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## **Final Report**

**Red Lake Band of Chippewa Indians**

**DE-FG26-05GO15710 A000**

### **Executive Summary:**

The Red Lake Reservation spends nearly three million dollars per year for electric costs. Unaffordable energy bills represent a significant threat to the well being of Tribal Members who are generally low income and where sixty five percent spend 20% of the annual income for energy costs. The average propane costs for heat is approximately \$1,200.00 per year (this will increase significantly with the increasing gas prices), plus electrical costs. Also a disproportionate number of Tribal Members heat with electricity. A large problem which is encountered is, although the Red Lake Members comprise only 10% of the rural electric cooperative's customer base, Red Lake Members comprise over 30% of the cooperative's electric service disconnection. With this disconnection come added service fees and reconnect fees, which is a great burden for the low income families as well as the Energy Assistance Program.

Red Lake Band of Chippewa Indians proposes to develop a more sustainable, affordable and autonomous energy future for Tribal Members. The Band will develop the capacity to conduct energy audits, to implement energy efficiency measures in tribal homes, and to build more energy efficient housing. This will be done by providing direct classroom and on the job training for Tribal members to conduct the energy audits and the installation of insulation. New construction by the Red Lake Reservation Housing Authority (RLRHA) will focus on energy efficiency methods.

### **Project Overview:**

The Red Lake Tribal Council seeks to advance the capacity of Tribal Members to become energy experts in order to further its stated long term goal of increased energy autonomy and sustainability on the reservation. It also seeks to create a vehicle for future energy-related education and skills enhancement. Red Lake requires its own energy experts in order to reduce energy consumption on the reservation, to increase members' ability to pay for energy and to develop energy-related economic opportunities.

Create an energy task force to promote the economic and environmental benefits of renewable energy and energy conservation. Establish locations to measure wind speeds on the reservation and complete a biomass feasibility study.

This project is designed to fully fund the Red Lake Energy Coordinator position in order to carry out the energy conservation goals of the Tribe's strategic plan, which are to increase energy efficiency of tribal housing, train Tribal Members as energy auditors, conservation contractors and develop a business plan for a Tribal energy services company.

The processes would promote the creation of energy efficient housing and build capacity of Tribal Members to provide these services on and off the reservation.

**Objectives:**

Enhance Tribal Members' energy expertise for reducing Tribal energy consumption and for implementing energy efficiency measures.

Increase the Tribe's capacity to secure additional funding for energy conservation, including State-sponsored investments.

To increase energy savings costs in Tribal homes.

**Description of Activities Performed:**

Alberta Van Wert was hired as the Red Lake Energy Coordinator and a Service Agreement was entered into with Energy CENTS Coalition. This agreement was to: facilitate the field energy auditor and conservation measure implementation training. Assist with energy consumption assessment of the RLRHA homes and other Energy Assistance Program Households. Provide technical assistance to the Red Lake Energy Coordinator. Provide grant reporting assistance to the Red Lake Energy Activities Coordinator. Provide assistance with securing Federal Low-Income Weatherization Assistance Program funding. Provide assistance with the design and development of a low-income conservation program. Provide assistance seeking additional conservation resources. Provide funds for direct conservation measures, not to exceed \$10,000. For these services RLRHA provided \$19,255.00 in compensation. Reimbursed all costs for equipment and tools purchased not to exceed the total equipment and total costs in the grant budget of \$26,600.00. Reimburse \$10,000.00 for energy auditor and conservation training. Allow any project savings identified and captures by ECC to contribute to ECC's commitment.

Nine RLRHA staff attended classroom training on furnace and mechanical training. This training included how to assess the safety and efficiency of furnaces and the proper maintenance and installation of furnaces.

Four staff of the RLRHA has completed the class room energy audit training (two maintenance, one inspector and one energy auditor). Aspects of the training consisted of insulation tools (infrared camera and software, wattage meter, blower door, oxygen sensor, monometer, insulation blower and other miscellaneous equipment) and safety, pre and post leakage tests, zone pressure testing attic sealing, attic and wall insulation. Eugene Standing Cloud has been hired to work specifically on energy efficiency work. Mr. Standing Cloud is housed in the Tribal CAP office who administers the Low Income Home Energy Assistance Program for the Tribe. He also received on the job training from Tri-Valley, the former energy installation contractor, on all the processes to do the energy audits, computer program and reporting, ordering and costs of materials and man

hours allowed. Also the RLRHA will work to determine budgets needed to complete more comprehensive energy efficiency needs and to increase the number of units to be completed each year. The RLRHA will continue the work to provide assistance to further the energy efficiency of units for Tribal members that was begun with this grant. Plans are in place to hire additional staff if needed.

Equipment purchased was two psychrometers, combustion analyzer, blower door, Tetite air tightness analysis software Version 3.1 (CR-ROM), exhaust fan flow meter with pole, infrared insight thermal imager, and other small insulation tool. Also insulation supplies were purchased.

Energy auditing and insulation work was completed on twenty eight units each year. The units are selected by fuel consumption per square foot. Household income is also a significant factor. The type of work completed on the units included sealing and insulating the crawl space, wall and attic insulation, sealing of duct work, insulate hot water heaters, furnace repair or replacement, etc.

RLRHA has two housing projects under development which are focused on energy efficiency. The projects will begin in 2008. One project is a fifteen unit home ownership project which will be funded by the Indian Housing Block Grant and a loan from Minnesota Housing. The units are designed to be certified energy star to allow for low income families to purchase homes and not only rely on rental units. It is very critical for Tribal members to be allowed the possibility of home ownership which are affordable. The fifteen units should be very energy efficient and affordable. Home ownership programs have proven to be the most successful of all housing programs. The second project is a Low Income Housing Tax Credit Project of thirty units. The units will be a lease to own project. The units will be rental for the first fifteen years as required by the IRS, with the tenant given the option to buy after the fifteen year period has expired. Geothermal units will be installed in the units as their primary heating source. This should provide heat for the units at a significantly reduced cost.

### **Conclusions and Recommendations:**

The Energy Auditing training is extremely complicated and requires continued usage to maintain the expertise and precision of the process. The staff should continue to take new and refresher course work regarding energy auditing. This training should eventually be a requirement for all the maintenance and inspection staff.

The cost for home heating will continue to rise and with the low income families on the reservation, it is suggested that future development make energy efficiency a high priority. There are many forms of alternative heating sources which should be researched further and identified for use in new development or for furnace replacement.

**Lessons Learned:**

Cross training should begin as early as possible in the projects.

Collaboration with other Tribal programs and organizations has provided a high degree of quality and quantity of work provided to the weatherization clients. The Grant provided the necessary training to Tribal staff, the Weatherization provided the funds necessary to complete the energy audits, unit insulation, window replacement, and furnace repairs or replacement, the RLRHA provided funding for other types of needed energy saving repairs which were not covered by the Weatherization Program.