

# The Coeur d'Alene Tribe

## SENIOR HOUSING COMPLEX ENERGY EFFICIENCY AND SOLAR ENERGY PROJECT

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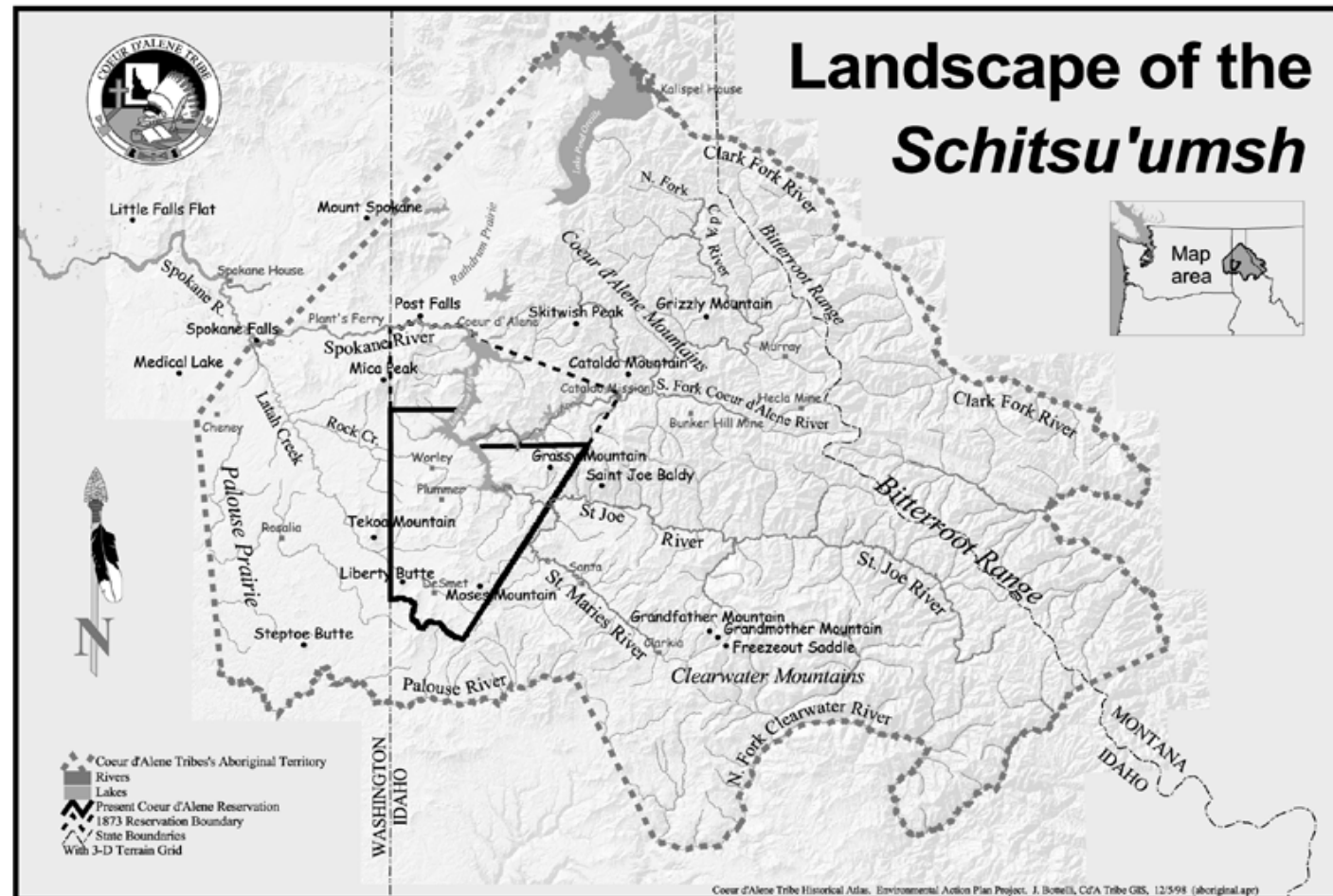
# Presentation Summary

- ▶ Overview of the Coeur d'Alene Tribe
- ▶ Previous Tribal energy work
- ▶ Senior Housing Complex Energy Efficiency and Solar Energy Project
- ▶ Next Steps
- ▶ Lessons Learned
- ▶ Contact Information

# Overview of the Coeur d'Alene Tribe

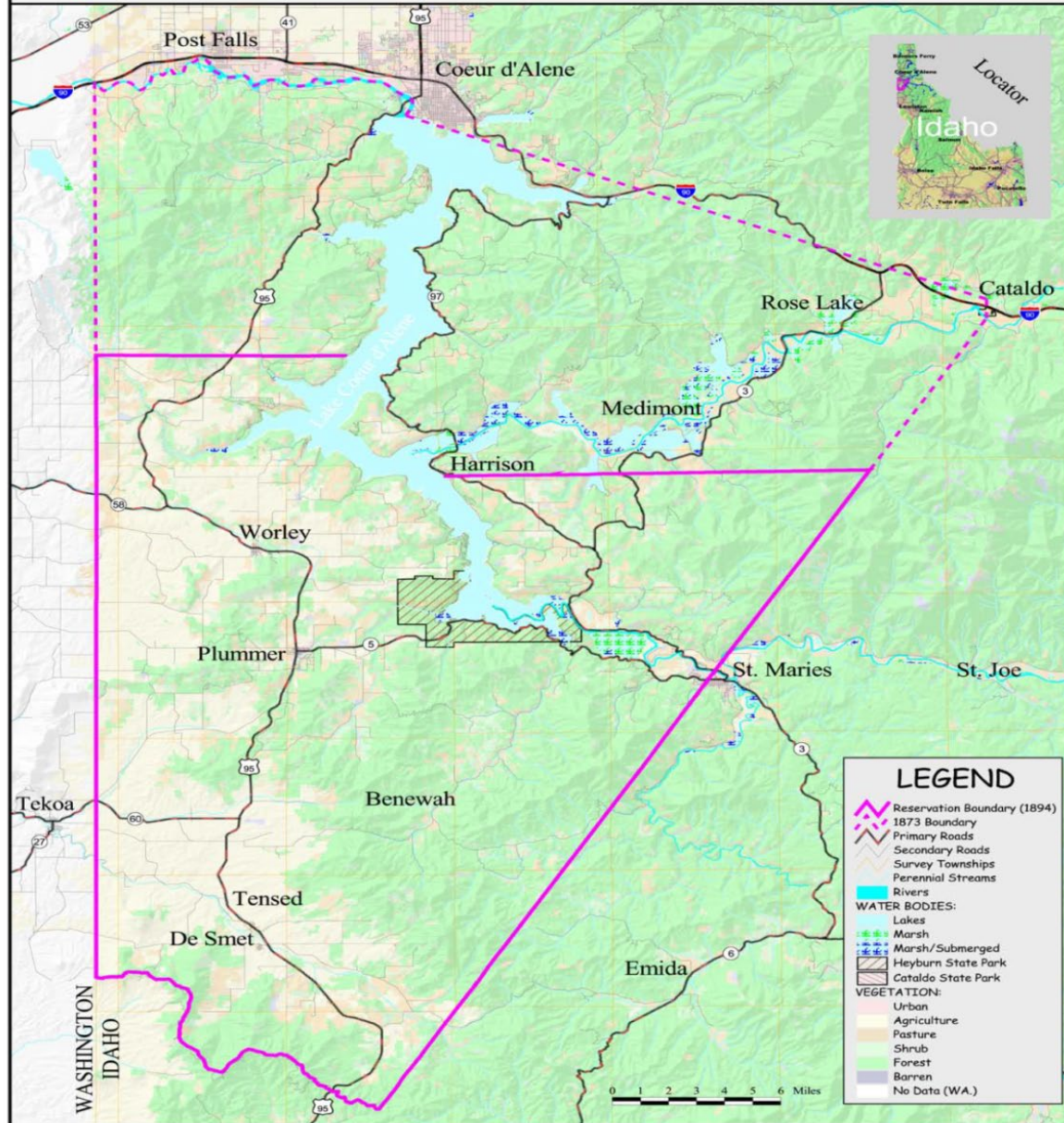
- ▶ The Coeur d'Alene Reservation is approximately 334,000 acres, not including Tribal submerged lands.
- ▶ Aboriginal territory = more than 5 million acres.
- ▶ 6,760 residents according to the 2010 Census.
- ▶ Tribal enrollment is 2,554 and growing (December 2020).
- ▶ Tribe relies on forestry, agriculture, gaming, etc. in the current economy.
- ▶ Tribe continues traditional subsistence activities such as fishing, hunting and gathering foods and medicine.

# Coeur d'Alene Tribal Map of Aboriginal Territory and Present Reservation Boundary





# Coeur d'Alene Reservation



**LEGEND**

- Reservation Boundary (1894)
- 1873 Boundary
- Primary Roads
- Secondary Roads
- Survey Townships
- Perennial Streams
- Rivers

**WATER BODIES:**

- Lakes
- Marsh
- Marsh/Submerged
- Heyburn State Park
- Cataldo State Park

**VEGETATION:**

- Urban
- Agriculture
- Pasture
- Shrub
- Forest
- Barren
- No Data (WA.)

# Coeur d'Alene Reservation



# Coeur d'Alene Reservation



# Coeur d'Alene Tribe -

<https://www.cdatribe-nsn.gov/>

## Mission Statement

We shall preserve and maintain at all costs our inalienable right to exist as a sovereign nation of people, speak our language, practice our traditions and culture, serve as protectors and stewards of our Mother Earth, respect our elders in everything we do, endeavor to build a future for our children and coming generations that is improved and better than what we ourselves inherited, and promote proud, healthy and vibrant communities and families.

## Vision Statement

The Schi'tsu'umsh, Coeur d'Alene Tribal Nation, forever guided by the traditional values of our great leaders of generations past, shall be the "model government" of the world, united as one under the K'olunsuten, with love for our tribe, harmonious with our natural world and the Mother Earth, proud in the strength of our community development, but remaining who we are, who we were meant to be and who we always shall be: Schi'tsu'umsh, Coeur d'Alene Indians!



# Tribal Natural Resources Department

- ▶ In 1992, the Tribal Natural Resource Department was established as a stand-alone Department
- ▶ The NR Department has many programs in it: Air Quality, *Environmental Programs Office*, Fisheries, Forestry/Fire, Hazardous Waste, Land Services, Pesticides Circuit Rider, Recreation, Water Resources and Wildlife
- ▶ The Environmental Programs Office in the NR Department has been applying for and administering Tribal energy grant work



# Coeur d'Alene Tribe

## Energy Efficiency Assessment Report

PLUMMER, ID  
JUNE 2012

## Prior Work

June 2012 – The Tribe completed its energy efficiency report on 34 Tribal government buildings



# Prior Work

- The Tribe completed its Energy Efficiency Feasibility Study in 2014



## Coeur d'Alene Tribe Energy Efficiency Feasibility Study



Coeur d'Alene Tribal Benewah Medical Center Front Entrance

Prepared for the Coeur d'Alene Tribe  
Environmental Programs Office in the Natural Resource Department  
by:



September 2014

Technical Report for the U.S. Department of Energy  
Assistance Agreement Award #DE-EE0005170

# Prior DOE Work:

## Benewah Market Energy Efficiency Project

- ▶ Owned by the Tribe
- ▶ Located in Plummer, ID
- ▶ Approximately 16,000 square feet
- ▶ Only full service grocery store in a 35-mile radius



Prior DOE Work:

## Benewah Market Energy Efficiency Project

- ▶ The Benewah Market EE Project Replaced:
  - ▶ 14 aging floor cases with high efficiency cases
  - ▶ 16 individual compressors for the refrigeration cases and walk-ins
  - ▶ Roof top condensers
  - ▶ 15 evaporators in the walk-in coolers and freezers with high efficiency units
  - ▶ Refrigerant lines

## Prior DOE Work:

# Benewah Market Energy Efficiency Project

- ▶ The Benewah Market EE Project was projected to:
  - ▶ Save at least 30.8% of the total energy used at the Market
- ▶ The Benewah Market EE Project Actually Saved:
  - ▶ 22.9% of energy use compared to pre-project energy use

(There was an over-estimation of the older equipment's inefficiency, and the Tribe did not install a heat recapture system to replace the one that was installed on the old equipment)

# Prior DOE Work: Benewah Market Energy Efficiency Project

- ▶ Lowered operating costs
- ▶ Lowered maintenance costs
- ▶ Improved perception of overall store
- ▶ Improved food quality
- ▶ Increased Tribal pride in store
- ▶ Received community support & appreciation
- ▶ Increased store sales



# Prior DOE Work: Benewah Market Energy Efficiency Project



**BEFORE**



**BEFORE**



# Prior DOE Work: Benewah Market Energy Efficiency Project

New Compressors



# Prior DOE Work: Benewah Market Energy Efficiency Project

## Produce Department Remodel



**Before**



# Other Previous Energy Work

- ▶ In 2008, the Tribe's Public Works Department completed a Wind and Biomass Energy Feasibility Study with Bureau of Indian Affairs funding (preliminary)
- ▶ In 2009, Bonneville Power Administration funded Energy Smart of Portland, Oregon to conduct energy audits of the Benewah Market and Benewah Auto on behalf of the Tribe's Development Corporation (reports were completed)

# Other Previous Energy Work

- ▶ In 2014, Bonneville Environmental Foundation awarded the Coeur d'Alene Tribe a Solar 4R Schools Program grant to place a 14.25 kW solar photovoltaic system on the Tribe's Natural Resources Department building



<https://cebrightfutures.org/kiosk-coeur-d-alene-tribe-natural-resources>

# Other Previous Energy Work

- ▶ In 2018, Bonneville Power Administration's Tribal Low-Income Energy Efficiency Program awarded the Tribe funding to replace all of the refrigerators and clothes washing machines, and some of the bathroom fans in the Tribe's Senior Housing Complex apartments



# Other Previous Energy Work – BPA

- ▶ In 2019, the Tribe received additional funding from Bonneville Power Administration's Tribal Low-Income Energy Efficiency Program: The Tribe replaced baseboard heaters with new ductless heat pumps in 19 of the 20 apartments (one had a new heat pump already), as well as the rest of the bathroom fans in the Tribe's Senior Housing Complex apartments
- ▶ The Tribe conducted three energy audits of Tribal homes for future work (the Tribe is contracting with the Community Action Partnership (CAP) in Lewiston, Idaho)

# Other Previous Energy Work - BPA

New Heat Pump – outside view



New Heat Pump – inside view



# Other Previous Energy Work – BPA

- ▶ In 2020, the Tribe contracted with the CAP and another contractor to do work at three Tribal member homes for energy efficiency and health and safety work



# Other Previous Energy Work – BPA



# New Energy Work – Senior Housing Complex Energy Efficiency and Solar Energy Project

- ▶ In late 2018, the Tribe was awarded a U.S. Department of Energy, Energy Infrastructure Deployment on Indian Lands grant for the Tribe's Sennwichen Senior Housing Complex commons area

## SENIOR HOUSING ENERGY EFFICIENCY AND SOLAR PROJECT

### TOPIC AREA 1.C

#### Project Summary

The proposed project will integrate a 52kW solar PV system to the Senior Housing Complex in Plummer, ID. The project will also upgrade lighting, a water heater, and additional efficiency measures. The Tribe's long term energy goals include "improving the quality of life and providing social and economic benefits across the Reservation." These proposed measures move the Tribe toward a more sustainable energy system while providing benefits to its tribal senior residents.



*The combined solar and energy efficiency measures will help reduce the total cost of housing for Tribal Seniors.*

#### Key Personnel/Organizations

Tiffany Allgood – Project Manager – Tribal Natural Resources  
Caj Matheson – Tribal Natural Resources Director  
Evan Ramsey – Consultant – Bonneville Environmental Foundation  
Adam Hoefert – Contractor – Next Gen Electric LLC

#### Budget

Federal funds requested: \$92,500  
Cost-share proposed: \$92,500  
Total Project Costs: \$185,000

#### Project Outcomes

The proposed solar and efficiency project will save nearly 100,000 kWhs/year of energy which will reduce the Senior Housing Complex common area's electricity cost by 87% with a decrease of \$7,600 per year. This effort will help deepen the Tribe's solar and efficiency impact with an associated reduction in carbon emissions of nearly 3 million pounds. This next step in the Coeur d'Alene Tribe's sustainable energy journey will demonstrate the value of solar and efficiency to the community and help spur additional solar development.

# New Energy Work – Senior Housing Complex Energy Efficiency and Solar Energy Project

- ▶ Bonneville Environmental Foundation is providing most of the cost share for the project and is also providing the Tribe technical assistance during the project
- ▶ The Tribe and the Tribe's Benewah Market is providing the remaining cost share
- ▶ The Tribe was awarded a Tribal cost share reduction due to covid-19

# What's Been Completed ?

- ▶ Completed National Environmental Policy Act compliance with the U.S. DOE for the project – Categorical Exclusion – Fall 2018
- ▶ Developed and executed a funding agreement with Bonneville Environmental Foundation – Winter 2019
- ▶ Visited the Spokane Tribe's Children of the Sun Solar Project (Tim Willink of Grid Alternatives toured us) – Summer 2019

# What's Been Completed ?

- ▶ Negotiated the contract with the energy efficiency and solar installation contractor (electrician) – Fall and Winter 2019
- ▶ Prices of materials and labor increased since the initial project estimate during the application process; the Tribe's Benewah Market in the Development Corporation contributed funds to the project to meet the shortfall – Fall and Winter 2019
- ▶ Purchased much of the solar equipment and materials – Winter 2019

# What's Been Completed?

- ▶ Coordination with Tribal departments, especially before site-preparation and installation – Ongoing
- ▶ Began coordination for the electrical and plumbing inspections – Spring/Summer 2020
- ▶ Installed the energy efficiency upgrades (LED lighting and new propane hot water heater) – Summer 2020

# Energy Efficiency Measures

New Propane Hot Water Heater



New Outside Light





# What's Been Completed ?

- ▶ Completed grading, laying down fabric and rocking the site for solar panel installation – September 2020
- ▶ Fenced the area for the solar panel installation – October 2020
- ▶ Installed the racking, solar panels and the inverters – November 2020
- ▶ Trenched the electrical conduit from the solar panels to the new meter location – November 2020

# Site Preparation



# Staking and Racking

Staking the Site



Installing the racking



# Installing the Solar Panels



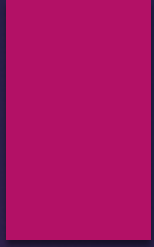
# Partially-Installed Solar Panels



# Aerial View of Partially-Installed Solar Panels



# Installed Solar Panels



# Inverters





# Trenching to the New Meter Location



# What's Been Completed?

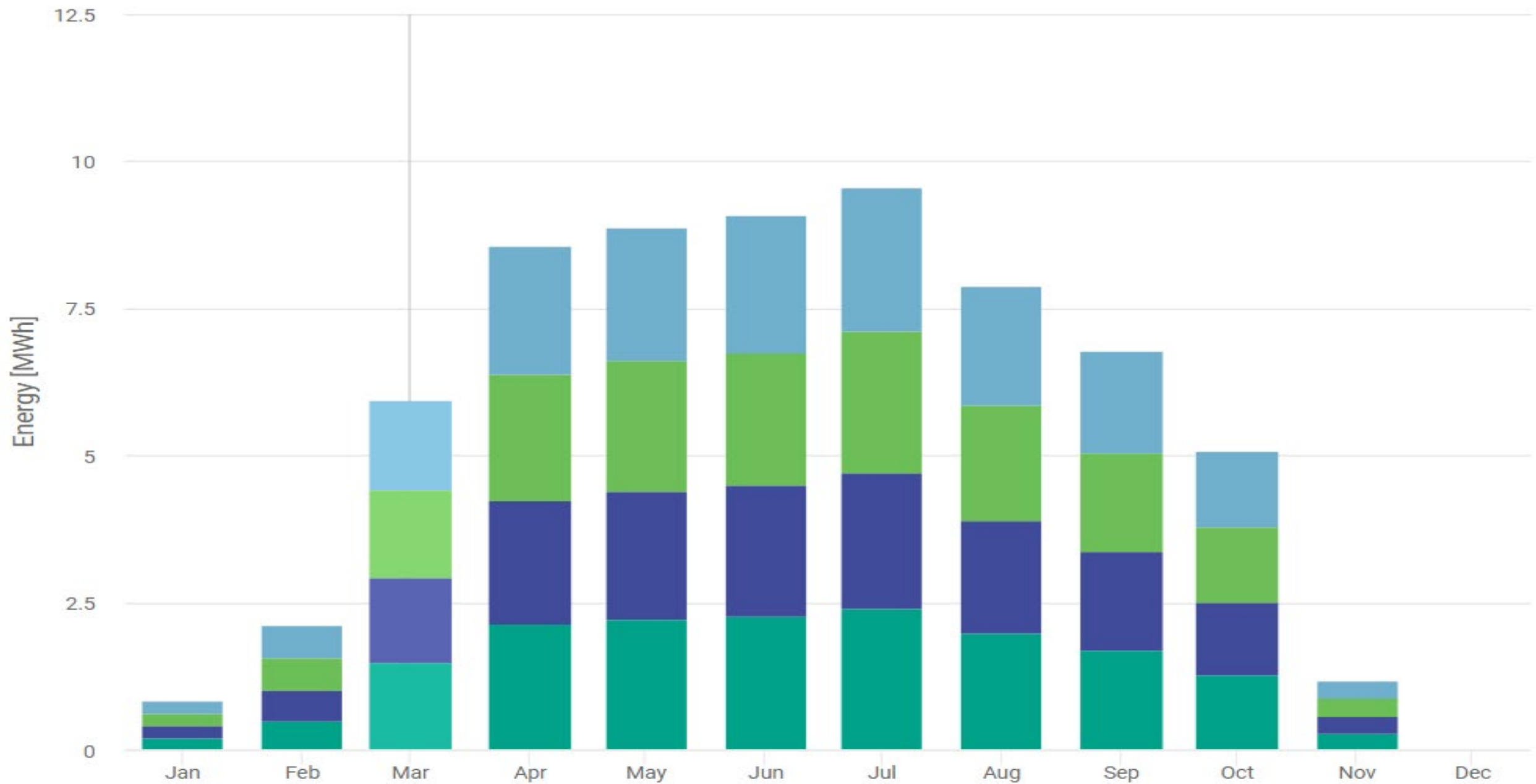
- ▶ Connected to new meter and transformer and completed electrical inspection of solar array – January 2021
- ▶ Executed the interconnection agreement with utility – January 2021
- ▶ Began downloading solar energy production data – January 2021
- ▶ Corrected a code violation and reinspected (an older electrical line to a new outside LED light was not coded for outside use) – September 2021

# Old Electrical Line Repair



# Energy Production – Early Results

- ▶ Estimated Energy Production
  - ▶ YEAR 1 = 72,000 kWh
- ▶ Estimated cost savings
  - ▶ YEAR 1 = \$5,400
- ▶ Actual Energy Production
  - ▶ 9 months of YEAR 1 = 63,966 kWh
- ▶ 3+ months of Actual Cost Savings
  - ▶ \$2,015.99 (straight comparison between costs this year and the year before)



2021

DAY

MONTH

**YEAR**

TOTAL

# What's Next ?

- ▶ Continue to measure results of solar energy production and cost savings for one year and complete final report – February 1, 2021 – January 31, 2022
- ▶ Submit the final project report to Tribal Council and, if approved, to the U.S. Department of Energy – April 2022

# Lessons Learned

- ▶ Incorporating training into the project not possible due to Covid-19
- ▶ During electrical inspection of lighting, a code violation was found from an earlier time
- ▶ Additional site preparation was done in order to decrease maintenance

# Lessons Learned

- ▶ Contractor, subcontractor schedules and materials delays
- ▶ Indemnification request from a subcontractor in the middle of the project was challenging
- ▶ Even if you call before you dig, you can hit things like gas lines
- ▶ Everything takes longer than you anticipate, especially during a pandemic



# Contact Information

- ▶ If you would like more information, please contact:
- ▶ Tiffany Allgood, Environmental Action Plan Coordinator, at (208) 686-8802, [tallgood@cdatribe-nsn.gov](mailto:tallgood@cdatribe-nsn.gov)

Thank you for your time today