

735

HCRA

HJR 10

-

HJR 60

5



Official Business

Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

Fouch V
State Capitol
Juneau, Alaska 99811

TO: Reps. Pat Carney
Fred Zharoff
Ray Metcalfe
Charlie Parr
Margaret Branson
Pat O'Connell

FROM: Rep. Bill Parker, Chairman

DATE: Feb. 19, 1979

Attached please find a letter from the Administrative Assistant of the Kenai Peninsula Borough related to the proposed Local Boundary Commission recommendation for correcting an error in the present corporate boundary description of the Kenai Peninsula Borough. As you know, this will automatically go into effect as of March 9, 1979.

This letter is for your information so that you will know that there have been no objections to the proposal.

Also attached are some copies of additional letters received recently from the Kodiak area re annexation.

January 30, 1979

The Honorable Arliss Sturgulewski
Alaska State Senate
Pouch V
Juneau, Alaska 99811

Re: Kenai Peninsula Borough Boundary Hearing

Dear Arliss:

The State Boundary Commission conducted a hearing on January 12, 1979, in Soldotna, during which only Philip Waring, our Planning Director, and Mayor Don Gilman gave testimony.

We take no exception to the Boundary Commission action since it conforms exactly to the Borough boundaries as we understood them to be.

Sincerely,

Clyde Baxley, Administrative Assistant
Kenai Peninsula Borough

CB:mw

BOX 850
SOLDOTNA, AK
99669

02003 NL TDA KODIAK AK 50 2-13 1145P AST

PMS REP PARKER

JUN

PROGRESS WILL OCCUR AT ITS OWN PACE. IT DOESNT NEED TO BE
PUSHED. PLEASE JUSTIFY OUR BELIEF THAT ALASKANS STILL
HAVE THE RIGHT TO DECIDE THEIR OWN FUTURE BY VOTING TO REVERSE
THE BOUNDRY COMMISSIONS DECISION.

WE ENJOYED HAVING YOU HERE FOR THE HEARING.

DICK AND JUNE JUELSON

BOX 286

KODIAK AK 996150

TELEGRAM

1979 FEB 14 AM 3 22

*Tell Alan
to call*

2/12/79

Joint CRA Committee
Pouch V
Juneau, Ak.

Chairman and members:

Thanks you for coming to Koolah to hold a hearing concerning the recent annexation decision of the Boundary Commission. It is interesting to note that when the Boundary Commission came to Koolah for a public hearing, only three members were present yet the decision was made by the entire commission. Listening to tapes is not the same as being at a hearing. If only the three members attending voted, the annexation would have been defeated as Mr. Strandberg voted against it. In later conversation with one of your committee members, I believe Mr. Bettisworth said he was not in favor but went along with the majority. Mr. Bettisworth attended. This leaves only the chairman, Mr.

Gallagher, of the members attending actively in favor of this annexation.

Mr. Strandberg's concerns about the time frame for providing services is well founded, annexations of any size made in the past to the City of Kodiak have provided a poor track record of providing services in a timely manner. In one case, seven years to provide sewer and sidewalks are still to be provided more than 12 years later. This proposed annexation virtually doubles the size of the residential & business land mass of the City of Kodiak.

I make about \$26,000/yr which is marginal in Kodiak. I own lot 12 USS 3101 near the end of Spruce Cape Rd. The size of this lot is 1.13 acres. I have a duplex on this property. Spruce Cape Rd is a state R road, and whether annexed or not will still be state maintained. I have city water provided by a line

installed by the U.S. Army Corp
of Engineers. In order to put this
line in, it was necessary to blast
3/4 miles through bed rock. The
cost of a sewer line in this
area is prohibitive and the
priority is very low
as we have no pollution problem.
It will be at least ten years before
the city of Kadial will get around
to us. They haven't even a tentative
time frame. Yet they propose that
we be in a 100% tax zone. Even
if I were willing to change
my life style, I could not. I
have as much housing as is
allowed with the services available.
I couldn't subdivide and sell a portion.
The average lot inside the city
is 7200 square feet. The taxes are
two and 1/2 times the tax outside.
I will be paying taxes on 44,000 square
feet with no way to reduce the
size. So this fair? I haven't even
had a say in this.

The voting district proposed
for annexation I voted 501 out of a

possible 850. This represents about 60%.
The entire borough voted only 32.9%.
I think this shows we are
concerned and responsible citizens,
more so than any other area in
the borough. We present not
having a say in our destiny
especially when city voters seem
to care so little what happens
to them.

The City of Kodiak is a Home
Rule City. It gives their City Council
tremendous power without concern
for the will of the people (especially
apathetic people). Their history
of keeping their word is not good.
For example, the proposal to put
the sewer plant on Spruce Cape Rd
included a sewer line for that road.
The residents didn't object, feeling
that we would benefit. The first
thing cut because of cost was the
sewer line for Spruce Cape Rd, but
the sewer plant was put there. The
proposal voted on by the people
included this sewer line yet we

didn't get it.

Please reverse the Boundary
Commission decision, or rather
recommmend reversal.

Thanks you for your
consideration.

Sincerely

Ed Jack
Spruce Cape Rd resident

ED JACK

BOX 1494

KODIAK 99615

HJR

39

COMMITTEE REPORT

HOUSE

FURTHER:

April 10, 1979

Date: 16 April 79

Mr. Speaker:

The Committee on C&RA has had HJR 39

Urging the President and Congress of the United States to retain the federal General Revenue Sharing Program as presently constituted.

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

- do pass do not pass
- do pass with attached amendments(s)
- replace with CS for _____ same title
- and recommends _____ new title
- AND attaches a "Letter of Intent" New Fiscal Note
- reports it back without recommendation
- referred to the _____ Committee

**MEMBERS SIGNING
DO PASS**

[Handwritten signatures]

**MEMBERS HAVING
OTHER RECOMMENDATIONS:**

[Handwritten signature]

CHAIRMAN



Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

COMMITTEE MINUTES

Pouch V
State Capitol
Juneau, Alaska 998

Official Business

DATE: 4/18/79

BILL NUMBER AND TITLE: HJR 39 Urgins the President and Cpngrss of the U:S. to retain the federal General Revenue Sharing Program as presently constituted.

ORIGINAL SPONSOR : Parr

OTHER SPONSORS:

RECEIVED FROM:

FURTHER REFERRALS: --

MEMBERS PRESENT:

Bill Parker X
Margaret Branson X
Pat O'Connell X

Pat Carney X
Charlie Parr X
Fred Zharoff X
Ray Metcalfe X

INDIVIDUALS CONTACTED:

WITNESSES TESTIFYING:

Parr -- Discusses reason for introducing bill. Publication by "State Council on Gov's." brought to his attention the fact that the federal gov't might eliminate the revenue sharing program as a way of helping to balance the federal budget. Points out that it is the only federal program without strings.

William Prichard, Dept. of C&RA.

1972 federal program began. By Sept. 30, 1980 \$39.117 Million will have been received by the State. \$78.7234 Million received by the municipalities. (1/3 of the funds go to the state; 2/3 goes to the municipalities) Anchorage alone received \$6.162 Million; Kodiak \$256,000.

Metcalfe- Would amend it to continue the program or allow for equal reduction in taxes. No support expressed for this idea.

COMMITTEE ACTION: Committee passes out bill with unanimous DO PASS recommendation

TAPE 1 7 SIDE 2

Sections 374-632

BILL NO. 39 re Urging Congress to retain General Revenue Sharing

Received from _____
Referred to _____

Original Sponsor _____
Fiscal Note _____

LAA Legal Research Contact _____

CONTACTS: Contacted re 7/15
✓ Parr

Continuously Interfolded Form No. 1000

HJR 39 TITLE & SPONSOR SUMMARY

14:54 5/01/79 PAGE 1 OF 3

AMENDED TITLE:
URGING THE PRESIDENT AND CONGRESS OF THE UNITED STATES
TO RETAIN THE FEDERAL GENERAL REVENUE SHARING PROGRAM
AS PRESENTLY CONSTITUTED

PRIME SPONSORS: PARR.

CO-SPONSORS:

CURRENT STATUS: 4/28/79 TRANSM TO GOVERNOR

HJR 39 HOUSE ACTION

14:56 5/01/79 PAGE 2 OF 3

DATE	SEQ	PAGE	LEGISLATIVE ACTION
04/10/79	01	0906	FIRST READING -- COMMITTEE REPORTS
04/19/79	02	0902	CRA -- DP06
04/23/79	03	1017	SECOND READING
04/23/79	04	1017	ADVANCED TO 3RD READING BY UNAN CONSENT
04/23/79	05	1017	THIRD READING
04/23/79	06	1017	PASSED BY DIV 34-00-09
04/28/79	14	1165	TRANSMITTED TO GOVERNOR
****	**	**	*** ** *

HJR 39 SENATE ACTION

14:57 5/01/79 PAGE 3 OF 3

DATE	SEQ	PAGE	LEGISLATIVE ACTION
04/24/79	07	0896	FIRST READING -- COMMITTEE REPORTS
04/25/79	08	0915	CRA -- DP03
04/27/79	09	0957	RLS -- OTHER04 TAKEN UP IMMEDIATELY
04/27/79	10	0968	SECOND READING
04/27/79	11	0968	ADVANCED TO 3RD READING BY UNAN CONSENT
04/27/79	12	0968	THIRD READING
04/27/79	13	0968	PASSED BY DIV 11-05-04
****	**	**	*** ** *

HJR

60

(7)

COMMITTEE REPORT

HOUSE

2/12/80

FURTHER: FINANCE

Date: _____

Mr. Speaker:

The Committee on COMMUNITY AND REGIONAL AFFAIRS has had HJR 60

"Approving the Lake Elva hydroelectric generation project, as required by AS 44.56.180."

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

- do pass do not pass
- do pass with attached amendments(s)
- replace with CS for _____ same title
 new title
- and recommends _____
- AND attaches a "Letter of Intent" New Fiscal Note
- reports it back without recommendation
- referred to the _____ Committee

MEMBERS SIGNING
DO PASS

MEMBERS HAVING
OTHER RECOMMENDATIONS:

[Handwritten Signature]

[Handwritten Signature]

[Handwritten Signature]

CHAIRMAN



Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

Official Business

BILL NUMBER AND TITLE: HJR 60 Approving Lake Elva Hydro

ORIGINAL SPONSOR: Anderson

OTHER SPONSORS: _____

RECEIVED FROM: _____

FURTHER REFERRALS: Finance

HEARING DATE: 4/11/80

MEMBERS PRESENT: Bill Parker X
Margaret Branson X
Pat O'Connell

Pat Carney X
Charlie Parr X
Fred Zharoff
Ray Metcalfe X

Dave Gray, Administrative Assistant, Rep. Nels Anderson
Discussed lines 28 and following. Deleted and attached
amendments added in the Committee Substitute.

COMMITTEE ACTION: Committee Substitute signed out of Committee.

TAPE # 8 SIDE 1 Footage 830-906



Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

Official Business

BILL NUMBER AND TITLE: HJR 60 Approving Lake Elva Hydroelectric

ORIGINAL SPONSOR: Anderson
RECEIVED FROM: _____

OTHER SPONSORS: _____
FURTHER REFERRALS: Finance

HEARING DATE: 4/7/80

MEMBERS PRESENT:	Bill Parker	X	Pat Carney	X
	Margaret Branson	X	Charlie Parr	X
	Pat O'Connell	X	Fred Zharoff	X
			Ray Metcalfe	

Dave Gray, Administrative Assistant, Rep. Nels Anderson
Reviews changes in the CS with the Committee. Discusses relevancy of the ALIVE decision relative to the effectiveness of resolutions in regard to HJR 60.

Parr - Points out that HB721 (also related to Lake Elva) calls for a "grant" rather than a loan. Questions the difference between the procedure being used in this resolution as compared with what was done in the Swan and Tye Lakes hydro resolutions. In these cases it was a "subordinated loan" approach which was used. Yest p. 1 line 28,29 of CSHJR 60 refers to "state financing" of the project rather than a subordinated loan.

Carney - Lake Elva should be financed the same way as the southeastern projects.

Gray - The sponsor will review the Swan and Tye Lake bills to compare with approach being suggested in HJR 60.

COMMITTEE ACTION: No Action

TAPE # 7 SIDE 1 Footage 1506-1795



Alaska State Legislature

House of Representatives

Committee on

Official Business

Community & Regional Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

BILL NUMBER AND TITLE: HJR 60 Relating to the Lake Elva Hydro Project

ORIGINAL SPONSOR: Anderson
RECEIVED FROM: _____

OTHER SPONSORS: _____
FURTHER REFERRALS: Finance

HEARING DATE: 3/31/80

MEMBERS PRESENT: Bill Parker Pat Carney
Margaret Branson Charlie Parr
Pat O'Connell Fred Zharoff
Ray Metcalfe

Rep. Nels Anderson

David Gray, Administrative Assistant, Rep. Anderson

Have determined that there is not much support for the \$15,000,000 grant approach. The project itself has been under consideration for many years. Lake Elva has been found to be feasible. There is no problem with anadromous fish. FERC licensing needed. 1.5 megawatts minor project so FERC license could be issued quickly.

Three legislative measures related to Elva have been proposed--HJR 60, HB 721, HB722. A replacement bill for \$5,000,000 grant is needed instead and HB 722 should be left in Committee.

Amendment suggested to HJR 60 p. 1 line 20. Delete "not" 1. 23 delete "by" after constructed insert "for" delete "only" after project. 1. 29 use more traditional language etc. (see written proposed amendments)

John Pearson, Pres. Nusagak Electric

Reviewed history of the Lake Elva project. 1964 Nusagak Electric formed. 1965 Original permit cancelled. Cost relatively inexpensive for diesel. 1976 Another preliminary permit requested. The need for a long term solution evident.

Dave Bouker, Manager Nusagak Electric

\$16.8 per WE is the cost now for electricity. Close to deficit level. A rate of increase is necessary. Price for KW goes up constantly. Standard increased from \$53.8 to \$91.6 in one year. Hydropower will not necessarily lower cost but will stabilize power production expense. 64% of expense is fuel at this time. Addition of hydro will ease costs. It is a good investment. Schools will be on system.

Terry McGuire, Director of Finance, Ak. Power Authority

Tazimina land presents problems. Lake Iliamna and Clark are in a National Monument. Downstream effects of hydro on andronomous stream is also a problem here. Tazamini is seen as

COMMITTEE ACTION: No Action

TAPE # 6 SIDE 1 Footage 1422-1528

an ideal regional project.

APA was requested to become involved in the project. Suggests that line 25 delete "only"--leaves open for future ownership rights of project. Contract revenue bonds considered. Same as proposed for Tyee. Ultimate ownership with State. Policy decision re whether local utilities should own project and state own regional projects?

Little field activity has been done at the site. Actual necessary costs not clarified. Method of financing not clear.



Official Business

Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

To: Ken Rosenstein
FROM: Marjorie Gorsuch
DATE: 3/31/80
RE: CSHJR 60 and SSHB721

Please redraft a CS for HJR 60 which includes the following:

- p. 1 line 20 Omit "not"
- p. 1 line 23 Omit "by" and replace with "for"
- p. 1 line 25 Omit "only"
- p. 1 line 29 Delete existing wording and replace with:
Whereas the costs to be incurred in financing the Lake Elva hydro-electric project will require the issuance of revenue bonds of the Alaska Power Authority in a maximum presently estimated amount not to exceed \$15,000,000; and
- p. 2 line 5 Insert:
Be It Resolved that the Alaska State Legislature approves the general design of the Lake Elva hydro-electric generation project near Dillingham and the incurring of revenue bond indebtedness by the Alaska Power Authority in a maximum amount not to exceed \$15,000,000 to pay for the project.

SSHB 721

- p. 1 line 10 Change amount to \$5,000,000
- p. 1 line 11 Delete "the Lake Elva hydroelectric generation project fund of"
- p. 1 line 14-16 Delete these lines and replace with:
"Section 2 This Act takes effect immediately in accordance with AS 01.10.070 (c)"



Alaska State Legislature

House of Representatives

Committee on

Community & Regional Affairs

Pouch V
State Capitol
Juneau, Alaska 99811

Official Business

BILL WORK SHEET

BILL NUMBER _____

RE

Lake Elva Hydro

Received from _____
Referred to _____

Fical Note _____
LAA Legal Contact _____

CONTACTS:

Sponsor: Anderson 3738

Eric Yucil 277-7641

Documents: Bristol Bay Energy & Electric
Power Potential Dec 199
U.S. Dept of Energy
Reconnaissance Study of Lake Elva
& other Hydroelectric Power Potential in
The Sulphur Area - Prepared for AEA
Feb 180

Fund - not procedure other projects here. What would happen if there was some reason for it not to go.

No real hard core site work done at Elva. \$70,000 effort done specifically on Grant, Elva, Tazemur. Technology not there for wind. No reliable 20 mile/hr manufacturers can't put one for above 3 kW.

At. Power Admin - \$100,000

Best long range development would be Tazemur - would require numerous small villages. Many transmission lines needed. Environmental concerns of fish.

Second alternative is development of Elva. Gov's AEA -> \$500,000 - \$100,000 Gov's Budget. Requested for field activities. BR Committee says that alternative haven't been explored.

Use of resolution (ALYK) on hand counsel Macton.

not enough to do any real work. Established feasibility & do environmental assessment. Info to support FERC license to construct.

4/9 Hearing Contacts

APA 277-7641

Mels Anderson

7C Analysis of Governor's Decisions

ITEM	AMOUNT	FUNDING SOURCE	EXPLANATION
<p>Dillingham Hydroelectric Project</p> <p>Agency Request</p> <p>Gov. Rec.</p>	<p>400.0</p> <p>100.0</p>	<p>G.F.</p> <p>G.F.</p>	<p>The agency request is to determine the feasibility of hydroelectric generation in the Dillingham area with emphasis on Lake Elva. However, a recent Alaska Power Administration report states that "high costs raise serious questions about the validity of additional investments in Lake Elva investigations". Consequently, funding for Lake Elva feasibility studies are not funded. The intent of the Gov. Rec. is to use existing data (i.e. Bristol Bay Energy & Electric Potential) to evaluate the potential for all forms of renewable energy in the Dillingham area and to recommend which projects would be most cost-effective in displacing fuel oil.</p> <p><i>SCS for HB 60 has \$500,000 for a preliminary study of the Lake Elva hydroelectric project. (Sec. 175)</i></p> <p><i>See HB 721 - \$15M for construction</i> <i>HB 722 - established Lake Elva fund</i> <i>HB 60 - approve general design</i></p>

CATEGORY Development

AGENCY Alaska Power Authority PROGRAM Economic Development

7C ANALYSIS OF GOVERNOR'S DECISIONS

000084

CAPITAL PROJECT EXPENDITURES (CASH FLOW)	TOTAL	BUDGET YEAR	BUDGET YEAR Plus 1	BUDGET YEAR Plus 2	BUDGET YEAR Plus 3	BUDGET YEAR Plus 4	REMAINING COST
Planning and Engineering	400,000	400,000					
Land							
Construction							
Equipment							
Administration and Other							
Total Annual Expenditure (Capital Cost)	400,000	400,000					

CONTINUATION OF NARRATIVE

in a recently completed reconnaissance study by R. W. Retherford Associates for the Alaska Power Administration entitled "Bristol Bay Energy and Electric Power Potential". Grant Lake, about 65 miles north of Dillingham, would incorporate a dam at the lake outlet to increase head and provide full regulation of flows. Installed capacity would be 1.5 MW and 12 million KWH could be provided annually. Access would be by air or overland vehicle. The site is located in Wood River Lakes Park, but hydro development is listed as a compatible use.

The proposed Lake Elva Project is located at a site about 49 miles north of Dillingham. This project would also require a dam to provide increased head and flow regulation. Installed capacity would be 1.5 MW and the project could provide about 8.5 million KWH annually. This site is also located in the state park, and access would be via Lake Aleknagik and Lake Nerke. A stream gage has been installed at this site to verify flow estimates.

The Tazimina Lake Project would include a forebay dam and a reservoir dam upstream. The site is approximately 120 miles from Naknek. It is located in a wilderness study area, but no definite finding of compatibility has been made. Access to the site would be via a planned state road from Iliamna to Nondalton. With 30 MW capacity, this project would be capable of serving the needs of the Iliamna area as well as Dillingham and Naknek.

A feasibility assessment of these three projects is currently underway. It is anticipated that one or two of the projects will prove viable and should be developed.

III. Estimated Capital Cost.

Preliminary cost estimates are from the previously cited Retherford report and include the cost of transmission. They are 1979 estimates.

Lake Elva \$10 million

CATEGORY Power Development AGENCY Alaska Power Authority PROGRAM Economic Development

PROJECT TITLE Dillingham Hydroelectric Project

35b PROPOSED PROJECT ANALYSIS

REVISED

000086

Grant Lake \$12 million
Tazimina 58 million

In addition, approximately \$400,000 is required for detailed feasibility study and license application for the most viable project.

IV. Operational Expense.

Based on estimates for other hydroelectric projects of similar size and location, annual operation and maintenance costs are estimated at \$50,000 for each of the smaller projects and \$150,000 for the Lake Tazimina Project. These costs would be paid out of revenues from the sale of project power.

V. Alternatives Considered.

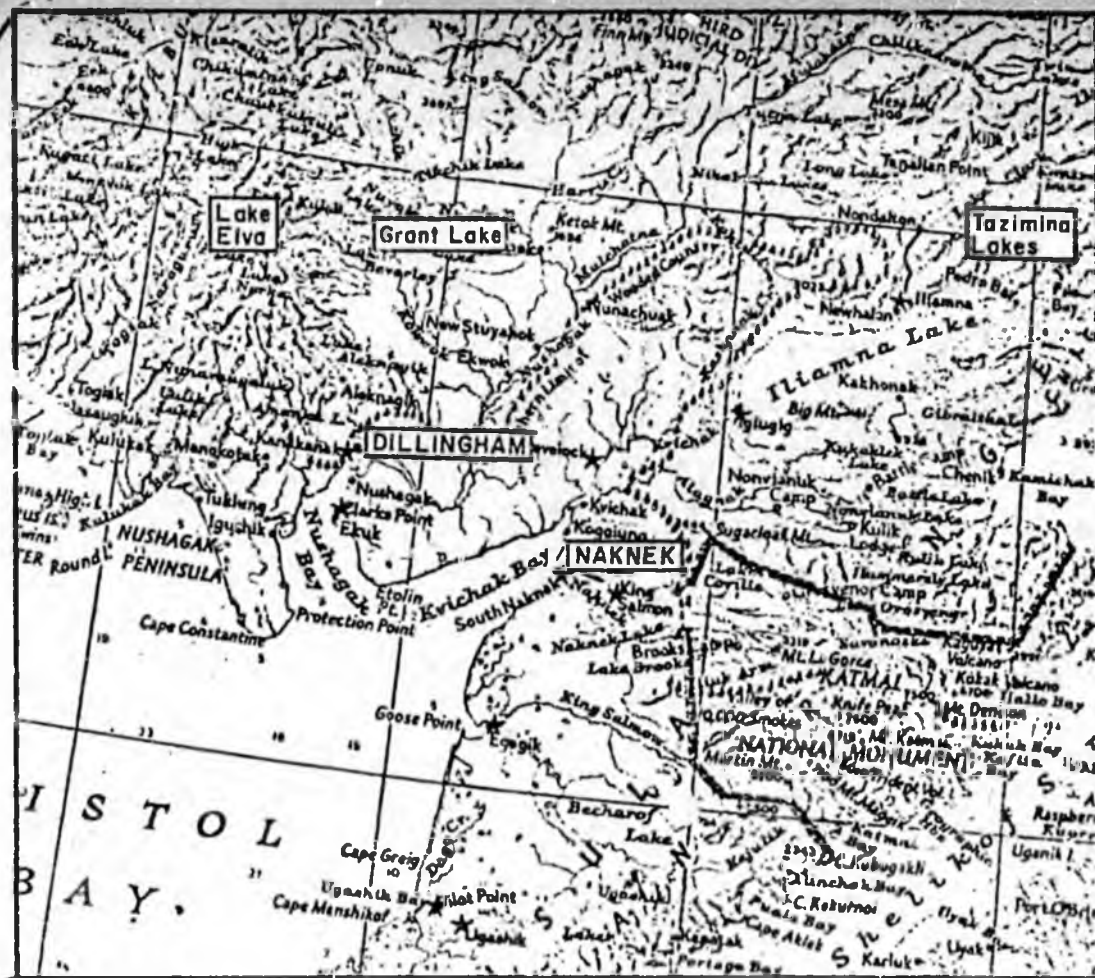
In addition to the 12 other hydroelectric sites, alternative means of providing power include continued use of diesel generation, coal-fired generation from local coal resources, and perhaps wind generation. Alternatives are being further evaluated in the feasibility assessment now underway.

CONTINUATION FORM

CATEGORY Power Development AGENCY Alaska Power Authority PROGRAM Economic Development
PROJECT TITLE Dillingham Hydroelectric Project REVISED 000087
01-1033 (7/73)

PROJECT TITLE Dillingham Hydroelectric Project		LOCATION(S) Dillingham Vicinity	AREA SERVED Dillingham/Naknek	ELECTION DISTRICT(S) 16																				
OBJ. NO(S) 5 & 6	OPERATING BUDGET BRUI(S) Alaska Power Authority	NAME(S)	BUDGET COMPONENT NUMBER(S) 08-71-7-060	START DATE Sept. 1979																				
PROJECT NARRATIVE		PROJECT TYPE		COMPLETION DATE Sept. 1983																				
<p>I. Project Need Statement.</p> <p>Nushagak Electric Cooperative supplies electrical power to the Dillingham area. It is a REA cooperative with about 2,900 KW of diesel generating capacity. The Naknek/King Salmon area is served by Naknek Electric Association, an REA cooperative with about 3,700 KW of diesel generating capacity. Thus, the area is susceptible to fuel price increases caused by both inflation and increases in the relative price of diesel oil. Since 1970, the amount of electricity provided by the two utilities has increased at 11% per year, and growth in demand is expected to continue at a rate of at least 4.5% annually.</p> <p>Several potential hydroelectric projects in the area have been identified that offer the possibility of displacing diesel-fired generation and meeting at least a portion of the anticipated load growth. Unlike diesel fuel, hydroelectric generation is virtually free of the effects of inflation and fuel price escalation. Further, it is in keeping with the state mandate to develop renewable resources.</p>		<p>PROJECT CHARACTERISTICS</p> <input checked="" type="checkbox"/> Totally New Facility <input type="checkbox"/> Addition to Existing Facility <input type="checkbox"/> Renovation of Existing Facility <input type="checkbox"/> Major Maintenance or Repair <input type="checkbox"/> Supplement Previously Authorized Funds to Enable Completion <input type="checkbox"/> One of Several Phases <input type="checkbox"/> Major External Funding Source <input type="checkbox"/> Other		APPROPRIATION REQUEST																				
				<table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>1002</td><td>FED. RCPTS.</td><td></td></tr> <tr><td>1003</td><td>G/F MATCH</td><td></td></tr> <tr><td>1004</td><td>GEN. FUND</td><td>400,000</td></tr> <tr><td>1005</td><td>I/A RCPTS.</td><td></td></tr> <tr><td></td><td>G.O. BONDS</td><td></td></tr> <tr><td colspan="2">TOTAL</td><td>400,000</td></tr> </table>	1002	FED. RCPTS.		1003	G/F MATCH		1004	GEN. FUND	400,000	1005	I/A RCPTS.			G.O. BONDS		TOTAL		400,000		
1002	FED. RCPTS.																							
1003	G/F MATCH																							
1004	GEN. FUND	400,000																						
1005	I/A RCPTS.																							
	G.O. BONDS																							
TOTAL		400,000																						
<p>II. Project Description.</p> <p>Three projects are now under consideration for the area and are the subject of a <u>feasibility assessment</u> presently underway. The three are the best sites from a longer list of 15 sites evaluated</p>		<p>SITE FEATURES</p> <input checked="" type="checkbox"/> Site Currently Owned? <input checked="" type="checkbox"/> All Utilities Available? <input checked="" type="checkbox"/> Access Already Available?		GOVERNOR'S RECOMMENDATION																				
				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>APPROVED</td> <td>DEFERRED</td> <td>DISAPPROVED</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr><td>1002</td><td>FED. RCPTS.</td><td></td></tr> <tr><td>1003</td><td>G/F MATCH</td><td></td></tr> <tr><td>1004</td><td>GEN. FUND</td><td>100.0</td></tr> <tr><td>1005</td><td>I/A RCPTS.</td><td></td></tr> <tr><td></td><td>G.O. BONDS</td><td></td></tr> <tr><td colspan="2">TOTAL</td><td>100.0</td></tr> </table>	APPROVED	DEFERRED	DISAPPROVED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1002	FED. RCPTS.		1003	G/F MATCH		1004	GEN. FUND	100.0	1005	I/A RCPTS.			G.O. BONDS
APPROVED	DEFERRED	DISAPPROVED																						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																						
1002	FED. RCPTS.																							
1003	G/F MATCH																							
1004	GEN. FUND	100.0																						
1005	I/A RCPTS.																							
	G.O. BONDS																							
TOTAL		100.0																						
		OPERATIONAL COST & NO. PERSONNEL	FIRST OPERATING YEAR	ULTIMATE ANNUAL YEAR	PREVIOUS YR-PRIORITY																			
		INCREASE (DECREASE)	1983	1984	80-14																			
		FUNDING SOURCE			AGENCY PRIORITY																			
		FED. RCPTS			81-07																			
		GEN. FUND			GOVERNOR'S PRIORITY																			
		Project Revenues	50,000																					
		TOTAL ANNUAL OPERATIONAL COST	50,000																					
		POSITION (FTE)																						

CATEGORY Power Development AGENCY Alaska Power Authority PROGRAM Economic Development



VICINITY MAP

FIGURE I-1

I. INTRODUCTION AND SUMMARY

A. INTRODUCTION

This reconnaissance study has been performed for the Alaska Power Authority (AKPA) under the contract "Reconnaissance Study for Hydroelectric Development at Lake Elva Near Dillingham and on the Kisaralik River Near Bethel" dated August 13, 1979. This study is a follow on to an earlier study¹. The purpose of this study is to evaluate previously identified potential hydroelectric sites in the Dillingham area in greater detail, including

- implementation of stream-gauging;
- site - reconnaissance and evaluation;
- conceptual design;
- economic feasibility analysis;
- investigation of other alternate electric energy resources.

A supplementary report will summarize the stream-gauging program and its impact on the conclusions of this study after a period of approximately one year.

B. SUMMARY

The questions to be answered by this study can be summarized as follows:

- Can the Lake Elva hydropotential be developed economically for Dillingham?
- Are there alternates which are also feasible?

Preliminary investigations described in the Bristol Bay study noted earlier have identified three promising hydroelectric sites in the Bristol Bay area:

Lake Elva
Grant Lake, and
Tazimina Lake

¹ "Bristol Bay Energy and Electric Power Potential - Phase I", Draft - Oct. 79 prepared for the U.S. Department of Energy, Alaska Power Administration.

Development of these sites had been assessed as feasible in regard to cost, capacity, environmental impact, and land status. Since implementation of construction of the three projects is judged nearly mutually exclusive due to the high expenditures involved, this study has assessed technical and economic feasibility of the possible alternate plans. Sensitivity to load growth and various interest rates has been determined. The area presently utilizes diesel generation exclusively and is experiencing very high increases in electric energy cost due to the recent escalation of fuel oil prices. All alternate developments have therefore been compared to the basic case of continued exclusive diesel generation.

The following paragraphs will summarize the main sections of the report.

1. Existing Systems and Future Power Requirements

With the Tazimina potential under consideration, power requirements have been established for 15 communities in the Nushagak/Kvichak/Iliamna area. With a forecasting period of 20 years the possible developments are shown on Table I-1. Whether the "high" or "low" load growth scenario is realized will depend greatly on the cost of electric energy. A low growth rate can be expected with the continued use of diesel generation and the steadily increasing cost. If a more cost-stable source of electric energy is available, it is anticipated that the historic growth rate will continue and industrial development will be encouraged.

2. Hydroelectric Site Evaluation

To allow a more accurate assessment of the available power, a stream-gauge has been installed at Elva Creek and low flow (winter) measurements will be taken at the Tazimina River. A series of historical measurements are available for Grant Lake. Presently the prime capacity of the three sites is assessed as follows:

<u>Site</u>	<u>Capacity (kW prime)</u>	<u>Capacity (kW installed)</u>	<u>Total Cost* (1979-1000\$)</u>	<u>Cost/kW Prime (1979-\$)</u>
Lake Elva	955	2x750	12,940	13,550
Grant Lake	1385	2x1350	17,416	12,575
Tazimina				
Stage I	9000	2x9,000	50,820	5,647
Stage II	18403	4x9,000	45,774	4,868

* Incl. transmission to load centers.

Electric Energy and Power Requirements
LOW Load Growth

Location	1977	1980	1985	1990	1995	2000
Dillingham						
Energy (MWh/year)	4769	5930	8500	11070	13521	15972
Demand (kW)	1200	1500	2040	2580	3115	3650
Naknek/King Salmon						
Energy (MWh/year)	11691	12526	15642	1770	20923	23076
Demand (kW)	2700	2550	3190	3830	4265	4700
Subtotal Dillingham/Naknek						
Energy (MWh/year)	16460	18456	24148	29840	34444	39048
Demand (kW)*	3600	4050	5230	6410	7380	8350
Clark's Point						
Energy (MWh/year)	152.7	160	175	191	537	883
Demand (kW)	45	46	51	55	153	250
Egegik						
Energy (MWh/year)	101.9	413	966	1517	1600	1683
Demand (kW)	40	600	645	690	730	770
Ekuk						
Energy (MWh/year)	21.3	188	195	203	290	378
Demand (kW)	6	214	224	233	260	287
Ekwok						
Energy (MWh/year)	167.4	178	198	218	257	297
Demand (kW)	50	51	57	62	65	68
Iglugig						
Energy (MWh/year)	79.1	145	155	166	199	232
Demand (kW)	25	41	45	48	51	53
Koiliganeq						
Energy (MWh/year)	160.1	170	188	206	296	386
Demand (kW)	50	50	54	58	73	88
Levelock						
Energy (MWh/year)	171.7	183	205	228	343	458
Demand (kW)	50	52	58	65	85	105
Manokotak						
Energy (MWh/year)	197.8	257	264	271	398	523
Demand (kW)	58	73	77	80	100	120
New Stuyahok						
Energy (MWh/year)	203.1	232	256	280	384	488
Demand (kW)	100	115	100	100	100	110
Portage Creek						
Energy (MWh/year)	83.3	110	134	156	190	224
Demand (kW)	24	31	38	45	48	50
Subtotal - 10 villages						
Energy (MWh/year)	13384	2036	2736	3436	4494	5552
Demand (kW)*	448	1273	1349	1438	1665	1901
Iliamna/Newhalen						
Energy (MWh/year)	1000	1382	1571	1761	1955	2149
Demand (kW)*	285	315	357	400	445	490
Total						
Energy (MWh/year)	18798.4	21874	28455	35037	40893	46749
Demand (kW)	4333	5638	6936	8246	9490	10741

*Noncoincident

Electric Energy and Power Requirements
HIGH Load Growth

Location	1977	1980	1985	1990	1995	2000
Dillingham						
Energy (MWh/year)	4769	5574	12827	19080	32298	45516
Demand (kW)	1200	1500	2730	3960	6310	8660
Naknek/King Salmon						
Energy (MWh/year)	11691	14086	22044	30002	40591	51180
Demand (kW)	2400	2870	4495	6120	7930	9740
Subtotal Dillingham/Naknek						
Energy (MWh/year)	16460	20660	34871	49082	72889	96696
Demand (kW)*	3600	4370	7225	10080	14240	18400
Clark's Point						
Energy (MWh/year)	152.7	184	879	1574	1894	2215
Demand (kW)	45	52	326	600	725	850
Egegik						
Energy (MWh/year)	101.9	1040	2316	3591	3642	3692
Demand (kW)	40	600	980	1360	1380	1400
Ekuk						
Energy (MWh/year)	21.3	198	233	269	948	1628
Demand (kW)	6	226	267	308	619	930
Ekwok						
Energy (MWh/year)	167.4	203	330	457	982	1507
Demand (kW)	50	58	94	130	238	345
Iglugig						
Energy (MWh/year)	79.1	158	225	292	410	528
Demand (kW)	25	45	65	85	103	120
Koiliganeq						
Energy (MWh/year)	160.1	190	356	523	1014	1505
Demand (kW)	50	54	102	150	248	345
Levelock						
Energy (MWh/year)	171.7	209	419	629	948	1267
Demand (kW)	50	60	120	180	235	290
Manokotak						
Energy (MWh/year)	197.8	338	678	1018	1728	2439
Demand (kW)	58	97	194	290	425	560
New Stuyahok						
Energy (MWh/year)	203.1	267	460	653	1183	1713
Demand (kW)	100	100	143	186	288	390
Portage Creek						
Energy (MWh/year)	83.3	120	198	275	372	468
Demand (kW)	24	34	57	80	94	107
Subtotal - 10 villages						
Energy (MWh/year)	1338.4	2907.0	6094	9281	13121	16982
Demand (kW)*	448	1326	2348	3369	4355	5337
Iliamna/Newhalen						
Energy (MWh/year)	1000	1543	2215	2887	5578	8270
Demand (kW)*	285	352	506	660	1190	1720
Total						
Energy (MWh/year)	18798.4	25110	43180	61250	91588	121948
Demand (kW)	4333	6648	10079	14109	19785	25457

*Noncoincident

Electrical Energy and Power Requirements

Table I-1

I-5

Mitigation of the anticipated impact of plant development on salmon spawning grounds has led to the downscaled development proposals for Grant Lake and Tazimina. Subsoil conditions at the planned Tazimina damsite will also not allow construction of the dam at the previously considered height.

Lake Elva and Grant Lake are located in the Wood River Lakes State Park but are listed as non-objectionable developments in the park statutes. Tazimina is located in a wilderness study area which is presently included in the 1978 federal emergency withdrawal. Attempts to obtain a powersite exemption are underway.

3. Economic Feasibility Analysis

Alternate development plans have been evaluated for the Dillingham system and for a regional intertied system including up to 15 communities. Utilizing annual cost and present worth comparisons the following scenarios have been found to be the most advantageous developments:

Lake Elva for the Dillingham system only;
 Lake Tazimina for a regional intertied system.

Transmission interties of 10 communities in the Kvichak/Nushagak area to the central generating plants in Naknek and Dillingham have been found feasible independent of hydroelectric power potential development. This is mostly due to the high fuel cost in remote locations and low generating efficiencies.

The following table will illustrate the economical differences for the main alternate development plans investigated. Unit cost for marketable energy are listed for a medium interest rate of 5%. Low load growth has been used to show the less advantageous cases for the hydro developments.

TABLE I-2

Alternate Plan	Busbar Cost of Electric Energy in ¢/kWh		
	1980	1990	2000
Continued use of diesel (Dillingham)	13.2	21.7	35.3
Small communities, local diesel ²	37.4	63.1	101.6
Intertied system ¹ , diesel only	14.1	22.2	35.8
Dillingham system with Lake Elva	13.2	20.0	28.3
Dillingham with Grant Lake	13.2	20.5	25.7
Intertied system ¹ with Elva and Grant	14.1	24.9	32.6
Intertied system ^{1,2} with Lake Tazimina	14.1	18.1	15.5
Intertied system ^{1,2} with Elva + Tazimina	14.1	21.3	18.0

¹ 10 communities with Dillingham and Naknek.

² Includes Iliamna, Newhalen and Nondalton.

It should be noted that the above are busbar cost -- not cost to the consumer.

4. Other Electric Energy Resources

The most viable alternate at this time to fuel oil or hydroelectric resources appears to be wind energy conversion. The available systems are still very costly though and reliability of the equipment in Alaska has not proven to be very high. With continued improvements it is anticipated that utilization of WECS will be economically feasible by individuals in remote locations as well as by electric utilities to offset fuel cost. Applications for pumping or heating appear to be even more promising. The cost for electric energy generation by WECS at this time in the Dillingham or Iliamna areas has to be anticipated between 30¢/kWh and 80¢/kWh. These cost do not include standby generators.

To utilize diesel generation more efficiently -- if no other source of electric energy is available -- central generation with transmission interties promise cheaper energy, if the transmission ties are economically feasible. The single wire ground return (SWGR) line concept is anticipated to offer savings of approximately 60% compared to conventional three phase transmission or distribution lines.

A demonstration project to be built in 1980 in the Bethel area is presently in the design stage. If the project is successful, this type of line construction is expected to increase and make interties between small communities and load centers possible. For this report the feasibility of interties has been investigated for 10 communities in the Nushagak/Kvichak area. It is conceivable that busbar cost of electric energy in the small communities could be lowered by up to 50% if the interties to Dillingham and Naknek are built. This is mostly caused by enhanced generating efficiency and lower fuel cost in Dillingham and Naknek compared to the more remote communities.

The possibility of an intertie between the Bristol Bay and Kuskokwim area has been briefly investigated, assuming that the Tazimina and Kisaralik hydropotential are developed. This preliminary evaluation indicates that this intertie could be marginally feasible somewhere around 1995 when the load growth in the Dillingham area would require implementation of the Tazimina Stage 2 development. The possible reduction in standby capacity has not been taken into account in this evaluation.

The above mentioned interties actually represent a form of conservation. It is not anticipated that it will be possible to actually reduce electric energy consumption in this area, where hookup saturation is still low. Other means of conservation of fuel oil such as utilization of variable speed engines and waste heat recovery are strongly encouraged.

5. Conclusions and Recommendations

The economic analysis clearly favors development of the Tazimina hydropotential for an intertied system of 15 communities. In order to pursue implementation of this project a regional power authority or a generation and transmission cooperative will have to be established to assure representation of the individual communities and act as the entity that will install and operate the facilities.

If the Tazimina development is not pursued, Lake Elva is the next best choice for Dillingham alone. It is the project with the shortest construction time and can be undertaken by the local utility with REA financing.

Either project should be prepared for FERC license application as soon as possible to assure the earliest possible start of construction.