electrification*, and (4) *growth as usual*. Each is briefly described in the remainder of this section.

No-growth. This assumption provides the lowest estimate of future electricity use. The ratio of new residential customers to new population is assumed to be equal to the present ratio in each region. The average annual rate of consumption of existing customers is unchanged and new customers consume at the average rate of old customers. In the commercial and industrial sectors, new customers are projected at the same ratio to new population as existing customers. However, annual average consumption is allowed to grow at 5.8 percent, which was the national rate for the decade 1962-1972. These assumptions correspond to a very restrictive climate for electricity demand increase. Such a climate could result from substantial and continuing relative price increases for electricity, as well as from restrictions on electricity use, which would hold down or reduce consumer use.

Low-electrification. This case allows a gradual increase in the ratio of residential customers to population. Present customers will continue to consume at existing average rates, while consumption by new customers will be determined by the mix of appliances they choose and the average consumption rate of those appliances. New customers in each region are assumed to acquire major electric appliances (space heaters, water heaters, and stoves) in the same ratio as existing customers in that region. Other appliances in new households are all electric. The average consumption for a new customer will thus vary among regions, based not only upon differences in the existing ratio of particular electric appliances to consumers in the region, but also upon implicit regional differences in the average consumption rate of electricity in the different appliances. The commercial and industrial sectors are, because of scarcity of data, projected using the same methodology as in the *no-growth* case. However, the rationale behind this set of assumptions is a

[1] A detailed analysis of this relationship is presented in Scott Goldsmith, "Future Electricity Requirements in Alaska," paper presented at the Western Economic Association Annual Meeting, San Francisco, June 17, 1976.

somewhat less restrictive atmosphere for the development of increased electricity demand than the *no-growth* case.

National average electricity requirements for the most common household appliances used in the development of these projections are shown in Table 2-1. Data on the percentage of households with major electric appliances is shown in Table 2-2.

Table 2-1

Household Appliance Electricity Consumption

Major Appliances	Average Wattage	Estimated Annual KWH Use
Dishwasher	1,201	100
Range (with oven)	12,200	1,175
Range (self-cleaning)	12,200	1,205
Freezer (15 cu. ft.)	341	1,195
Freezer (Frostless, 15 cu. ft.)	440	1,761
Refrigerator (12 cu. ft.)	241	728
Refrigerator (Frostless, 12 cu. ft.)	321	1,217
Clothes dryer	4,856	993
Water heater	2,475	4,219
Water heater (quick-recovery)	4,474	4,811
Air conditioner (room)	860	860
Dehumidifier	257	377
TV (black & white, tube)	160	350
TV (black & white, solid st.)	55	120
TV (Color, tube)	300	660
TV (color, solid st.)	200	440
Other Common Appliances		
Broiler	1,436	100
Coffee maker	894	106
Deep fryer	1,448	83
Frying pan	1,196	186
Hot plate	1,257	90
Oven (microwave)	1,450	190
Roaster	1,333	205
Toaster	1,146	39
Trash compactor	400	50
Iron (hand)	1,008	144
Wash machine (automatic)	512	103
Wash machine (nonautomatic)	286	76
Bed covering	177	147
Heater (portable)	1,322	176
Humidifier	177	163
Hair dryer	381	14
Heat lamp (infrared)	250	13
Radio	71	86
Clock	2	17
Sewing machine	75	11
Vacuum cleaner	630	46
Toothbrush	7	½

SOURCE: Electric Energy Association.

Moderate electrification. This case differs from low electrification in two respects. First, all new consumers in the residential sector acquire electric water heaters and stoves. Second, the projections of both commercial and industrial customers, as well as average consumption level per customer, are based upon regression analysis employing historical time series data for the individual region. This case reflects an atmosphere more conducive to electricity consumption growth than the former cases.

Growth-as-Usual. Finally, this case is based entirely upon regression analysis using observed historical relationships between the demographic and economic variables of the economic model and electric power consumed through utilities. Implicit in this case is the assumption of a continuing reduction in the relative price of electricity within Alaska.

Table 2-2

Percentages of Households With Selected Appliances – 1970

CENSUS DIVISION	Number of Occupied Housing Units	Percent Modern Space Heat	Percent Electric Space Heat	Percent Modern Water Heat	Percent Electric Water Heat	Percent Modern Cooking Fuel	Percent Electric Cooking Fuel	Percent Clothes Dryers	Percent Electric Clothes Dryers	Percent Dish-washers	Percent Clothes Washing Machines	Percent [illegible]ezers	Percent Television Sets
ANCHORAGE REGION													
Anchorage	35,021	94.9	6.4	95.6	34.6	99.4	64.5	59.4	54.2	29.0	63.2	39.1	94.6
SOUTHCENTRAL REGION													
Cordova-McCarthy	563	100.0	0.0	90.4	11.5	100.0	51.9	49.2	34.3	10.8	48.3	68.7	62.5
Kenai-Cook Inlet	3,881	90.8	3.6	86.1	33.0	97.4	23.6	54.6	42.8	17.4	61.6	50.8	70.5
Kodiak	2,535	96.1	0.8	93.1	21.9	100.0	54.7	66.8	61.9	12.9	78.3	51.5	80.7
Matanuska-Susitna	1,797	68.8	1.1	63.2	31.3	82.1	44.0	47.5	44.0	19.3	47.3	66.5	75.0
Seward	534	95.5	3.9	87.5	30.9	100.0	47.0	53.0	36.9	26.2	75.3	71.3	90.6
Valdez-Chitina-Whittier	1,017	78.9	0.9	56.5	20.2	93.6	17.9	35.0	17.5	5.5	30.5	40.0	36.0
INTERIOR REGION													
Upper Yukon	365	36.7	0.0	0.0	0.0	38.1	0.0	0.0	0.0	0.0	12.1	27.1	14.0
Yukon-Koyukuk	1,030	73.6	5.9	48.5	28.0	81.8	35.2	32.6	30.8	3.7	47.9	42.3	50.1
FAIRBANKS REGION													
Fairbanks	11,630	72.6	6.9	75.8	33.7	98.9	77.7	47.6	46.5	21.7	56.7	38.5	91.4
Southeast Fairbanks	982	73.1	6.2	83.0	45.8	92.4	59.0	54.7	54.7	17.1	60.9	45.9	67.9
SOUTHEAST REGION													
Angoon	116	79.3	0.0	15.5	0.0	79.3	0.0	0.0	0.0	0.0	0.0	15.5	0.0
Haines	362	92.5	0.0	72.1	26.2	92.5	48.9	56.9	56.9	13.0	69.1	52.5	41.4
Juneau	4,293	99.0	0.6	98.2	27.5	97.7	79.6	57.4	57.0	24.2	59.4	38.5	81.6
Ketchikan	2,820	99.3	3.5	98.7	66.4	100.0	87.8	64.3	64.3	21.8	63.2	40.6	78.3
Outer Ketchikan	412	100.0	16.9	100.0	83.5	100.0	89.1	74.0	74.0	11.7	94.9	69.7	88.8
Prince of Wales	528	96.4	0.0	79.0	7.4	93.4	6.6	31.6	13.8	7.0	64.8	43.4	16.3
Sitka	1,873	100.0	0.0	97.0	42.3	100.0	59.7	62.1	59.2	20.1	71.1	48.6	83.0
Skagway-Yakutat	626	90.7	3.6	87.6	20.5	90.7	34.8	33.7	24.3	7.0	40.9	47.1	24.3
Wrangell-Petersburg	1,395	96.5	3.4	86.5	51.0	90.6	60.9	45.4	45.4	19.6	64.2	53.8	66.8
NORTHWEST REGION (Rural)													
Barrow	513	100.0	0.0	25.0	0.0	95.9	7.6	21.6	18.1	0.0	17.5	14.6	28.1
Kobuk	955	81.4	2.2	19.3	6.6	74.9	17.6	19.3	19.3	4.6	15.6	30.2	4.5
Nome	1,238	85.5	1.8	34.0	5.6	87.6	9.5	12.6	11.1	5.1	15.1	12.9	1.4
SOUTHWEST REGION													
Aleutian Islands	1,192	88.3	5.7	82.8	52.3	100.0	62.2	66.1	62.8	15.0	73.2	45.7	53.9
Bethel	1,439	86.7	0.0	19.7	2.6	81.8	13.1	9.1	8.1	1.5	25.6	28.1	0.0
Bristol Bay	655	89.9	0.0	37.3	3.5	93.1	18.5	18.2	18.2	3.4	34.4	37.9	0.0
Bristol Bay Borough	213	100.0	0.0	72.3	29.1	100.0	38.0	84.5	48.4	17.8	56.8	82.1	93.4
Kuskokwim	401	29.9	0.0	24.4	9.5	39.7	14.0	14.7	14.7	0.0	24.4	24.4	14.9
Wade-Hampton	773	46.2	0.0	5.8	0.0	46.6	6.2	8.9	8.9	0.0	21.2	9.4	6.2
TOTAL	79,059	89.0	4.8	83.6	32.5	96.2	58.9	52.5	48.3	21.9	58.5	41.3	78.9

SOURCE: U.S. Bureau of the Census, Department of Commerce, *1970 Census of Housing.*

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Susitna study funds discussed

JUNEAU (AP)—Top officials huddled but made no decision today on whether to pump money into newly troubled feasibility studies for the Susitna hydroelectric project.

The Internal Revenue Service has balked at a state financing plan for the engineering work, and lawmakers are now considering whether to keep alive a proposal to spend $8 million in state money for the first of the studies.

Alaska Sen. Mike Gravel told lawmakers he is optimistic the studies and project can proceed, and he warned that loss of momentum could bog down the entire $2.6 billion hydro-electric project to serve Fairbanks, Anchorage and the areas between.

Gravel remained confident that federal legislation involving the project can clear Congress.

But state Transportation Commissioner Bob Ward, active on the Susitna issue, took a more cautious approach to the studies in light of the IRS ruling. Ward wouldn't say if the state administration plans to reverse its stand and oppose state spending for the studies this year.

Meanwhile, key lawmakers say they don't know when they will make a decision on the funding issue.

"We don't know where we're going. We're still looking at options," said Eric Yould, executive director of the Alaska Power Authority.

Yould, Gravel and state House and Senate leaders discussed the issue in a quickly called meeting, but the gathering broke up without a resolution of the problem.

Yould said the power authority itself must now reassess whether it wants the Legislature to proceed with the funding.

The APA has been seeking $8 million for the first year of the $25 million, 46-month study by the U.S. Army Corps of Engineers. Yould has been pushing for quick funding so equipment could be moved to the sites with snow cover still protecting the ground.

CORRECTION

University of Alaska-Fairbanks has an enrollment of 180 declared majors in civil, electrical and mec[illegible] engineering.

Look closely at hydro proposals

Celia Hunter

The Susitna Dam project is presently undergoing intensive resuscitation efforts by local business interests, GVEA, the Hon. Mike Gravel et al. Those of us who are labeled as 'stumbling blocks to progress' might not be forced into so negative a stance if the advocates of measures authorizing projects which impact heavily on the public interest would be more critical and demanding of facts and honest evaluations of costs vs. benefits. The typical attitude of the promoters of such schemes is: "Don't confuse me with facts. My mind is made up."

Even to plead for time in which the true facts can be assembled, and the long-range consequences assessed is suspected of being mere obstructionism. It would be interesting to go back through recent history and to document the instances where projects hastily conceived and executed have resulted in environmental and financial catastrophe.

I think of one off-hand: the Teton Dam. Opposed early on by critics who pointed out that the geologic formations created hazards to such a dam, it was pushed through to completion in total disregard for these factors, and finally gave way, with terrible consequences in human lives lost, farms and other investments destroyed, and a huge bill for clean-up and restitution incurred.

The casualness with which the boosters of the Susitna Dam project dismiss the earthquake hazard of the Susitna fault lying only five miles below the dam site brings echoes of other equally vehement protestations about the safety of other construction operations. We can believe what we want to believe, but such an attitude has its problems—trouble is, it's always the public that pays, not the promoters. We pay for the building and financing, and we pay over and over again for the unwise use of scarce resources, whether financial, or wildlife, or environmental or human.

Alaskans today are massing support for moves away from being controlled from afar, but this movement seems to be highly selective, aimed only at the federal government represented by the National Park Service and the U.S. Fish and Wildlife Service, the supposed 'preservationist' agencies. Meanwhile the Trojan horse carrying subjugation and total dependency on outside forces is being wheeled into their midst, where it is greeted with cries of joy and celebration. How can anyone with any understanding of the implications such an enormous project brings with it fail to comprehend the inevitable loss of personal freedoms and the economic and energy options we forego from such a move?

We would have all our eggs in one basket. It has been pointed out repeatedly that such total dependence on an integrated system is a major weakness in the Lower 48, witness the disastrous New York City blackouts, and less massive but equally threatening power failures elsewhere in the country. Amory Lovins, and many other energy experts argue logically and persuasively for development of a system of smaller, self-sustaining power supplies, which insure communities against such calamities. We need to study carefully our options for providing additional power in small increments, including an assessment in depth of some 30 smaller hydroelectric power sites within the railbelt area.

The power from a Susitna dam may be virtually all surplus to local needs when it comes on stream many years from now. Our present and future power needs must be met somehow by smaller incremental units in the meantime, and these in themselves may prove quite sufficient to handle our power demands, especially as increased prices slows projected requirements. After all, one reason given by GVEA for cancelling Healy No. 2 was that electrical power use here had failed to reach projected demands.

The message I'm attempting to convey here is simple: let's look before we leap. And especially let's look before we take hard-to-come-by tax dollars to shore up a faltering project which its chief sponsor, Sen. Mike Gravel, admits has "tenuous economic viability" (story in News-Miner 3/13: "IRS ruling called threat to Fairbanks power plans.")

That "tenuous economic viability" is sufficient cause to reject the Susitna Dam project. In addition to that fundamental issue, we have the slipperiness of projected power demands, primarily developed by a self-serving agency, the Alaska Power Authority, which is overstepping its original charge when created, and is now planning and promoting power development projects in general, and the Susitna Dam in particular. Alaska desperately needs to do some comprehensive planning of realistic energy needs and resources, rather than jumping from one crash program to another, attempting to bail out a faltering economy with enormous public works programs, such as the Susitna Dam.

We need more time—and by we, I mean the Alaskan citizen and taxpayer—before we buy into the Susitna Dam, whether for $8 million, or $25 million, or to be saddled with the entire cost, which undoubtedly will escalate out of sight due to cost overruns as these projects inevitably do. We need to take a hard look at the effects such a quantum jump in available energy will have on individual independence and self-reliance, as well as its effects on our communities.

Furthermore, I object to my rural electrification association—GVEA—buying newspaper space to promote state financing support of this project. It's easy to label the opposition as "no-growth obstructionists" as they do in their ads—sounds great and gets instantaneous positive reaction from some local residents—but it takes more than labels to determine what the public good really is. Let's get the facts—first!

...while the matter is in court ... For disputes over wages, etc. ... the city

News Miner 3/8

Funds for Susitna study languish in House panel

By CHARLIE SPENCER
News-Miner Bureau

JUNEAU—The flow of a special appropriation to initiate a study of the giant Susitna River hyrdoelectric project may be in for a freeze.

Running through the legislative channels is an $8.2 million bill to fund the first year of a four-year feasibility study for the project. The Legislature is being asked to get the $25 million study started because federal financing has yet to come through.

The Senate earlier approved the $8.2 million, but the request has been mired this week in the House Resources Committee. Resources co-chairman Rep. Bill Miles, D-Anchorage, said today he wants to re-examine the entire hydroelectric picture for the state.

He pointed out there are other appropriations totalling more than $7 million for smaller hydro projects in Ketchikan, Petersburg and Kodiak.

Miles said he will meet within the next few days with other members of the House leadership "to tie those together and stake out our position."

He said, "It's obvious that hydro power is the only way to go in certain areas of the state and under certain situations." But he said there are several big questions about Susitna that he wants to get answered before the committee votes on the appropriation.

One of the biggest was discussed Wednesday when the committee took testimony from more than 30 witnesses over the state teleconference network.

Said Miles afterward, "Some of the folks claim that Susitna is going to provide much more energy than the Railbelt will ever use. Other witnesses testified that not even two Susitnas would provide enough power in the long-range future."

The project would help supply electricity to Fairbanks, Anchorage and the areas between the two cities.

Another big question concerns the risk of placing the dam on what has been termed an area subject to many earthquakes, but Miles said he personally puts that down the list.

"I'm no geologist, but we've got that problem in over 800 miles of a pipeline project," he said.

Seismic tests are only part of the four-year study, to be conducted by the Army Corps of Engineers. But the Alaska Power Authority, coordinating with the Corps, which would eventually pay for the $2.6 billion two-dam project, wants to get going this year.

APA officials have said the state money is needed immediately so Corps equipment can be moved into the remote, upper Susitna site before breakup.

But the project has received heavy criticism in legislative hearings. Wednesday, several witnesses urged the legislators to consider other, smaller hydro projects.

Other critics said that to go ahead with the study would be to irrevocably commit the state to the project. The Corps, however, maintains the study can be shut down at any one of several steps, and the total project can be scrapped at the completion of the study.

Also Wednesday, the general manager of the Anchorage Municipal Light and Power Co. said the state's largest power consuming area will be in trouble without Susitna.

"There's no question that Susitna will be sorely needed at the time it is built," said Tom Stahr. "It will not produce an energy surplus."

Meanwhile, Terry McGuire, a finanacial analyst with the APA, said today, "Every week that the approvals are delayed will force a change in the scope of activity that will be performed in the first year" of the study.

But he said that if the study can begin within the mext month, it should not significantly stretch out the total life of the work—provided state agencies hire personnel in time to perform some of the work planned for this summer.

The Department of Fish and Game, for example, must do some of the biological surveys.

Susitna Funding Plan Sought

By The Associated Press

Although funding has bogged down, the U.S. Army Corps of Engineers says it still can acomplish a full year of Susitna River dam studies beginning around May 1.

But the Corps says lack of snow cover will not permit ground access to one of the two sites proposed for massive dams.

Meanwhile, top state officials huddled here Tuesday in an effort to resolve federal roadblocks to the state's financing method for the $25 million study project.

The officials reached no decisions, other than to return to the Internal Revenue Service and hope for a more favorable ruling.

Alaska Power Authority officials earlier told the governor and Legislature that this year's proposed "phase one" feasibility studies would be in jeopardy if the project wasn't started before spring breakup.

But Corps Col. Jim Fero outlined a new work schedule at the meeting.

"We feel the project is salvageable for this year, just by rearranging our schedule," he was quoted as saying by the Anchorage Daily News.

The future of the studies is still uncertain, with both the administration and the state House waiting to see if financing problems can be straightened out before throwing support behind continuing the dam studies this year.

The project has been on hold since the Internal Revenue Service recently informed the Alaska Power Authority that it couldn't use an $8 million appropriation from the Legislature to back the sale of revenue bonds to pay for the studies.

The power authority's directors, plus lawmakers and other officials, met to debate what to do about the four-year study for the $2.6 billion project in the wake of the Internal Revenue Service ruling.

The $8 million appropriation had the support of Gov. Jay Hammond and had already cleared the Senate at the time of the ruling. But House Resources Committee co-Chairman Bill Miles, D-Anchorage, told the power authority meeting that the House has numerous questions about the proposal and has adopted a "show me" attitude.

State Transportation Commissioner Robert Ward told the meeting that the governor's Susitna task force was unenthusiastic about pushing the dam studies appropriation through the Legislature if the revenue bonding plan falls through.

"If direct appropriation is the only alternative, there was reluctance expressed that the task force would not want an $8 million appropriation to compete with other capital needs this year," he said.

But he said the new work plan presented by the Corps, and the possibility that some revenue bonds still might be used for the project are important considerations in the administration's view.

Tax consultants said the initial Internal Revenue Service Ruling didn't necessarily preclude a modified financing plan, and they believe tax-free bonds may be allowed to pay for at least part of the studies.

The power authority discussed alternatives for getting the study money — including simply writing a check to the Corps or private engineering firm — but decided to wait for about two weeks .

Litter Bill Clears Full Senate

Empire
3/9

House Susitna Vote Delayed

By The Associated Press

House Resources Chairman Bill Miles says he will not let his committee vote on Susitna dams appropriations bill until some key questions are answered.

The Senate has already approved advancing the Alaska Power Authority $8 million to continue phase one studies of the hydroelectric project and committee hearings have been started on the House side.

Miles, an Anchorage Democrat, says he wants to look at the question of hydroelectric power from a statewide perspective, and will meet with House leaders the next few days to "take out our position."

He said that other appropriations bills for smaller projects in Ketchikan, Petersburg and Kodiak total more than $7 million.

Witnesses at the Senate and the House hearings, many of them by teleconference, have either said the project is a critically needed bargain, or that it is foolish to invest in one largescale project to serve the majority of the state's population.

...diner, D-Ketchikan and also a member of the state affairs panel.

Empire
3/6

House Studies Susitna Funding

By The Associated Press

The state should investigate alternatives before committing itself to the proposed $2.6 billion Susitna hydroelectric project, says a state lawmaker.

Kenai Democrat Hugh Malone called Monday for an independent evaluation of other energy possibilities before "the taxpayers go on the hook for $2.6 billion."

The House Resources Committee started hearings on a Senate-passed bill to provide $8 million in state funds for feasibility studies on the two-dam project. The hearings were to continue into the week.

"We might be down the road $30 million ... and somebody says 'Wait a minute,'" Malone told the panel.

Malone said further study could determine if the Susitna project is better than 30 other identified hydroelectric sites, using power generated from the Beluga coal fields, using North Slope natural gas to generate electricity or any other alternatives.

Malone, House Speaker in the last Legislature, said that Legislature intended study of the alternatives.

The $8 million would only fund a part of the $25 millionplus "phase one" feasibility studies for the project. Malone said he wants to know how much more the studies could cost.

Environmentalist Jim Brennan urged a year's delay in the feasibility study funding.

...tion with downtown.

ROSEMARY SHINOHARA

Yes, Virginia, it does snow every year

JUNEAU — Others talked about kilowatts and caribou killed, but none brought such perspective to the debate as a man named Carl Benson.

The debate about the proposed $2.6 billion Susitna Dam project blossomed into a full-fledged legislative issue last week, and then it shriveled just as suddenly, proving Benson right.

EARLY ON, there was pressure from pro-dam forces to rush an $8 million appropriation through the legislature so the state could continue feasibility studies on the dam. If work is to be accomplished at all this year on one of the sites it must be begun before the snow melts and travel across roadless federal land in the region is forbidden.

In the midst of the pressure for speedy action, Benson, speaking to a committee from Fairbanks last week during a teleconference hearing, brought a refreshing attitude. He simply pointed out that it snows every year.

"Why do we have to rush into this?" he asked. "People say we have to go before the snow melts, but we have snow every year."

THE CERTAINTY that it will snow every year may have been the one solid fact that those considering the project could bank on.

The House Resources Committee, whose task it was to gather facts and opinions about the state putting up the money, heard some of the dam's opponents say the proposed project is so big the railbelt region coulnd't consume all the power.

It heard people say little dam sites haven't been studied enough.

AND IT HEARD municipal officials say towns like Anchorage and Fairbanks are going to be in big trouble within a few years without the dams, or some other major new source of power.

Finally, at the end of the week, legislators learned that the Internal Revenue Service disapproves of the plan the state power authority had in mind for using the $8 million to borrow three times that much to pay the total cost of the studies.

Unless a brilliant new idea is brought forward, or the Susitna region has a long, long winter with a snowstorm in June, this latest IRS problem is bound to hold things up until after the big spring melt.

And that takes care of that. On to the next issue.

Daily News to tell ~

IRS ruling called threat to Fairbanks electric plan

News-Miner Bureau

JUNEAU—An Internal Revenue Service ruling that has jammed up funding for a Susitna hydro-electric study may jeopardize a proposed electrical transmission line tying together Fairbanks and Anchorage as well.

The double-tower line is perceived as a viable project whether or not the two Susitna dams are built. It is designed to help float peak power surpluses between the two population centers.

But Eric Yould, executive director of the Alaska Power Authority, told members of the Alaska Rural Electric Cooperatives Association Monday, "We are going to have IRS problems in the future, and they will affect that inter-tie as well."

The power authority, to pay for Susitna construction and possibly the $25 million preliminary study for it, had been counting on selling tax-free revenue bonds. That would mean a savings of three interest points.

But IRS last week said it would turn down the APA request for the tax exemption.

Sen. Mike Gravel, D-Alaska, told a group of legislators Monday that the ruling was more dangerous to the larger $2.6 billion dam project because

(See SUSITNA, page 5)

Fbks
N.M 3/13

SUSITNA . . .

(Continued from page 1)

of its tenuous economic viability, than to the initial study.

The transmission line, to stand alone, would have to be economical however, and Yould said the APA has determined—assuming the tax exemption was approved—it was viable.

Meanwhile, Yould said both the governor's Susitna task force and the APA board of directors will meet in the next few days to discuss the project.

He told the rural coop representatives that the Legislature now has two choices if it wants to go ahead with the study. It can appropriate the $8.2 million as requested by Gov. Jay Hammond to start it up, hoping that federal legislation comes through to provide federal reimbursement.

Or, said Yould, the Legislature can forget the federal government and pay for the whole study itself.

Empire 3/13

Susitna Funding Decision Pending

By The Associated Press

Top officials huddled but made no decision today on whether to pump money into newly troubled feasibility studies for the Susitna hydroelectric project.

The Internal Revenue Service has balked at a state financing plan for the engineering work, and lawmakers are now considering whether to keep alive a proposal to spend $8 million in state funds for the first of the studies.

Alaska Sen. Mike Gravel told lawmakers that he is optimistic the studies and project can proceed, and he warned that loss of momentum could bog down the entire $2.6 billion two-dam undertaking.

Gravel remained confident that federal legislation involving the project can clear Congress.

But state Transportation Commissioner Bob Ward, active on the Susitna issue, took a more cautious approach to the studies in light of the revenue agency ruling. But Ward wouldn't say if the state administration plans to reverse its stand and oppose state spending for the studies this year.

Meanwhile, key lawmakers say they don't know when they will make a decision on the funding issue.

"We don't know where we're going. We're still looking at options," said Eric Yould, executive director of the Alaska Power Authority.

Yould, Gravel and state House and Senate leadership discussed the issue in a quickly called meeting, but the gathering broke up without a resolution of the problem.

Yould said the power authority itself must now reassess if it wants to Legislature to proceed with the funding.

The power authority has been seeking $8 million for the first of the $25 million, 46-month study by the U.S. Army Corps of Engineers.

Yould has been pushing for quick funding so equipment could be moved to the sites.

Yould said even with the new snag, the Corps still could carry out critical studies required to keep the 46-month timetable.

The $8 million has passed the Senate, and is now in the House Resources Committee. Resources Chairman Bill Miles, D-Anchorage, said he didn't know when the committee would have its next hearing on the proposal.

Under the financing plan as originally proposed, the Legislature would have appropriated $8 million to use as collateral in borrowing funds for the study.

But Yould said the Internal Revenue Service will not rule favorably on plans to allow the authority to pay interest on money borrowed to finance the study.

Fbks D.M. 3/21

Corps holds out hope for Susitna

JUNEAU (AP)—Although funding has bogged down, the U.S. Army Corps of Engineers says it still can accomplish a full year of Susitna River dam studies beginning about May 1.

But the Corps says lack of snow cover will not permit ground access to one of the two sites proposed for the hydroelectric dams.

Meanwhile, top state officials huddled here Tuesday in an effort to resolve federal roadblocks to the state's financing method for the $25 million feasibility study.

The officials reached no decisions, other than to return to the Internal Revenue Service and hope for a more favorable ruling.

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"If direct appropriation is the only alternative, there was reluctance expressed that the task force would not want an $8 million appropriation to compete with other capital needs this year," he said.

But he said the new work plan presented by the Corps, and the

(See SUSITNA, page 7)

SUSITNA . . .

(Continued from page 1)

possibility that some revenue bonds still might be used for the project are important considerations in the administration's view.

Tax consultants said the initial IRS ruling didn't necessarily preclude a modified financing plan, and they believe tax-free bonds may be allowed to pay for at least part of the studies.

The power authority discussed alternatives for getting the study money—including simply writing a check to the Corps or private engineering firm—but decided to wait for about two weeks while tax experts talk again with IRS.

The Bureau of Land Management is apparently going to let the Corps haul equipment to the Devil Canyon site on an old Bureau of Reclamation trail, Fero said.

Devil Canyon site is about 20 miles from the other dam site—Watana—and equipment and people could be ferried between the sites, he said.

JUPITER . . .

(Continued from page 1)

Susitna dam critics, backers give testimony

By ROSEMARY SHINOHARA
Our Juneau Bureau Chief

JUNEAU—The Susitna is a beautiful, clear river for fish, a House committee was told Wednesday. "Let's have an attitude of gratitude for the way it is," said an opponent of the dam, Ada Charlton, speaking over a teleconference network from Fairbanks.

"If we have to have a damn dam... let's go ruin some other valley please," she said.

CHARLTON'S testimony was more poetic than most, but reflected growing criticism of the proposed $2.6 billion dam project which now depends on the Alaska Legislature for an $8 million appropriation to allow feasibility studies to continue.

The 18 million appropiration sailed through the Senate, but is undergoing more extensive debate in the House. Meanwhile, backers of the project are trying to secure funding immediately so that heavy equipment can be hauled in the Susitna River dam sites over a snow cover.

If the work doesn't begin before spring, it will have to wait until next winter because the federal Organic Act requires that roadless government land be managed wilderness until it is decided what to do with it. That means no roads can be built.

CRITICS of the project fear the $8 million for feasibility studies will lead to an irrevocable commitment for the project to go ahead. They say the huge dams will create a surplus of power for the railbelt area, and alternatives for smaller dams haven't been adequately studied.

But others say hydropower is important to the future of the most populous area of the state.

Tom Stahr, general manager of the Anchorage Municipal Light and Power Co., told the House Resources Committee hearing on the project Wednesday that Anchorage will be in trouble with out big new power sources.

"THERE'S NO question that Susitna will be sorely needed at the time it is built. It will not produce an energy surplus," Stahr said.

The initial costs may be high, but over its life, it will provide cheaper energy for Southcentral residents than other options, he said.

(Continued on Page 22)

Amin readies

• Susitna dam

(Continued from Page 1)

Coal—the most likely alternative to the Susitna project — would take a higher toll in pollution, Stahr said. Answering criticism of other witnesses that alternatives to build smaller dams have not been studied, Stahr said, "lots of studies have already been done. No new information can be found from further studies."

MOST OF the Critics of the dam project disagreed, saying there are numerous sites suitable for smaller dams that haven't been considered.

State Rep. Chat Chatterton, R-Anchorage, challenged one witness to "show us these sites." The witness, Bo Bassett of Anchorage, said he would send the legislator a map showing 54 potential hydro sites in Southcentral Alaska.

Another witness suggested that if the legislators aren't aware of the alternative dam sites, that is proof they don't have the information needed to make a decision.

JOHN NICHOLS of Anchorage said the study should be done, but there should be a year's delay.

"I'm concerned about the possibility of the state embarking on this project with blinders on," Nichols said.

Nichols and several other witnesses said if the study is done, the U.S. Army Corps of Engineers should not be the one to do it. Since the corps would probably build the dam if the project is ever finally approved, it has a vested interest in it, witnesses said.

However in earlier hearings, officials have testified that if the site hopes to get reimbursed from the federal government for the dam studies, the Corps of Engineers must be hired to do them.

HOUSE RESOURCES Co-Chairman Bill Miles, after listening to some 30 witnesses Wednesday, told the Daily News that the committee will probably act on the Susitna bill soon, but it will consider other proposed dams in Alaska as part of the total package.

Miles said he personally has some doubts about the project, "but the main problem is the fact that both Anchorage and Fairbanks are going to be in rough shape. Cheap gas is going to be gone from Anchorage within a couple of years."

The dam project was proposed by the Corps of Engineers in 1976. The phase I study program is expected to total $25 million, including the $8 million appropriation for the first year.

U.S. SEN. Mike Gravel is sponsoring legislation that calls for the federal government to reimburse the state if after four years the studies show the project shouldn't go ahead. The bill was killed along with the d-2 lands bill late in the 1978 session of Congress, but Gravel hopes it will pass this year or next.

Instead of waiting for the federal money, Gov. Jay S. Hammond is asking the legislature to make an appropriation to the Alaska Power Authority now to fund the first year's study.

But wait, that's not all. In the original House and Senate versions of the d-2 bills, the Susitna was one of 14 Alaskan rivers to be added to the federal wild and scenic river category.

Susitna was eventually dropped from both versions. But when Interior Secretary Cecil Andrus last fall withdrew 110 million acres into wilderness study classification for three years he threw in the original 14 rivers.

The new versions of the Alaska lands bills in the House also say BLM should run a study concurrently with the Corps' effort to determine what would be done with the Susitna.

Q. But what about the land?

A. Most of it will end up owned by Native corporations. The state will then have to negotiate, and trade or buy. In 1975 the Corps said the reservoir land was worth $25 million.

Whatever the final price, Yould says the cost of the land will not be what makes or breaks the project, because it will be dwarfed by the total bill.

Q. Some expensive undertaking, anyway. So why do we need it?

A. Remember we said the dam could provide 6.1 billion KWH a year, and the present Anchorage plus Fairbanks residential and small commercial load is slightly less than half that.

Yould says that by the year 2000 the load requirement should triple or quadruple. Even if both dams went on line in 1994, there could still be excess demand, he says. Assuming that is true, it would mean there would still be a need for coal- or natural gas-fired electric generating capacity.

Q. Even if we could use all that power, would it really be cheaper than other energy?

A. According to Yould, the projected mill-rate cost of power from the two-dam complex would be 40 mills per KWH, compared to coal costs of 52 mills, in today's dollars.

Throw in a decade and a half of inflation, and hydropower may be roughly four-fifths as expensive as coal-fired power.

Q. Anything else you haven't told me?

A. Something Gravel told a legislative committee in Juneau this week probably drives home the fact that, even if the studies say Susitna is both environmentally and economically feasible, there is going to be a huge battle.

Gravel pointed out that the dams are at the top of the national "environmental hit list." That may be more for their possible impact on the Lower 48 than on the Alaskan wilderness.

"Dam" is a dirty word in most of the country. They aren't getting built. But if this one gets by, Gravel said, the environmentalists fear it could be the crack that bursts the present virtual moratorium on dam-building.

Q. So what do we do with th complicated mess?

A. Some say abandon it: Why should mimic the energy mistakes of Lower 48? Why don't we wait alternative energy sources to developed? Dams are only accept on a small-scale basis. Leave ecosystems alone. Stop.

Hammond, however, has fir supported the effort to move ahead the study. We'll see if the Legisla agrees. And remember that phase only about a quarter of the t engineering and designing effort visioned for the entire project, tho its completion would allow construct to begin.

The 46-month phase I is split i three parts: preliminary screen detailed feasibility studies and deta design for Watana, its access road the transmission system.

Says the Corps, "At the end of an the three program steps, Susi hydroelectric development could determined to lack economic or vironmental justification" and project could be terminated.

Gas on U.S.-Mexico talks agenda

WASHINGTON (AP)—Administration officials said today the expect negotiations to begin within one or two months between th United States and Mexican governments on guidelines for the U.S purchase of natural gas from its neighbor across the border.

The move would mark an unusually direct intervention by th U.S. government into import negotiations, which had general been left up to private purchasers.

The question of natural gas sales was one of the sore points U.S.-Mexican relations which Carter had hoped to heal in his thr day summit with President Jose Lopez Portillo, said the officia who accompanied the president on the visit.

The United States also agreed to discuss with Mexico the idea a triangular swap of oil, to bring Mexican oil into the United State while relieving the transportation problem confronting oil fro Alaska.

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or develops Home Treatment to

A ... wildlife will hold ... Alaska lands legislation in ...banks March 10.

The day-long hearings will begin in ...all on the University of ... Office Building ..., Washington, D.C. 20515, Phone (202) 225-7307.

In addition to the hearings, the subcommittee members and staff are expected to visit the North Slope and some of the areas proposed for ...

SUSITNA DAMS . . .

(Continued from page 1)

then along came d-2, Gravel killed the Alaska lands bill and environmentalist Rep. John Seiberling of Ohio killed the water resource bill.

Q. What happens now?

A. The state could wait for a new federal bill. Gravel told the Legislature this week, "I can assure you there will be no water resources bill without a Susitna." He predicted it will pass within "60 to 90 days . . . certainly this year . . . or if not, next year."

Gov. Jay Hammond decided not to wait. He has asked the Legislature for an immediate $2.8 million appropriation for the first year of phase I.

Q. Where is that request right now?

A. A bill to appropriate the money and a resolution to approve the APA selling revenue bonds to pay for phase I were passed out of the Senate Resources Committee Wednesday. They face an important Senate Finance Committee hearing Monday.

Q. If the Legislature does shell out the money for the bond reserve, will it ever get its money back?

A. If Gravel gets his amendment passed, and the project ends up a no-go, the feds will refund the money. If the project goes ahead, the APA will eventually pay for everything, including the study, by selling revenue bonds.

Q. Any Hitches?

A. One. Part-way through the study period, the APA could decide that a private firm would finish faster and more cheaply than the Corps. If that firm—and there are several available—were substituted, the state would void the cooperative agreement with the Corps and would not be eligible for the refund as provided by the yet-unpassed water act. So if the project fell through, the Legislature would be holding the tab.

Q. How soon does the Legislature have to act?

A. The Corps says right away, if the study is to begin this year. The Bureau of Land Management has said the Corps must move into the site during winter conditions to minimize damage to the landscape. That means the Corps has to get rolling by early March into the area, which sits east of the Parks Highway about half-way between Talkeetna and Cantwell.

Q. Speaking of environmental damage, and putting aside the full project's impact, what are the environmental risks to allowing the Corps to conduct the study?

A. The Corps says it needs a 5,000-foot runway to airlift bulk samples out for testing. It also wants to install a 70-man camp. BLM is writing an environmental assessment of the phase I impact on the area. That is due in a matter of days, and should conclude whether or not a full environmental impact statement is needed before phase I is begun. If an EIS is required, it would shelve the study for at least another year.

Q. What about if we end up building the dams?

A. According to Eric Yould, APA executive director, one of the biggest concerns is "the integrity of the project in a highly seismic area." Or, as a preliminary study document says, the project is "located in an area of major faults."

The study said that "during the period of record, through the end of 1970, 262 earthquakes had been recorded within a radius of 150 miles of the proposed Devil Canyon site. Of these, 229 had a magnitude on the Richter scale of less than 5.3, while 20 were between 5.3 and 7.0, 11 were between 7.0 and 7.75, and two were greater than 7.75."

The seismic situation should be re-evaluated using recent advances in seismic technology, the study recommended. About $1 million of the phase I money is to into direct seismic study.

Another big concern expressed by the public so far, Yould said, is that a "glut of power" will in turn lead to a glut of intensive industry along the railbelt.

"To be perfectly honest, I think that's the least of our concerns," he said. Assuming the hydro power would be cheaper than alternative power sources, it would haye to be really cheap to compensate for the high cost of labor and construction in Alaska, Yould says.

Q. OK, but what about the animals?

A. Watana, the larger resevrvoir, would cover 43,000 acres and stretch 54 miles. Devil Canyon would inundate 7,550 acres over a 28-mile stretch of river. One person who testified this past week said, "The Susitna basin is the only really good game location for Fairbanks, where people can drive up and hunt."

Both moose and caribou inhabit the area. Yould says the anadromous fish do not come up as far as the dam sites, so their cyclic pathway would not be blocked. The dams would affect flow, temperature and sediment, but Yould says that does not necessarily mean a negative effect.

But before making any claims, he says, he wants to see the results of the phase I study, which will address the fish and caribou as well as the rocks.

Q. You're talking about an awful - lot of acreage. Considering all the land problems we have, are there any conflicts in this area?

A. You guessed it. Almost everybody's in on the act. A majority of the reservoir area was claimed by six Native village corporations soon after the Corps announced its site choices in 1976.

That land is to be conveyed to Cook Inlet Region Inc., which will in turn convey it to the six villages. In addition, Cook Inlet Region has overselected the entire area, as has the state.

Q&A

(EDITOR'S NOTE: Both state and federal legislative action is being considered to get the proposed Susitna hydroelectric project moving. Today, reporter Charlie Spencer from the News-Miner's Juneau bureau examines the massive project.)

Q. What is the Susitna River dams project?

A. As proposed by the Army Corps of Engineers in 1976, the project would eventually consist of two dams on the upper Susitna River. The first dam, Watana, would go in about 100 miles upstream from Talkeetna.

An earthfill structure, it would be 810 feet high and would create a resevoir 54 miles long. It was proposed to go on line in 1994.

Next would be the Devil Canyon dam. It would be 635 feet high and would be built of concrete. It would sit 32 miles downstream from Watana, and is envisioned to go into operation as soon as needed—tenatively about 1999 but perhaps concurrently with its big sister if the need were there.

A transmission line would be strung from Fairbanks to Anchorage as part of the project. Hooked into the power plants at both dam sites, it would take about 75 per cent of the power south and the rest north.

The two dams could produce 6.1 billion kilowatt hours "firm annual energy." The railbelt's present consumption, excluding industrial and national defense energy, is about 2.8 billion KWH.

Q. How much would the project cost?

A. In 1975, the corps said $1.5 billion. The projection now is $2.6 billion.

Q. Where are we now with the project?

A. Waiting on a phase I study for which there is at the moment no money.

Q. Who would pay for the study?

A. Originally the federal government was to pay for the whole thing, according to the 1976 Federal Water Resources Act. But the state's leaders soon realized there was probably no way the federal government would end up paying so much to build dams to benefit so relatively few people.

So the Legislature created the Alaska Power Authority to finance this and other hydro projects. Then proponents had to figure out how to finance the phase I study, now estimated to run 46 months and $25 million.

Sen. Mike Gravel went to work on the Water Resources Act that was due to pass in 1978, putting in language that would set up two pots of money.

The new APA could sell revenue bonds to raise the $25 million, and the federal government would set aside a like amount. If the study showed after four years that the project wouldn't go, the feds would reimburse the state.

The language also said the feds would pay for cost overruns resulting from acts of God or miscalculations by the Corps of Engineers in the study. But

(See SUSITNA DAMS, page 2)

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SUSITNA PLAN HITS SNAG

Times photo by Alice Puster

FISH AND GAME OFFICIALS DEFEND WOLF HUNT

Alaska Department of Fish and Game officials Ron Summerville, left, Bud Burriss and Bob Henman, right, consider questions from members of the Board of Game at today's hearing on aerial wolf hunts. The special meeting was called after the planned wolf control program came under heavy criticism while Alaska legislators were in Washington, D.C., last week to lobby on the D2 land issue.

IRS Rejects State Proposal For Financing

By MEAD TREADWELL
Times Juneau Bureau

JUNEAU — The Internal Revenue Service has shot down a financing plan for the engineering feasability study of the proposed Sustina hydroelectric project.

Core drilling at the site of one of the two dams has been set back for another year, Alaska Power Authority Director Eric Yould said today.

The power authority asked the House Resources Committee, which was rushing to pass an $8 million appropriation by a deadline of next week, to hold off on passage of the legislation.

"We don't think it's prudent for the Legislature to proceed forward with a defunct financing scheme," Yould said.

Under the plan, the Legislature would have appropriated $8 million to use as collateral in borrowing funds for the $25 million, 46-month study by the Army Corps of Engineers.

But the Internal Revenue Service notified Yould Thursday that it would not rule favorably on a request which would allow the authority to pay the interest on money borrowed to finance the study.

"It pretty well shot us out of the water for this year," Yould said.

The power authority director said he would talk with Sen. Mike Gravel this weekend and meet with legislators Monday to see if an alternative financing plan was possible this year.

"But I don't think the Legislature can act that fast," Yould said.

Gravel failed last year in an attempt to get a federal appropriation for the study past President Carter and his Senate colleagues. While Gravel continued his attempt, Gov. Jay Hammond proposed that the state indirectly finance the first year of the study, with the hope that the federal government would take over funding later.

The March 15 deadline for a state

(See Page 2 Col. 1)

Susitna Plan Hits A Snag

(Continued From Page 1)

financing plan was necessary because the Bureau of Land Management would not allow construction of an airstip at the Watana site where an earthfill dam of the Susitna River has been proposed. A study had to be approved before breakup, when drilling equipment could be taken in across frozen snow-covered ground.

Yould said it is possible that some core drilling would begin at the Devil Canyon site, where a 635-foot dam is proposed.

"We could get mobilized this summer and get some actual core drilling done there," Yould said, "but I don't think we can spend the full $8 million this year."

Despite testimony by environmentalist groups asking for delay or refusal of the study, the Senate quickly passed the Susitna legislation two weeks ago. After several hours of testimony this week, House Resources Committee chairman Bill Miles was slated to take up final consideration of legislation Saturday.

"The Legislature has bent over backwards to meet our time frame," Yould said. If the Legislature decides to push on with the study in the next week, he continued, the state would have to finance directly the $25 million phase one study and use a private firm, rather than the Army Corps of Engineers, to complete it.

In this week's hearings, many were concerned that the Army, which would eventually build the project, might have a conflict of interest in carrying out a study to see if the dam was feasible.

As chairman of the Environment and Public Works Subcommittee on Water Resources in the Senate, I introduced the Water Resources Development Act of 1979 last Wednesday. It authorizes about $1 billion in water and navigation projects of the Army Corps of Engineers. Five sections of the bill are of particular importance to Alaska:

-- The four-year preconstruction study (Phase I) of the Susitna Hydroelectric Project is directly authorized in the bill, superceding the need for approval by the Office of Management and Budget.

-- Changes are made in the Hydroelectric Power Development Act of 1976, under which the Susitna dams would be built. The changes make it clearer at what point the government guarantees of the Corps' work would be triggered. The changes were requested by bond specialists. Construction of the dams would be paid for by the sale of state bonds. Upon completion, the dams would be owned by the state power authority.

-- Construction of the addition at Kodiak harbor, for $8.6 million, is authored.

-- An increase is made in the amount the government may pay toward construction of small boat harbors. This continuing authority goes from $2 million to $3 million per project. The balance of the cost of any project would be paid by the local community. At the present time, the Corps is studying plans for a small boat harbor in Juneau with a total price tag of $5 million. In other communities of Alaska, as well, the increased federal share would make small harbors more feasible.

-- A study of riverbank erosion in Bethel is authorized. The Corps is already looking into emergency bank stabilization -- the new study would look at controlling erosion over the long term.

In addition, later in the week, I wrote to the Office of Management and Budget and to the Treasury Department concerning the Susitna Project. Treasury, through the Internal Revenue Service, must approve the tax-exempt status of bonds to be sold by the state in financing the Phase I study. And the OMB must authorize the Corps to do the work for the state.

UNITED STATES SENATE
WASHINGTON, D.C. 20510

PUBLIC DOCUMENT

Mike Gravel

U.S.S.

Jay S. Hammond, Governor

April 9, 1979

Devil Canyon Task Force

Susitna Recommendation

Based upon the results of several recent discussions with you, certain of the Legislative leadership, the Alaska Power Authority, and ourselves, the following recommendation is offered.

Ask the Legislature for an $8,000,000 supplemental appropriation to the Alaska Power Authority, the expenditure of which is contingent upon one of two things happening:

1. That Senator Gravel is successful in achieving passage of legislation that would establish the Joint Federal/State Project for Susitna Development with the federal reimbursement of state expenditures for Phase I studies if the project is determined not feasible.

2. That a reasonable alternative program is developed for accomplishing the scope of work required to produce a complete application to F.E.R.C. for a license to construct the Susitna Hydroelectric project without federal participation.

or private

It is also the recommendation of the Task Force that the Legislature be asked to approve a supplemental appropriation of $150,000 to the Alaska Power Authority to pay for the development of the reasonable alternative.

Some general comments are in order:

The scope of work necessary to develop a complete F.E.R.C. application will include such site specific work and public involvement as is required to develop a complete and comprehensive E.I.S. and economic and technical assessments. In addition, the plan will provide for an additional independent assessment of seismic effects.

It will take a minimum of four months to develop the alternate proposal in Item 2.

Perhaps an oversight committee which includes some members of the Legislature will be necessary to recommend a reasonable alternative.

Absent some completely unforeseen event occurring, the General Fund would be the only source of funds available to finance either approach but might be payed back if Gravel's plan is approved. In either proposal, the money required could become part of the project financing if the project is constructed.

The Power Authority is prepared to finalyze the R.F.P. and assist the Legislature in considering the legislation.

RWH:lh

Introduced: 1/19/79
Referred: Resources and Finance

IN THE SENATE

BY THE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

COMMITTEE SUBSTITUTE FOR SENATE BILL NO. 63

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act making supplemental appropriations to the Alaska Power Authority for feasibility studies for the Susitna Hydroelectric Project; and providing for an effective date."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. The sum of $8,178,000 is appropriated from the general fund to the Alaska Power Authority for the purpose of paying costs of a portion of the Phase I feasibility studies of the Susitna Hydroelectric Project. The authority shall not expend or obligate the sum appropriated in this section unless either (a) federal legislation is enacted providing in substance for an agreement to repay the sum appropriated (i) if the report issued as a result of the studies demonstrates that the Susitna Hydroelectric Project is not feasible, or (ii) if the report demonstrates the Project is feasible, the authority is not able to borrow money to pay construction costs of the Project, including the costs of the report, based on the security of the Project or its revenues within three years of the completion of the report, or (b) a reasonable alternative program is developed by the authority for accomplishing the scope of work required to produce a complete application to the

Federal Energy Regulatory Commission for a license to construct the Project.

The sum appropriated may be expended or obligated by the authority if either of the above two events occurs on or prior to January 1, 1980. The unexpended and unobligated portion of this appropriation shall lapse into the general fund on June 30, 1980.

The program to be developed pursuant to paragraph (b) shall include such specific site work and public involvement as is required to develop the necessary environmental, economic and technical information, and shall include an independent analysis of seismic potential and related design factors.

* Sec. 2. The sum of $150,000 is appropriated from the general fund to the Alaska Power Authority for the purpose of paying the costs of developing the program referred to in paragraph (b) of section 1 hereof.

* Sec. 3. This Act takes effect immediately in accordance with AS 01.10.070(c).

8.178
.150
6,328,000

SUSITNA AMENDMENTS

to accompany an appropriation for the Phase I studies

Limit the appropriation to the first year, not the four-year total.

Whereas phase--

Whereas the legislature recognizes that an independent, impartial analysis of the feasibility of the proposed Susitna project and its alterntives is necessary before proceeding beyond the first year of the Phase I studies.

Resolved phrase--

Resolved that the Legislative Affairs Agency shall contract for an independent study which, with the full cooperation of the Alaska Power Authority, will analyze the assumptions and findings concerning the economic and financial feasibility of the proposed Susitna Hydroelectric Project and possible alternatives to it. These alternatives shall include but are not limited to smaller hydroelectric, coal, and gas-fired plants, including the use of royalty gas from the North Slope. A report shall be submitted to the legislature by April 15, 1980.

This needs an appropriation of ~~$200,000~~ #170,000.

Additional, optional, resolved phrases--

Resolved that the first year of the Phase I studies be contracted to and conducted by a private engineering firm.

Resolved that the Alaska Power Authority shall submit to the legislature no later than April 15, 1980 a report detailing the first year's expenses, the data collected, and the con-

clusions drawn.

(The dates for the two reports-- first year and independent-- should be the same.)

Another possibility is making the Susitna appropriation contingent upon passage of amendments to the federal Water Resources Act which would provide a definite reimbursement of Phase I costs if the project did not proceed <u>for any reason</u>. The money shall be held in escrow until that guarantee is provided.

Contingent on OMB