



THE SUSITNA WATANA HYDRO PROJECT

Executive Summary of Susitna River Hydroelectric Project Overview

Su Dam: A Poor Investment for the Future of Alaska

The Susitna Dam has been proposed and abandoned three times in the past 80 years due to high costs, economic risks, and landscape level impacts. Despite over \$1 billion state and federal investment in feasibility studies, the project has never advanced beyond evaluation. While recent discussions have renewed interest in large-scale hydropower, the attached analysis, conducted by researcher and Ph.D. candidate Sarah O’Neal, raises serious concerns about the economic viability, environmental impact, and long-term feasibility of the Susitna Dam as a solution for Alaska’s energy future.

“Regardless of opinions, more than the present day equivalent of \$1 billion have been invested by the State of Alaska alone for a project that has yet to receive a permit, much less break ground.” -Sarah O’Neal

Economic, Environmental, and Industry Risks at a Glance

- Repeated feasibility studies have failed to justify the project.
- State subsidies would be required to keep the dam financially viable.
- The Susitna watershed drives \$800 million in sportfishing revenue and major tourism—both at risk.
- Dam reservoirs emit methane and CO₂, prompting some states to label large hydro as non-renewable.
- The dam would disrupt fish migration, sediment flow, and water temperature.

Even the Alaska Energy Authority admitted the project would never "pencil out."

The State of Alaska has already spent hundreds of millions of dollars on this unpopular project, with the 1970s/80s proposal costing the equivalent of \$800 million today and the 2010s proposal burning through another \$250 million before being abandoned. While proponents claimed the project would create 1,300 temporary construction jobs and 24 to 28 permanent positions, they failed to acknowledge the far greater job losses it would cause in tourism, fishing, and other industries. The Susitna watershed is an economic powerhouse, supporting 240,000 annual visitors to Talkeetna, generating over \$800 million in sportfishing revenue, and sustaining a valuable commercial fishing sector. Rather than boosting the economy, the dam would undermine these industries while requiring perpetual subsidies to remain afloat. Proven alternatives like wind and pumped storage at Eklutna offer cleaner, more cost-effective energy solutions without the devastating economic and environmental consequences of damming one of Alaska’s great wild rivers.

Hydro Projects are not Carbon Neutral

When the Susitna Dam was first proposed in the 1950s, the environmental devastation caused by large-scale hydropower was poorly understood. Today, there is no excuse for ignoring the overwhelming evidence that these projects cause more harm than good. The reality is that the environmental costs far outweigh any supposed benefits. Large hydro projects produce significant greenhouse gas emissions from their reservoirs, disrupt ecosystems, and permanently alter river systems. Recognizing these harms, some U.S. states have reclassified hydropower as non-renewable. Even a federal review of Alaska's renewable energy options rejected large hydropower projects like Susitna, instead prioritizing wind, solar, and smaller-scale renewables that provide cleaner energy without destroying vital ecosystems. The Susitna Dam's contribution to reducing greenhouse gas emissions would be negligible, especially when compared to the far more effective and less destructive alternatives available. Moving forward with this project would not only be irresponsible but would also divert resources from real climate solutions that can actually benefit Alaska's future.

Huge Consequences for the Susitna's Natural Resources

Large-scale hydropower projects, including the Susitna Dam, have significant environmental impacts, particularly on aquatic and terrestrial ecosystems. Dams create migration barriers for aquatic species, inundate critical wildlife habitats, and disrupt river dynamics by altering flow patterns. These changes impact downstream habitats, reduce sediment and nutrient flow, and alter water temperatures, which can harm aquatic life, including salmon. The fluctuating flows caused by load-following operations of the Susitna Dam could lead to daily water level changes, disrupt ice processes, and interfere with essential surface and groundwater interactions. Additionally, altering aquatic habitats can affect algae, insect populations, and fish spawning, with potential consequences for salmon survival. These impacts extend to riparian and upland ecosystems, threatening vegetation and wildlife, including big game species like caribou, moose, and bear, as well as affecting cultural resources and local communities dependent on subsistence hunting.

Environmental studies have been conducted for each iteration of the Susitna Dam proposal, resulting in thousands of reports. These studies have addressed various physical, chemical, and biological conditions, including the impacts on weather, geology, water chemistry, fish, wildlife, and recreation. Despite advances in technology and methodologies, many of these studies have faced delays and challenges. In the 2010s, studies were impeded by logistical issues, including land access and funding shortfalls, which caused delays in the licensing process. Disputes over study designs, including concerns over climate change and its effects on the basin's ecosystems, led to further delays. While some study design changes were made, key issues, such as the effects of climate change on species and the feasibility of fish passage, remain unresolved, prolonging the licensing process and leading to concerns about the credibility and adequacy of the studies conducted.

Bottom Line:

A full and transparent assessment of Alaska's energy needs, economic priorities, and environmental commitments should guide decision-making. Given the persistent economic, ecological, and regulatory concerns surrounding the Susitna Dam, investment in proven, cost-effective energy alternatives may provide a more sustainable and responsible path forward for Alaska's energy future.



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Full Report

