



# Ishkonige

# Nawadide

# Solar Project

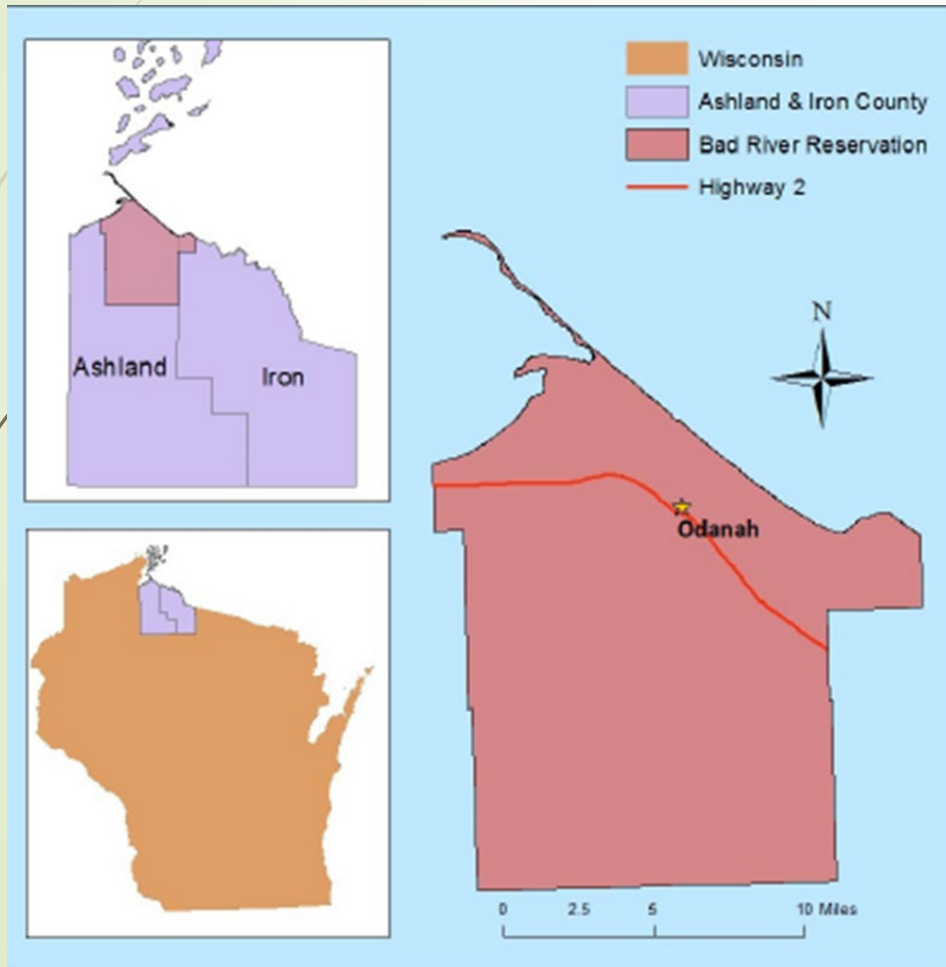
# Update

December 17, 2020

Bad River Band of Lake Superior  
Tribe of Chippewa Indians

Daniel Wiggins Jr, Project lead

# Bad River Band of Lake Superior Tribe of Chippewa Indians



- Located on a 125,000+ acre reservation in Northern Wisconsin on the south shore of Lake Superior
- Territory ceded by the tribe to the U.S. government includes the upper one third of what is now the State of Wisconsin.
- Has over 7,000 members, the majority living off the reservation, about 2,000 live on/near the reservation.

# Overview

- **Phase 1: Ishkonige Nawadide**
  - Objectives
  - Project Details
  - Planning & Development
  - Execution of Project
  - Challenges
  - Accomplishments
  - Next Steps
  - Partners
- Long-term Planning
- Phase 2: Giwijiwaaganinaan  
Gitigan Microgrid Project
- Questions



# Phase 1: Ishkonige Nawadide Solar Project



# Ishkonige Nawadide Objectives



- ▶ The Bad River Tribe was awarded a USDOE Grant in 2019 for the Ishkonige Nawadide (It Catches Fire) Solar Microgrid Project.
  - ▶ 2 Million Dollar Project
  - ▶ 50% USDOE Contribution
- ▶ Focused on resiliency after the 2016 Flood and while experiencing lengthy electrical outages at crucial facilities, such as the Health & Wellness Center, the Tribe's community Clinic.
- ▶ Tribe is installing over 500 kW of solar with over 1000 kWh of battery storage at three tribal facilities located in the Odanah Community:
  - ▶ The Chief Blackbird Administration Building
  - ▶ Wastewater Treatment Plant (WWTP)
  - ▶ Health & Wellness Center (H&WC)
- ▶ Systems at the H&WC and the WWTP will offset the entire facility electrical loads and offer a level of resiliency if power goes out that can last projected days if not weeks.



# Ishkonige Nawadide Details

- ▶ Chief Blackbird Administration Building
  - ▶ PV Size: 24kW DC
  - ▶ Battery Size: 22 kWh
- ▶ Health & Wellness Center
  - ▶ PV Size: 300 kW DC
  - ▶ Battery Size: 568 kWh (250 kW or discharge rate)
- ▶ Wastewater Treatment Plant
  - ▶ PV Size: 200 kW DC
  - ▶ Battery Size: 426 kWh (200 kW or discharge rate)
- ▶ All Systems operate on a DC Bus System
  - ▶ Everything (PV and batteries) is connected on the DC side.
  - ▶ Cloud Monitoring System

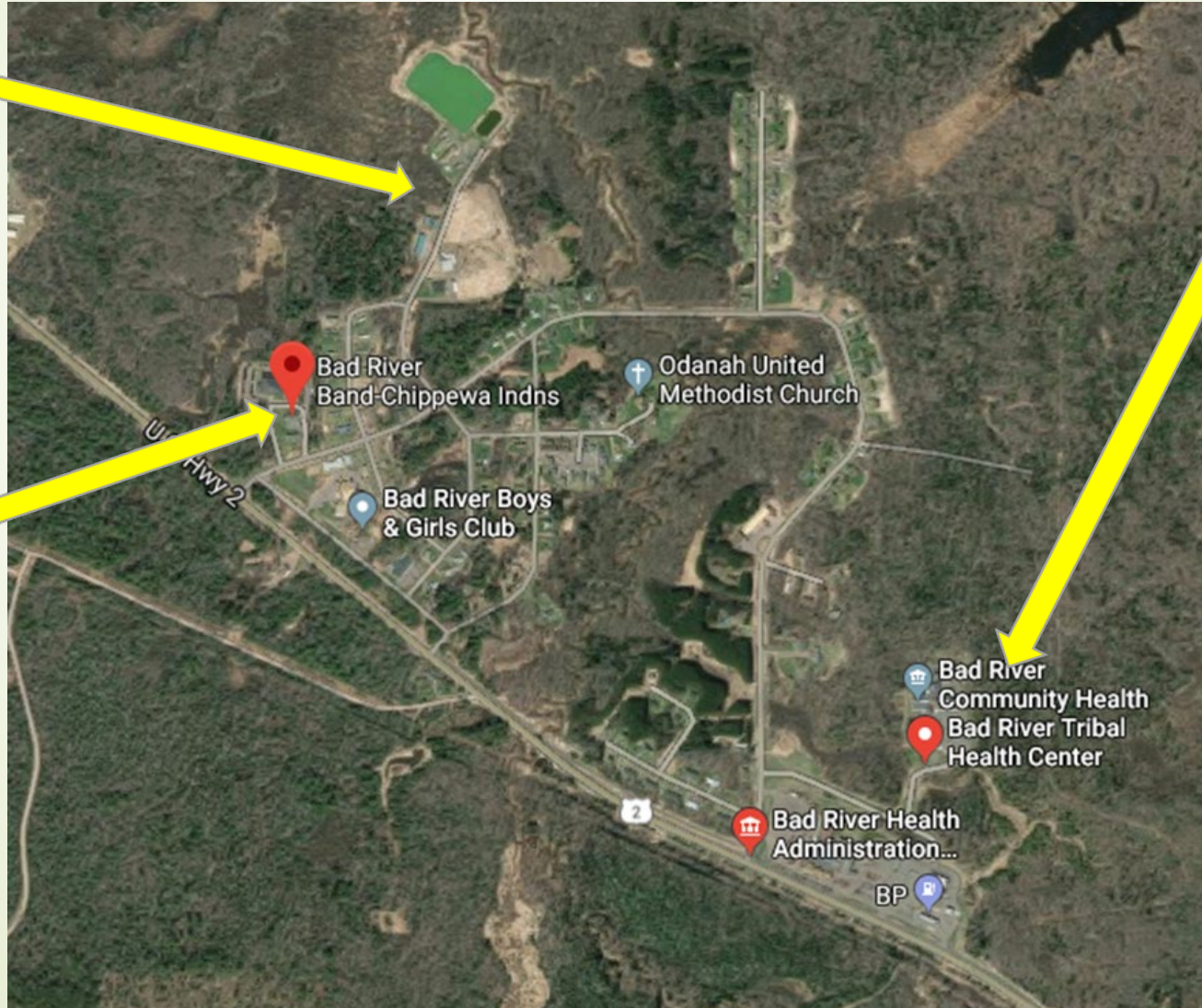
# Odanah Community



Waste Water  
Treatment Plant

Administration

Health &  
Wellness  
Center



# Ishkonige Nawadide Planning & Development



- ▶ The Ishkonige Nawadide Project was guided with both Strategic Energy Planning done in 2012 and 2017.
- ▶ The Tribe used the newly adopted 2018 Emergency Preparedness Plan (EPP) to identify critical infrastructure that was affected by power outages and the 2016 Flood.
- ▶ Several buildings and scenarios were identified for possible solar projects
- ▶ The 2018 EPP clearly identify the Health & Wellness Center, Wastewater Treatment Plant, and the Chief Blackbird Administration Building as critical infrastructure.



# Ishkonige Nawadide

## Execution of Project



- ▶ Request For Proposals:
  - ▶ Investor and Developer come together
  - ▶ Started Nov 2019
  - ▶ Concluded May of 2020
  - ▶ Awarded Faith Technologies
- ▶ Contracts & Documents
  - ▶ Leasing and Energy Services Agreement (Several Attachments)
  - ▶ Started June 2020
  - ▶ Concluded and executed October 2020
- ▶ Began Construction in October of 2020
  - ▶ Anticipated Commissioning in March of 2021
  - ▶ Interconnection Agreement and PPA process has started

# Administration



# WWTP



# Health & Wellness Center







# Ishkonige Nawadide Challenges



- ▶ COVID-19
  - ▶ Tribe issued *Declaration of Public Health Emergency with Respects to the 2020 COVID-19 Pandemic* in March of 2020 along with Safer at Home orders once COVID began to hit the community in June
  - ▶ Made meetings difficult
    - ▶ Decision making by leadership
    - ▶ Utility Task Force Meetings
    - ▶ Overall Team Meetings
    - ▶ Virtual Meetings have created a great level of communication
  - ▶ Construction
    - ▶ Limited building access and extra precautions
    - ▶ Contractors coming from out of town
    - ▶ Required all contractors to have strict COVID-19 policies

# Ishkonige Nawadide Challenges



## ► Community Acceptance

- Replacing land with solar or any infrastructure is not always accepted by elders and environmentalists.
  - “ I don't know how I'll feel about it until I see the panels.... The trees were nice.”  
Community Elder
- There is a level of sovereignty given up when involving **partners and investors**.
  - Any time this is said it will not be accepted by many tribal members
  - Emphasizes the need for clarity and transparency
  - Community meetings and presentations around financing strategies



# Ishkonige Nawadide Accomplishments



- ▶ Completed RFP Process
- ▶ Executed Construction and Contracts
- ▶ Developed a Long-term Strategy once Ishkonige Nawadide has been commissioned
  
- ▶ Working with Faith Technologies to develop Tribal workforce
  - ▶ Workers knowing how to install and handle panels
    - ▶ One tribal worker during Construction of racking and PVs
    - ▶ Working with education to support training module within 18–24-year-old program.
    - ▶ OMCO has offered complete training for Tribe with racking and PVs
  - ▶ Facility Managers will identify technicians to work with Faith Technology Staff or (Itians) in order to develop skills to fully operate the microgrids.

# Ishkonige Nawadide

## Next Steps



- Batteries and interior electrical
- Interconnection and Commissioning scheduled for March
- Execute Long-term Phased Energy Plan
  - Phase 2 USDOE Application Submittal in February of 2021
  - Identify Other funding strategies

# Ishkonige Nawadide Partners



- Bad River Tribe Utility Task Force Team
- Cheq Bay Renewables
- Madison Solar Consulting
- muGrid Analytics
- Faith Technologies



Madison Solar Consulting



# Long-term Planning



- Conducted November of 2019, led by Amy Simpkins of MuGrid Analytics.
- Concentrated on a strategic phased approach incorporating the Ishkonige Nawadide Solar Project as Phase 1.
- Two-day collaborative meeting with Department heads, leadership, and community representatives.
- Long-Term Poster and Report was developed for the Tribe
  - Report: <https://tinyurl.com/y6xl9gt7>
  - Poster: <https://tinyurl.com/y5ffqnem>

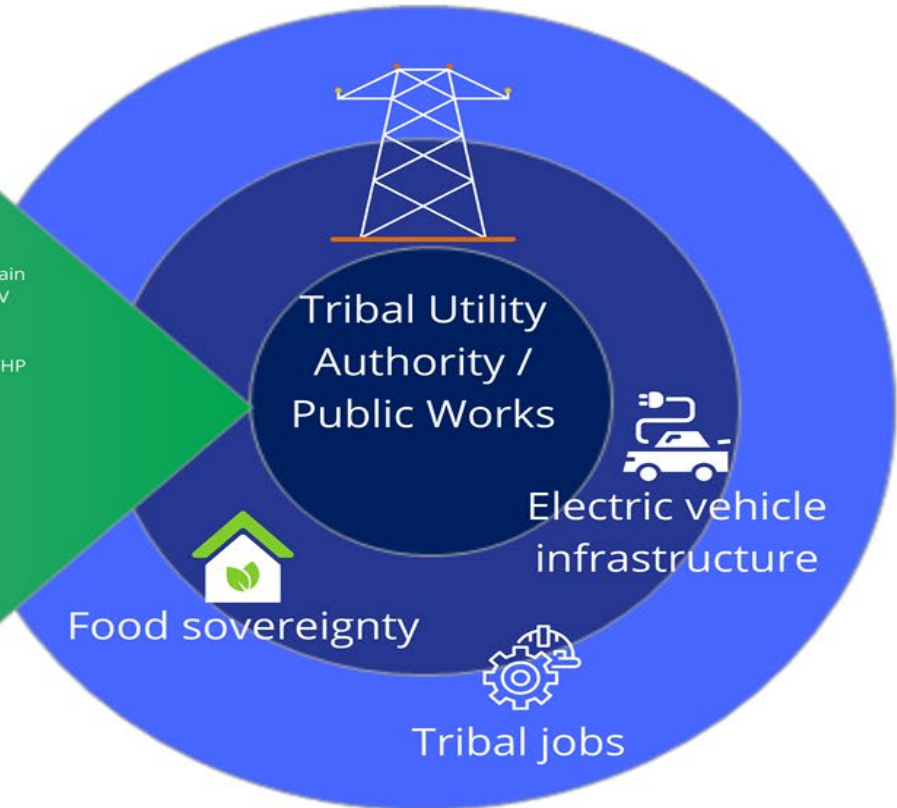


**Bad River Band**

# Phased Energy Plan

Phase 1	Phase 2	Phase 3	Phase 4	Phase 6
Solar+Storage at	Microgrid:	1MW Community Solar	Solar+Storage at	Solar+Storage at
Administration Building	Health and Wellness Center	◆ Solar+Storage at:	New Elderly Housing (planned construction)	Community Center (planned construction)
Health and Wellness Center	Head Start Bldg	Housing Authority	<b>Phase 5</b>	
Waste Water Treatment Plant	Elderly Bldg	Hatchery	Solar+Storage at	
		Pump House	Casino	
		Elderly Housing	Moccasin Trail	
2020	2021			

**Phase 7**  
Microgrid the main cluster with MV distribution  
Biomass plant/CHP



**2030 VISION**



*Energy Sovereignty*

for the benefit of the land, the water and the people

## Phase 2: Giwijjiwaaganinaan Gitigan Microgrid Project



- ▶ Giwijjiwaaganinaan Gitigan means Community Garden or Three Sisters Garden. This was the original Project title for Clinic, Head Start and Elderly Buildings when Clinic was originally built.
- ▶ Connects new Head Start and existing Elderly buildings adjacent to the Clinic to the Ishkonige Nawadide Solar Microgrid
- ▶ Applying for USDOE funds and using same financing strategy
- ▶ Team is also working with the Bad River Housing Authority on Phase 3
  - ▶ Elderly Apartments and other infrastructure
  - ▶ 1MW solar garden specifically for residential benefits
  - ▶ Challenges are land availability and Utility capability

Miigwech!  
(Thank you)



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