Leech Lake Band of Ojibwe

Investment Grade Audit for Service Performance Contracting

First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands

2016 ~ DE-FOA-0001621

Business/Technical Contact:
Brandy Toft
Environmental Deputy Director

08-01-17 to 01-31-19

Total Grant

$87,916.00

Table of Contents

Executive Summary

The Leech Lake Band of Ojibwe (Band) performed an investment grade audit (IGA) to identify energy conservation measures to increase energy efficiency in 22 of the Leech Lake Band of Ojibwe's worst performing government buildings. With this IGA the Band identified energy control measures to reduce our energy use by 2,728,278 kilowatt hours per year. The funding also provided for the drafting and printing of the Band's Sustainability Energy Portfolio.

The Leech Lake Band of Ojibwe (Band) is an emerging leader in Northern Minnesota and among Tribal Nations. The Leech Lake Reservation is 865,000 acres in size, the size of Rhode Island, and home to over 10,000 Tribal members. Three district representatives, along with the Secretary/Treasurer and Chairman, constitute the Tribal Council. The Band has set forth a vision of seeking sustainable energy solutions, as evidenced by several solar projects in place across the Reservation and future plans for additional sustainable projects. As one of these projects, the Band is evaluating aging and inefficient infrastructure in government facilities. This audit continues the Band's growth as a sustainable leader.

Project Overview and Objectives

Leech Lake's *First Steps Toward Developing Renewable Energy and Energy Efficiency on Tribal Lands* project surveyed and assessed energy use in 22 of our poorest performing Tribal government buildings. These buildings were identified via B3, an energy benchmarking tool. Please see Map 1.0 for general Reservation building location and the Table 1.0 for buildings involved in audit process. The Investment Grade Audit, performed by our certified Energy Service Company Noresco, provided the Band with specific measures (energy control measures or ECMs) to pursue for building energy and sustainability upgrades in six categories: Lighting, Controls, HVAC, Utility Conversion, Water Conservation, and Renewable Energies with Solar PV installations. Please see Table 2.0 for these ECMs and subsequent energy savings. These 22 buildings have established benchmarks and the audit provided energy control measures for realizing a savings potential of $276,000 per year.

This IGA provided a path to attain:

- Energy cost savings
    - Installing technology with smaller energy demand and higher efficiency
    - 2,728,278 kWh/yr in electrical savings
    - Switching from propane to natural gas saved 14,646 gallons per year
    - 1,211 kGal in water savings per year

- Resolved comfort issues, making the work spaces more conducive to productivity
    - Saves energy with marketable less use of space heater operation
    - Thermostats that work and have setbacks for off hour operation

- Reduced carbon and greenhouse emission
    - 3,570,422 lbs of CO2
    - 2,969 lbs of SOx
    - 2,871 lbs of NOx
    - 2,213 Tons of CO2E
        - A savings of GHG emissions equivalent to 423 vehicles annually

- Increased equipment functionality, increased lifespans, decreased maintenance

- Establish and promote Leech Lake as a continued sustainable leader in the region

Map 1 GESP Building Locations

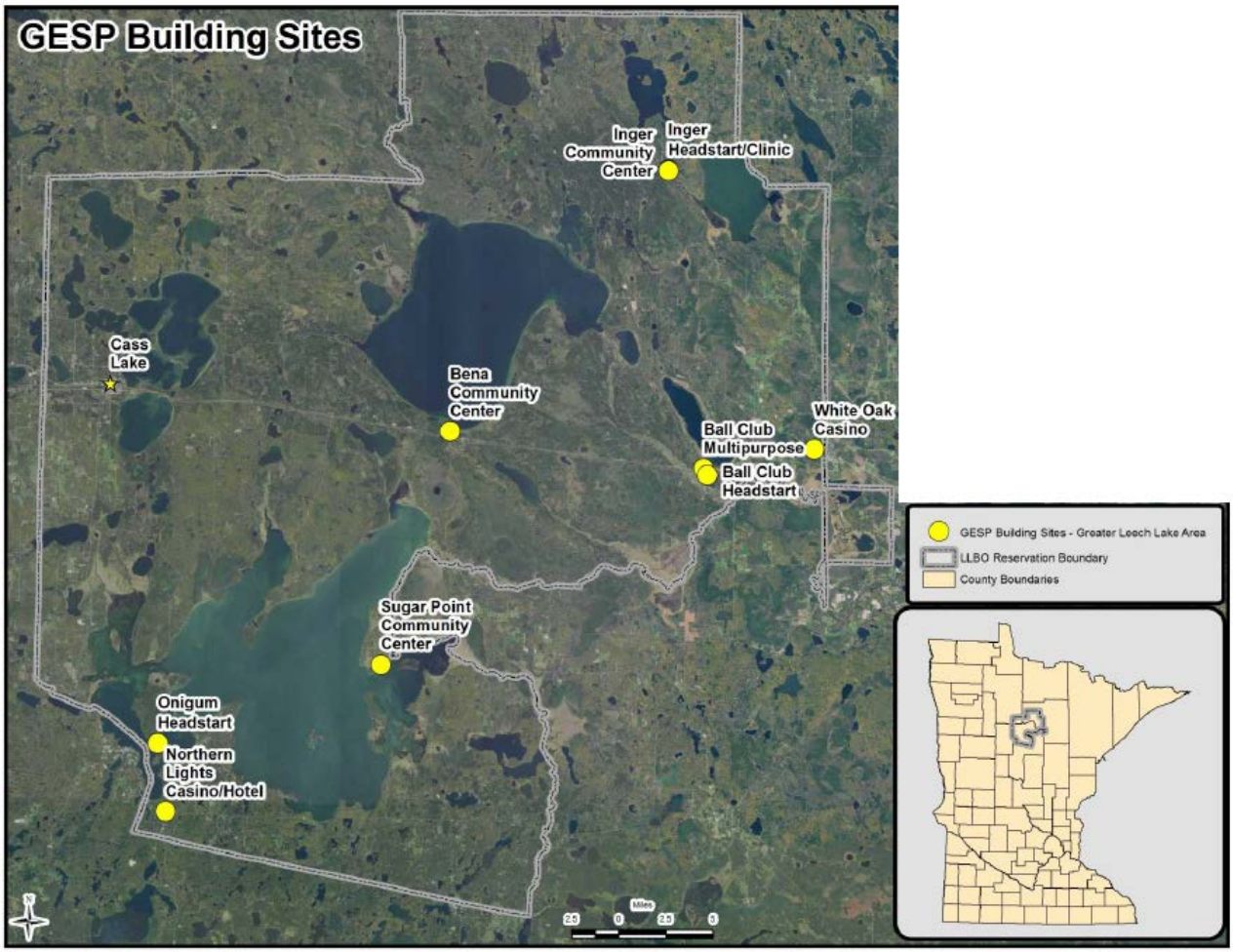

Table 1 Leech Lake Band of Ojibwe Government Buildings in the IGA

Building Name	Location	Square Footage	Year Built	Primary Use
Northern Lights Casino/Hotel	Walker, MN	188,000	2000	Casino/Hotel
The Palace Hotel	Cass Lake, MN	24,400	1981	Hotel
White Oak Casino	Deer River, MN	22,448	2000	Casino
Facility Center	Cass Lake, MN	57,840	1971	Offices
Early Childhood	Cass Lake, MN	21,421	2000	Pre School
DRM Fisheries	Cass Lake, MN	4,000	1980	Fish Hatchery/Office
Che We Kaegon	Cass Lake, MN	12,580	1980	Gas Station/Offices
Bena Community Center	Bena, MN	16,000	2007	Community Center
Sugar Point Community Center	Sugar Point, MN	5,050	2012	Community Center
Housing Authority	Cass Lake, MN	10,000	1950	Offices/Garage
Food Distribution Building	Cass Lake, MN	8,736	1978	Office/Warehouse
Roads and Const Garage 1 (Tribal Roads)	Cass Lake, MN	11,720	1995	Garage
Ball Club Multipurpose	Ball Club, MN	10,300	2010	Community Center/Clinic
Fleet Management (Polman Building)	Cass Lake, MN	3,360	2001	Garage
Onigum Headstart	Onigum, MN	8,023	2005	Pre School
Public Works	Cass Lake, MN	17,500	1980	Public Works
Inger Headstart/Clinic	Inger, MN	8,996	1992	Pre School/Clinic
Vet's Memorial	Cass Lake, MN	7,309	1996	Gathering Center
Inger Community Center	Inger, MN	3,920	2012	Community Center
DQ Building	Cass Lake, MN	6,380	1995	Restaurant/Offices
Ball Club Headstart	Ball Club, MN	3,775	2011	Pre School
Fitness Center	Cass Lake, MN	4,700	2005	Fitness Center
Total		**456,458**		

Table 2 Energy Control Measures (ECMs) Savings within the 22 Buildings

ECM No.	ECM Description	Price	Year 1 Energy Savings	Year 1 O&M Savings	Year 1 Total	Estimated Rebate	Simple Payback Years
1	Mechanical System Upgrades	$1,630,324	$55,707	$27,042	$82,749	$940	19.7
2	Control System Upgrades	$813,414	$50,844	$-	$50,844	$1,511	16.0
3	LED Lighting Upgrades	$1,301,636	$110,608	$19,717	$130,325	$96,356	9.2
4	Water Conservation	$96,061	$2,073	$-	$2,073	$-	46.3
5	Utility Related Measures	$12,293	$5,009	$-	$5,009	$-	2.5
6	Solar Photovoltaics (PV)	$283,048	$5,657	$-	$5,657	$70,000	37.7
	Project Price (excluding TERO Fees)	$4,136,777	$229,898	$46,759	$276,657	$168,807	14.3

Description of Activities Performed

Energy usage was identified through benchmarking software of Leech Lake's 74 Tribal owned and operated buildings. Understanding buildings and energy use has been key to Leech Lake's desire to energy conservation and reduction. The Band used the ranking from the benchmarking tool to prioritize which buildings most required retrofits and subsequently realize an efficient energy savings. The Band reduced energy operational costs in 22 of these buildings including: casinos, community centers, office buildings and early childhood facilities.

This IGA project further developed and provided steps for implementation of an energy action plan with the six ECMs. The IGA addressed the need for reducing energy costs, upgrading aging infrastructure, and decreasing maintenance costs. The investment grade audit identified a potential savings of 2,728,278 kWh/yr in energy costs, which equates to over $276,000 savings annually. This funding will go back into paying for the upgrades for the next 14 years to provide for a net zero project. The IGA will benefit the Tribal community for 20 plus years to come and assist in establishing our status as a leader for energy efficiency and sustainability among Tribes and in the local area.

The selection of the ESCO was the first objective of the project. Noresco was the selected vendor for the IGA. This process utilized the Minnesota Department of Commerce RFP and evaluation process. This was extensive and thorough receiving six responses to our RFP, narrowing the proposals to two, of which we held in-person interviews. The GESP Team was formed to do the interviews and later to engage in the planning, implementation and execution of the IGA. Final approvals were provided by the Tribal Council.

Once Noresco was selected, the second objective was to complete the IGA audit and establish a timeline for implementation. Once the proper GESP paperwork was processed via Band's protocols and the Minnesota Department of Commerce, the IGA was underway. The IGA took months to complete and Leech Lake is of the opinion that they received a very thorough and complete IGA that yielded feasible options for increased energy efficiency and decreased energy costs that can be used to pay back the energy efficiency upgrades within the 14 year timeline.

The GESP Team, in weekly meetings, coordinated with Noresco to identify which energy conservation measures to pursue. These measures were evaluated on the basis of high savings potential with a feasible payback plan for buildings that will be utilized for the foreseeable future. Due to this we did remove one portion of a building from the IGA as its next use was undetermined. Final approval for all ECMs was provided in two phases. First by the GESP Team and then final approval by the Tribal Council.

As a tier of fact checking, Leech Lake assessed six buildings that were involved in the IGA via the Minnesota Retiree Environmental Technical Assistance Program (RETAP). The assessed six Tribal governmental buildings gave Leech Lake an initial sense of energy savings and potential measures available in these buildings. With these we

were able to fact check the Noresco IGA. We are pleased to say that all the parameters identified in the RETAP audits were match and exceeded with the Noresco IGA.

The third and final objective of the proposed project was developing a sustainable energy portfolio. This 20 page document outlines the work that Leech Lake has completed to date, paths to move forward and policies to implement to gain further energy sustainability. In line with this we also printed copies of the Solar Master Plan and the Population Vulnerability Assessment and Climate Adaptation Framework documents. We also prepared a short video to highlight the GESP project https://youtu.be/h446YjX3z-A and a GIS Story Map of the project https://arcg.is/0KKLS8 . The Band has used all these products to future promote Leech Lake's work and future endeavors to partners and to the Tribal community.

Conclusions and Recommendations

The Leech Lake Band of Ojibwe highly recommends undertaking a process such as the IGA. It provided the Band with the tools to identify and improve our energy use, reduce our overall operational cost, reduce our fossil fuel consumption, improve our air quality and decrease our bottom line.

The Band also recommends using an established system, such as the Minnesota Department of Commerce's GESP process. This is valuable for the Band as we do not have the staff time nor expertise to spend on evaluating and processing such information as with our IGA. The State's process provides a third party review of contracts, work orders and measurement and verification of the implemented IGA to ensure a valuable product is received.

Lessons Learned

This project, once it started to move, progressed very efficiently. The hardest portion of the project was reviewing and processing the reams paperwork with the Minnesota Department of Commerce's Guaranteed Energy Savings Program. The Band would suggest to engage all parties early in the process to allow ample time for legal review and discussion back and forth. Utilizing this pre-vetted process with the Department of Commerce allowed us to rest assured that we were getting what we were promised by the contractor and the IGA. On a project as large as this, both physically and monetarily, as well as outside our expertise it was important to have reassurances and backing.

Communication. The second lesson to promote is to engage all parties, even parties that may drop out, early and often in the IGA process. The Band's core GESP Team identified these parties early and engaged with them. Many did drop out of the process, however they were kept in the loop of communication. If there was a problem or an

issue that someone from this initial engagement tried to bring up after the fact we were able to state that they were notified and information was shared. This allows for different perspectives and evaluations of the overall process and to incorporate past knowledge that proved to be crucial to the project as a whole.

The third lesson was to keep engaging and hosting regular weekly meetings. Though people are extremely busy it is important to have their input and feedback. This was particularly important with one key player in our GESP Team. Patience and reframing the information so all parties hear the same message in a manner of which they can understand. This keeps the project moving forward and progressing towards our goals of energy reduction and efficiency.

The fourth lesson was to fact check and follow-up on information. This was done in a couple ways. First with the RETAP assessments. This provided us with a background to understand what options were available for energy efficiency and started us understanding the language used in referring to energy control measures. This coupled with having the right people on our GESP Team we were able to make informed and timely decisions for the betterment of Leech Lake.