

Agency: Commerce, Community and Economic Development**Grants to Named Recipients (AS 37.05.316)****Grant Recipient: Southeast Alaska Power Agency (SEAPA)****Federal Tax ID: 92-6000082****Project Title:****Project Type: Remodel, Reconstruction and Upgrades**

Southeast Alaska Power Agency - Swan Lake Hydroelectric Project Reservoir Expansion Project

State Funding Requested: \$12,330,519**House District: 33 / Q**

One-Time Need

Brief Project Description:

This project will directly contribute to increasing regional hydro storage capacity and will displace up to 12,000 MW hours of winter diesel generation which is equivalent to 800,000 gallons of diesel fuel annually.

Funding Plan:

Total Project Cost:	\$13,391,869
Funding Already Secured:	(\$1,061,350)
FY2015 State Funding Request:	<u>(\$12,330,519)</u>
Project Deficit:	\$0

Funding Details:

<i>Funding Years</i>	<i>2011-2012</i>	<i>2013</i>
<i>SEAPA Funds</i>	\$389,000	\$94,350
<i>DCCED Grant Funds</i>	\$578,000	

Detailed Project Description and Justification:

The Southeast Alaska Power Agency (SEAPA) is a not-for-profit Joint Action Agency of the State of Alaska that supplies wholesale power to the municipal utilities of Petersburg, Wrangell, and Ketchikan over its interconnected transmission system. SEAPA is seeking to obtain State funding for final design, construction engineering, project management, and construction of its reservoir expansion project at the Agency's Swan Lake Hydroelectric Project located on Carroll Inlet approximately twenty-two miles northeast of Ketchikan.

The Swan Lake Hydroelectric Project is comprised of a concrete arch dam, 174 feet high and 430 feet long at its crest, located approximately 3/4 mile downstream from the mouth of the original Swan Lake and having an uncontrolled ogee spillway section, 100 feet long, with a crest elevation of 330 feet. Normal maximum reservoir storage capacity is 86,000 acre-feet, spilling an average of 35,000 acre-feet of water annually. The power tunnel is 2,200 feet long and 11 feet in diameter, leading from the intake structure down to the power house. There are two Francis style hydro turbines with a total rated capacity of 22,000 kW. The project output in 2011 was 91,584 MWhrs.

Development of the SEAPA Swan Lake Expansion Project is critical to southern Southeast Alaska's continued economic sustainability as it will provide the region with increased regional hydroelectric storage capacity. The project will:

- Directly contribute to increasing regional hydro storage capacity, which was identified as a priority in the Southeast Alaska

Integrated Resource Plan (SEIRP);

- Displace up to 12,000 MWhrs of winter diesel generation, which equates to a reduction of 800,000 gallons of diesel fuel annually;
- Swan Lake is interconnected to the communities of Petersburg, Wrangell, and Ketchikan; the additional storage adds operational flexibility that benefits the entire region;
- The project would be fully operational by 2016 and will shift summer spill that would have occurred at the Whitman Hydroelectric Facility to much needed winter hydro generation;
- Provide additional storage for future longer term projects; and
- Maximize the value of an existing hydro project.

Project Timeline:

2011-2013: Feasibility, License Consulting, Environmental Studies

2013-2016: Construction Engineering and Project Management

2014: Amendment Costs (Timber Harvest, 4e Constraints, etc.)

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

Southeast Alaska Power Agency

Grant Recipient Contact Information:

Name: Trey Acteson
 Title: CEO
 Address: 1900 First Avenue
 Ketchikan, Alaska 99901
 Phone Number: (907)228-2281
 Email: tacteson@seapahydro.org

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

Southeast Alaska Power Agency

Swan Lake Hydroelectric Project Reservoir Expansion Project

Owner: Southeast Alaska Power Agency
1900 First Avenue, Suite 318
Ketchikan, Alaska 99901

Contact: Trey Acteson, Chief Executive Officer
(907) 228-2281
tacteson@seapahydro.org

Start of Construction: 2014
On-Line Date: 2016
Estimated Cost: \$12,330,519
Funding Request: \$12,330,519

Priority Ranking: 1



Swan Lake Dam

Project Description

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The Swan Lake Hydroelectric Project is comprised of a concrete arch dam, 174 feet high and 430 feet long at its crest, located approximately $\frac{3}{4}$ mile downstream from the mouth of the original Swan Lake and having an uncontrolled ogee spillway section, 100 feet long, with a crest elevation of 330 feet. Normal maximum reservoir storage capacity is 86,000 acre-feet, spilling an average of 35,000 acre-feet of water annually. The power tunnel is 2,200 feet long and 11 feet in diameter, leading from the intake structure down to the power house. There are two Francis style hydro turbines with a total rated capacity of 22,000 kW. The project output in 2011 was 91,584 MWhrs.

SEAPA has conducted preliminary engineering, license amendment, and system integration studies in the pursuit of expanding the Swan Lake reservoir. After two years of effort, at an expense to SEAPA of funds totaling \$565,550, we continue to promote expanding the reservoir at Swan Lake. A detailed cost benefit analysis (available at www.seapahydro.org) determined that raising the dam face height 15 feet will result in the best return on investment. It will add 25% additional storage for winter hydro generation, displacing up to 12,000 MWhrs of diesel generation annually. SEAPA conducted agency meetings in February 2013 and filed the voluminous 642 page Initial Consultation Document (ICD) as part of the non-capacity license amendment process on April 15, 2013. Several additional activities are in progress or scheduled to be completed for inclusion into the final license amendment application including: civil engineering plan and approval, FERC Board of Consultants summary, FERC dam safety review, economic benefits report, Tongass National Forest (TNF) resource reports, and the environmental assessment (EA). These activities are being funded by the storage initiative portion (\$578,000) of our 2012 legislative appropriation (\$3M) and SEAPA. The subsequent cost to complete final design, construction engineering, project management, and construction is \$12.3M.

Project Benefits

Development of the SEAPA Swan Lake Expansion Project is critical to southern Southeast Alaska's continued economic sustainability as it will provide the region with increased regional hydroelectric storage capacity. The project will:

- Directly contribute to increasing regional hydro storage capacity, which was identified as a priority in the Southeast Alaska Integrated Resource Plan (SEIRP);
- Displace up to 12,000 MWhrs of winter diesel generation, which equates to a reduction of 800,000 gallons of diesel fuel annually;
- Swan Lake is interconnected to the communities of Petersburg, Wrangell, and Ketchikan; the additional storage adds operational flexibility that benefits the entire region;
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- Maximize the value of an existing hydro project.

Schedule and Cost Estimate

Detailed below is the anticipated schedule and cost estimates associated with moving the project forward.

Project Costs	2011-2012	2013	2014	2015-2016	Total
Feasibility, License Consulting, Environmental Studies	\$389,000	\$214,000			\$603,000
Amendment Costs (Timber Harvest, 4e Constraints, etc.)			\$557,000		\$557,000
Construction Eng. & PM		\$458,350	\$739,611	\$9,416,698	\$10,614,659
Total	\$389,000	\$672,350	\$1,296,611	\$9,416,698	\$11,774,659
Escalation	\$0	\$0	\$132,903	\$1,484,307	\$1,617,210
Project Grand Total	\$389,000	\$672,350	\$1,429,514	\$10,901,005	\$13,391,869

Funding Request

The total cost of the reservoir expansion project is estimated to be \$13,391,869. The Southeast Alaska Power Agency is seeking \$12,330,519 from the State of Alaska to undertake final design, construction engineering, project management and construction of the project.

Funding	2011-2012	2013	2014	2015-2016	Total
SEAPA Funds	\$389,000	\$94,350			
DCCED Grant Funds		\$578,000			
Remaining Construction & Engineering Funds Needed			\$1,429,514	\$10,901,005	\$12,330,519
Total Requested Funds					\$12,330,519