



## Chikuminuk Lake Hydroelectric Project Interim Feasibility Report

### Foreword

Nuvista Light and Electric Cooperative, Inc. is a non-profit electric cooperative founded and led by non-profit, tribal, and Alaska Native stakeholders in the Yukon-Kuskokwim Delta region. Nuvista's stated mission is to improve the energy economics in rural Alaska by creating energy generation and transmission infrastructure to serve, connect and enable the region to attain affordable, long-term energy sustainability and self-sufficiency.

The motivation to explore new energy solutions is clear. The Yukon-Kuskokwim region, like many other rural regions of Alaska, suffers from staggering energy costs. High and rising electric, fuel and heating costs undermine the foundations of life in rural communities. Low-income families are hardest hit by the high cost of diesel-generated energy, with some households paying more than 50 percent of their monthly income for heat and electricity.<sup>1</sup> The State of Alaska attempts to relieve the exorbitant prices that rural families face through continued support for the power cost equalization (PCE) program; but even with the PCE program, residents of rural Alaska pay more than twice their urban neighbors for electricity. Further, PCE subsidies do not extend to businesses; resulting in electric bills that are four to five times those of urban Alaska.

Nuvista recognizes that the volatility of the petro-based fuel system punishes business and family finances, ultimately threatening the future of cultures and the solvency of communities in our region. We were created specifically to identify the most pressing energy problems and develop projects that offer the best possible solutions. Given this mission, and the large-scale energy problems, we sought to explore a promising, large-scale solution.

Beginning in 2010, Nuvista worked with local communities to investigate possible solutions to the region's energy challenges. From the many alternatives considered, hydroelectric generation at Chikuminuk Lake, which sits at the upper reaches of the Nuyakuk-Nushagak drainage in northern Wood Tikchik State Park, was selected as a promising energy solution by representatives of YK regional organizations over a series of meetings in fall of 2011. Chikuminuk has several advantages over other potential regional sites; records indicate it receives limited recreation or subsistence activity, preliminary studies show it does not support a salmon run, and it can generate year-round water flows capable of meeting the electricity demand among communities throughout the Yukon-Kuskokwim and Bristol Bay regions.

---

<sup>1</sup> Commonwealth North, Energy for a Sustainable Alaska – The Rural Conundrum presentation of ISER February 2010 Study Data.

The Chikuminuk Lake Hydroelectric Project presents an opportunity to provide affordable electricity from a stable and sustainable source, as well as a source that does not contribute to climate change already threatening the future of our region's coastal villages.

In 2011, under the continued guidance of the Board of Directors and through the support of funding from the Alaska Legislature, Nuvista began studying the feasibility of hydroelectric generation at Chikuminuk Lake. Following the Federal Energy Regulatory Commission's (FERC) guidelines, Nuvista began preliminary studies of the site to develop baseline understanding of the area, assess potential capacity, and evaluate potential impacts. Initial studies focused on:

- Geology of the lake basin
- Water use and quality, water flow
- Aquatic Resources
- Terrestrial Resources
- Cultural and Subsistence Resources
- Recreation and Visual Resources
- Socioeconomic Resources
- Electric generation capability of the site
- Potential costs to construct and operate

Results of the studies, to date, are presented in this interim feasibility assessment. Independent of any insights about the hydroelectric project, this research produced the first ever thorough investigation of the environment and human uses of this remote landscape. The information gathered provides valuable, but preliminary, data on the Chikuminuk project area and the project's potential impacts. Early results are encouraging, suggesting that adverse environmental impacts would be modest, and that the project is technically feasible and can provide long-term affordable stable, renewable, clean power. However, due to limited access while conducting field work and certain land use restrictions, we do not yet believe we have compiled enough information to recommend a decision on the project to Nuvista leadership, stakeholders, and the Alaska Legislature.

The information Nuvista has been able to gather to this point definitely shows the Chikuminuk Lake Hydroelectric Project has merit today, and may someday become essential. Particularly intriguing is the potential for per kilowatt hour costs following construction, shown on Pages 24-25, alongside the diesel price projections.

We understand the challenges before the state legislature concerning capital funding for any project, small or large-scale. We also understand the concerns voiced by some regional residents that this project could disrupt the watersheds that support subsistence and our way of life. We are residents of the region, and would not support a project that would jeopardize those resources. Further, Nuvista's Board understands that there are unanswered environmental and economic questions, as well as political issues, that may prevent this particular hydroelectric project from being a practical solution to Western Alaska's energy problems at this time. On the other hand, there may be a point, in the not too distant future, at which hydroelectric generation at Chikuminuk Lake will be an

essential element of the region's energy solutions. Accordingly, we remain proud of the work we have conducted to analyze the project and the conditions at the site as a base-line for any future review of the hydroelectric potential of Chikuminuk Lake.

The path to regional energy solutions is not clear and no initiative is perfect, but we must position ourselves to begin pursuing opportunities available to our communities. Nuvista is poised to consider any option "on the table" and hydroelectric generation at Chikuminuk Lake was just one such option. The bottom line is that new energy solutions are needed in Western Alaska, solutions founded on thorough investigation, working with the people who are most affected by these decisions. Nuvista continues to work to improve the energy economics for the people of Western Alaska.

Ultimately, we see access to affordable energy as being a component of self-determination for our people and self-sufficiency for our businesses and families. Nuvista's role is to speak up for, and work on behalf of, the people we are trying to help. We will have succeeded when we have attained affordable, sustainable energy choices for every community in our region.

We submit the following report as a contribution to the science and understanding of the Chikuminuk area and hope that it fosters greater understanding of this magnificent resource.



Tiffany Zulkosky  
Executive Director  
Nuvista Light & Electric Cooperative, Inc.