

Agency: Commerce, Community and Economic Development**Project Title:**

Alaska Energy Authority - Susitna Hydro Study and Railbelt Energy Plan

State Funding Requested: \$ 2,500,000
Future Funding May Be Requested**House District: Statewide (1-40)****Brief Project Description:**

Project provides the Alaska Energy Authority (AEA) with initial funding for the development of an integrated strategic energy plan for the Railbelt area including the feasibility of developing a hydroelectric project on the Susitna River.

Funding Plan:**Total Cost of Project: \$4,250,000**

	<u>Funding Secured</u>		<u>Other Pending Requests</u>		<u>Anticipated Future Need</u>	
	<i>Amount</i>	<i>FY</i>	<i>Amount</i>	<i>FY</i>	<i>Amount</i>	<i>FY</i>
State Funds					\$1,500,000	2010
Total					<u>\$1,500,000</u>	

Detailed Project Description and Justification:

This appropriation will provide the Alaska Energy Authority (AEA) with initial funding for the development of an integrated strategic energy plan for the Railbelt area to include the feasibility of developing a hydroelectric project on the Susitna River. AEA will consult with various government agencies, railbelt utilities, native corporations, other landowners, and various regional economic development councils during the course of their work.

The work tasks and goals are detailed below and the timeline is provided to illustrate the work that could be done in parallel rather than sequentially.

Work Task 1: Integrated Energy Plan for the Railbelt

Estimated Cost: \$1,000,000

Schedule: 30 June 2008 – 30 January 2010

A strategic energy plan for the Railbelt area will be developed. This will examine projected energy demands under a variety of different future scenarios that will examine growth in population, potential new industrial demands, changes in air and water regulations, fuel costs, development of new energy technologies, as well as risks of the variety of generating options. The objective of this plan is to provide a balanced view of energy needs and opportunities to allow for informed decisions on energy projects.

Work Task 2: Susitna Hydro Feasibility Study and Cost Estimates

Estimated Cost: \$1,500,000

Schedule: 30 June 2008 – 30 September 2009

Work includes updating cost estimates for construction of the Susitna Hydro project using current construction and design technology. The prior estimate is from 1984. Constructibility and logistics will be key components of this update. Additionally a review of engineering and technical risks including seismic design will be identified. The design of this facility is such that there are minimal size reductions that can be done. While there may be a need for 700 MW of generating capacity the constraints of the Susitna site may only allow for 300 MW, 1000 MW, and 1,620 MW options. The new study therefore will examine the possible size options that are inherent in the 1984 estimate and provide capital, operating and maintenance costs and subsequent costs of power over the lifetime of the facility for those options. Additionally, modifications and estimates for upgrades of the Railbelt Electrical Grid to allow use of this new generation capacity will be developed. Timelines for design, permitting, and construction for each option will be developed.

Future work for which additional funding will be required:

Analysis of Financing Options

Estimated Cost: \$200,000

Schedule: 30 January 2009 – 30 September 2009

Construction costs of the Hydro plant are estimated to be in excess of \$5 billion. Even if economic studies determine that the plant will provide competitive power, construction financing may be a limiting factor. An analysis of potential financing options needs to be developed.

Alternative Power Generation Cost Assessment

Estimated Cost: \$800,000

Schedule: 30 March 2009 – 31 December 2009

Cost estimates for alternative power generation options for the Railbelt area need to be made. Options to be considered include the use of coal, natural gas, wind, geothermal, tidal and potential hydro other than Susitna. These estimates will be used to compare the economics of power generation from Susitna as well as the displacement opportunity of other fuels this project will enable. An important outcome of this work will be the determination of the costs/values of emissions each generating option will provide, including such things as carbon emissions/capture and mercury emissions.

Environmental/Socio-economic Impact Study

Estimated Cost: \$500,000

Schedule: 30 January 2009 – 30 September 2009

Environmental permitting and the socio-economic impact on the affected area is a key component of this study and will have the most impact on the feasibility of this study. A review of necessary permits, licenses and an analysis of potential impacts to the area will be done. Economic impacts and opportunities, including construction and operation jobs, which will result from a project of this size and generating capacity will be determined.

Additional Field Work

Estimated Cost: \$250,000

Schedule: 30 June 2008 – 30 September 2009

Limited field work is envisioned; however there may be need for helicopter access to the location of the proposed dam sites as well as limited amount of field work including terrain, river conditions and potential construction camp sites and lay down areas.

Full Proposal Summary

Total Estimated Cost of Sustina Study: \$3,250,000

Total Estimated Cost including the Railbelt Energy Plan: \$4,250,000

FY 09 - \$2,750,000

FY 10 - \$1,500,000

It is anticipated that this work will take approximately two years, with a draft report available in January 2010 and a final report including the Railbelt energy plan available in June 2010. Over the course of the project interim reports will be issued and specific decision gates on proceeding with phases of the project will be developed. If at anytime the feasibility of the Sustina Dam project becomes non-viable the project will be curtailed.

Project Timeline:

Work will take approx 2 years, with a draft report available in Jan 2010 and a final report including the Railbelt energy plan avail in June 2010.

Entity Responsible for the Ongoing Operation and Maintenance of this Project:

Alaska Energy Authority

Grant Recipient Contact Information:

Contact Name: Sara Fisher-Goad, Dep Dir Ops, AEA

Phone Number: 907-771-3012

Address: 813 West Northern Lights Blvd. Anchorage, AK 99503

Email: SFisherGoad@aidea.org

Has this project been through a public review process at the local level and is it a community priority? ☐ Yes ☒ No

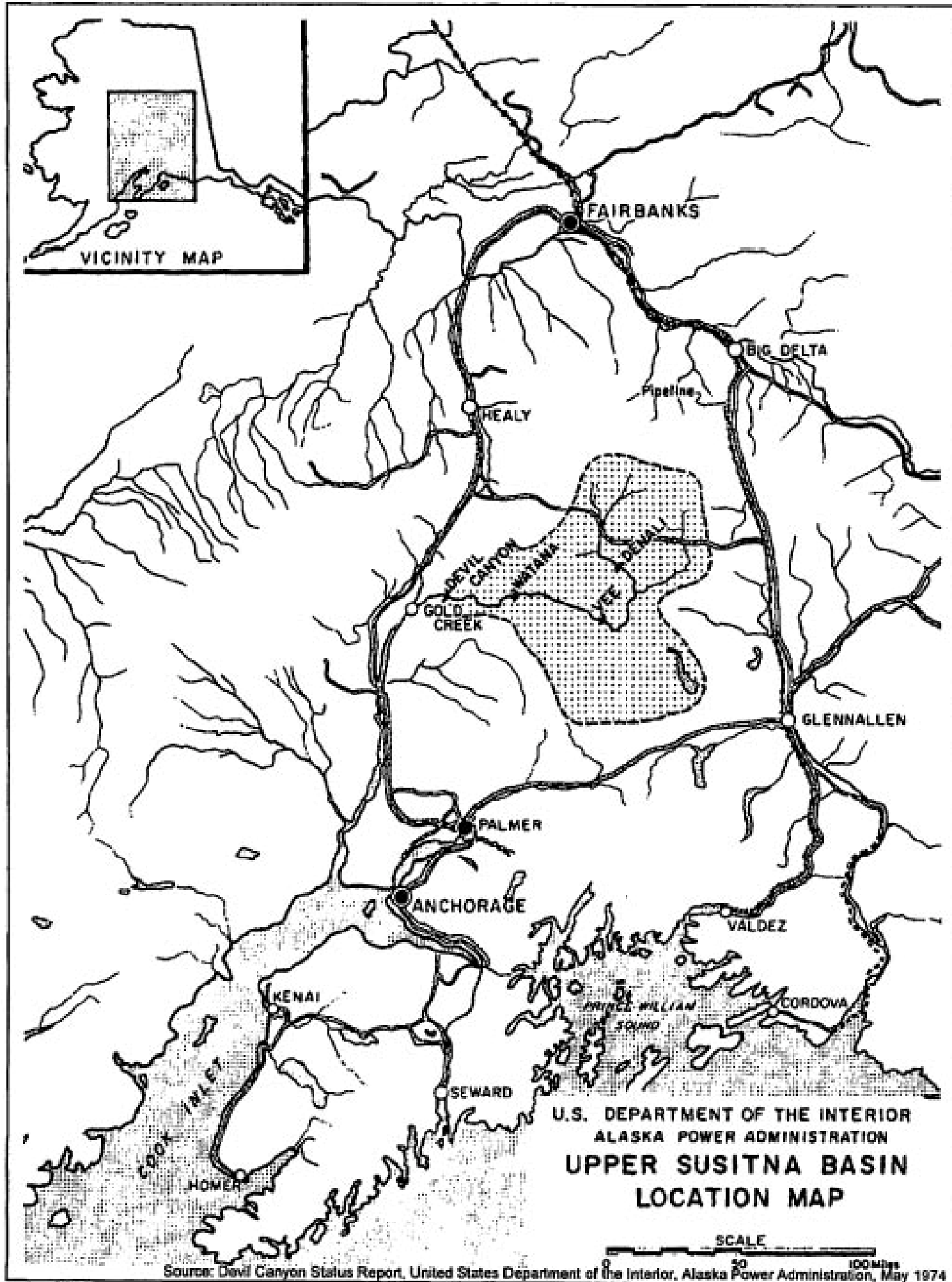


Figure 1 – Susitna Project Location

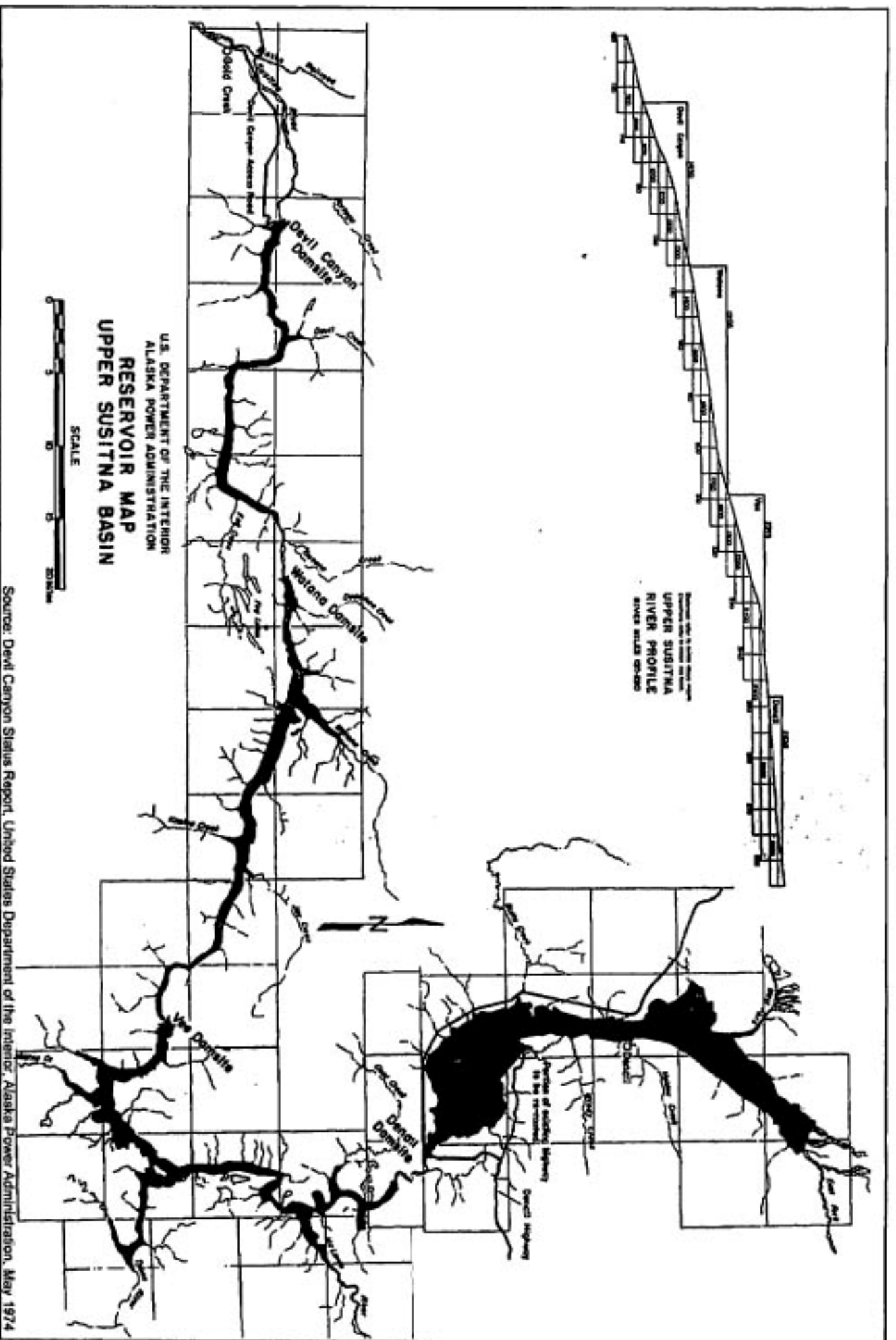


Figure 2 – Susitna Four Dam Scheme

Source: Devil Canyon Status Report, United States Department of the Interior, Alaska Power Administration, May 1974