

ALASKA ENERGY AUTHORITY

# SUSITNA-WATANA HYDROELECTRIC PROJECT

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House Energy Committee  
January 26, 2023



# Who We Are



**Our Mission**  
Reduce the cost of  
energy in Alaska.



Created in 1976 by the Alaska Legislature, the Alaska Energy Authority (AEA) is a public corporation of the State of Alaska governed by a board of directors with the mission to “reduce the cost of energy in Alaska.” AEA is the state's energy office and lead agency for statewide energy policy and program development.

# What We Do

**AEA's mission is to reduce the cost of energy in Alaska. To achieve this mission, AEA works to diversify Alaska's energy portfolio.**



**Railbelt Energy** – AEA owns the Bradley Lake Hydroelectric Project, the Alaska Intertie, and the Sterling to Quartz Creek Transmission Line – all of which benefit Railbelt consumers by reducing the cost of power.



**Alternative Energy and Energy Efficiency** – AEA provides funding, technical assistance, and analysis on alternative energy technologies to benefit Alaskans. These include biomass, hydro, solar, wind, and others.



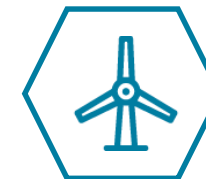
**Power Cost Equalization (PCE)** – PCE reduces the cost of electricity in rural Alaska for residential customers and community facilities, which helps ensure the sustainability of centralized power.



**Grants and Loans** – AEA provides loans to local utilities, local governments, and independent power producers for the construction or upgrade of power generation and other energy facilities.



**Rural Energy** – AEA constructs bulk fuel tank farms, diesel powerhouses, and electrical distribution grids in rural villages. AEA supports the operation of these facilities through circuit rider and emergency response programs.

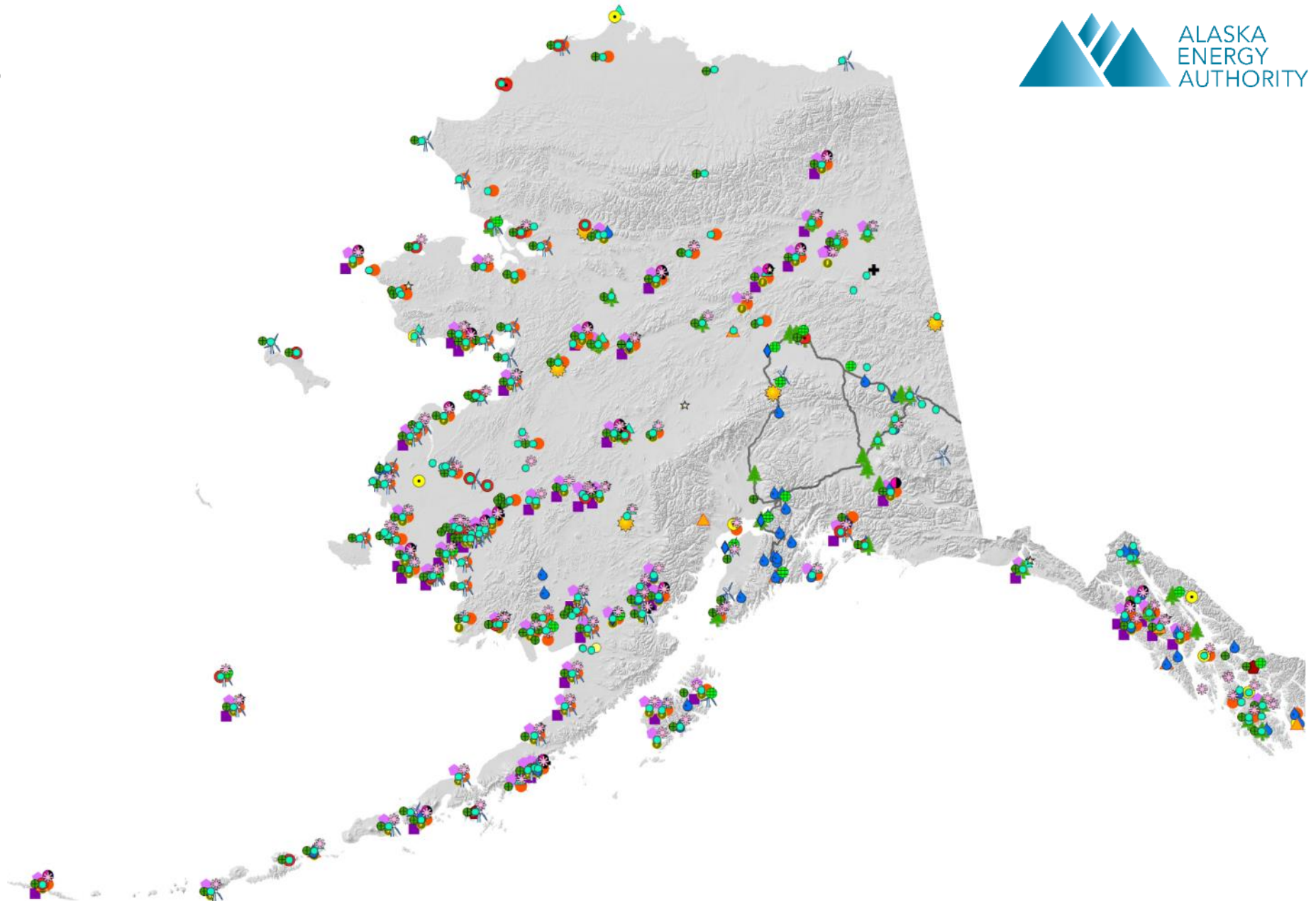


**Energy Planning** – In collaboration with local and regional partners, AEA provides economic and engineering analysis to plan the development of cost-effective energy infrastructure.



# Active Projects and Services

-  Biomass/Biofuels
-  Bulk Fuel Upgrades
-  Circuit Rider Assistance
-  Diesel Emission Reduction Act
-  Electrical Emergency Response
-  Emerging Energy Technology Fund
-  Heat Pump
-  Heat Recovery
-  Hydroelectric
-  Maintenance and Improvement
-  Ocean/River
-  PCE Community
-  PCE Utility Clerk Training
-  Rural Power System Upgrade
-  Solar
-  Storage
-  Transmission
-  Utility Operator Training
-  Utility Technical Assistance
-  VEPP (Efficiency)
-  Wind







# SUSITNA-WATANA HYDRO

*Clean, reliable energy for the next 100 years.*



# Project Status

2014

In 2014, Administrative Order (AO) 271 placed the Susitna-Watana Hydroelectric Project into abeyance

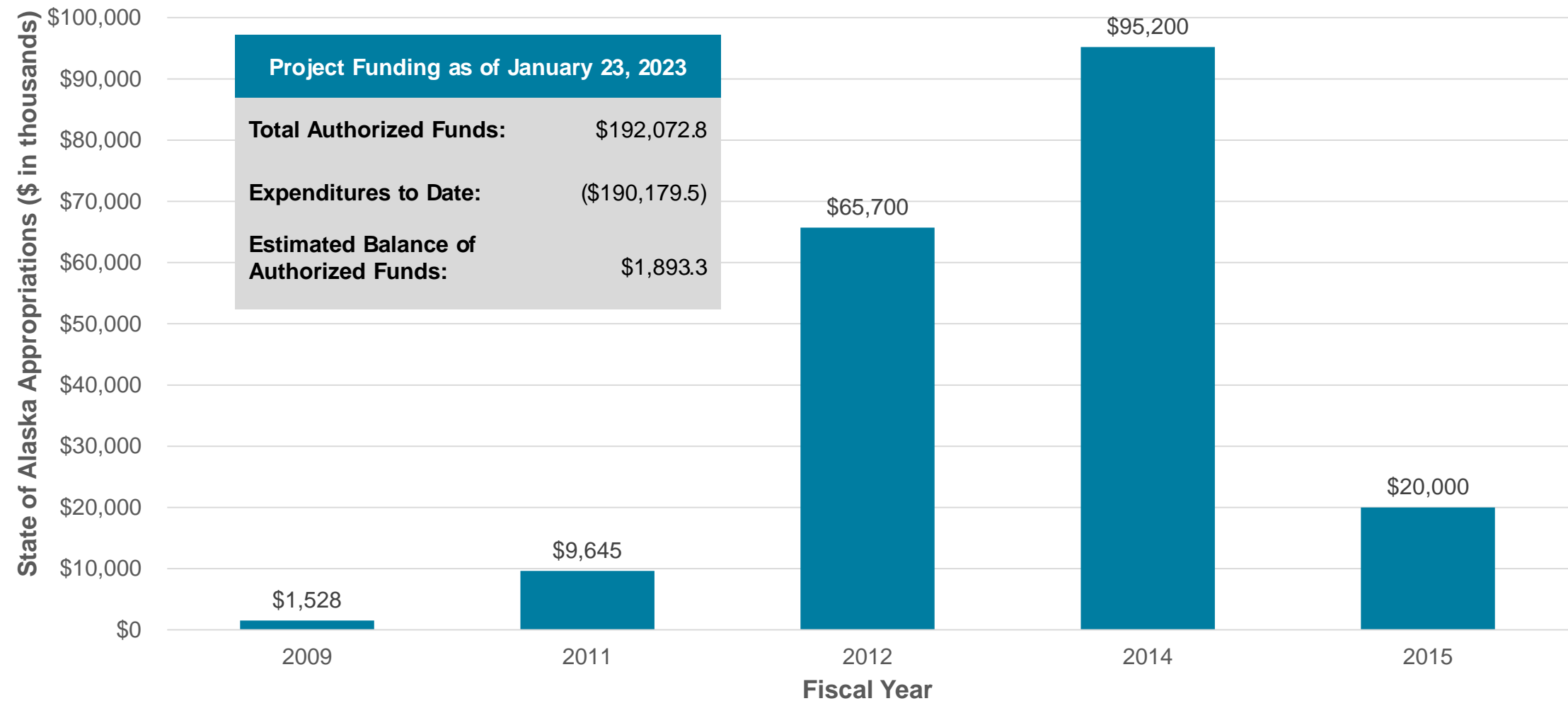
2019

In 2019, through AO 309 the Governor rescinded AO 271

2022

In Fiscal Year 2022, no state funds were spent

# Project Funding History





# Alaska Statute 44.83.080

## Powers of Authority

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- (18) to acquire a Susitna River power project, whether by construction, purchase, gift, or lease, including the acquisition of property rights and interests by eminent domain under AS 09;
- (19) to perform feasibility studies and engineering and design with respect to power projects.





# Why Susitna-Watana?

50  
percent

estimated supply  
of current Railbelt  
energy demand

100+  
years

is the project life  
providing long-  
term, stable rates

\$11.2  
billion

estimated energy cost  
savings (\$2014) over  
first 50 years

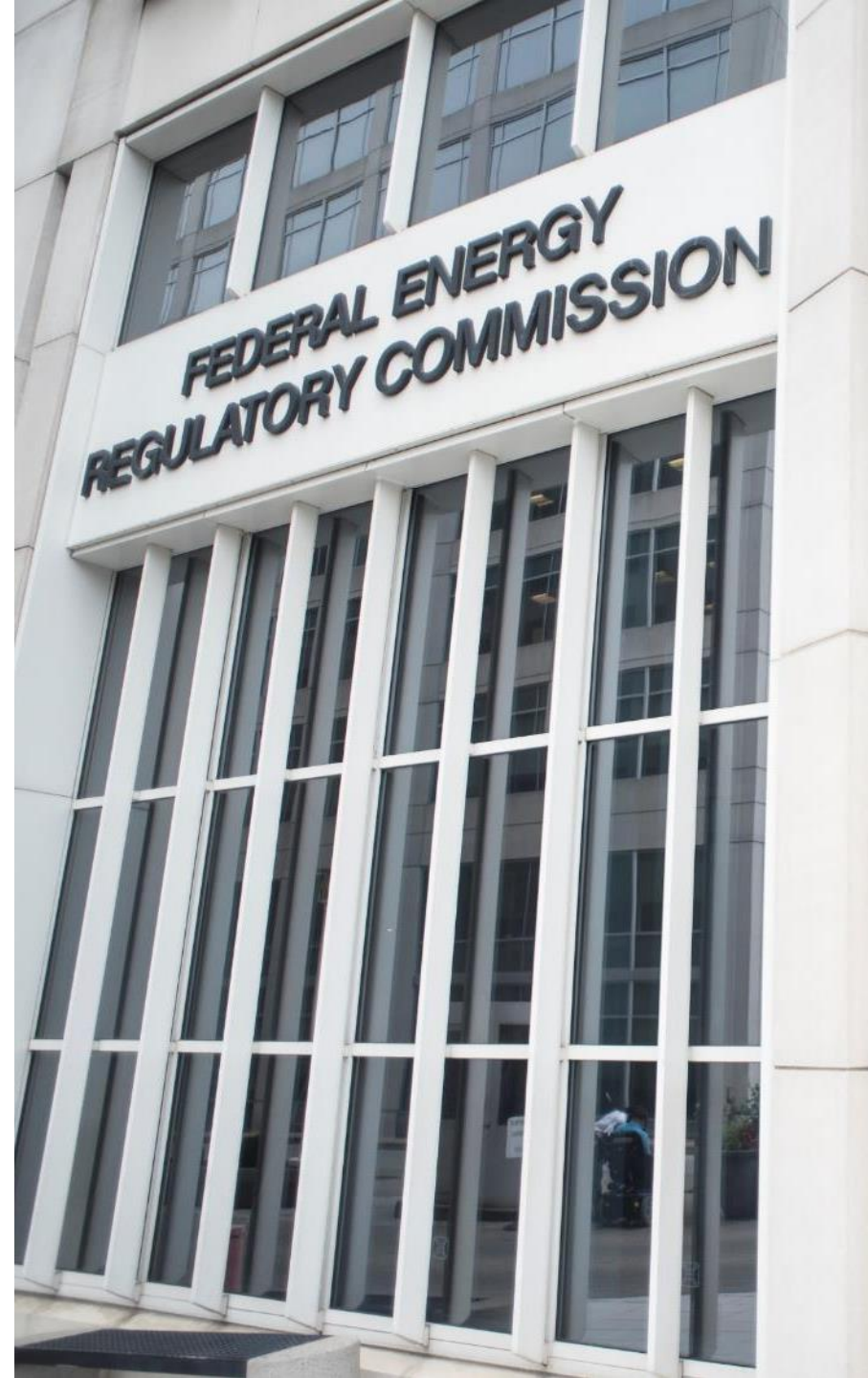


The reduction of carbon dioxide emissions from displaced coal and natural gas-fired generation would amount to 1.3 million tons a year, which equates to removing approximately 250,000 cars from the road.

# FERC Licensing Status

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- Federal Energy Regulatory Commission (FERC) Integrated Licensing Process
- 2/3 of the way done
- 58 FERC-approved studies:
  - Implemented 2012-2017
  - 19 studies completed
  - 39 significant progress made
- Initial Study Report filed with FERC



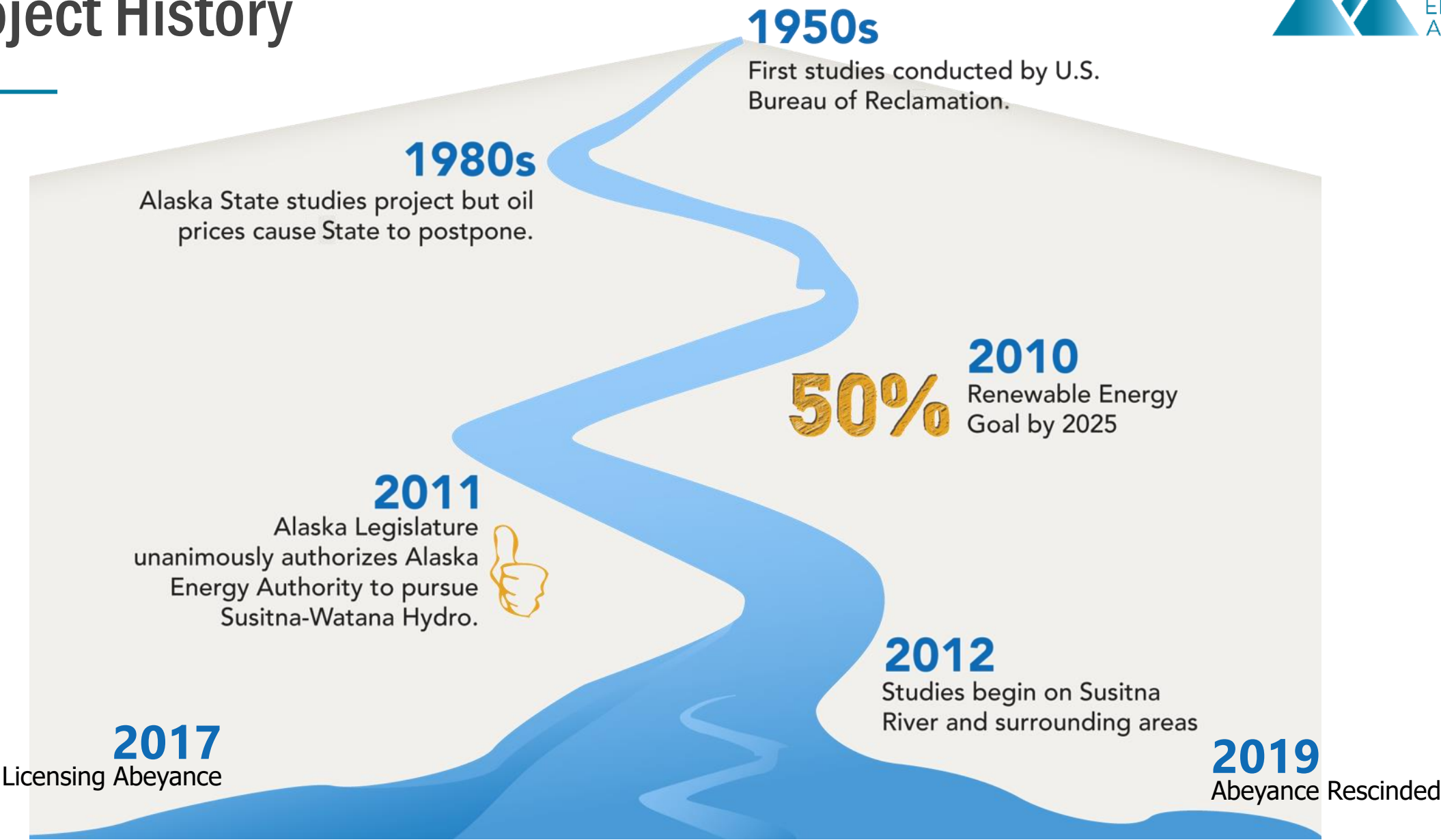


# FERC Study Plan Determination Outcome



- Confirmed adequacy of environmental studies
- Validated quality of work completed to date
- Rejected nearly all study modification requests
- Rejected requests for additional years of study
- Confirmed data gathered thus far is representative of baselines
- Rejected requests for additional studies
- Licensing activity currently in abeyance

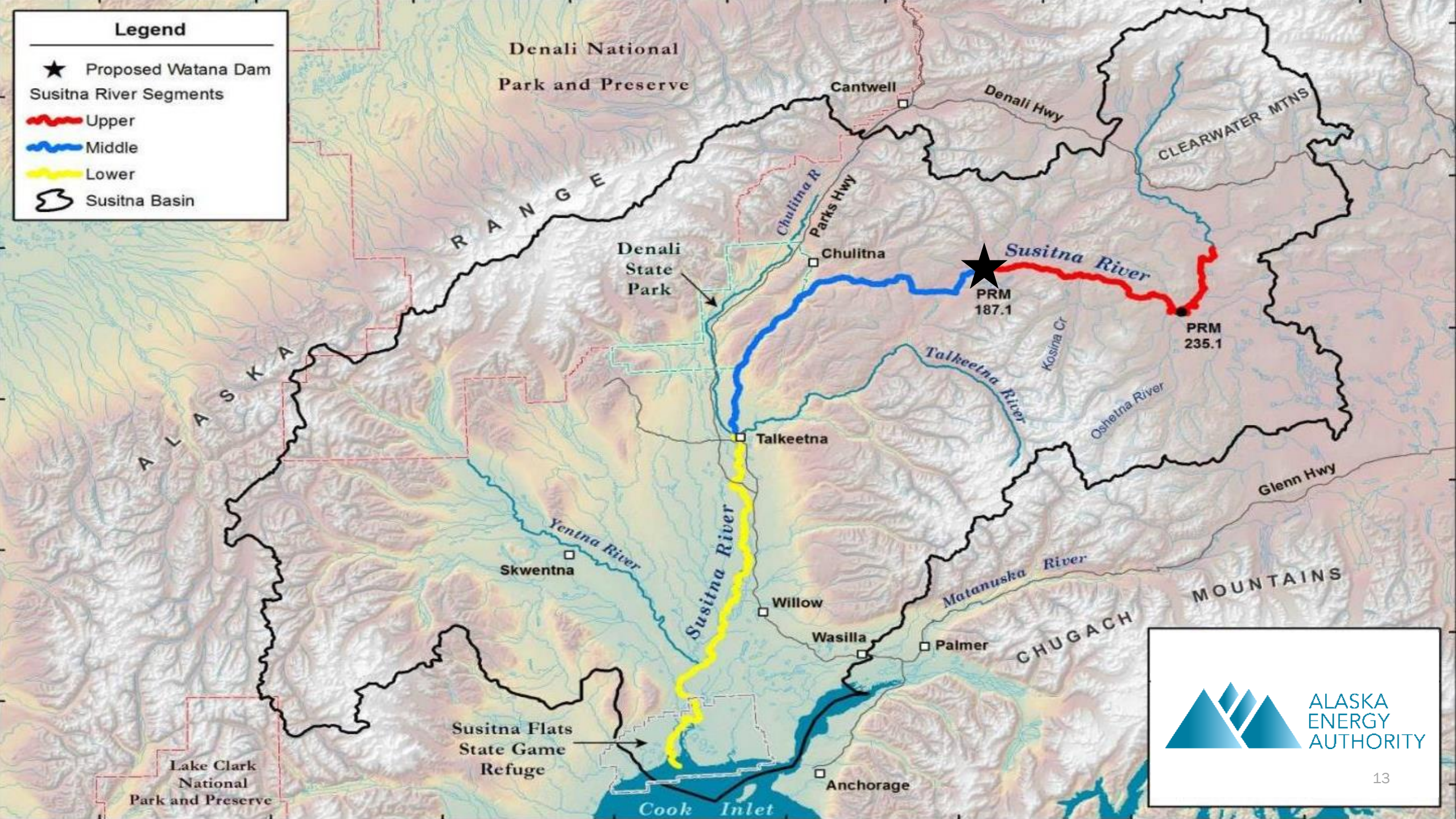
# Project History





## Legend

- ★ Proposed Watana Dam
- Susitna River Segments
  - Upper
  - Middle
  - Lower
- Susitna Basin



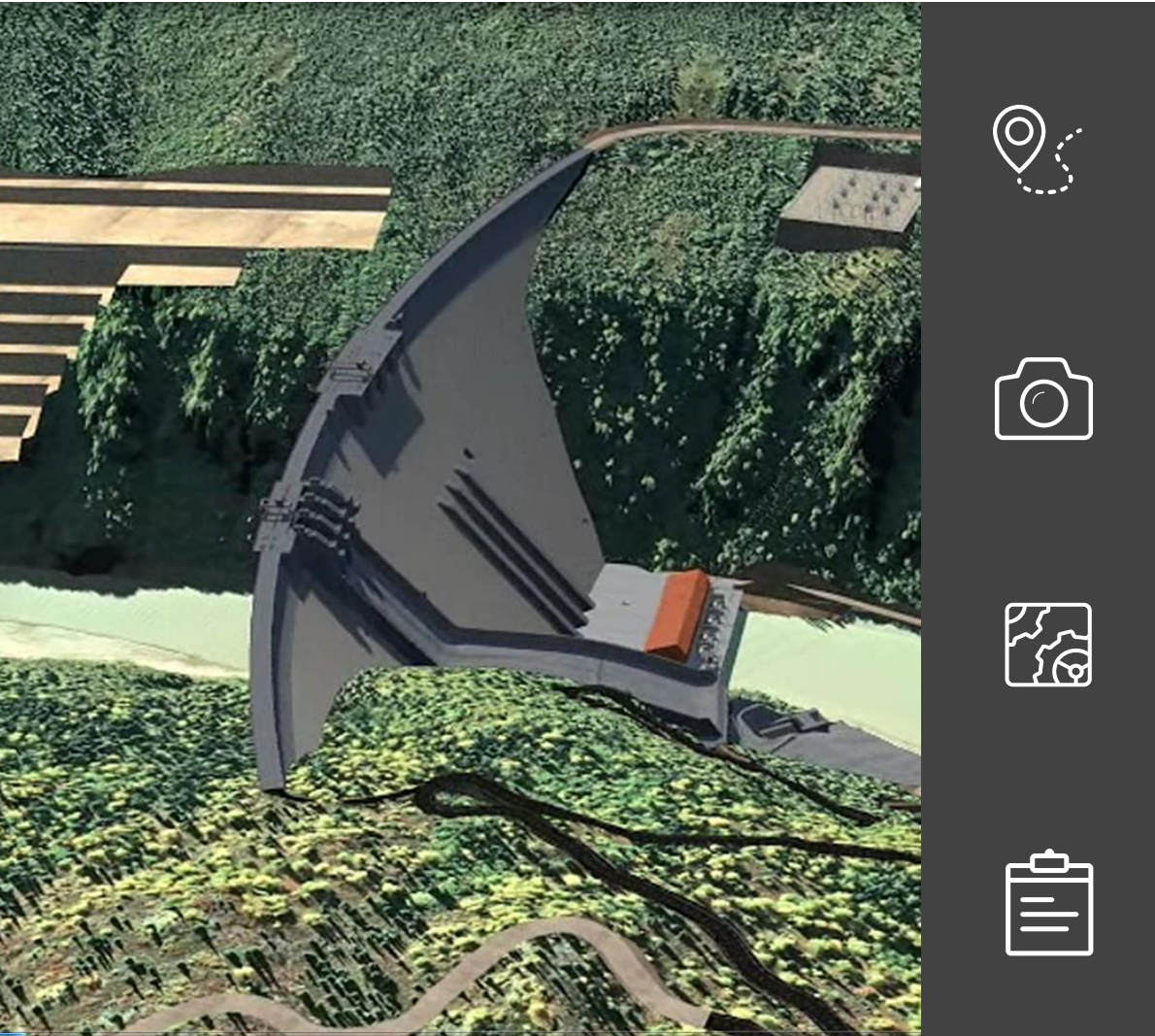


# Project At-A-Glance

- **Dam Height** – 705 feet
- **Dam Elevation** – 2,065 Feet
- **Reservoir Length** – ~42 miles
- **Reservoir Width** – ~1.25 miles
- **Installed Capacity** – 618 MW
- **Annual Energy** – 2,800,000 MWh
- **Cost** – ~\$5.6 billion (2014\$)







# Engineering

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- Size and generation optimized
- Design reviewed by International Board of Consultants
- Designed to withstand:
  - 10,000-year flood
  - Maximum credible earthquake of a magnitude 8.0
- 2014 Engineering Feasibility Report





# Economics

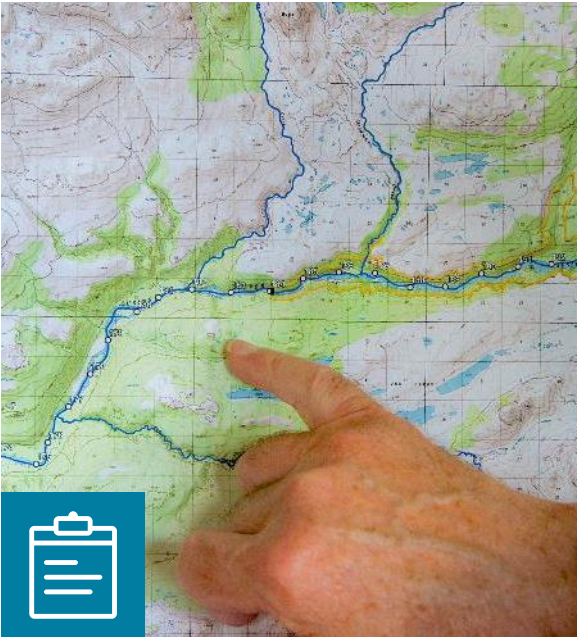
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- Benefit-Cost and Economic Impact Analyses completed in 2015
  - Based on 2014 projection of natural gas prices:
    - Benefit-cost ratio of 2.39 from energy savings alone
    - \$11.2 billion (2014\$) in energy savings over first 50 years
    - Energy savings and retirement of older generation facilities





# Employment Opportunities



## Pre-Construction Employment

~5,000 direct jobs  
~3,870 indirect jobs



## Construction Employment

~12,000 direct jobs  
~11,305 indirect jobs



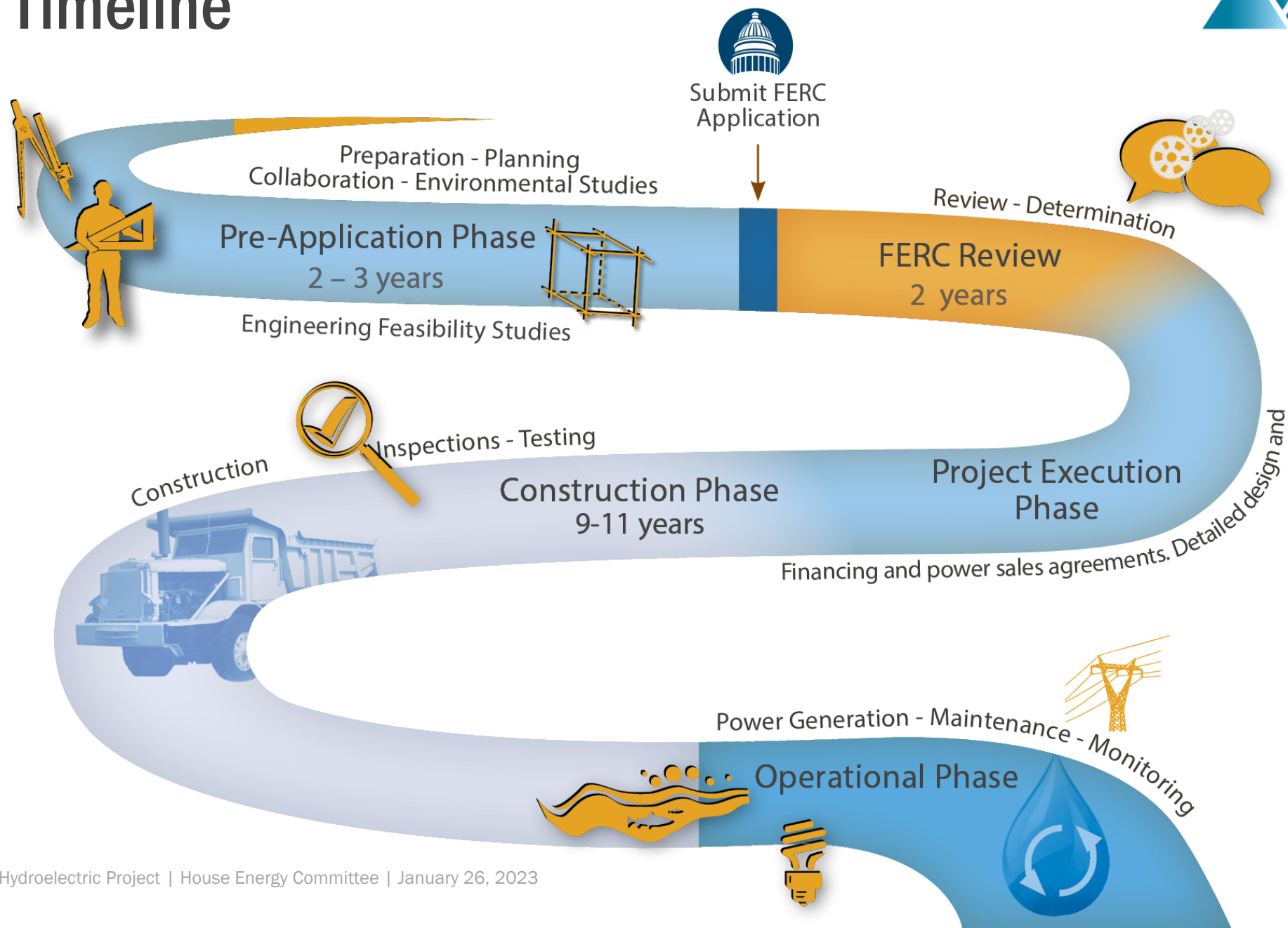
## Operations Employment (Life of Project)

~24-28 direct jobs  
~105 indirect jobs



**32,308 Total Jobs**  
17,028 Direct jobs  
15,280 Indirect jobs

# Project Timeline





# Governor and Legislature Decide Next Steps

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If greenlighted...

- Determine licensing status
- Update cost estimate to obtain license
- Update benefit-cost and economic impact analyses
- Review data to assure it remains reflective of current conditions
- Consult with FERC, landowners, and other stakeholders





AEA provides  
energy solutions  
to meet the  
unique needs of  
Alaska's rural  
and urban  
communities.

## Alaska Energy Authority

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