

A COURSE TOWARDS SUSTAINABILITY: LEECH LAKE BAND OF OJIBWE

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Environmental Deputy Director

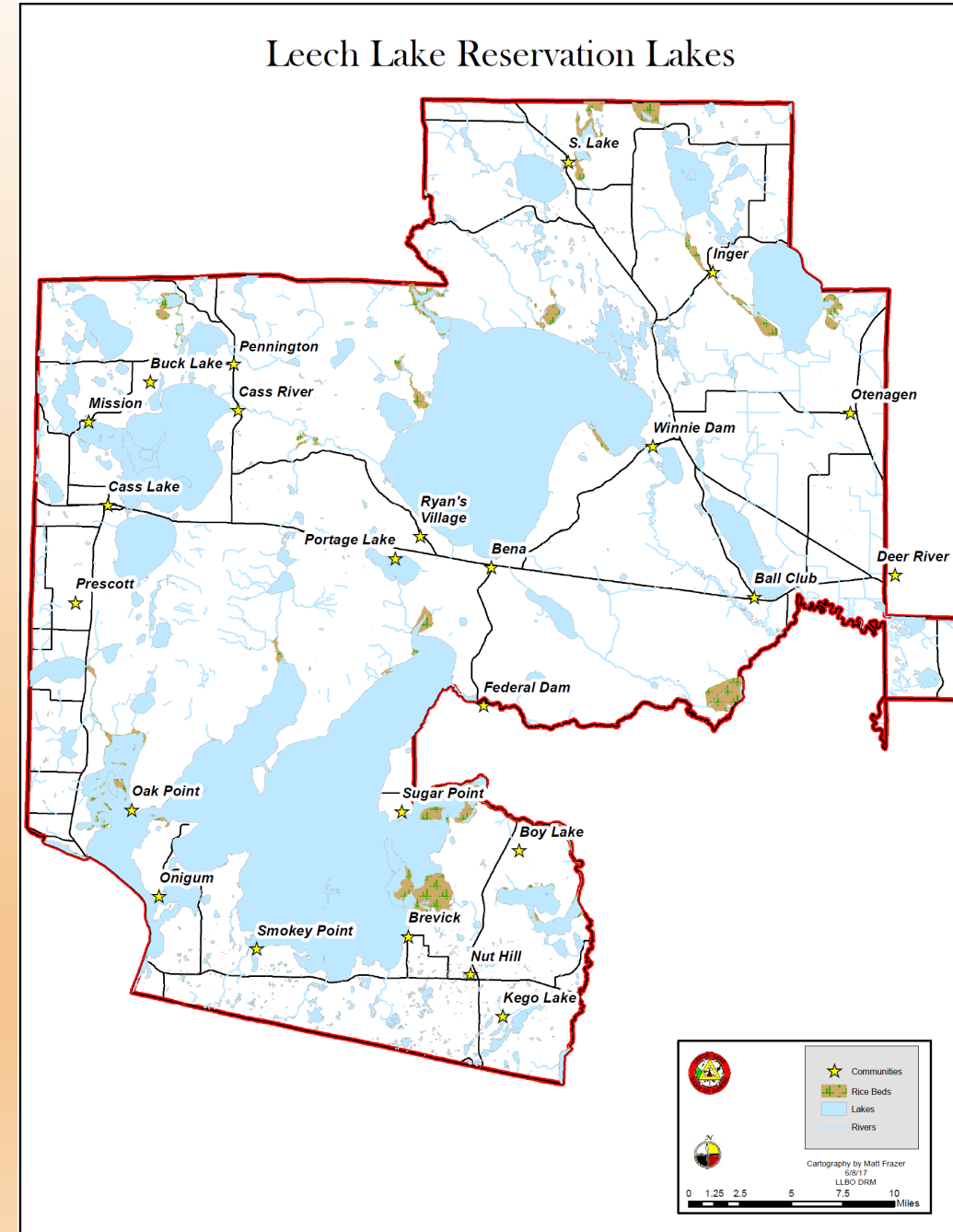
DOE Office of Indian Energy Program Review

December 13th, 2018



LEECH LAKE BAND OF OJIBWE

- Leech Lake Reservation rural area located in north central Minnesota
- 864,158 acres, over half is water/wetlands
- 260 miles of rivers/streams
- 270 fishable lakes
- 40 Wildrice lakes
- 10% of water in Minnesota
- Serving 12,000 in 17 communities
- 1855 Ceded Territory



GUARANTEED ENERGY SAVINGS PROGRAM

- Program with MN Department of Commerce
- Provides structure and vetted contractors/process
- 3rd party review and verification
- Savings are guaranteed for payback period
- Not just Minnesota program
- Can do without 3rd party



**GUARANTEED
ENERGY
SAVINGS
PROGRAM**



WHERE DID IT ALL START?

- MN GreenCorps with State of Minnesota
 - Host site for 4 years, applying again in 2019
 - Relied heavily on GCM for project development
- Sustainable energy projects
 - Solar Garden for low income Tribal Members
 - B3 Benchmarking – GESB
 - Local, sovereign food
 - Assist with Air Program
 - Outreach



GESP - 2015 TO PRESENT

- Identified and started project pitch in 2015
- Gathered Owner's Team
 - Environmental Dept and GreenCorps
 - Construction Manager
 - Purchasing and Accounting
 - Facilities and Building Managers
 - Gaming Management
 - Gaming Maintenance and Electricians
 - Tribal Executive Director



*What buildings?
What upgrades?
Timeframe?
= IGA*



GESP TIMELINE 2015-2019

- Joint Powers Agreement – Feb 2016
- Energy Service Contractor selection – Oct to Nov 2016
- Noresco ESCO selected – Nov 2016
- Work Order Contract #1 – Dec 2016 to Feb 2017
- Noresco kick off meeting – Feb 2017
- *Investment Grade Audit commenced - Jan 2018*
- Tribal Council approve IGA Audit & WO #2 - Mar 2018
 - State DOC and Noresco contract approval - Apr 2018
- Commence GESP project “construction” - Aug 2018
- Projected to be completed by Feb 2019

DOE funds 2016-2017



THE AUDIT



- DOE \$\$ sweetened the blow of a scary big project
- Detailed building use, equipment, cost, payback...
- Negotiated internally, welcomed “devil’s advocates”
- Outline and timeline of the project



INVESTMENT GRADE AUDIT

6 Energy Conservation Measures (ECMs)

- ECM 1: Mechanical System Upgrades
- ECM 2: Control System Upgrades
- ECM 3: Led Lighting Upgrades
- ECM 4: Water Conservation
- ECM 5: Utility Related Measures
- ECM 6: Solar Photovoltaics (PV)



Building	ECM Name	Price	Year 1 Energy Savings	Year 1 O&M Savings	Year 1 Total Savings	Estimated Rebate	Simple Payback Years
Northern Lights Casino/Hotel	LED Lighting	\$484,867	\$53,560	\$8,771	\$62,331	\$23,023	7.4
White Oak Casino	LED Lighting	\$99,764	\$10,456	\$1,549	\$12,005	\$-	8.3
The Palace Hotel	LED Lighting	\$43,752	\$3,903	\$1,732	\$5,635	\$3,877	7.1
Facility Center	LED Lighting	\$110,294	\$5,769	\$1,108	\$6,877	\$17,651	13.5
Early Childhood	LED Lighting	\$114,480	\$5,597	\$1,583	\$7,180	\$12,897	14.1
DRM Fisheries	LED Lighting	\$24,476	\$1,736	\$216	\$1,952	\$1,724	11.7
Che We Kaegon	LED Lighting	\$38,357	\$2,313	\$457	\$2,770	\$4,942	12.1
Bena Community Center	LED Lighting	\$48,257	\$3,738	\$545	\$4,283	\$-	11.3
Sugar Point Community Center	LED Lighting	\$19,775	\$1,704	\$304	\$2,008	\$-	9.8
Housing Authority	LED Lighting	\$42,486	\$2,433	\$426	\$2,859	\$6,215	12.7
Food Distribution Building	LED Lighting	\$14,747	\$1,286	\$184	\$1,470	\$700	9.6
Roads and Construction	LED Lighting	\$28,669	\$1,712	\$322	\$2,034	\$4,869	11.7
Ball Club Multipurpose	LED Lighting	\$23,876	\$1,771	\$219	\$1,990	\$-	12.0
Fleet Management (Polman)	LED Lighting	\$12,683	\$927	\$119	\$1,046	\$920	11.2
Onigum Headstart	LED Lighting	\$26,028	\$1,808	\$297	\$2,105	\$-	12.4
Public Works	LED Lighting	\$54,392	\$4,063	\$534	\$4,597	\$10,626	9.5
Inger Headstart/Clinic	LED Lighting	\$18,542	\$1,076	\$159	\$1,235	\$874	14.3
Veteran's Memorial Bldg	LED Lighting	\$29,553	\$1,772	\$293	\$2,065	\$2,394	13.2
Inger Community Center	LED Lighting	\$15,199	\$1,195	\$207	\$1,402	\$852	10.2
RTC-DQ Building	LED Lighting	\$31,167	\$2,419	\$425	\$2,844	\$4,232	9.5
Ball Club Headstart	LED Lighting	\$9,542	\$852	\$92	\$944	\$-	10.1
Fitness Center	LED Lighting	\$10,728	\$518	\$175	\$693	\$560	14.7
Total		\$1,301,636	\$110,608	\$19,717	\$130,325	\$96,356	9.2

Building	ECM Name	Price	Year 1 Energy Savings	Year 1 O&M Savings	Year 1 Total Savings	Estimated Rebate	Simple Payback Years
Housing Authority	Convert from Propane to Nat Gas	\$4,098	\$1,686	\$-	\$1,686	\$-	2.4
Food Distribution Building	Convert from Propane to NatGas	\$4,098	\$1,510	\$-	\$1,510	\$-	2.7
Veteran's Memorial Bldg	Convert from Propane to NatGas	\$4,098	\$1,813	\$-	\$1,813	\$-	2.3
Total		\$12,293	\$5,009	\$-	\$5,009	\$-	2.5

Building	ECM Name	Price	Year 1 Energy Savings	Year 1 O&M Savings	Year 1 Total Savings	Estimated Rebate	Simple Payback Years
Northern Lights Casino /Hotel	PTAC Replacement	\$361,421	\$27,582	\$6,490	\$34,072	\$940	10.6
Northern Lights Casino /Hotel	Boiler Replacement	\$140,146	\$7,418	\$-	\$7,418	\$-	18.9
White Oak Casino	RTU/AHU Replacement	\$447,382	\$4,511	\$10,817	\$15,328	\$-	29.2
White Oak Casino	DHW Heater Replacement	\$17,995	\$165	\$-	\$165	\$-	109.1
Facility Center	RTU/AHU Replacement	\$375,802	\$2,805	\$6,490	\$9,295	\$-	40.4
The Palace Hotel	PTAC Replacement	\$263,115	\$11,806	\$3,245	\$15,051	\$-	17.5
Facility Center	DHW Heater Replacement	\$4,893	\$756	\$-	\$756	\$-	6.5
Early Childhood	DHW Heater Replacement	\$4,893	\$379	\$-	\$379	\$-	12.9
Ball Club Multi-purpose	DHW Heater Replacement	\$4,893	\$121	\$-	\$121	\$-	40.4
Inger Headstart/Clinic	DHW Heater Replacement	\$4,893	\$58	\$-	\$58	\$-	84.4
Veteran's Memorial Bldg	DHW Heater Replacement	\$4,893	\$106	\$-	\$106	\$-	46.2
Total		\$1,630,324	\$55,707	\$27,042	\$82,749	\$940	19.7

THE NUMBERS:

- \$4.2 million project
- 22 Tribal buildings
- 14 year payback
- \$66,320 Investment Grade Audit (IGA)
- \$276,000 in energy savings
- \$168,000 energy rebates
- 2,030 metric tons of GHG per year



STORY MAP — A WAY TO TELL THE STORY

A Story Map

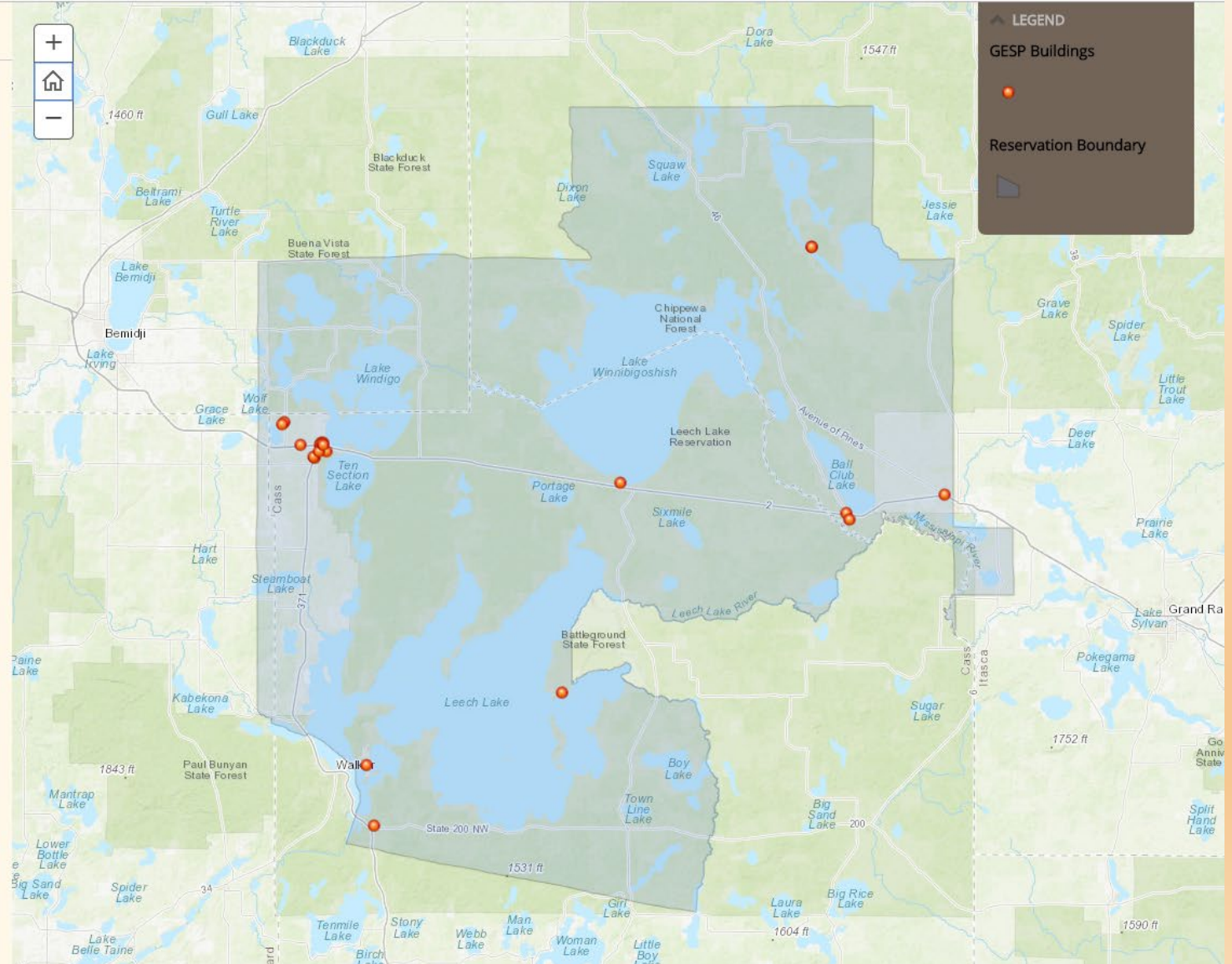


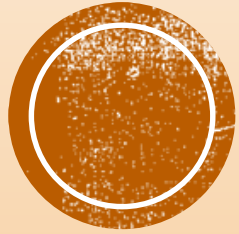
Leech Lake's Guaranteed Energy Savings Program



Leech Lake's Guaranteed Energy Savings Program (GESp) is a \$4.2 million project that uses Energy Savings Performance Contracting to retrofit 22 public facilities on the Reservation.

The Leech Lake Band of Ojibwe entered this GESp initiative with an ongoing commitment to be a sustainability leader in Northern Minnesota. This project will significantly reduce energy consumption and greenhouse gas emissions. Project construction began August 2018 and will be completed in January 2019.





SUSTAINABLE ENERGY PORTFOLIO



17 Page Synopsis of Leech Lake's Sustainable Energy Projects (to date)

1. Solar PV
2. Solar Heat Furnaces
3. Solar Master Plan
4. Wind Feasibility Study
5. GESP
6. Electric Vehicle Charging
7. Tribal Greenstep Nations
8. Building a Sustainable Tribal Community
9. Ongoing Work and Forecasted Projects



PORTFOLIO USE?

- Reference for Tribal Council
- Inter-Department use
- Create *and/or*
 identify partnerships
- Use/reference in grants
- Outreach to Band Members – on LL website
- 1st edition ~ living document



SUSTAINABLE STEPS; BUILDING A PLATFORM

- *Population Vulnerability Assessment and Climate Adaptation Framework*
 - GreenStep Tribal Nation opportunity
- *Solar Master Plan*

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- What can this lead to?
 - Grants
 - Partnerships
 - Public relations/outreach



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