U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

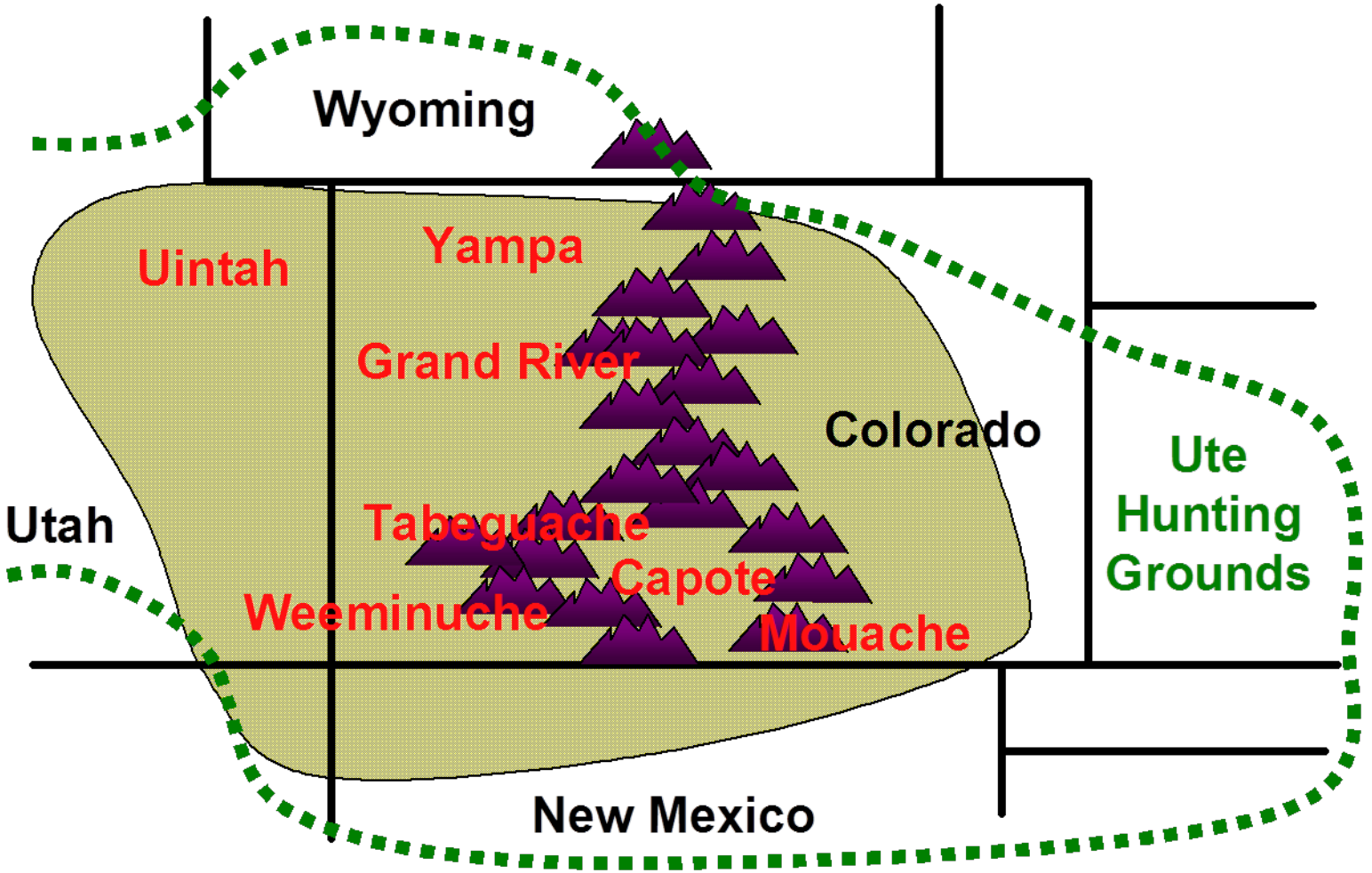
Oxford Solar Project

Presented by
Brent Brown, Construction Project Manager

Southern Ute Indian Tribe
Ignacio, Colorado

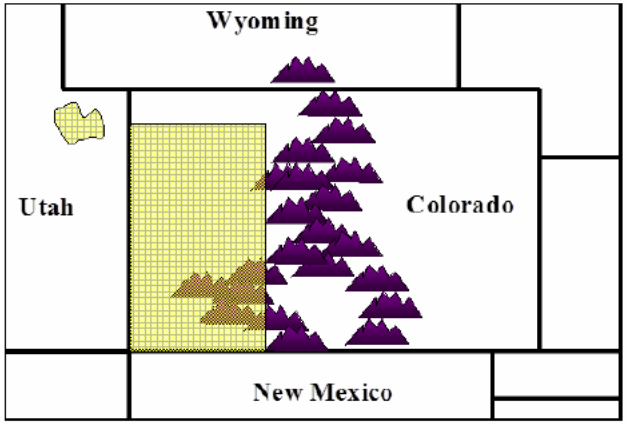
November 14th, 2016

Historic Ute Land

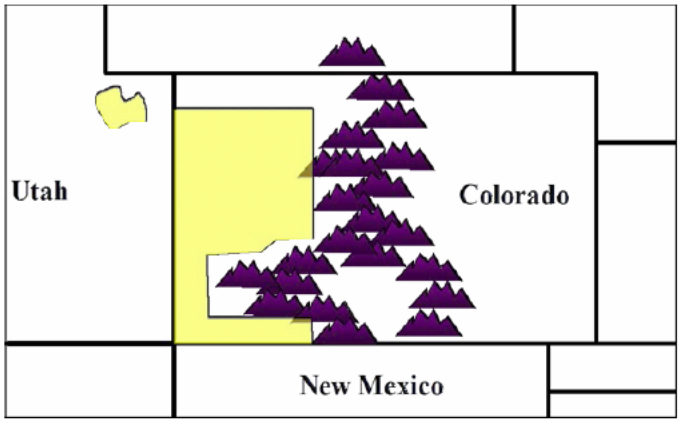


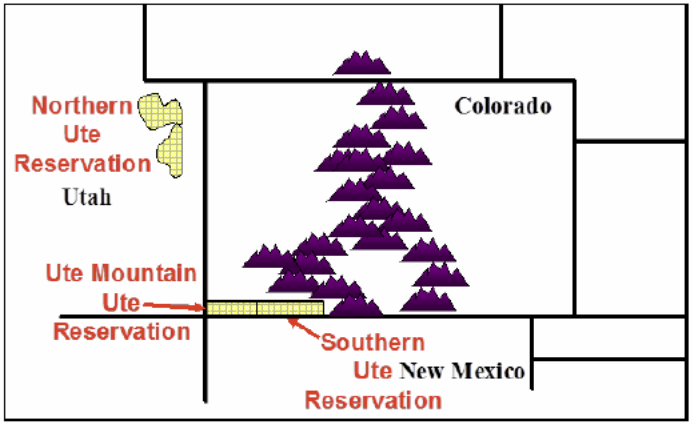
Ute History

Original Ute Reservation in 1868



The Ute Reservation after the Brunot Cession in 1873

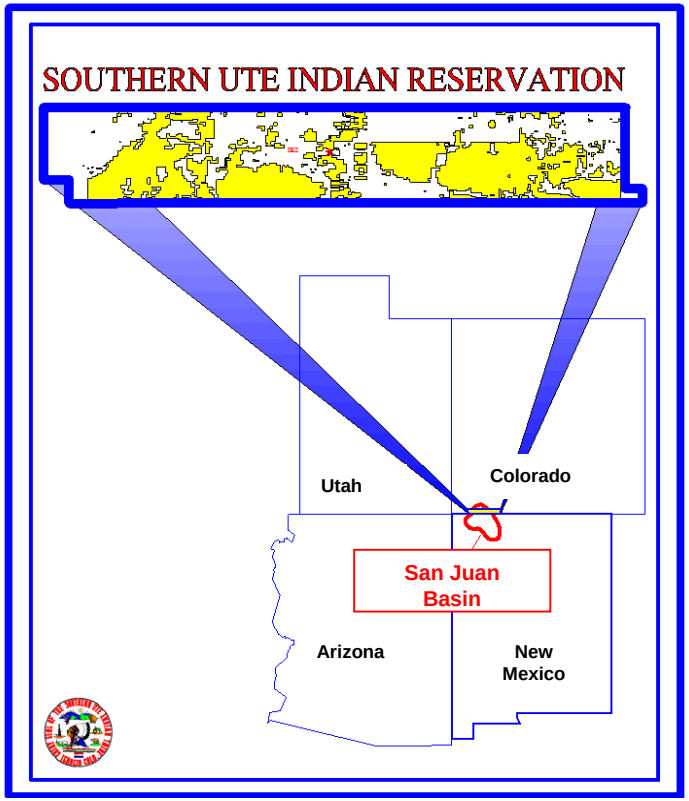


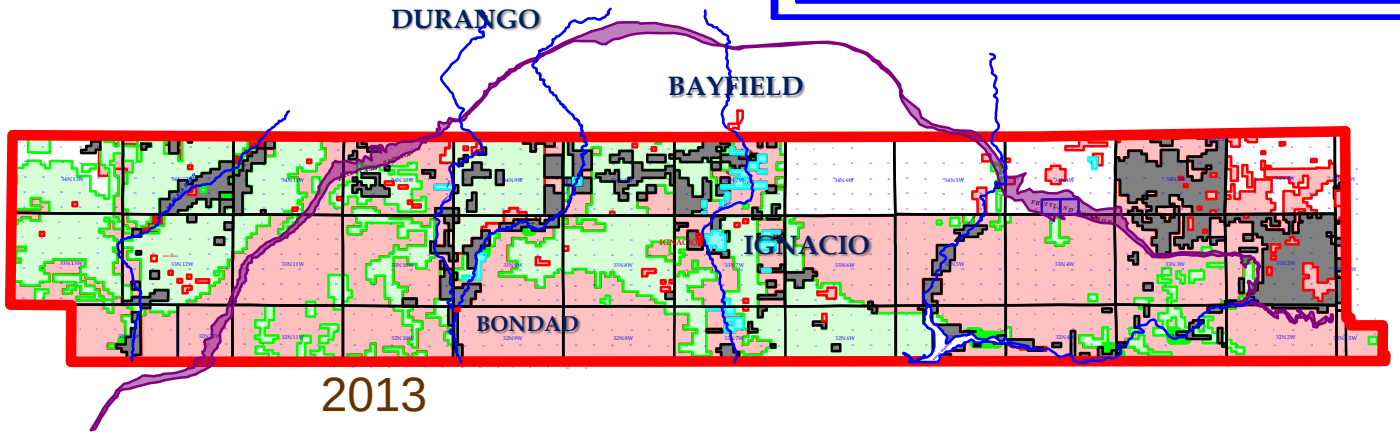


Current Ute Reservations

Southern Ute Statistics Today

- **Tribal Members**: 1,400+
- **Reservation**: 313,070 acres
  exterior: 681,306 acres
- **Unemployment**: 6%
- **Employment**: The Tribe is the largest employer in La Plata County with more than 1,300 employees.

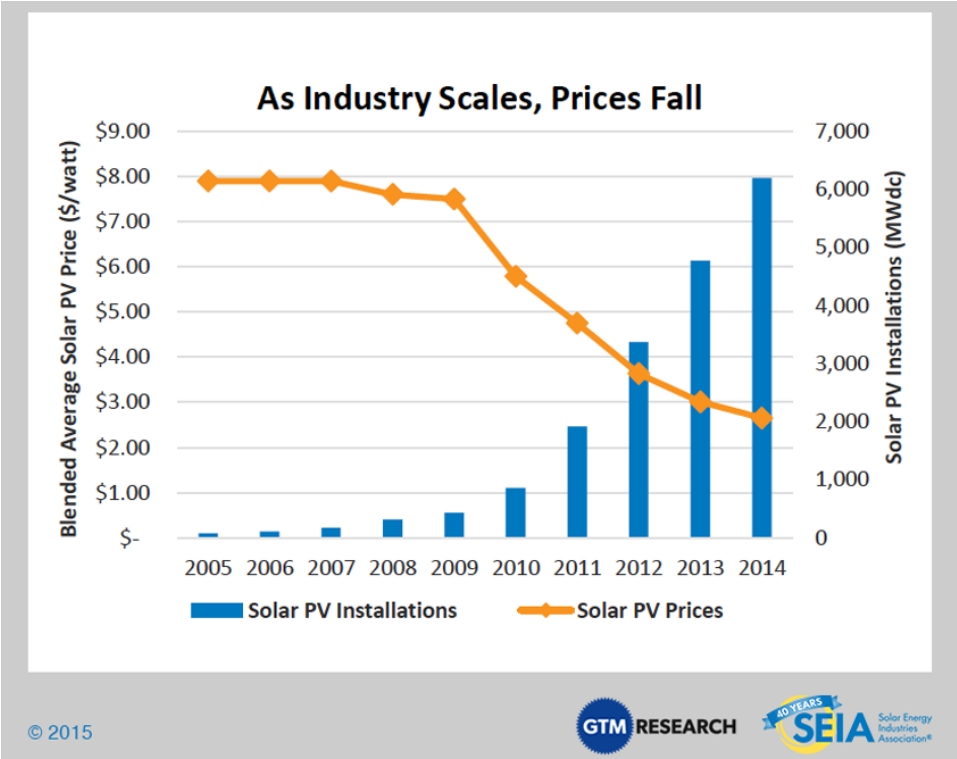




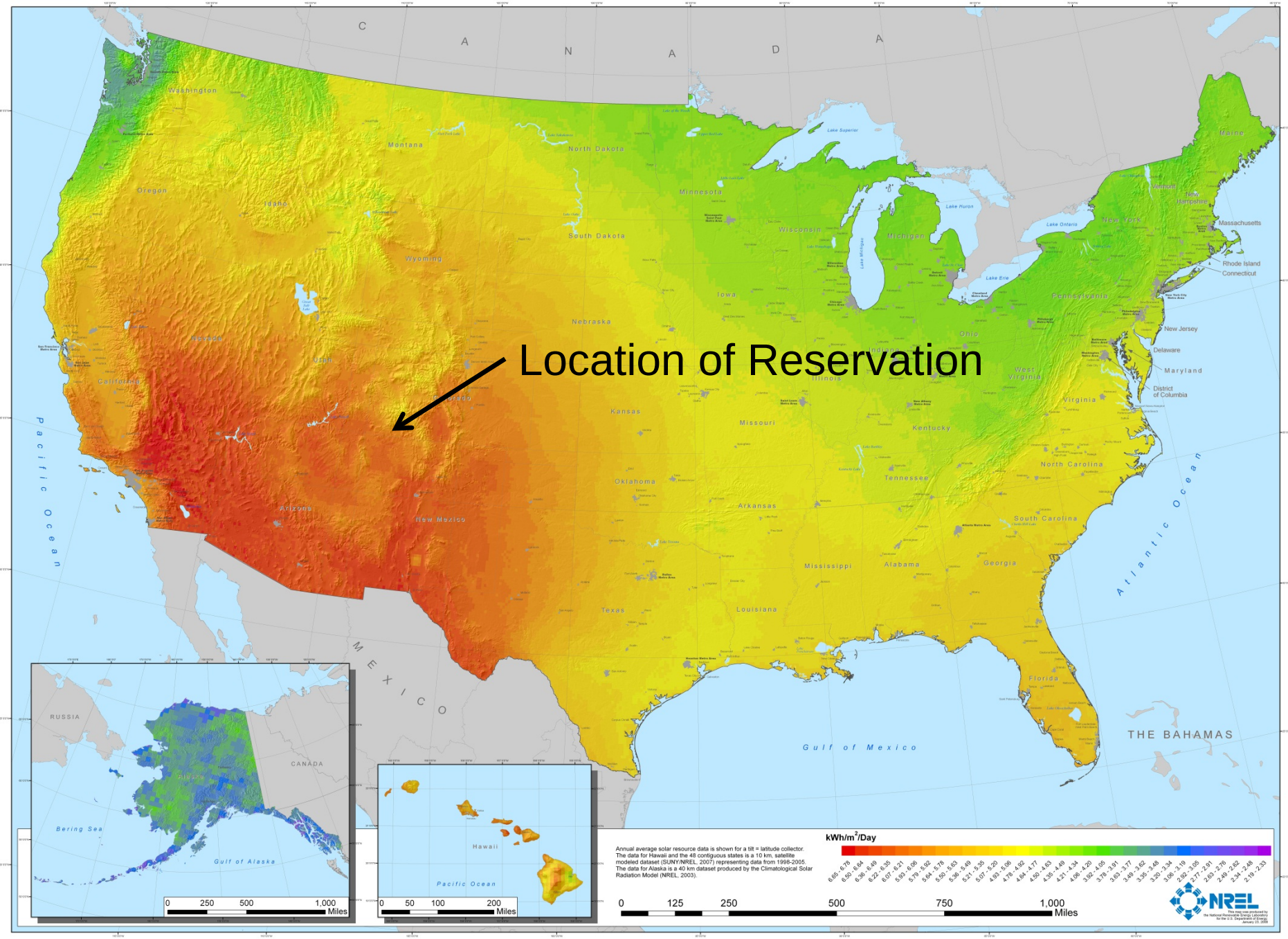
2013

Solar Make Sense?

- Part of Tribe's overall plan to diversify their businesses
  - Decision started the process in 2006
- We have the solar resource
- The technology started to become economical for our area
  - Solar costs dropped over 60% over last 5 years
- Grant was critical to the project



United States Photovoltaic Solar Resource : Flat Plate Tilted at Latitude



Solar Feasibility Study

Conducted a broad study of solar energy options (2012-2013)

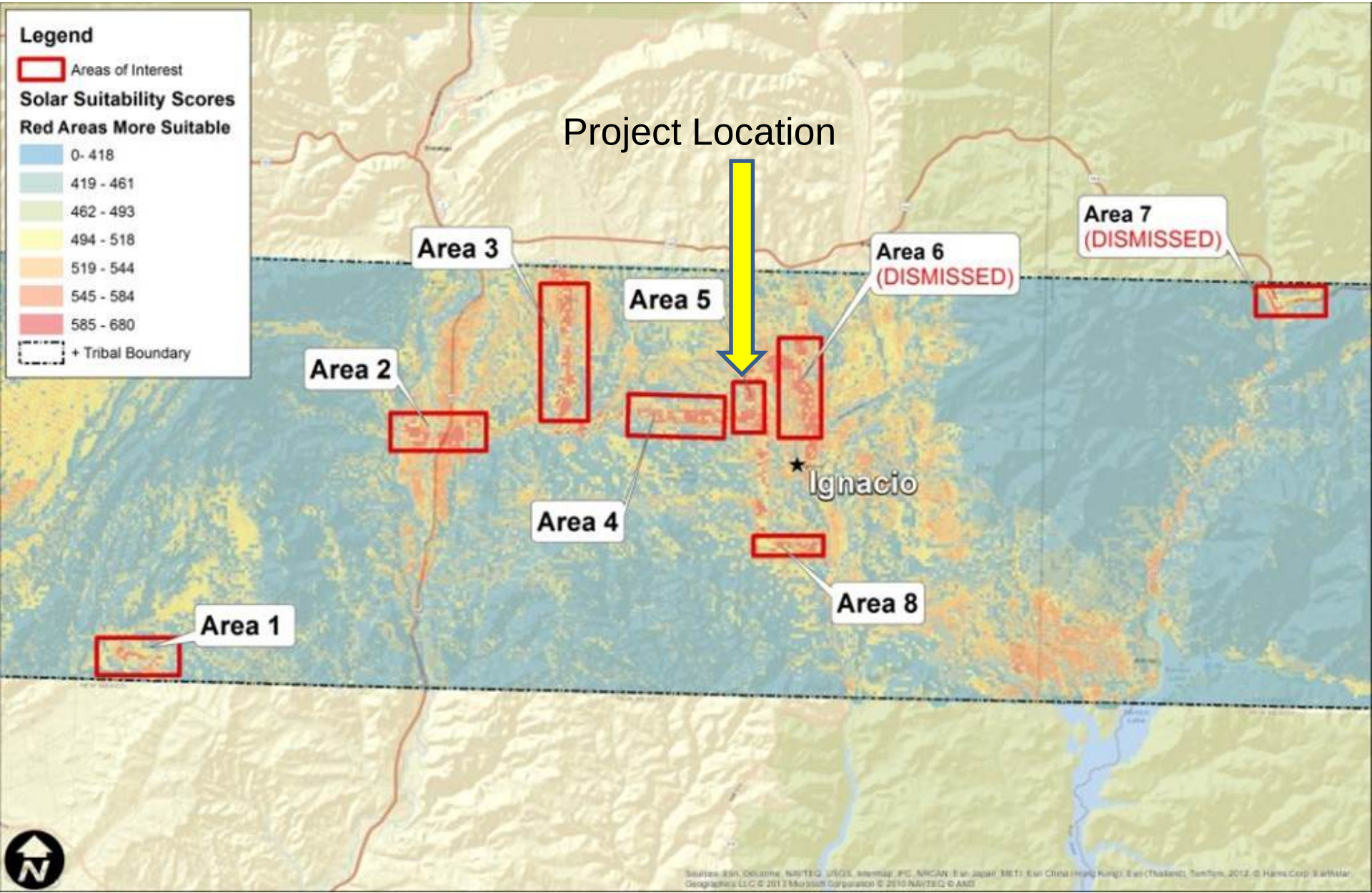
- Goals
  - Identify Lands and Buildings best suited for solar PV projects
  - Identify if Utility and/or Commercial scale solar is currently viable on the Reservation
  - Identify needed conditions for economically viable projects
- High level analysis of solar energy opportunity within Reservation boundaries
  - Utility Scale – wholesale energy, ground mount, greater than 1MW
  - Commercial Scale – net metered, roof mount, less than 1MW
- Solar photovoltaic (PV) technology
  - Low Technology Risk
  - Rapid Price Decline
  - Widely Deployed

Solar Feasibility Study

Identified most suitable areas for utility scale solar

- Utilized site based parameters that impact energy generation, development cost and/or development risk
  - Proximity to transmission infrastructure
  - Proximity to roads
  - Topography (slope, aspect and flood plains)
  - Solar resource
  - Land Ownership
  - Habitat for threatened and/or endangered species
  - Others
- Utilized GIS data and developed parameter weighted scoring methodology to compare sites (Solar Suitability Score)
- Collected data and mapped all Reservation lands
- Selected 8 most promising areas

GIS Based Solar Suitability



Permitting/Land Access

- Environmental
  - NEPA - Eligible for a Categorical Exclusion due to early farming and ranching activity which disturbed the land
- Geotech
  - Utilized an outside contractor and took extra care in this evaluation
- Land Lease and Rights of Way
  - Right to use and access the land (e.g., Trust land)
  - Complexities
    - BIA water ditches
    - Private property
    - Utility rights of way and infrastructure
    - Oil and gas infrastructure

Utility Project Negotiations

Discussions included:

- Interconnection Agreement
  - Negotiated with local electric utility
  - Defines the terms under which the project can connect to the grid
- Power Purchase Agreement
  - Defines the rates the project will be paid for the energy provided to the buyer

SUIT Buildings that will Benefit from Project

Ten buildings will benefit from the energy produced

(1) SUIT Growth Fund Building
(2) SunUte Community Center
(3) Animal Shelter
(4) Construction Services
(5) Construction Services Quonset
(6) Water Resources Building
(7) Education Area Building 1
(8) Education Area Building 2
(9) Southern Ute Education Center
(10) Food Distribution buildings.

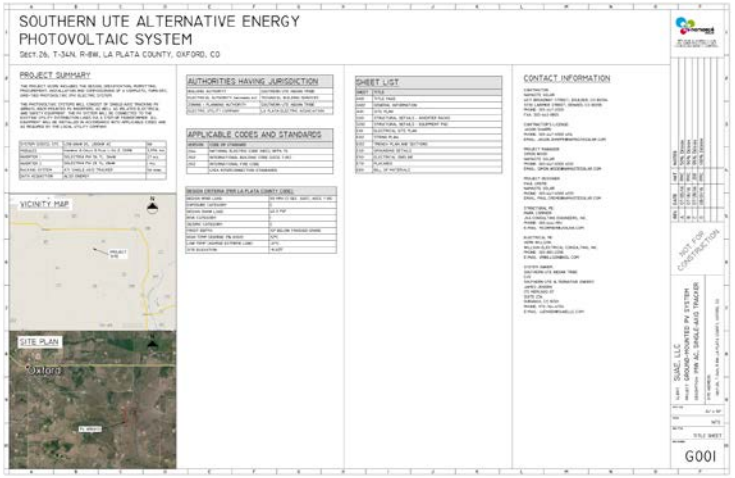
These buildings were selected due to their location and ability to offset greater than 15% of fuel usage through electric savings alone. With a ground mount facility and an agreement with LPEA to credit the energy generated to the buildings the Tribe specifies.

Growth Fund Building

SunUte Community Center

Solar Project Overview

- Finalize Design (Summer of 2016)



- ~1,000kW ground-mount Photovoltaic (PV) project
- Interconnection near an underutilized substation
- Power sold to local utility
- Electricity generated equivalent to the usage of about 250 households
- $3M budget including $1.5M award from USDOE TEP/EERE - Community-Scale Clean Energy Projects in Indian Country

Solar Project Overview

Construction Started (Fall 2016)

Solar Project Overview

Underground Conduit

Pile Structures

Inverter Assembly

Solar Project Overview

- Energize and Test the Array
- Commission the System
- Commercial Operation
  (Estimated Spring 2017)

Questions?

Contact Information

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