SUSITNA HYDROELECTRIC PROJECT

PROJECT SUMMARY

National Hydropower Association

March 11th, 2010

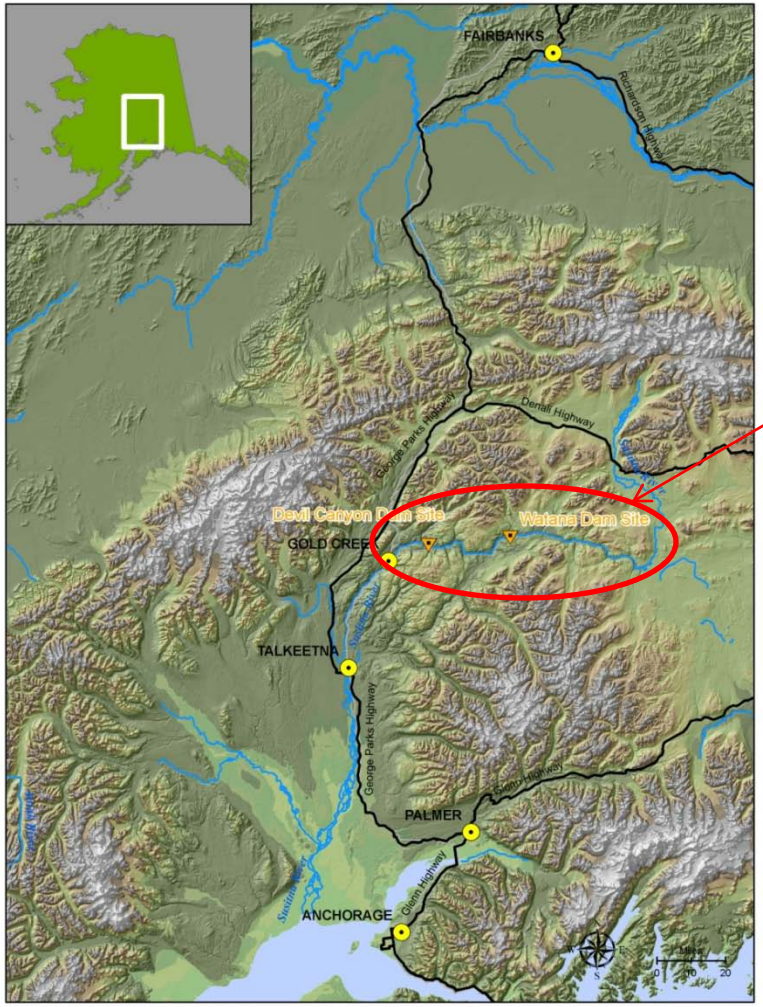
ALASKA ENERGY AUTHORITY

MAJOR POWER GENERATION PROJECTS RECOMMENDED BY THE RAILBELT INTEGRATED RESOURCE PLAN (RIRP)

- DSM/EE Programs (2011)
- Nikiski Wind (2011)
- HCCP (2011)
- Fire Island Wind (2012)
- Southcentral Power Plant (2013)
- Glacier Fork Hydro (2014)
- Anchorage and GVEA MSW (2015/2017)
- GVEA North Pole GT Addition(2018)
- Mt. Spurr Geothermal (2020)
- Parallel pursuit of Chakachamna/Susitna/Glacier Fork
- Multiple transmission projects

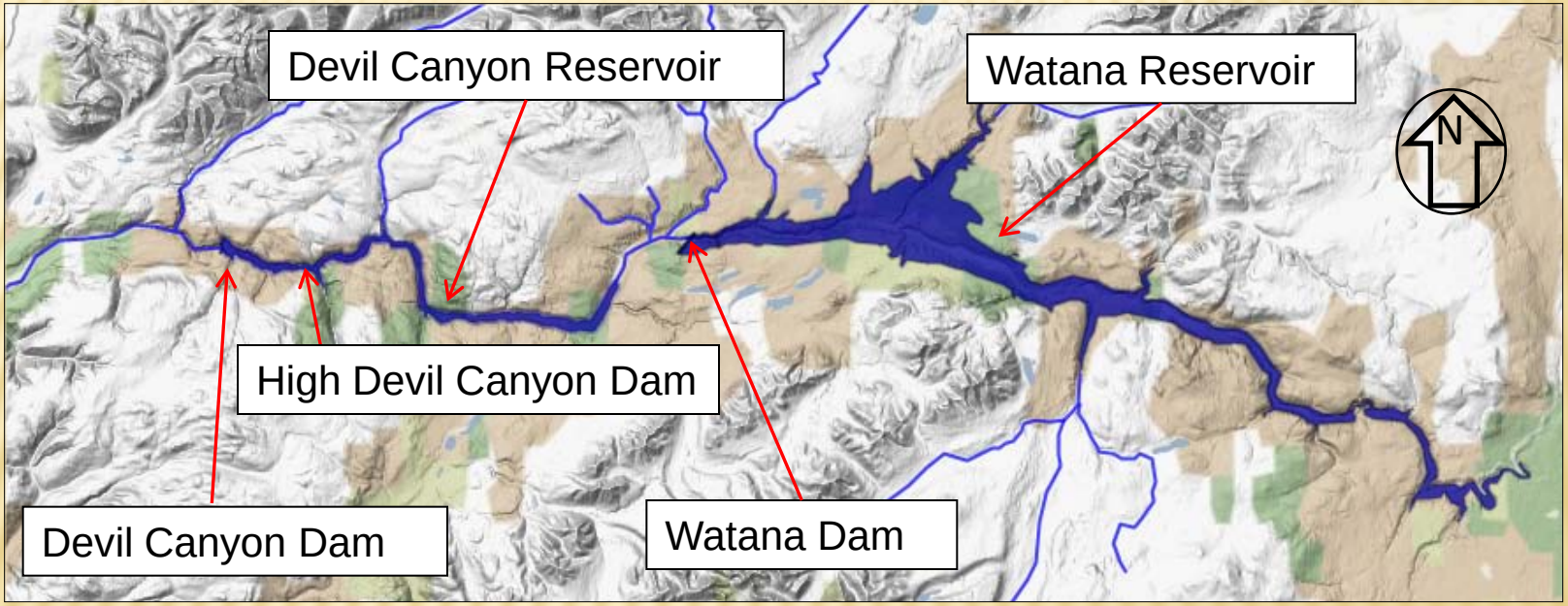
ALASKA ENERGY AUTHORITY

SUSITNA PROJECT LOCATION



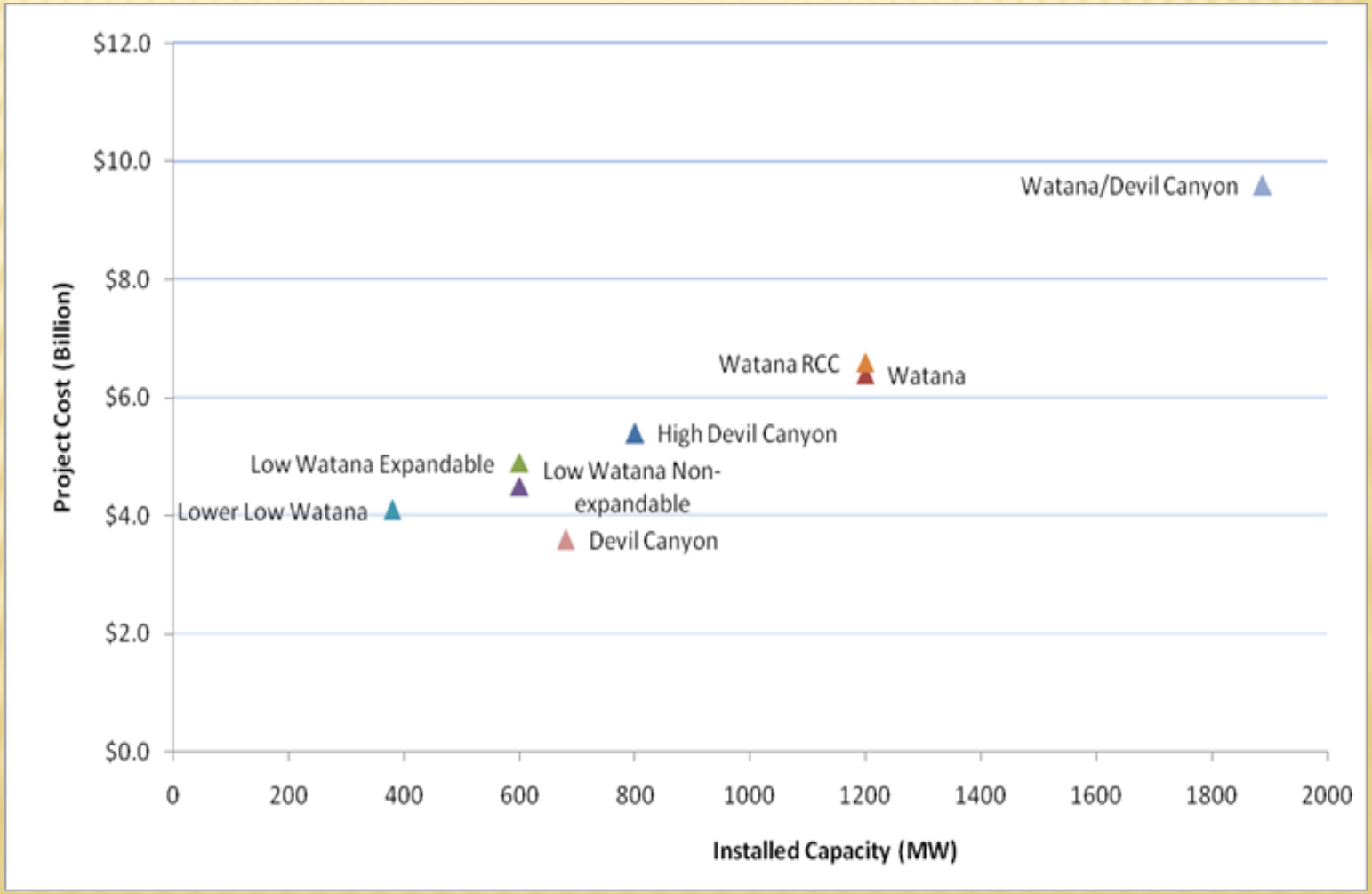
Susitna Hydro project area

Potential Project Sites



RIRP Project Susitna Evaluation

- Identify a range of single dam alternatives
  - Estimate energy & cost



Study Results

Alternative	Dam Type	Ultimate Capacity (MW)	Construction Cost ($ Billion)	Energy GWh/yr)	Schedule (years from start of Licensing)
Lower Low Watana	Rockfill	380	$4.1	2,100	13-14
Low Watana Non-expandable	Rockfill	600	$4.5	2,600	14-15
Low Watana Expandable	**Rockfill**	**600**	**$4.9**	**2,600**	**14-15**
Watana	Rockfill	1,200	$6.4	3,600	15-16
Watana RCC	RCC	1,200	$6.6	3,600	14-15
Devil Canyon	Concrete Arch	680	$3.6	2,700	14-15
High Devil Canyon	RCC	800	$5.4	3,900	13-14
Watana/Devil Canyon	Rockfill/Concrete Arch	1,880	$9.6	7,200	15 - 20
Staged Watana/Devil Canyon	Rockfill/Concrete Arch	1,880	$10.0	7,200	15 - 24

Option selected by RIRP model

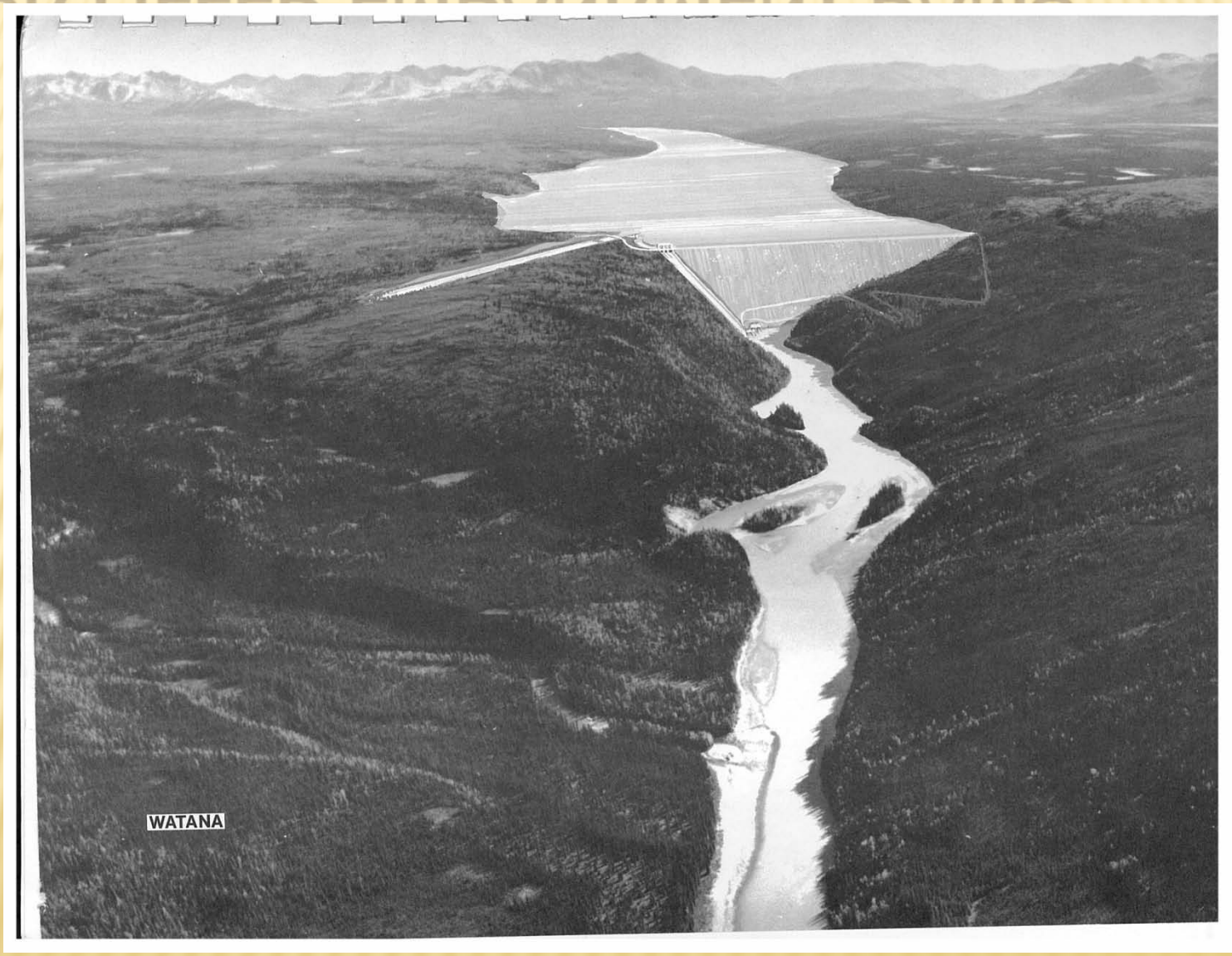
LOW WATANA EXPANDABLE

- 700’ Rock filled embankment dam
- 39 mile long reservoir
- Produce about 40% of Railbelt annual energy
- Dam crest may be raised in the future (would provide a 39% increase in energy)

ENVIRONMENTAL

- Salmon have not been found at site (Devil Canyon blocks upstream migration)
- Endangered species not present
- River temperature effects within natural variability

ROCK-FILLED EMBANKMENT DAMS



FOCUSED QUESTIONS

- Project Timeline – 15 years from start of licensing
- Total Cost of Project – $4.9 B
- Project Cost includes Transmission to Grid
- Cost of Power to Consumers
  - Levelized cost of power for 100 years (2010 dollars) - $0.15/kwh
- Amount of Power Supplied to Railbelt - 2600 Gwh/year
- Likelihood of Completion – High, majority of technical and environmental issues resolved in 1980's
- Licensing Roadblocks – Next step for project is to engage stakeholders to explore project issues and concerns.

CONCLUSIONS

- Of the renewable resources in the railbelt region, the Susitna project is the most studied and best understood.
- Project is considered to be technically feasible.
- Project has potential to expand to meet future loads.
- Large hydro provides dispatchable energy and stabilizes the grid.
- Environmental and seismic risk is considered manageable.
- Long term stable cost of power