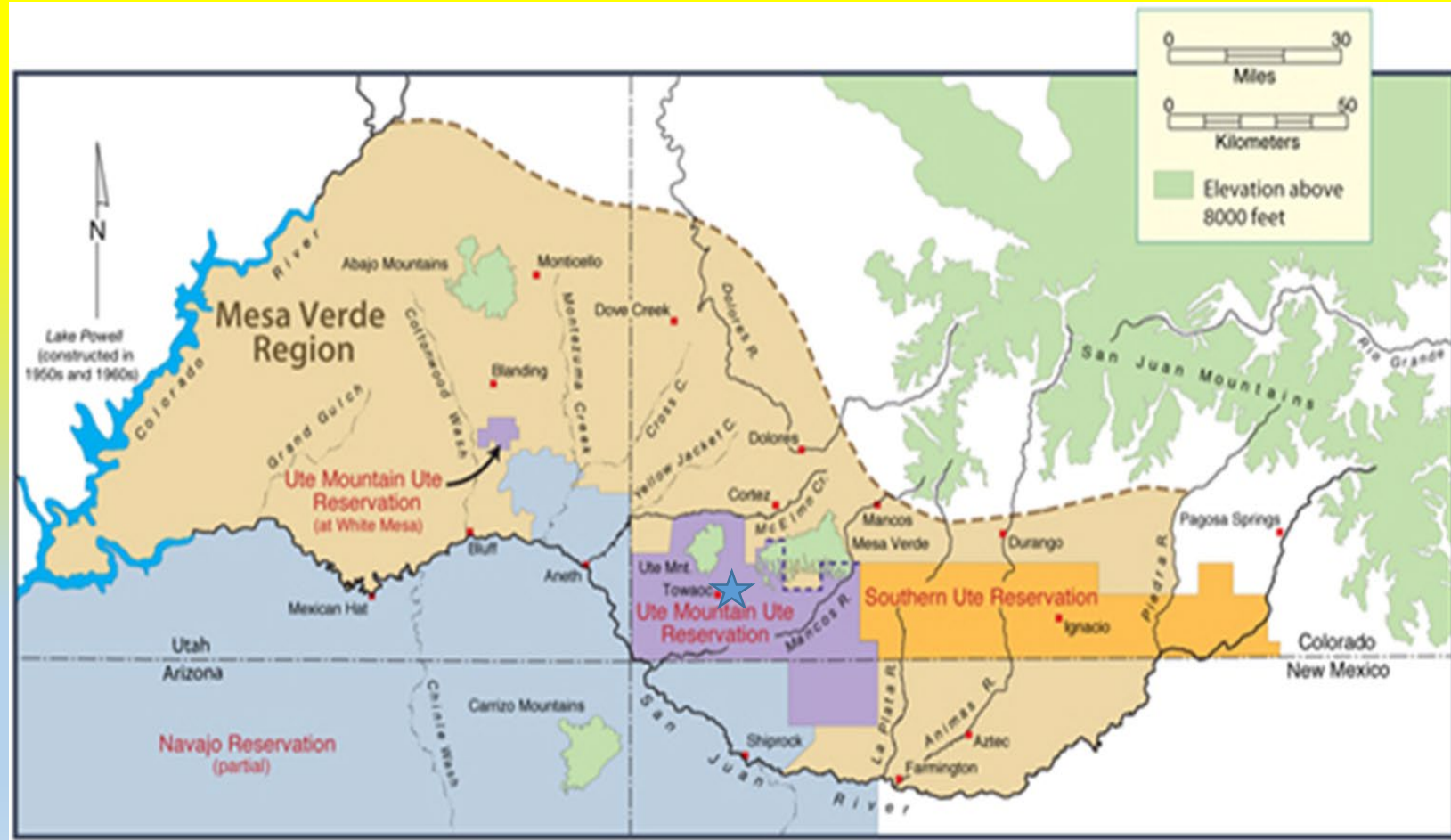


**Ute Mountain Ute Tribe
Towaoc, Colorado**

Ute Mountain Ute Tribe

Overview

- The Utes were Hunters & Gatherers
- The Utes, originally were seven (7) Bands situated in Colorado & Utah
- The Weeminuche Band is now known as the Ute Mountain Ute Tribe
- 2,500 Tribal Members
- Colorado & Utah Residence
- 55 Years of Age Life Expectancy
- 26 Years Median Age
- 582,321 acres Total Trust & Tribal Fee Lands (541,209 Trust Land & Tribal Fee Lands 41,112)

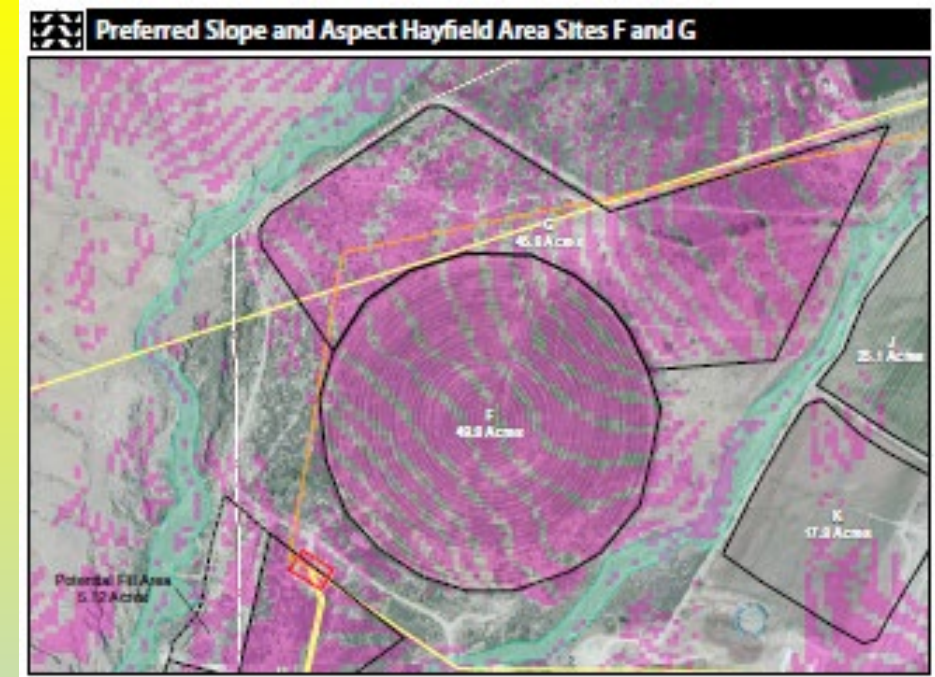


Master Sustainability Plan

- Land
- Energy
 - Oil and Gas
 - Hydro
 - Solar
 - Goals – start small, then go big
 - Solar Installations on government and housing buildings
 - 2014 Feasibility Study – DOE Funded
 - Community Scale Project
 - Planning Grant
- START Grant and Strategic Planning with Sandia Labs- Sandra Begay et al.
- Energy Efficiency – DOE funded EERE grant for energy audits and small facility solar



Tribal Administration Building
Courtesy Jim Rapp



Project Overview



High Level Goals & Outcomes:

- Actualize phase I of 2014 Feasibility Study; deploy 1 MW array.
- Provide paid job skills training for Tribal members (intern positions) in solar installation, maintenance and repair, and additional Grid Alternatives led training through TERO, Temporary Worker Program, and for volunteers.
- Off-set both a substantial number of buildings, and substantial percentage of Tribal load (over 25%) with clean solar power, eliminating between 1,515 tons of greenhouse gas emissions annually.
- Community solar bill credits to be negotiated with utility; estimate at 60% residential, 40% government buildings.
- Set UMUT on a path to energy independence; save tribe an estimated \$172,200 in energy expenses annually and save an estimated \$3,444,000 over the life of the solar system.
- Transition tribal energy economy from exclusively fossil fuels to renewable energy revenue (Stepping Stone)

Project Participants

- Engineering, Procurement, Construction contractor is GRID Alternatives
 - Leading installation
 - Supported Tribal workforce goals
 - Supporting leveraged dollars by donating developer fee
- Local Electric Company – Empire Electric
- Engaged Tribal Enterprise: Weeminuche Construction Authority
 - Site prep work



Project Overview (continued)

Funding:

DOE	\$973,820
UMUT Match	\$973,820
Leveraged Dollars	<u>\$216,404</u>
Total Budget:	\$2,164,044



Complex interconnection

- Behind the meter(s) of large enterprise loads
- Currently no single load big enough to allow 1 MW interconnection; coupling a number of loads behind one meter is current strategy- Nuchu1 circuit should suffice
- Establish a master meter with O&M relationship negotiated with the local utility to handle current underground lines and transformers

Project Status



Contracting:

- Ute Mountain Ute Tribe – Grid Alternatives
- Ute Mountain Ute Tribe – Project Manager
- Grid Alternatives – Circuitous Engineering
- Grid Alternatives – Trautner Geotechnical
- Grid Alternatives – American Fence Co.
- Grid Alternatives – Weeminuche Construction
- Grid Alternatives – Empire Electric (equipment procurement)
- NOTE: Ute Mountain Ute TERO – Grid Alternatives, Subs



NEPA:

- DOE issued a Categorical Exclusion
- Location was changed, DOE maintained Cat-Ex
- BIA concurred with DOE Cat-Ex

7/25/2017 U.S. DOE: Office of Energy Efficiency and Renewable Energy - Environmental Questionnaire

PMC-ND
(1.08.09.13)

U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION

RECIPIENT: Ute Mountain Ute Tribe STATE: CO

PROJECT TITLE : Ute Mountain Ute Tribe Community Scale Solar Initiative

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001660	DE-IE0000095	GFO-0000095-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

DOE Grant Modifications

Thank You Jami and Tweedie!!!

Ground Breaking Ceremony



In Attendance:

- Tribal Council and Chairman
- Grid Alternatives Staff
- Tribal Staff
- Tribal Members
- Project Manager and Subcontractors
- Press

Community Volunteer Day

In April , Volunteers helped to build racking for a Saturday!
Great Teamwork!



Workforce Development

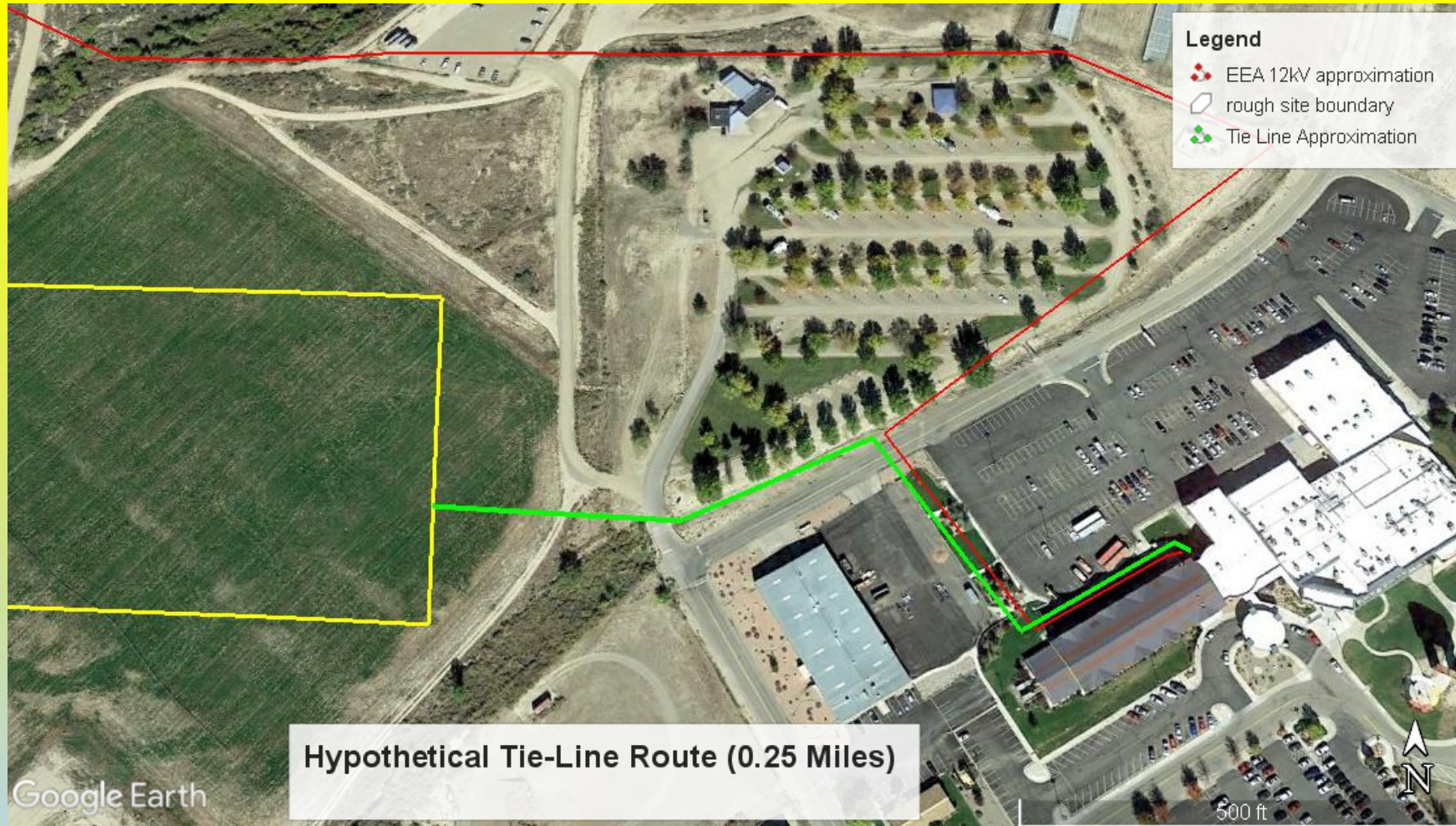
2 Interns to 4 Interns...

- 21 applied
- Higher Ed SEEDS Grant
- Temp Worker Program
- 11 employed
- 6 Interns saw it all the way through
- Other Co.'s Interested



Project Overview Continued

➤ Interconnection Decisions



Nuchu 1 Circuit to be purchased with O&M Agreement negotiated

Project Overview Continued


➤ Interconnection Decisions

➤ Financial Modeling Drivers

- Empire Electric “Large Commercial Customer” Pricing Scenario
 - Influences Demand Charges- not simple fixed rate
 - Reduces the Credit Value of Some of the Meters/Customers
 - Affects Bill Credit to Residential Customer Price Point
 - Fixed Panel vs. Single Axis Trackers

➤ Interconnection Scenarios

- Tri-State Power Supplier, NTE 1MW & Policy 115
- 1 Master Meter-Infrastructure Purchase, Existing Price Structure
- Interconnect at Largest Customer Meter, Multiple Meters
- WAPA involved as EEA system user/federal decision -maker



TRI-STATE
Generation and Transmission
Association, Inc. **Board of Directors Policy**

Subject: MEMBER SYSTEM DISTRIBUTED GENERATION POLICY			Policy No: 115
Original Issue: 1-9-02	Last Revised: 5-3-17	Last Reviewed: 5-3-17	Page 1 of 10

OBJECTIVE

The Wholesale Electric Service Contract between Tri-State and the Member Systems allows each Member System the option of using generation resources they own or control to serve up to five percent (5%) of the Member System's total load. This policy describes how this option will be implemented. The five percent (5%) represents a right, not an obligation of the Member System.

It is intended that the implementation of the 5% option should minimize subsidization between Member Systems that choose to implement this option and Member Systems that do not.



Empire Electric Association, Inc.
801 N. Broadway P.O. Box K Cortez, CO 81321-0676 Phone (970) 565-4444
www.eea.coop

Distributed Energy Resource Interconnection Agreement

This Agreement is made and entered into this ____ day of _____, 20____, by and between EMPIRE ELECTRIC ASSOCIATION, INC., 801 North Broadway, Cortez, Colorado (“Empire”) and _____ (“Customer”) whose address is _____ (“Customer’s Address”). Empire and the Customer may be referred to herein individually as a “party” or collectively as the “parties.”

- 1) **Purpose.** This Agreement is required for Customer to interconnect a customer-generator (“Generator”) to Empire’s electrical grid. If the Generator is to be net metered behind an existing load, this agreement also allows Customer to receive service under Empire’s Net Metering Rate Schedule.
- 2) **Term.** This Agreement shall remain in effect as long as the Customer’s Generator is interconnected to Empire’s electrical grid. The Customer’s Generator shall be considered a fixture and shall be attached to the land located at the Customer’s Address.

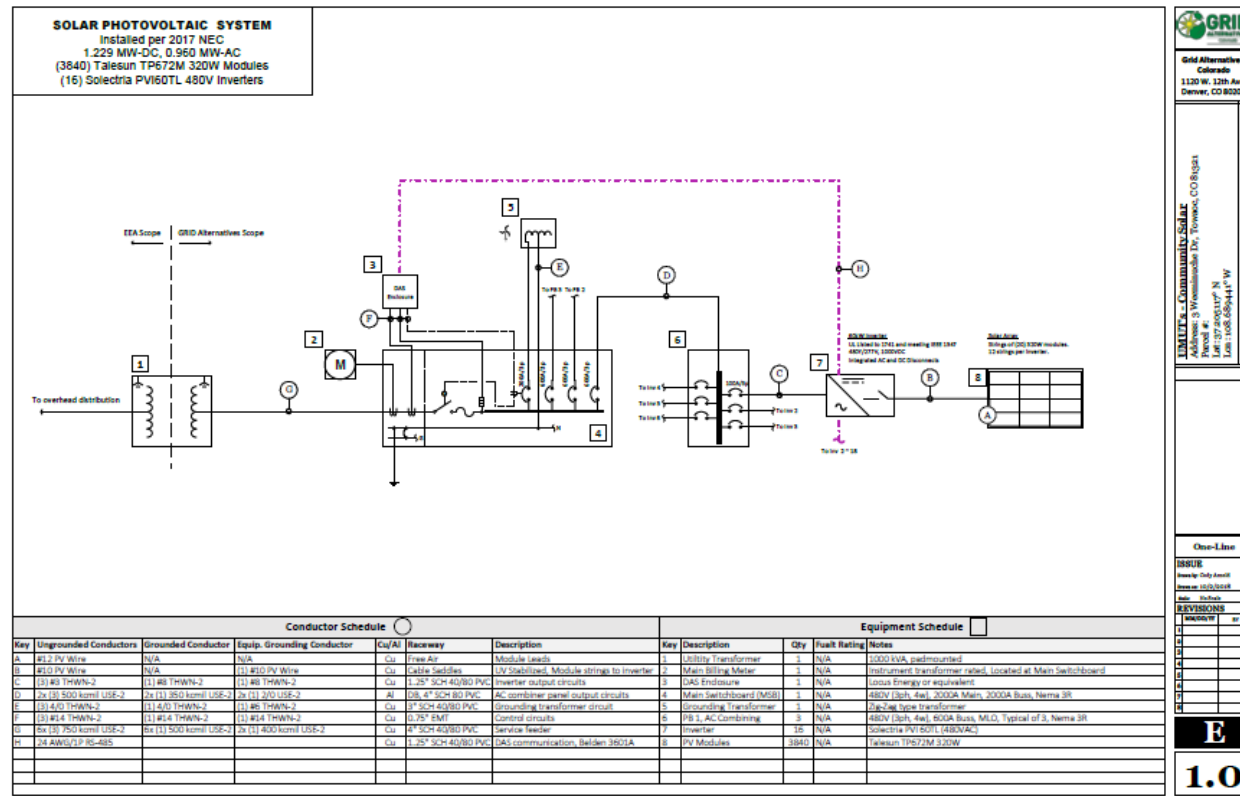
Project Status

- Geotechnical Analysis Completed in Fall of 2018
- Piles Driven
- Fence Installed
- Workforce Training March-April 2019
- Racking and panel Installation begun in April
- System Impact Study conducted by Empire Electric Assoc.
- AC component procurement preferred option
- DC wiring and Inverter installation complete



Project Overview Continued

➤ Conceptual Schematic



Final Steps


- Operations and Maintenance Agreement with Empire Electric Association for Nuchu 1 Circuit
- Operations and Maintenance Agreement with Solar Contractor, 1-2 years
- Finish Procurement of Nuchu 1 Circuit
- Receive & Install Transformer and Meters
- Final System Tests
- Commissioning
- 1 Year Test Phase
- BILL CREDITING!!!



Final Steps

- BILL CREDITING
 - Residential Customers
 - 120 signed up
 - Extended Deadline 2X
 - Annual Opportunity
 - Tribal Government
 - Public Works- Offset O&M Staff Costs
 - Community Utilities
 - Water System
 - IT/Servers
 - Recreation Center
 - Largest Consumer after Casino




Solar Bill Credit Sign-Up Form
2019

Name: Guillermo Lopez King Date: March 25, 2019
Empire Electric Association Account: 36747001
Physical Address: 350 Red Horse Ave, Alton, Colo. 81834

1. NO Payment will be made direct to the Tribal Member.
2. Bill credit will be applied to the electric account only.
3. It is the responsibility of the account owner to notify the tribe of a disconnection as soon as possible.
4. A copy of the current electric bill.

Signature: Guillermo Lopez King Phone: 970-270-4835

RETURN TO

Planning Development (125 TRIBAL COMPLEX)
Environmental Program (520 Sunset Blvd.)
Public Work Program (100 Mike Wash Road)

By April 30, 2019

For more information contact:
Bernadette Cuthair: 970-564-5698, bcuthair@utemountain.org
Scott Clow: 970-5654-5432, sclow@utemountain.org
Lee Trabaldo: 970-565-3753 Ext-491 ltrabaldo@utemountain.org



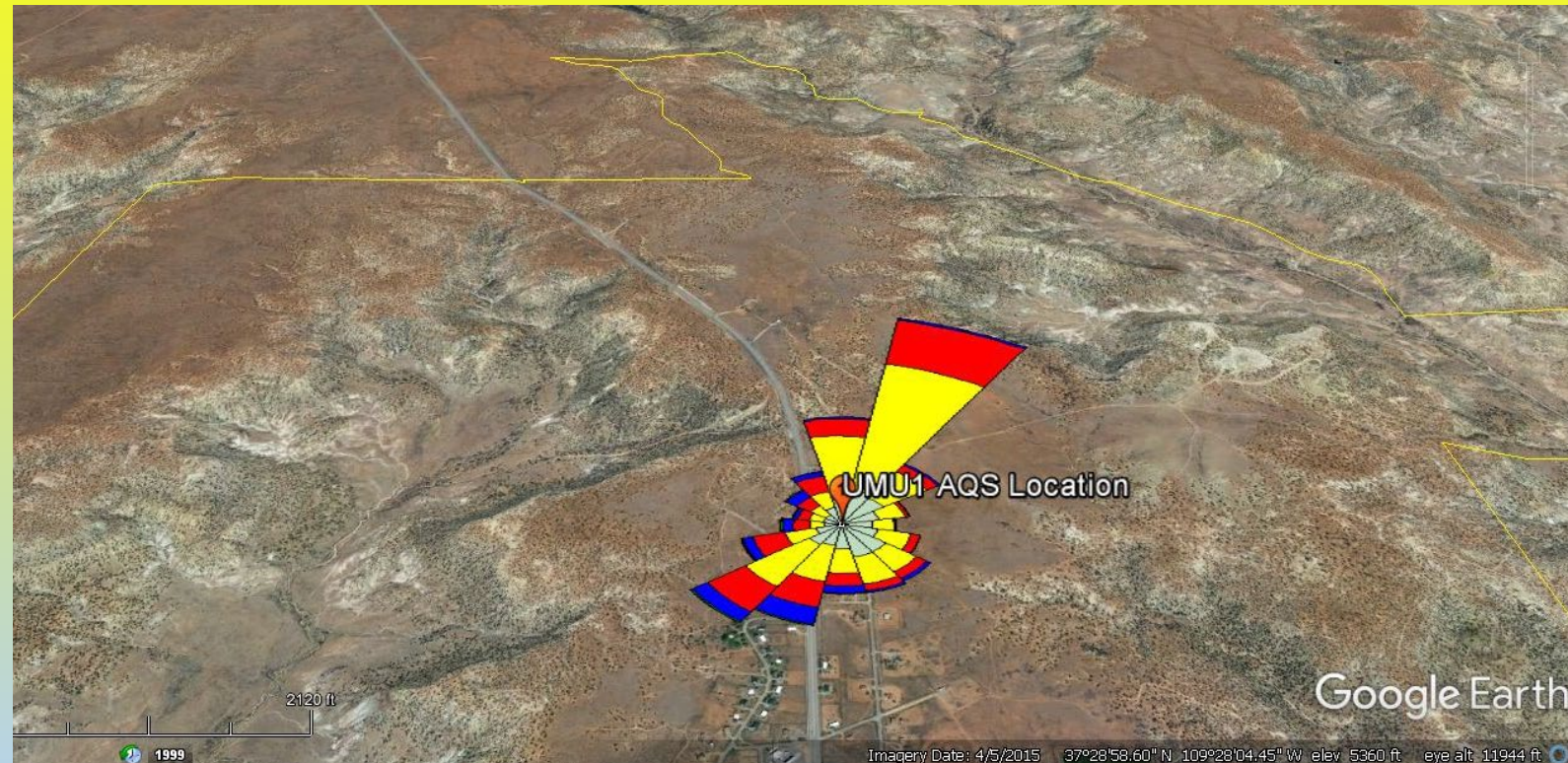
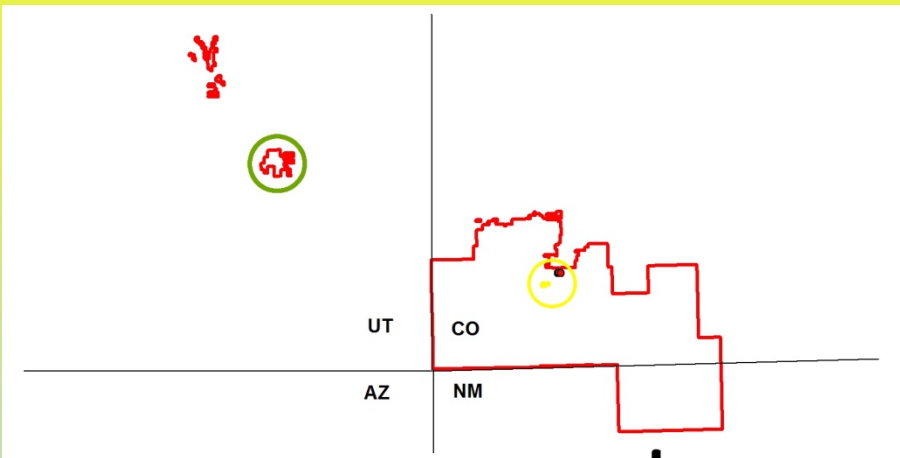
Future Phases of Community Solar

- Additional kW – MW at current site
- Brownfields to Greenfields
- Additional Facility Scale Offsets



Future Phases of Community Solar

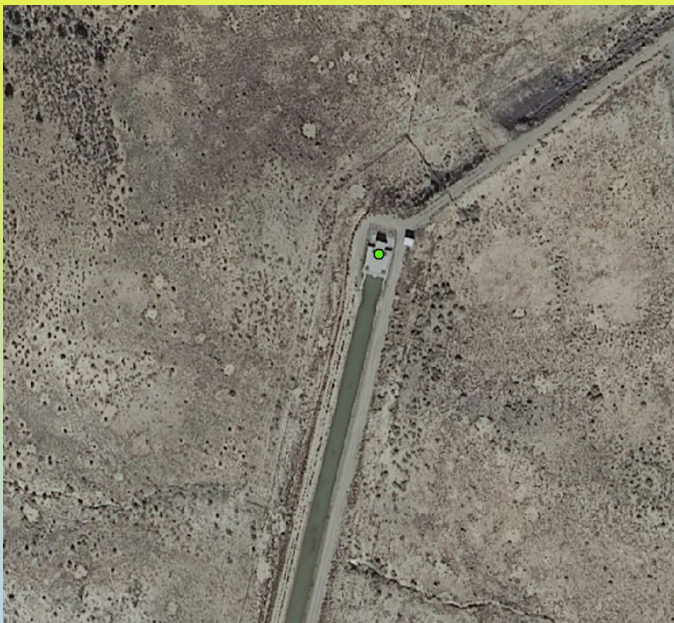
- White Mesa Community Solar
- White Mesa Wind



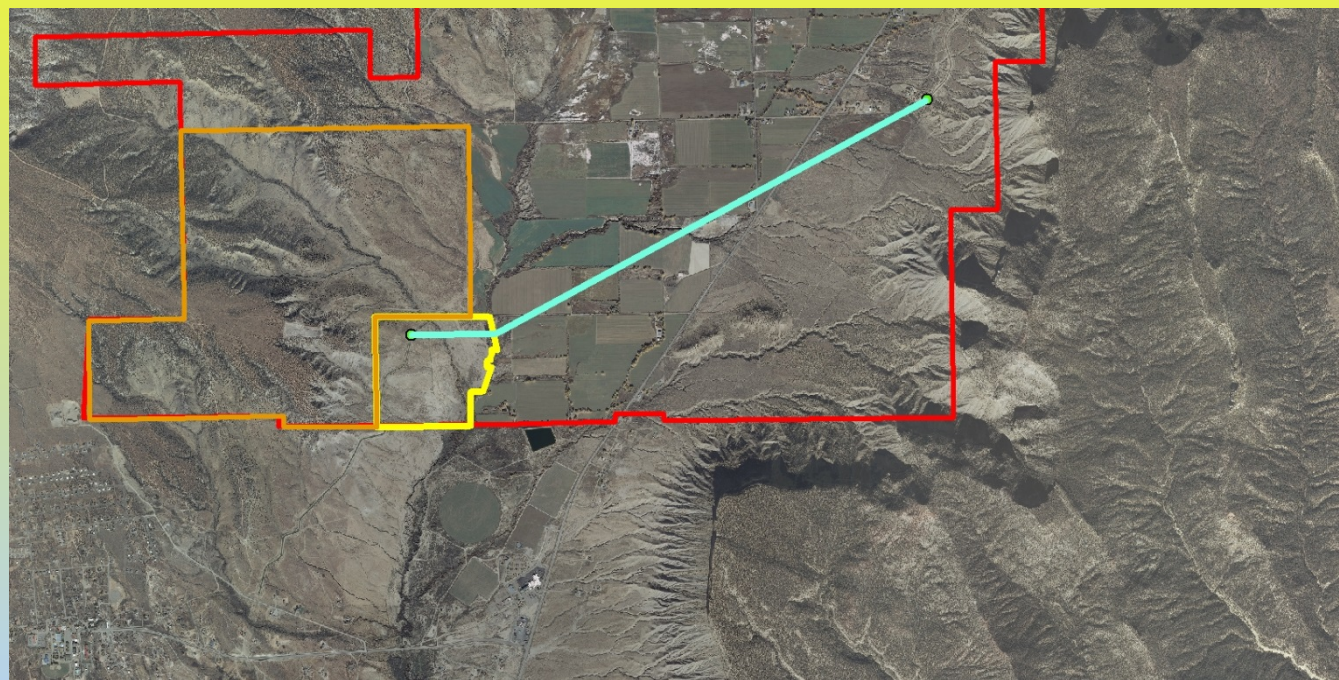
Renewable Energy Future for Tribe Commercial Opportunities



- Micro-Hydroelectric Project
 - 1.4 MW during irrigation season
 - >7000 MW-hours annually
 - Partners: Dolores Water Conservancy District, Tri-State Energy Power Purchase



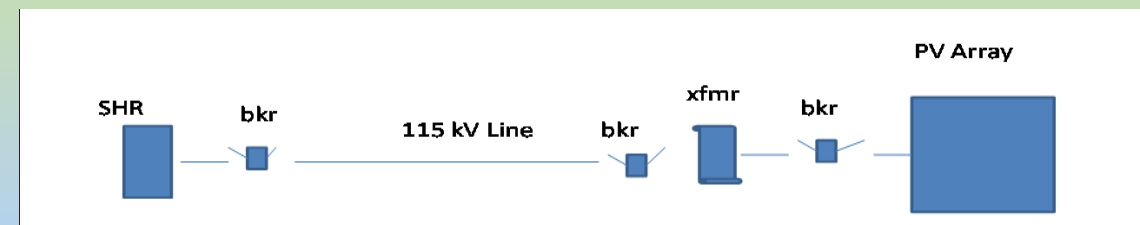
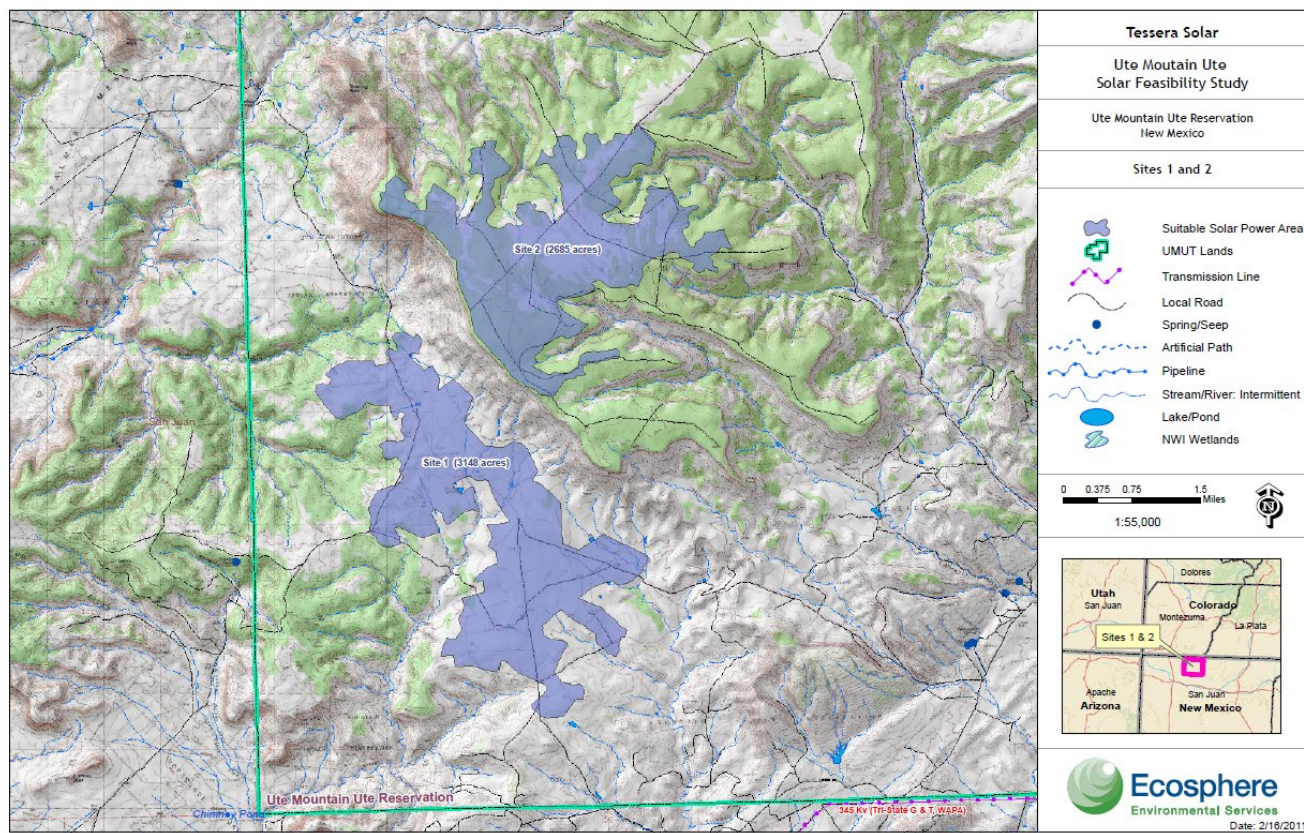
Towaoc Highline Canal
Courtesy Steve Albert



Large Scale Commercial Renewable Energy



- Commercial Solar
- Energy Storage



Challenges to Get Here

- Interconnection Scenarios More Complicated than Originally Anticipated
- Additional (New) Role for EPC and Engineers
- System Impact Study Contemplation
 - Empire Electric Assoc.
 - Tri-State
 - WAPA
 - Delayed final Procurement for some long lead time equipment
 - Need for redundancy
 - Need for curtailment
- Intern Lay-off 2.5 months June-August
- The Big Question from Tribal Members: “What Happened to that Solar Project?..”
- Thanks for Your Attention

