

Department of Energy Program Review November 15-18, 2021

Jerrald Hauber

Energy Manager

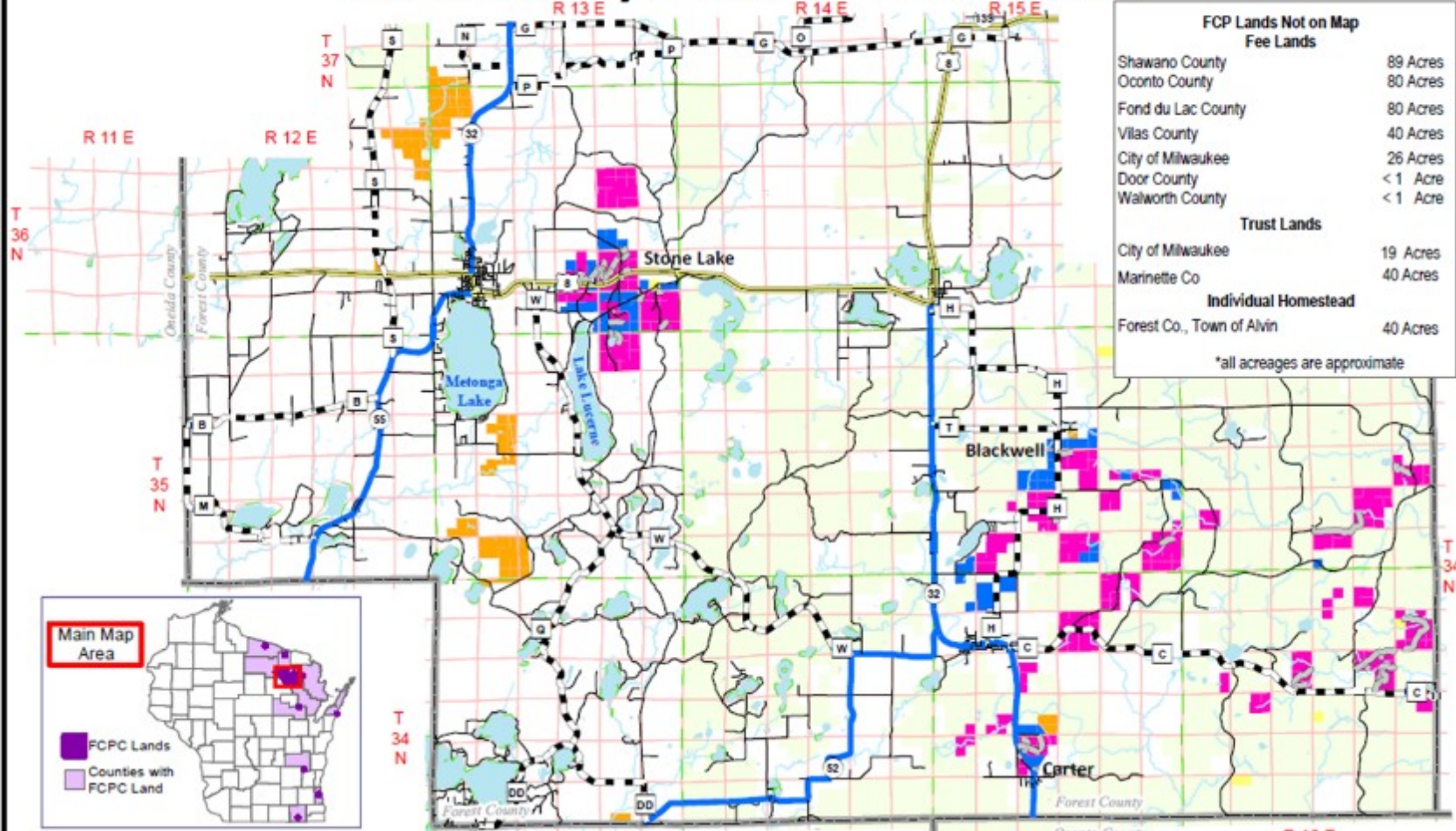
Forest County Potawatomi Community

Background Forest County Potawatomi Community

The Potawatomi were once a part of a historical confederacy made up of the Ojibwa, Odawa and Potawatomi Nations known as the Council of the Three Fires. The Ojibwa were addressed as the “Older Brother” as such were also the “Keeper of the Faith”. The Odawa were referred to as the “Middle Brother” and were the “Keepers of the Trade”. The Potawatomi were known in this confederacy as “Little Brother” and “Keeper of the Fire”.

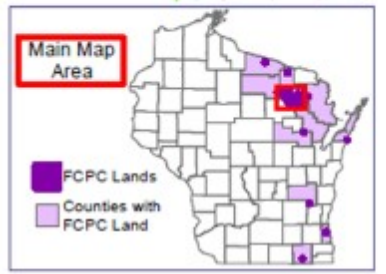


Forest County Potawatomi Land Base

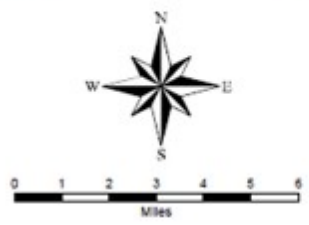


FCP Lands Not on Map	
Fee Lands	
Shawano County	89 Acres
Oconto County	80 Acres
Fond du Lac County	80 Acres
Vilas County	40 Acres
City of Milwaukee	26 Acres
Door County	< 1 Acre
Walworth County	< 1 Acre
Trust Lands	
City of Milwaukee	19 Acres
Marinette Co	40 Acres
Individual Homestead	
Forest Co., Town of Alvin	40 Acres

*all acreages are approximate



- | | |
|--------------------------|---------------------|
| FCPC Land Base | — Civil Townships |
| Land Designation | — County Boundary |
| ■ Proclaimed Reservation | — Section Lines |
| ■ Tribal Trust | Roads |
| ■ Tribal in Fee | — US Highway |
| ■ Homestead | — State Highway |
| Chequamegon - Nicolet | — County Highway |
| ■ National Forest | — Local Roads |
| Water Features | — BIA; Tribal Roads |
| ■ Lakes & Rivers | |



No warranty is made, express or implied, as to the accuracy of the information used. The data layers are a representation of current data to the best of our knowledge and may contain errors. It is not a legally recorded map and cannot be substituted for field-verified information.

Date: 10/1/2019

Environmental Mission Statement

The traditional values of the Forest County Potawatomi Community teach us to respect all living things, to take only what we need from mother earth, and to preserve the air, water, and soil for our children. Reflecting these values, we take leadership in creating a sustainable and healthy world. We resolve to reduce our own environmental impacts and to take steps to remedy the impacts of others. We encourage others to do the same. We also seek legislative and policy changes that protect the environment for all people, including generations to come. (Adopted November 20, 2008)



Background...environmental initiatives

- ▶ Class I Air Redesignation
- ▶ Participation in (former) Governor Doyle's CCTF
- ▶ Project Greenfire
- ▶ Adopted "Environmental Mission Statement"
- ▶ A Comprehensive Energy Audit
- ▶ Renewable Energy Credits (RECs) are purchased
- ▶ Four day work week was also established
- ▶ #16 On the EPA Top 30 Local Government List
- ▶ Member of the Green Power Partnership
- ▶ And many others...

Project 1: First Steps Grant

Developing Residential Energy Usage Baselines and Energy Efficiency Options- 2017

Goals

- Take the First Steps to gather an energy usage baseline for residential homes on Reservation and identify significant energy efficiency options to reduce the overall energy consumption by 15%
- Approximately 250 homes - Goal to conduct audits on 115-130 homes
- Gather energy usage data
- Conduct home energy audits in homes
- Present Home Energy Audit Report findings
- Help implement energy efficiency updates and cost savings with the goal to reduce energy usage

Home Energy Audit: What Is It?

Home energy audits are **VOLUNTARY**

A trained energy auditor inspects your house, looking for drafts, leaks & other ways your house is losing energy.

Energy Auditor's Toolbox

- Tape Measure
- Combustion Analyzer
- Watt Meter
- Blower Door
- Moisture Meter

BRR!

The average house leaks enough air to add up to leaving a medium-sized window open all day, every day of the year.

To sign up for a **FREE** home energy audit call (715) 478-4155 or (715) 478-4944.

Open to FCP tribal members **but** on the reservation.

NOBEE COUNTY PROFESSIONAL LAND & NATURAL RESOURCES DIVISION

Successes

- ▶ 117 total audits completed
 - ▶ 74 Tribal Members
 - ▶ 45 Tribal Rentals
- ▶ Currently 0 audits outstanding to be completed
- ▶ 100 Presentations have been completed
- ▶ 76 Tribal members off reservation have expressed interest in the audits



Next Steps

1. Deliver the remaining presentations to Tribal member homeowners
2. Begin the close out of the grant
3. Begin looking for funding opportunities to implement the home energy audit recommendations on Tribal member homes

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Open to FOP tribal members living on the reservation.

ROBERT COONEY PROFESSIONAL LAND & NATURAL RESOURCES DIVISION

Challenges and Lessons learned:

- Change in staffing
- ◀▶ Underestimated amount of time it would require to obtain release of information forms for ALL tribal homes
- ◀▶ Utility data entry input into software has taken longer than expected
- ◀▶ Trade Ally Certification process
- ◀▶ Working with homeowners schedules
- ◀▶ COVID pandemic
- ◀▶ Travel restrictions for training

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▷ Community Outreach – these efforts have been ongoing

- ▷ Informational Meetings
- ▷ Door-to-door visits
- ▷ Mass mailings
- ▷ News articles/Ads/brochures
- ▷ Booths at community meetings
- ▷ Incentive Kits
- ▷ Facebook Advertisement
- ▷ Website sign-up

▷ Collection of Energy Release Forms

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ROBERT COUNTY PROFESSIONAL LAND & NATURAL RESOURCES DIVISION

Project Findings

- Inadequate ceiling/attic insulation and building tightness
- Window/door weather seals missing
- Half of homes audited thus far have programmable thermostats but almost none are taking advantage of setbacks or are not programmed
- Most homes utilize about 50% energy efficient light bulbs
- Exhaust fans in bathrooms flow less than 100 cfm leading to moisture issues
- Box sill insulation is less than recommended and not air sealed
- Typical roof is 4/12 pitch with fiberglass shingles and soffit/ridge passive with no mechanical venting
- Many energy conservation opportunities identified



Accomplishments

- Goal to conduct home energy audits for 117 homes – 119 signed up to participate
- Leverage as many financing opportunities as possible.
- Continue efforts for audits without grant funds through tribal dollars and local programs.

Project Modification



- ▶ Project was modified to perform energy audits on 4 additional residential living facilities on Reservation.
 - ▶ Residential living facilities provide a number of community benefits. Reduction of cost for operation allows more funding to funnel to services. Men's, Women's Transitional Living Facilities and Elder Care.
- ▶ Project was extended in order to meet our initial goal to conduct home energy audits on 115 tribal homes.
- ▶ To improve our efficiencies and workforce for conducting home energy audits, two staff will attend a BPI certification training class.
- ▶ Project was extended in response to the pandemic, restrictions, and in order to keep everyone safe and complete the project deliverables.

Project 2: Community Scale Solar

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the slide, creating a modern, layered effect. The text is positioned on the left side of the slide, set against a plain white background.

2019 Community Scale Solar

- ▶ FCPC's solar PV projects have developed over 2 MW of behind the meter generation at individual sites.
- ▶ On the reservation in Forest County Wisconsin, the majority of government buildings have energy use offset by solar between 17 and 99.9%
- ▶ The new grant will provide an additional MW of solar PV energy for the Carter hotel, Aquaponics facility, Carter Wastewater Treatment plant, Stone Lake Church, Stone Lake Wastewater Treatment plant and Carter C-Store.

Project Revisions

- ▶ Initial sites had to be adjusted to accommodate changes in construction schedules, tariff issues zoning concerns and engineering challenges.
- ▶ New sites were added to absorb over 200 kw of PV at the FCPC RG facility including the Carter C store and the Stone Lake Wastewater Treatment Facility.
- ▶ Other sites were enlarged.
- ▶ Regulatory challenges in Milwaukee were encountered and forced the movement of 334 kW to other sites.

Installation by Location and Size

Community Scale Solar Project Grant 120					
Solar Array sites	Current site change ideas to KW Solar to Install	First Change to KW Solar to Install	Original kW to Install	Change Notes	Mount Type
FCPC Bingo – 1721 W Canal St. Milwaukee, WI	323.1	323.1	280	Increased kW	Roof
Potawatomi Carter Casino & Hotel (PCCH) -616 Highway 32, Wabeno, WI	339.9	249.9	197	Increased kW	Roof
Carter Wastewater Treatment Plant – 3909 Industrial Park Rd, Wabeno, WI	40.3	40.3	20	Increased kW	Roof
Stone Lake Church – 5132 Jaeger Rd, Crandon WI	9.43	9.43	8	Increased kW	Roof
(Modified Site) Aquaponics– 3389 County Highway H, Laona, WI	133.7	85.3	60	Increased kW; roof and ground mount (originally roof only)	Roof and Ground
(New location) Carter C-Store 614 WI-Highway 32, Wabeno, WI	63.2	63.2	0	New location	Roof
(New location) Stone Lake Wastewater Treatment 8138 Mish ko Swen Dr., Crandon, WI	97.4	41.9	0	New location	Roof
Removed site Wgema Campus	0	334.9	255	Removed site	Ground
(Removed Site) Carter Church	0	0	8	Removed site	Roof
(Removed Site) FCPC Renewable Generation Biodigester Facility	0	0	240	Removed site	Ground
Total kW Solar to be Installed (Net Increase of ~80 kW)	1007.03	1,148.03	1,068		

Model

- ▶ FCPC initially planned on using the model used for the 2013 and 2017 projects
 - ▶ Investment tax partner receives the ITC
 - ▶ Lowers FCPC's capital investment
 - ▶ FCPC creates LLC with partner and permits installations for the LLC
 - ▶ Ownership outright at the end of the ITC recovery period

This approach changed based on regulatory restrictions/legal challenges in Wisconsin. The ITC/LLC arrangement is subject of a court case. Utilities are arguing that the ITC partner is essentially a utility subject to PSC control.

The Tribe will use a traditional approach buying the panels outright.

Recent Steps

- ▶ RFP for solar installer/contractor circulated in 2019. Contractor chosen and contracting is underway.
- ▶ Installations are planned and approved with minor modifications.
- ▶ NEPA review is complete with the exception of one location.
- ▶ Interconnection agreements are submitted.
- ▶ Site specific permits have been applied for.



Goals

- Install 1.1 MW of solar generation at 8 sites.
- Tribe anticipates substantial energy offset, ranging from 4.2 - 99.9% grid electricity reduction at the selected sites.
- This focuses on the Tribe's goal of achieving 100% carbon-neutrality.
- This project further instills the idea of tribal energy sovereignty.

Successes

- ▶ Developed and circulated an RFP.
- ▶ Evaluated contractor bids.
- ▶ Selected a contractor.
- ▶ Worked with DOE to modify the grant to change site locations.
- ▶ Developed and signed the contract.
- ▶ Completed site designs, walk-throughs and ordered materials.
- ▶ Began construction the end of September 2020 on 4 sites.



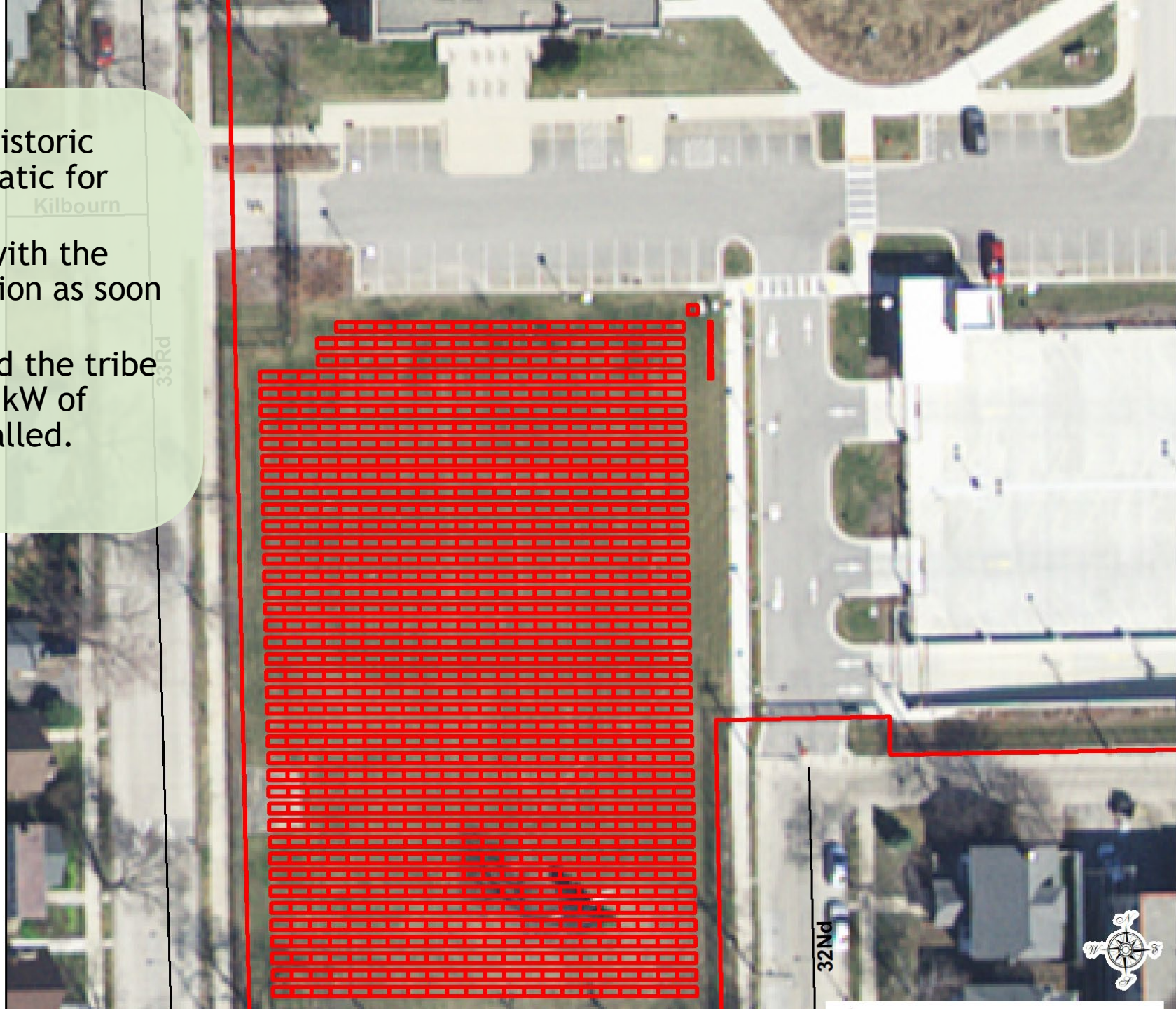



Next Steps

- Work with the contractor to either add sites or add solar to current sites.
 - Once the changes to the project plan have been finalized, we will work with DOE approve any changes.
- Work with the Contractor and Sub-contractor on finishing the fall construction plan.
- Conduct quality control inspections of the solar installations.

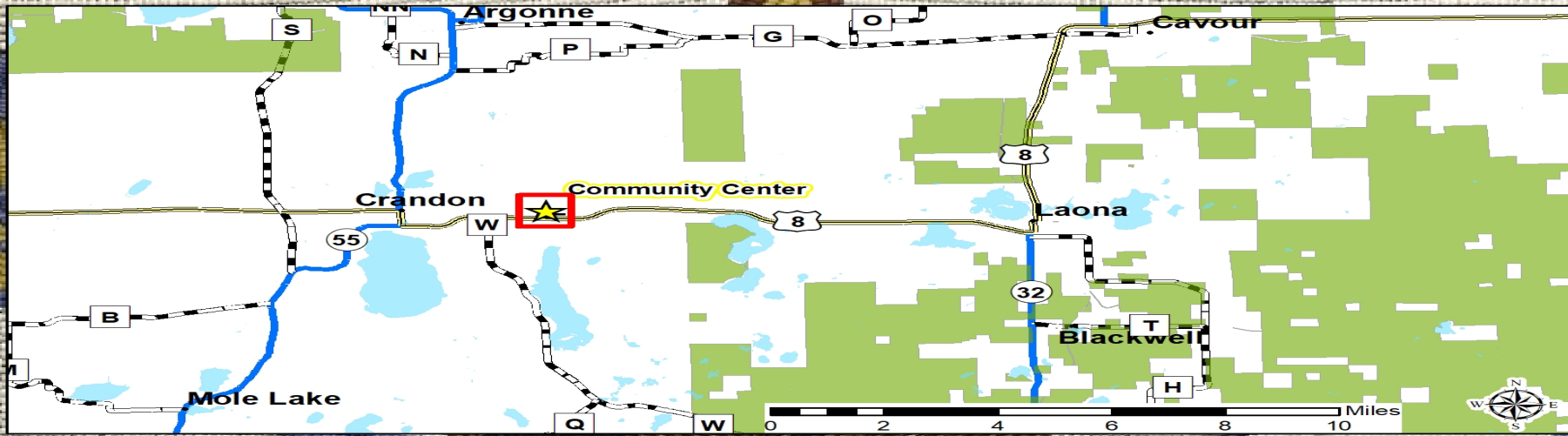
Challenges and Lessons learned:

- Zoning issues in historic area are problematic for solar projects.
- Begin working with the zoning commission as soon as possible.
- This issue forced the tribe to relocate 334 kW of solar to be installed.





Project 3: Community Center Solar and Energy Efficiency Measures (EEMs)



Project Goals

- Based on the Tribe's environmental mission and FCPC values, the Tribe set specific project goals for options selection, such that each option must:
 - Minimize building energy demand;
 - Pay for itself over its lifespan;
 - Be technologically deployable within the construction timeline; and
 - Be grant eligible.

- In addition, any renewable energy generation system selected must:
 - Preserve the landscape; and
 - Must not discourage Tribal members from visiting the community center.

Decision Making

Improve / Add	Measure #	Option	Annual therms Saved	Annual kWh Saved	Cost	30 Yr Cost Savings	Payoff Year
Walls	1	R-21.85	610		4,545	10,914	13
	1	R-28.1	929		9,090	14,454	16
	1	R-34.35	1,103		13,383	14,571	18
Windows	2	U-0.20	6,677		158,146	11,071	29
Roof	3	R-37.5	454		12,087	-581	31
	3	R-40	883		24,584	-2,206	32
	3	R-42.5	1,261		49,168	-17,210	39
Under Slab	4	R-10	13,537		43,900	299,173	6
	4	R-20	18,049		87,800	369,622	9
Edge / BG	5	R-15	198		5,159	-141	31
	5	R-20	441		9,055	2,121	27
Boiler	6	Condensing	7,419		31,750	156,272	8
Pool	7	70% ERV	55,000		19,250	1,374,634	1
Light	8	Controls		103,120	20,000	268,659	4
Solar PV	9	200 kW		216,449	188,674	522,304	10
Total			89,950	319,569	577,226	2,702,044	8

Progress

Community Center is Now Open & All EEMs are Installed

[INSERT 1st VIDEO]

Progress

200 kW Solar PV System

FCPC received 3 competitive bids.

Final contractor has been selected.

Contract has completed a legal review and next the contract will be signed approved by Executive Council.

Design is complete, working on interconnection agreements.

FCPC received \$35,648 in incentives for EEMs from the state run energy efficiency program - Focus on Energy and is expecting to receive \$46,000.00 for the 200 kW of solar to be installed.

Exploring an option to add additional solar to the 200 kW array.

Anticipated completion date: Spring, 2022

Lessons Learned

- Aligning the grant application with a tight new building construction schedule is very difficult.
- Difficultly separating incremental prices of EEM upgrades from general construction budget.
- Still waiting for first utility bills to begin the Measurement and Verification process.

Progress

Community Center is Now Open & All EEMs are Installed

[INSERT 2nd VIDEO]

Thank You!