

Proposed Road Belt Inter-Tie Reconnaissance Engineering Report

The Ahtna Inter-Tribal Resource Commission (AITRC), Tanana Chiefs Conference (TCC), Copper Valley Development Association (CVDA), and Copper Valley Electric Association (CVEA) are proposing a reconnaissance engineering report for an electric transmission line to encompass most of the Road System on the eastern side of Alaska and connect to the existing Rail Belt Transmission System. Phase 1 of this proposed high voltage line would span approximately 134 miles from Sutton to Glennallen and continue to Delta Junction for approximately 152 miles (286 miles total), thus completing an electric transmission bus loop and establishing a second and secure path for additional and redundant power transmission from Anchorage to Fairbanks. Phase 2 of the proposed project would electrically connect Gakona to Tok and Delta Junction to Tok—an additional 100 miles of transmission line within existing Right of Ways to fill in the gaps within this 220 mile span of road. Collectively, Phases 1 and 2 will complete a bus loop around the entire road system of interior Alaska and connect to the Rail Belt electrical transmission line, thus providing a continuous Road Belt Inter-Tie (RBIT). These transmission lines would supply Rural communities and industry with lower cost electricity, open up markets for renewable energy and mineral resources that are now stranded, and provide redundant, cheaper and additional power to Department of Defense and other mission-critical facilities.

At the present time, there is widespread support for the project, including from the Alaska Power Association, Alaska Federation of Natives, three Regional Native Corporations, 16 Tribal Governments, 17 small communities currently relying on diesel generated power or other expensive alternatives, existing Rail Belt utilities, and numerous other industry alliance and economic development organizations. RBIT would establish an electric grid the size of Montana to connect to the existing Rail Belt, save over 4.5 million gallons of diesel fuel annually, significantly reduce energy costs in economically depressed areas of Alaska, and could create hundreds of direct and indirect new jobs. Military installations that would benefit from RBIT include Black Rapids Training Facility, Donnelly Dome Range, Ft. Greeley, Eielson AFB, and Clear Lida AFB. Alyeska Pipeline would also benefit with cheaper energy for pumping oil and cathodic protection at its non-grid connected pump stations.

The reconnaissance study proposed here would result in the following activities and documents:

1. Collection and review of previous technical and economic studies and reports, maps and available aerial photography, relevant geotechnical information and land status, proposed corridors and routing, and identification of known environmental issues and permits required.
2. Basic line design criteria including voltages, conductor sizes, use of shield wires, typical structure and foundation types, typical span lengths, right of way widths, etc.
3. Preliminary alignment for each of the transmission and sub-transmission lines, substation upgrades and new construction, and areas likely needing special consideration and modifications.
4. Cost estimates for surveys, geotech, engineering, permitting, land acquisition, and construction; initial cost/benefit analysis and public education and outreach.
5. Draft and Final Report, including maps, and incorporating public comments and peer reviews.

The outcome of this proposed reconnaissance study would be an actionable document to define a path forward for project development, a timeline and milestones table, beneficiaries and project participants, and indicative pricing and budget. It is expected that US Departments of Defense, Energy, Interior, Commerce, and Agriculture, along with Alaska state agencies, would be approached and contribute toward project deployment and construction, as well as beneficiary utilities, communities, and organizations.

The proposed RBIT reconnaissance study is expected to take 9 months and cost \$2.5 Million. The Denali Commission will serve as the lead federal agency for administration.

Project Understanding

Copper Valley Development Association is interested in studying the feasibility of expanding Alaska's "Rail Belt" transmission line grid into an eastern Alaska "Road Belt" grid. This expansion would include new transmission lines from Glennallen to Sutton (approximately 134 miles) and from Glennallen to Delta Junction (approximately 152 miles), with new sub-transmission lines from Gakona to Tok (approximately 120 miles) and from Delta Junction to Tok (approximately 107 miles). These lines will complete a bus loop around the road system of interior Alaska and connect to the "Rail Belt" transmission lines.

Following is a scope outline for studying the feasibility of constructing these new lines, including identifying likely routes and estimating construction costs.

Scope Outline

1. Review previous studies and reports
2. Identify study lines, i.e. Glennallen to Sutton, Glennallen to Delta Junction, Gakona to Tok, Delta Junction to Tok, etc.
3. Assemble data from USGS maps and available aerial photography.
4. Conduct road corridor and fixed wing or helicopter reconnaissance of routes.
5. Identify the geographical areas to be considered in the study
6. Obtain additional aerial photography
7. Obtain land status information
8. Obtain and utilize input from environmental studies
9. Establish basic technical, economical, and environmental criteria. The following items are expected to be included in this criteria
 - i. locations needed to interconnect with MEA and GVEA
 - ii. services to Tok, military facilities, and others
 - iii. avoid mountainous areas
 - iv. minimize steep terrain, avalanche areas, wide crossings, wetlands, etc.
 - v. avoid wildlife refuges and parks
 - vi. minimize private lands, native lands, developed areas
 - vii. locate in proximity to existing transportation corridors to facilitate construction and maintenance
10. Identify corridors that meet the basic technical, economical, and environmental criteria.
11. Screen the candidate corridors and select the preferred ones.
12. Obtain further field investigations, geotechnical conditions, and aerial photography for the preferred corridors.
13. Identify federal environmental protocols and federal and state permits. Locate critical environmental issues.
14. Establish basic line design criteria including voltages, conductor sizes, use of shield wires, typical structure and foundation types, typical span lengths, right of way widths, etc.
15. Obtain information on property parcels, public lands, roadways, and existing right of ways, including the granted rights, such that a typical cost per acre can be estimated for obtaining right of ways for the new lines.

- 16. Using the design criteria and land status, identify a likely alignment for each of the transmission and sub-transmission lines.**
- 17. Identify substation locations and basic requirements including upgrades to existing substations at Glennallen, Sutton, Delta Junction and Tok.**
- 18. For each alignment, determine line lengths, angle locations, and typical span lengths and structure types. Identify areas to be constructed by all-season roads, winter trails, or helicopters. Identify areas likely needing special construction such as long spans (river crossings), avalanche areas, extreme meteorological conditions, and special foundations. Identify line sections to be constructed with distribution and/or communication underbuild facilities.**
- 19. Develop cost estimates for constructing each of the lines and substations, including surveys, geotechnical investigations, engineering, environmental permitting, regulatory permitting, land acquisition, and construction management.**
- 20. Generate Draft Report I discussing the preliminary findings. Include maps, exhibits of typical structure types, and cost estimates.**
- 21. After receiving comments and suggestions on the first draft report, revise the report and submit Draft Report II for a second round of reviews.**
- 22. Incorporate comments and suggestions into a final report.**

----- Forwarded message -----

From: Greg Huffman <ghuffman@drydenlarue.com>

To: <Duhamel@cvea.org>

Cc:

Bcc:

Date: Fri, 15 Sep 2017 10:33:50 -0800

Subject: Re: Unsolicited Proposal for a Roadbelt Grid

Hi John. Attached is a scope outline we've put together for the study. Unfortunately, we haven't had time to go into more detail than the outline. I'm on vacation next week and will likely be busy catching up when I return. I can possibly provide more input after that if you wish.

Our ballpark estimate to perform this study is \$850k for the two transmission line segments (286 total miles) and an additional \$450k for the two Tok sub-transmission line segments (227 miles total), assuming they will all be done together.

We included a nominal effort in our scope and budget to identify and estimate costs for the environmental process, probable permits/approvals, and critical environmental issues. We think it will be beneficial to include environmental consultants on the same team as engineering consultants so they can work closely and cohesively on the project.

Let me know your thoughts and if you would like additional information.

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High Cost Energy Installations

6. Mr. Niemeyer, section 315 of the Public Law 114-328, the Fiscal Year 2017 NDAA, includes a requirement for the Assistant Secretary of Defense for Energy, Installations and Environment to work with the Under Secretary of Defense for Acquisition, Technology, and Logistics to report on efforts to achieve cost savings at military installations with high levels of energy intensity. The report includes an assessment of State and local partnership opportunities that could achieve efficiency and cost savings, and any legislative authorities required to carry out such partnerships or agreements. What are your initial ideas to help reduce the cost of energy at installations with high energy intensity and do you commit to ensure this report gets completed on time, that the State of Alaska is robustly consulted, and that potential commercial partnerships are also explored?

I am aware of the legislations and, if confirmed, I intend to continue efforts to achieve energy efficiency and cost savings at our military installations. I will ensure the Department completes the report on installations with high energy costs. I also look forward to working with the State of Alaska and exploring commercial partnership opportunities.

7. Mr. Niemeyer, in the context of section 315 of Public Law 114-328, the Fiscal Year 2017 NDAA, discussions are ongoing on a "Road Belt" Energy Transmission Line that would run from Palmer to Delta Junction, AK (about 365 miles). This line could provide redundant energy supply to Ft. Greely, a critical U.S. missile defense hub, and would assist DOD in reaching its goal of 25 percent renewable energy usage. Currently, tribes, local communities, and regional corporations are involved in project planning. If DOD becomes involved, will you commit to working closely with these stakeholders to ensure their needs and preferences are taken into account?

If confirmed, I will continue the close relationship with our utility partners to ensure energy resilience for our military installations. If DoD becomes involved with projects related to the "Road Belt" Energy Transmission Line, it will certainly collaborate with all interested parties.