



**Sidney Bob Dietz II – Chairman of Navajo Tribal Utility Authority**

# Navajo Tribal Utility Authority

- **Established** by the Navajo Nation Council in 1959
- Electric, Water, Wastewater Treatment, Natural Gas, Renewable Energy
- Service Territory – **27,000** square miles of the Navajo Nation
- ~ **750 Employees**
- **Seven District Offices**
- **New Services:** Internet, Cell Phone, and Data Storage Services



# **Navajo Tribal Utility Authority**

## **Underserved Population**

- Total population on Navajo Nation over 240,000
- ~ 55,000 homes
- ~ 16,000 families without electricity and running water
- ~ 60% without landlines (pre-2005)
- Poor cell coverage (pre-2010)
- Poor internet coverage (pre-2010)



# **Navajo Tribal Utility Authority**

## **Two-Phase Telecom Project**

- Phase 1 – Internet access – ARRA Grant and NTUA
  - fiber backbone
  - microwave links
  - LTE cell-based connections
  - Data Center
  - 100% Navajo owned
- Phase 2 – Phone access – NTUA and Comnet
  - Retail phone subsidiary
  - 51% Navajo owned

## NTUA

# Navajo Nation Middle/Last Mile Project: Quality Quality Broadband for the Navajo People

- In 2010 NTUA was notified that the “**Navajo Nation Middle/Last Mile Project: Quality Broadband for the Navajo People**” would receive a \$32 million grant
- Awarded through the American Recovery and Reinvestment Act (ARRA). Administrated by the US Department of Commerce
- At the time, it was the largest Broadband grant awarded in the United States – still the largest for Indian Country
- NTUA went to work to build a **fiber-optic network communications and microwave infrastructure**

- Established a successful partnership with Commnet – experts in wireless communications
- Extended 550 miles of fiber and 84 towers
- Built on top of NTUA's existing microwave network to provide broadband access to major NN communities
- 96 strands of aerial fiber optic cable and 59 microwave tower sites
- Offers last-mile fixed and mobile service using 4G LTE, microwave, and direct-fiber links



**Successful partnership created a high quality, more reliable internet, wireless and broadband connectivity for benefit of the Navajo people**







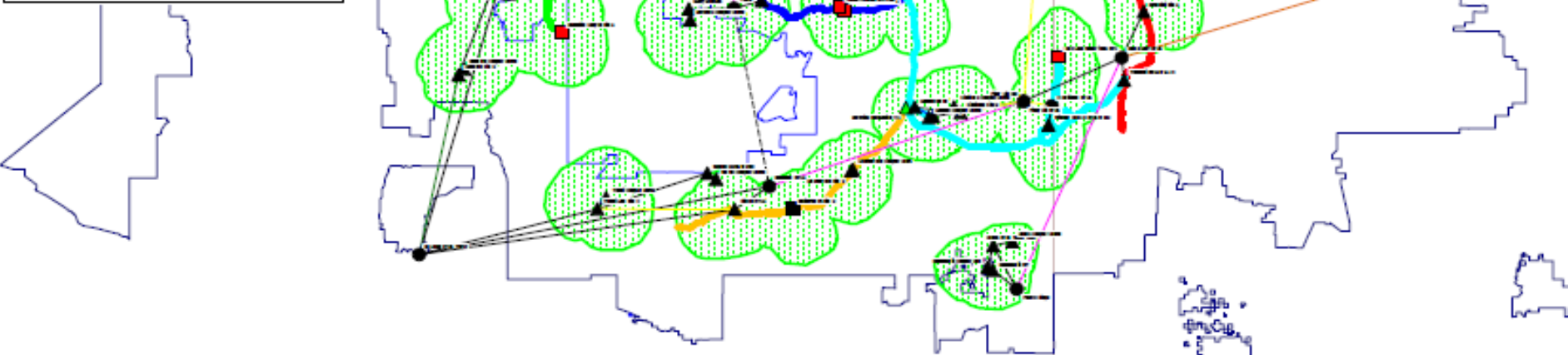


**Site Legend**

- ▲ Tower/CH Poles Visited New
- Tower Existing Visited
- ▲ New Site NV
- LTE
- LTE Visited

**Link**

- Path Visited OK
- Path Optional Visited OK
- Path Existing No Upgrade
- Not Feasible Path
- Line
- Line
- Path Upgrade Visited
- Not Visted Yet
- Upgrade Not Visit Yet



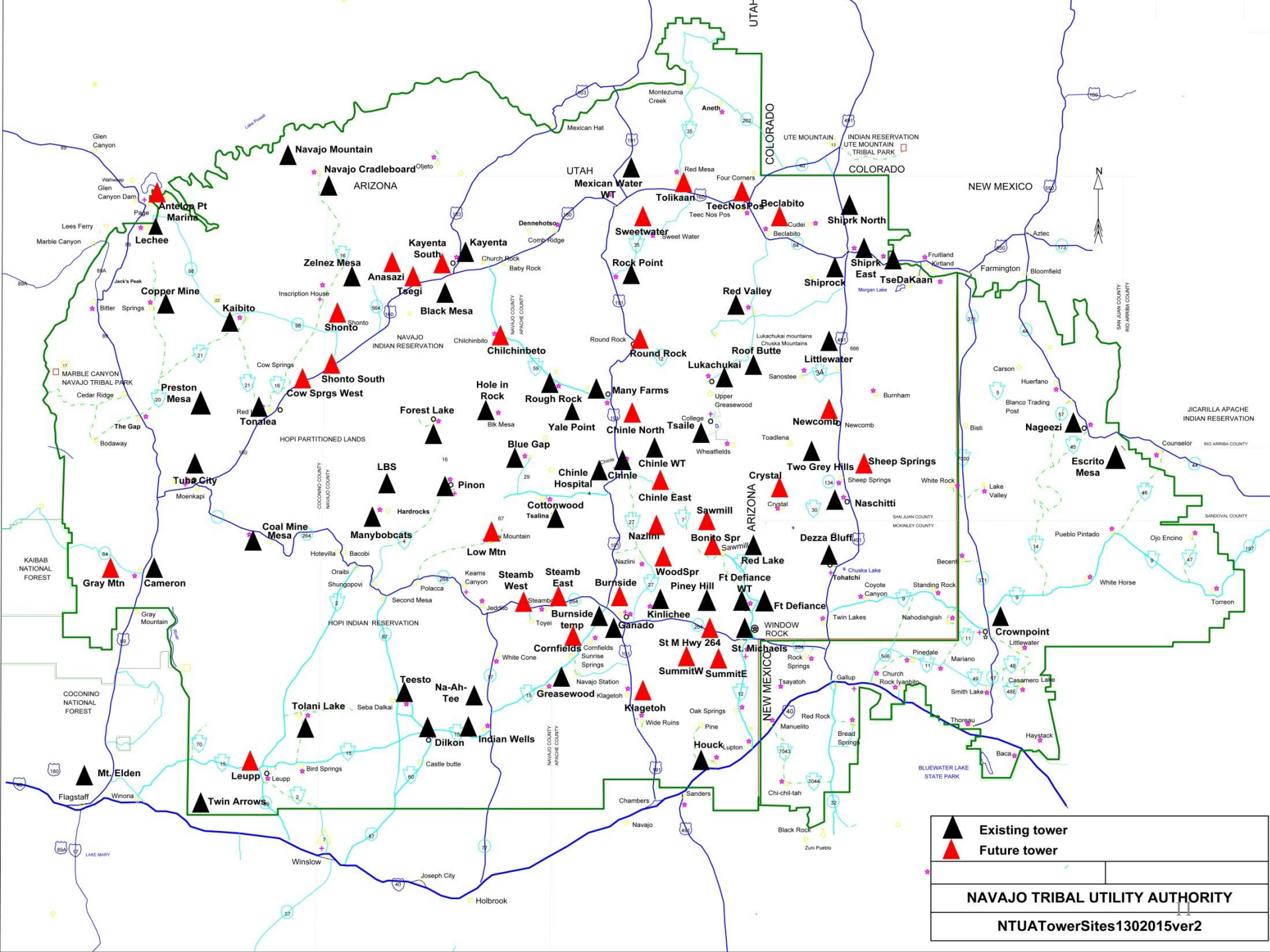
**Network Components**



- Phase I Fiber
- Phase II Fiber
- Phase III Fiber
- Phase IV Fiber
- Phase V Fiber



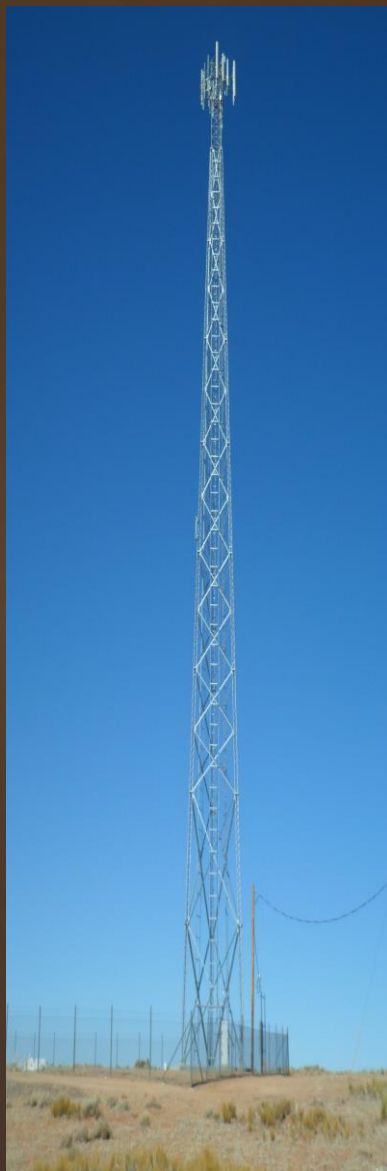






 Existing tower	
 Future tower	
<b>NAVAJO TRIBAL UTILITY AUTHORITY</b>	
NTUATowerSites1302015ver2	





# Data Center Component

New technology - Data Storage

A fully certified Tier 3 Data Center

First time the Navajo Nation is home to a high level Data Storage facility

Only certified Tier 3 in the northwest region



# NTUA Wireless

- A for-profit joint venture between NTUA (51% ownership) and Commnet Wireless (49% ownership)
- NTUA Wireless is committed to bringing phone and internet services to the reservation
- NTUA brings the utility infrastructure
- Commnet brings experience as a national rural wireless carrier
- Provides last-mile wireless and broadband coverage to 72% of the Navajo Nation residences
- NTUA Wireless purchases wholesale fiber optic connectivity off of the NTUA fiber backbone at tariffed rates



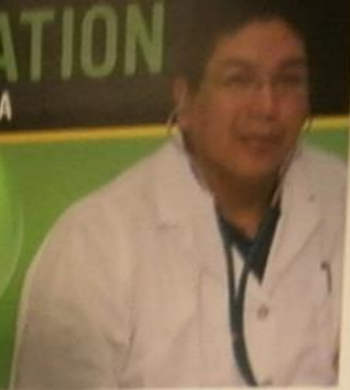




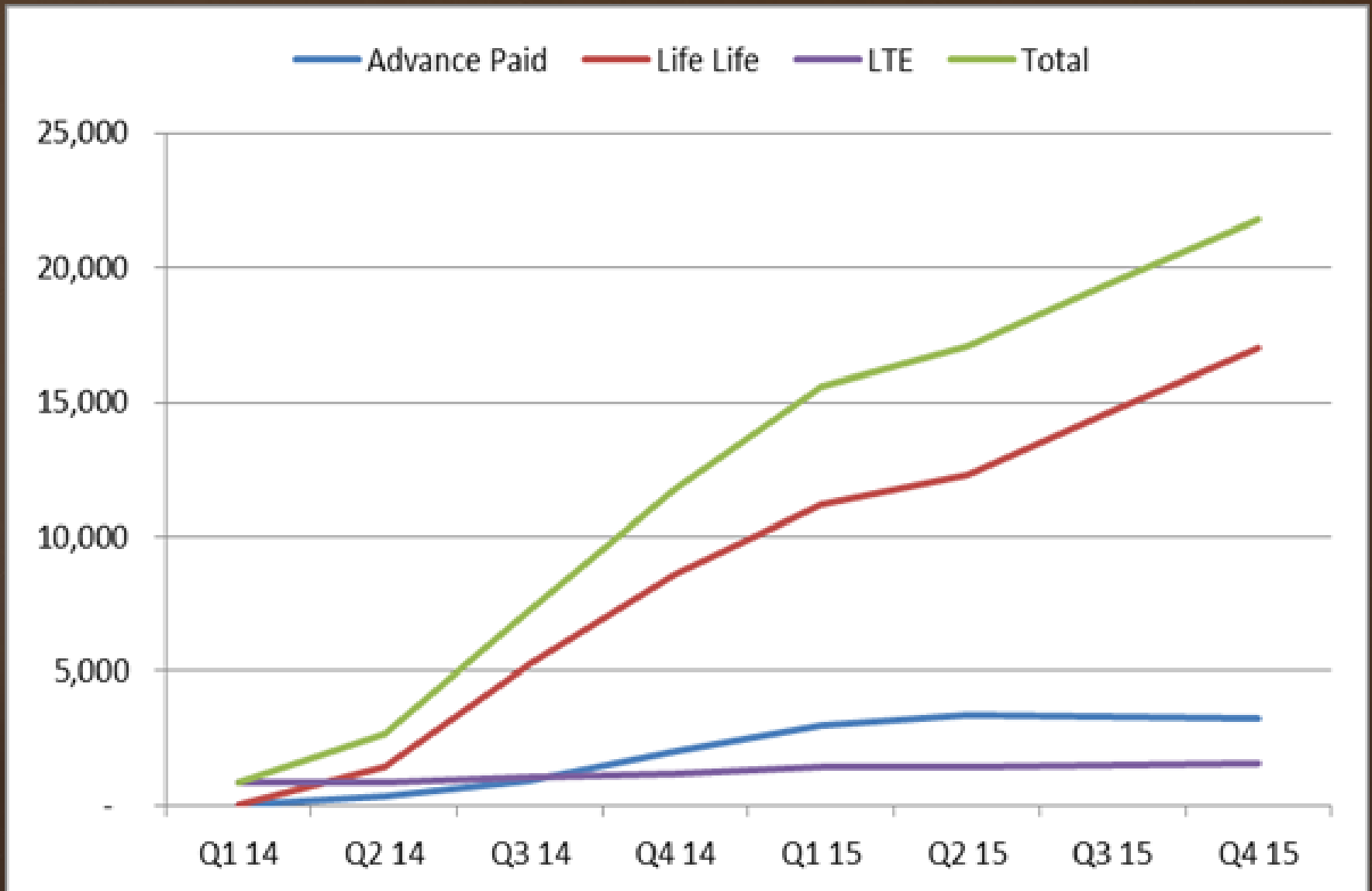
# COMMUNICATION

SOLUTIONS FOR RURAL AMERICA

- Healthcare
- Schools and Libraries
- Government and Education
- Wide Area Networks
- Tribal Healthcare



# NTUAW Subscribers

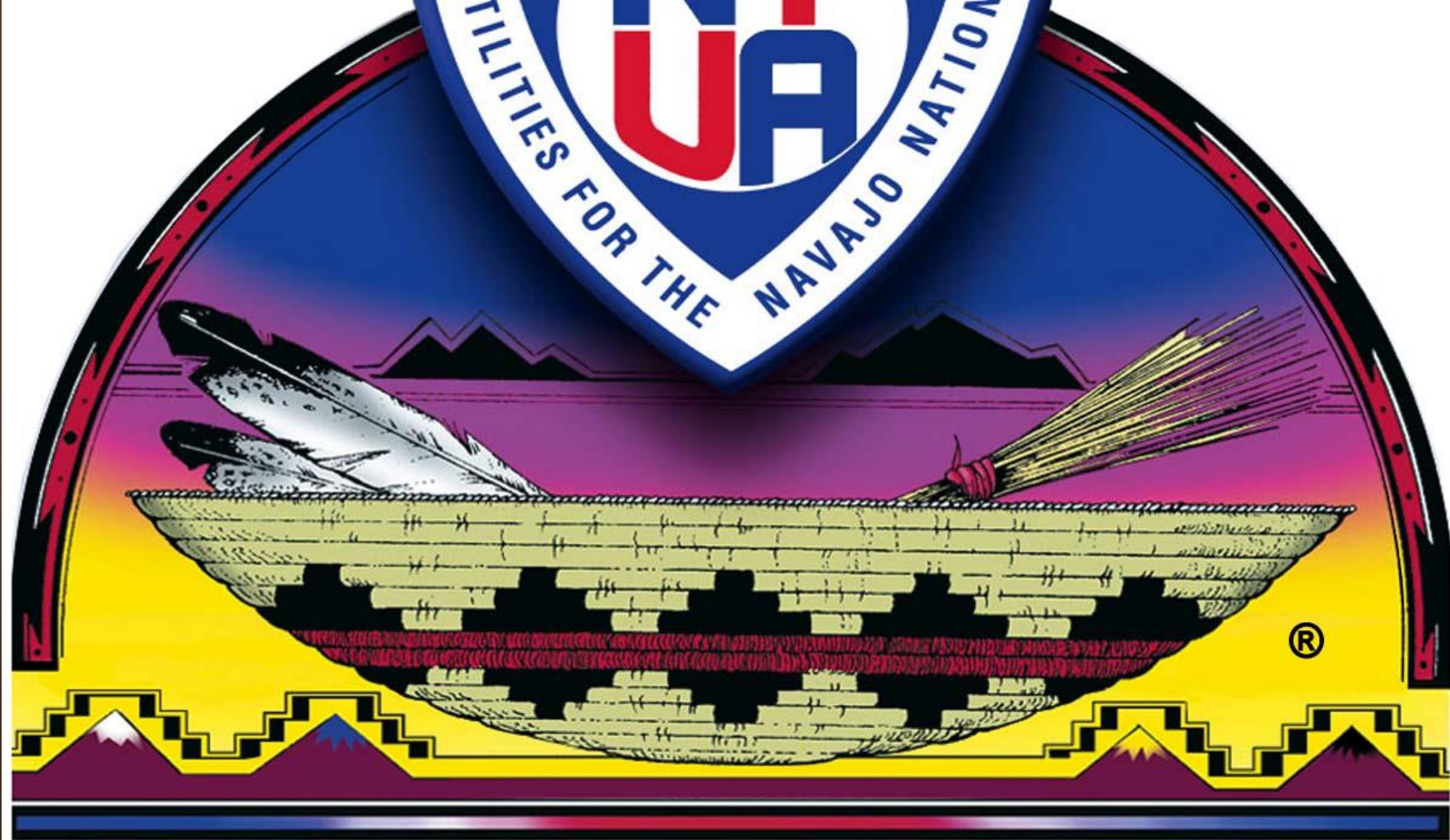




NAVAJO TRIBAL UTILITY AUTHORITY



UTILITIES FOR THE  
NAVAJO NATION





**Telecom and Energy Access Issues in  
California's Tribal Regions  
NARUC Winter Meetings  
Washington, D.C.  
February 15-17, 2016**

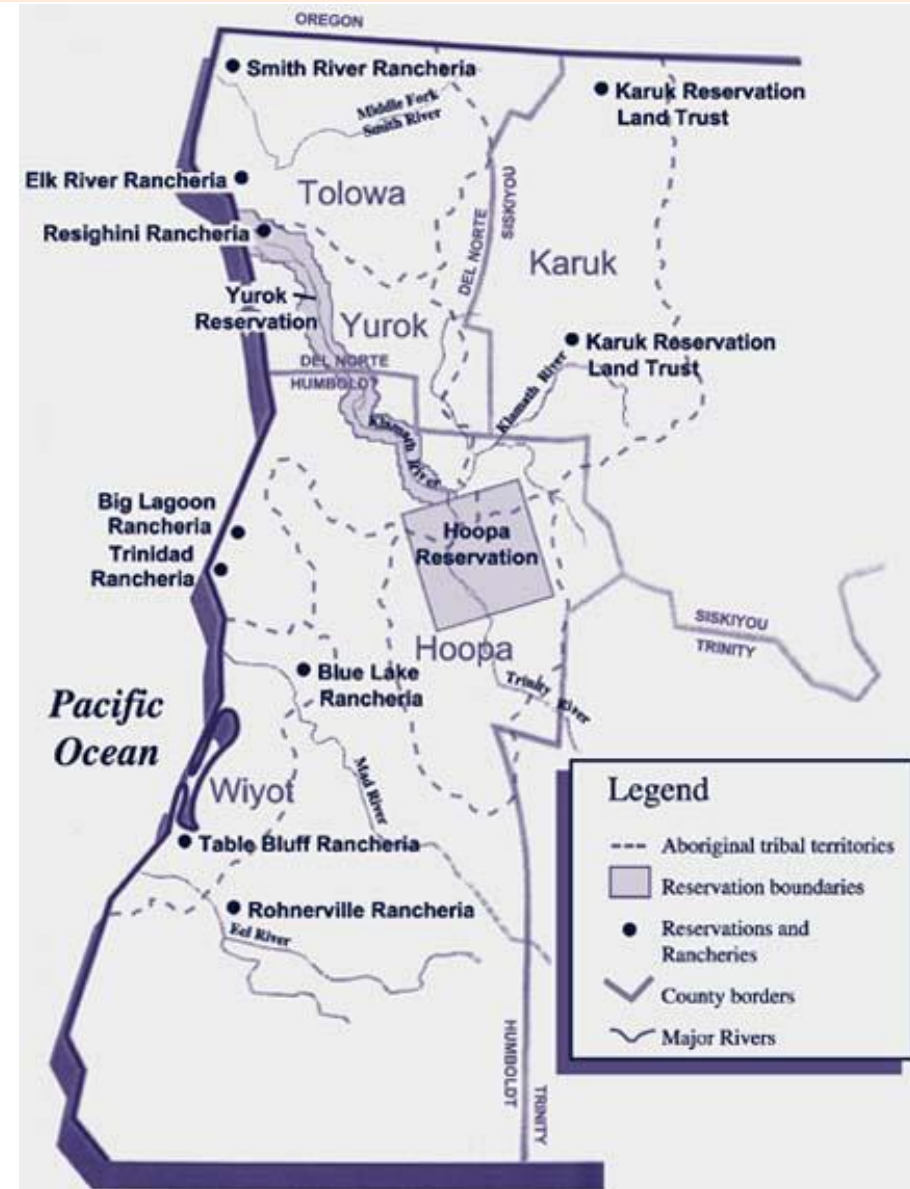


Commissioner Catherine J.K. Sandoval  
California Public Utilities Commission





# 109 Federally Recognized Tribes in California







# The River Region of Northwestern California





**Yurok Veterans Memorial;  
The forest limits solar  
production and wireless  
signal propagation.**







Fiber Route for  
California  
Advanced  
Services Fund &  
Tribal *Klamath  
River Rural  
Broadband  
Initiative  
(KRRBI)*

CalFire Lookout, Bald Hills  
Rd. on KRRBI route,  
Improving Public Safety  
through Broadband





**Yurok Tribal  
Fisheries,  
Inspecting  
Sturgeon Catch,  
Klamath River**

**Yurok Fish Patrol,  
Klamath River, Can Use  
Broadband to Improve  
Fishery Management  
and Tribal Government  
Operations**







## Johnson's Upriver



Upriver communities home to ~180 households: Limited electricity, many dependent on diesel (15kW generator @ 1 gallon per hour @ \$3.00 per gallon or ~\$11,000 per year for 10 hour per day operation). Median income \$20,000 per year.





Bald Hills Road from  
Hwy 169 to Hwy 101  
– Fiber Route for  
CASF- funded  
*Klamath River Rural  
Broadband Initiative*,  
Yurok and Karuk  
Partnership

CalFire Lookout, Bald  
Hills Rd.







**Yurok's Jack  
Norton Elementary  
School, lacking  
telephone and  
electric lines**

**Jack Norton is  
powered by diesel  
generators that  
consume about 6,000  
gallons of diesel per  
year, costing  
approximately  
\$18,000**







## **End of the Electric Line on the Yurok Reservation.**

**130 of the 180 households in the  
Yurok Reservation “Upriver  
Communities” lack electric power.**

**They rely on diesel generators,  
wood, or limited solar in the forest  
area, often spending \$600 a month  
or more on diesel and wood.**

**Such households are ineligible for  
energy efficiency or state bill  
subsidies because they are not  
utility customers. Median  
Household annual income is  
\$20,000**





At the Tyners  
celebrating their  
first phone  
service, Yurok  
Reservation,  
April 2014





# Karuk Computer Center, Orleans, CA









**Verizon microwave facility, Orleans. Fiber backhaul is being installed to increase reliability**

**Verizon passive reflector used to propagate microwave signal**





# **Karuk RUS-funded “Talking Line,”**

**Broadband Dedicated October 2015  
Orleans, CA**

**Klamath River Broadband Initiative  
funded by CASF leverages the Talking  
Line**







## **Challenge and Opportunity, Building Broadband in Tribal Regions**

- **Connect America Fund will help fund broadband buildout in many areas.**
- **Carriers have 6 years to buildout until 2021. Must build to 40% of eligible households in 2017.**
- **Remote Area Fund rules and auctions are critical to many states including California.**
- **Must address Broadband Access and Adoption issues for Urban Native Americans**
- **Energy/Communications Nexus; Communications needs energy so must address energy access**





# Thank you!

For more information, please contact:

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# Telecom & Energy Access Issues in California's Tribal Regions

NARUC Winter Meetings • Washington, D.C.

February 15, 2016



**Tracy Stanhoff**

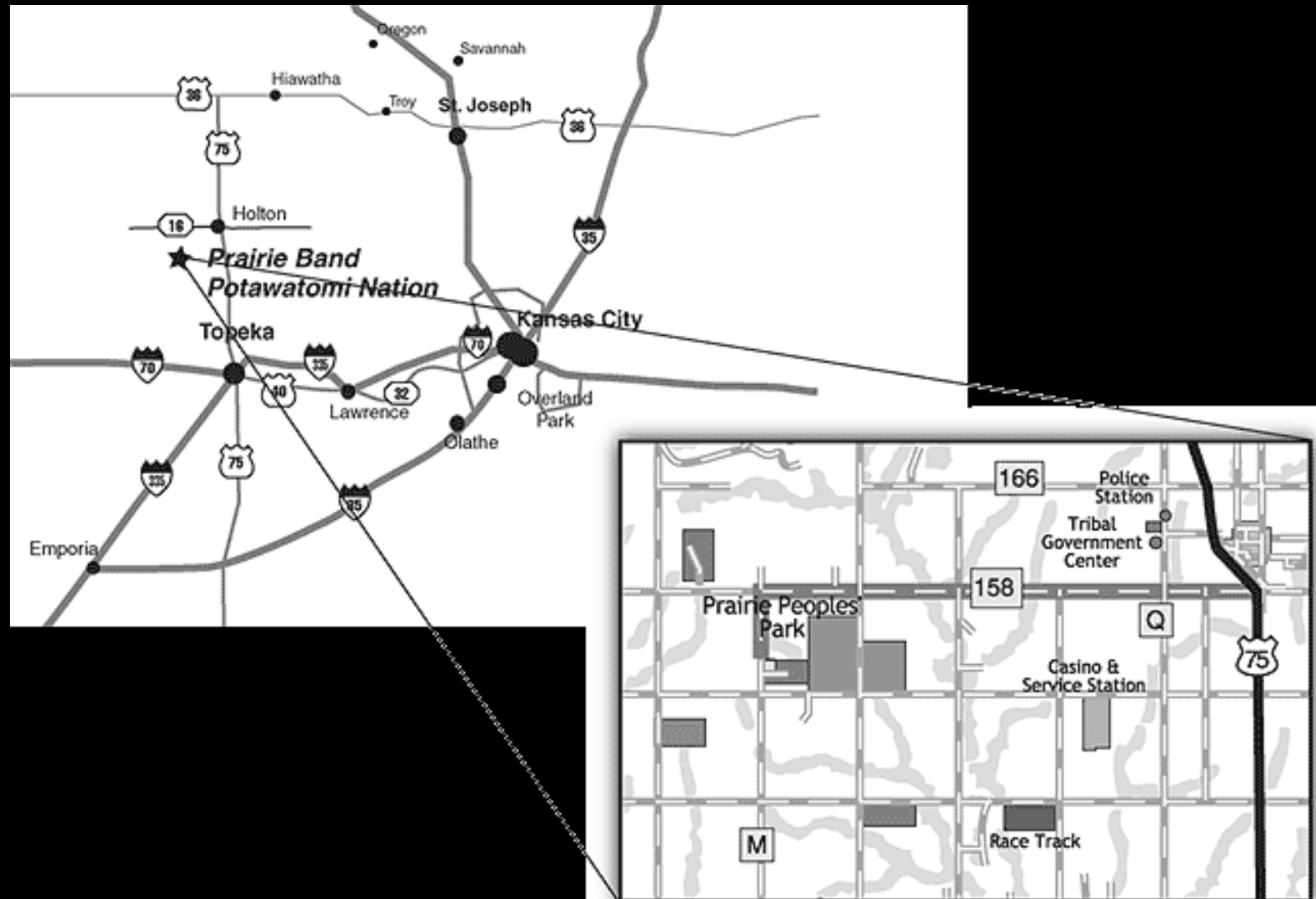
President, American Indian Chamber of Commerce  
Former Tribal Chair, Prairie Band Potawatomi Nation  
Owner, AD PRO

# Prairie Band Potawatomi Nation – Mayetta, Kansas





# Prairie Band Potawatomi Nation – Mayetta, KS



# Prairie Band Potawatomi Nation Government Center





# Prairie Band Potawatomi Nation Government Fire & Police



# Prairie Band Potawatomi Nation Government Services

- Senior Center
- Senior Living
- Housing
- Park
- Health Center
- Boys & Girls Club
- Early Development
- Child Care Center





# Prairie Band Potawatomi Nation Economic Development



# Prairie Band Potawatomi Nation Infrastructure Development

- Cellular Tower
- Water System
- Waste Water Systems
- Roads & Bridges
- Pedestrian & Bike Paths
- Broadband





# **American Indian Chamber of Commerce Brings Focus To Infrastructure Development On Tribal Lands**

- Infrastructure Necessary For Economic Development Mission
- Working To Build Awareness Of Needs With Regulatory Agencies Such As the California Public Utilities Commission
- Providing A Vehicle For Possible Partnerships With Energy, Telco, Water Companies
- Advocacy Where Relevant – Tribes Speak For Their Own Development
- Establishing A Forum For Discussion Of Needs & Sharing Of Best Practices



## Contact Information

[www.aicccal.org](http://www.aicccal.org)

- Tracy Stanhoff – [tracy@adproweb.com](mailto:tracy@adproweb.com)
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Events & Outreach  
Sophia Gleich • [sophia.gleich@aicccal.org](mailto:sophia.gleich@aicccal.org)
- American Indian Chamber Education Fund –  
Procurement Technical Assistance Center – Program Manager  
Venessa Gleich • [venessa.gleich@aicccal.org](mailto:venessa.gleich@aicccal.org)





NARUC – Winter Meeting 2016

**100% Native Owned Company**  
**Built by Indian Country... for Indian Country**



President & CEO  
Forest James  
Direct: 541.999.6861  
Office: 971.319.3372



## MISSION

EnerTribe is a 100% Native owned consulting firm specializing in tribal government and tribal enterprise with a focus on communications in Indian Country. Sister company Earthprint Technologies was built to provide best of breed equipment to tribes.



Planning/Studies, Funding,  
Project & Program  
Management & Permitting



Wireless Technology Company,  
Network Design, Engineering &  
Construction



## ENERTRIBE TEAM



**Forest James**

Ch'ee-taa-ghee-ne

*President & CEO*

An artistic thinker from childhood Forest has a creative & diverse secular background ranging from over a decade in the film and entertainment industry to building telecommunications companies for Native & Rural America. With an entrepreneurial spirit and great interpersonal communication skills Forest brings a grass-roots approach to solving the digital divide found in North America for both native and non-native rural communities.

To date Forest has two companies in operation supported by a team of experts who all work towards the same vision. Be it organizations, government, companies or communities down to the individual Forest has a knack for getting everyone to move in the same direction to achieve specific goals. Forest's companies are contracted by tribal government, tribal enterprise, native companies, local providers, non-native companies, non-profits, federal and state agencies and others.

Forest serves as the Senior Project Manager for the Orleans Broadband Project (funded by the USDA), the Klamath River Rural Broadband Initiative (funded by California Public Utility Commission) and sits on the Broadband Committee for the Hoopa Valley Tribe, the board for Tribal Telecom, and is the communications planning arm for many tribes. Forest's company EnerTribe, inc. ([www.enertribe.com](http://www.enertribe.com)) provides all Project Management, Program and Grant Management and Permitting for both projects. Another company co-founded by Forest, Earthprint Technologies ([www.earthprinttech.com](http://www.earthprinttech.com)), was built to provide all last mile equipment for tribes and is a 100% native owned technology company.

Specialties: Planning, Innovative thinking (outside the box), solution oriented, B2B Technology, Telecom, Wireless Infrastructure, Sales & Marketing, Branding, Project Management, Program Management, Grant Writing, Portfolio



## ENERTRIBE TEAM

### Ron Flavin

*EnerTribe, Director of Grant Services*



Ron is an Apache native and the Director of EnerTribe's grant services department. Ron is a grant specialist with a proven track record (raised over \$200 million over the last ten years) of developing and writing successfully-funded competitive grant proposals and cooperative agreements for non-profit organizations, governmental agencies and private sector companies. Ron is a published author on the topic of grants and has spent time as a subject matter expert working for the federal and state funding agencies as a grant reviewer. Ron Graduated from Nova Southeastern University with his Doctorate of Business Administration.



## ENERTRIBE TEAM



**Penny Echert Ph.D**  
*Environmental & Permits Director*

Dr. Eckert has over 30 years of experience in natural resource management, research, and education. She has worked extensively with watershed analysis, land use, land tenure, and land management analysis. She has worked both nationally and internationally with environmental impact assessment of large and small projects, and has authored numerous environmental documents. She has led interdisciplinary teams in complex environmental assessment projects and has been responsible for the completion of the technical reports. In addition to her technical skills, Dr. Eckert excels at establishing successful working relationships with regulatory agencies and negotiating terms and conditions of environmental permits that are practical, economically feasible, and environmentally compliant. Her skills in strategic thinking and her inclusive approach to project leadership have enabled her to be successful in complex problem solving and in finding solutions that are acceptable to all parties.

Dr. Eckert is an experienced project manager with specialized skills in federal and state environmental permitting and compliance. She has worked with clients in the private and public sectors to successfully analyze and permit projects. She has managed projects ranging in value to \$10 million, and projects of both short and multi-year duration.





## ENERTRIBE TEAM



**Jeffrey Anspach**  
*VP of Operations*

In his past roles as CEO of the Confederated Tribes of Warm Springs' ("CTWS") Economic Development Corporation ("WSEDC") and the CEO Warm Springs Telecommunications Company ("WSTC") Jeff spearheaded the startup of their wholly owned Tribal Telco. That effort was greatly aided by tribal members, administrative personnel, first responders and interested parties that were engaged in the effort of CTWS taking control of its telecommunications destiny.

Prior to his work in Warm Springs, Jeff worked in corporate restructuring. He specialized in taking overly complex financial information breaking it down to a level that was easy to manage and understand. He has developed usable and flexible financial projection models that can be instrumental in identifying opportunities for improvement; whether it was used for raising capital, disposal or acquisitions of business segments, developing cost containment strategies and/or supporting Business Plans.

Jeff has over 25 years of business experience in a wide range of industries, from public corporations with sales in excess of \$15 billion to small privately held companies with sales under \$1.5 million.

Jeff is an Enrolled Member of the Bois Forte Band of Chippewa, is a Certified Public Accountant, a Certified Turnaround Professional, received his BS in Accounting from Florida State University and served in the Army's 82nd Airborne Division.



## ENERTRIBE TEAM



**Tamara Eden James**  
*Chief Financial Officer*

Tamara started as a financial consultant for EnerTribe and Earthprint Technologies and quickly settled into the EnerTribe team as the Chief Financial Officer. Tamara has held these positions for the past 5 years. Tamara's background is in business administration and operations.

*Specialties & Skills:* Operations & Project Budgets; Accounts Receivable; Accounts Payable; Financial Forecasting; Payroll; Tax Preparation; Payroll Taxes; Employee Benefits; Employee Training; Records Management, QuickBooks



# ENERTRIBE SOLUTIONS

## Bringing the Pieces Together



Funding



Broadband  
Planning



Integration



Technology  
Procurement



Project  
Management



Permitting





# ENERTRIBE CLIENTS

Current contracts include:

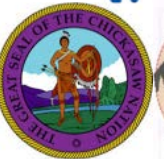
- Tribal governments
- Tribal Enterprise
- Local Incumbents (providers)
- Federal, State, County & Municipalities
- Non-Native, For-Profit companies
- Native Companies

We currently work “with”:

- USFS
- County Roads
- BIA
- CPUC
- USDA/RUS
- Department of Transportation
- EDA
- UIHS
- Schools



Northern Arapaho Tribe



## SUCCESES HIGHLIGHTS

- **Senior Project & Program Management** as well as the **Environmental & Permits** arm for the **Orleans Broadband Project** for the Karuk Tribe *(funded by the USDA)*
- **Senior Project & Program Management** as well as the **Environmental & Permits** entity for the **Klamath River Rural Broadband Initiative** for the Yurok & Karuk Tribes *(funded by the California Public Utilities Commission)*
- EnerTribe's **Grant services** department have helped obtain funding in excess of **200 million dollars** from various agencies *(\$10,000,000.00 in the past 2 years for Broadband).*
- **Co-Author** of the quarterly **TribalNet** article on **Grant funding & Technology Projects** for Indian Country



# Tribal Government–Service Areas



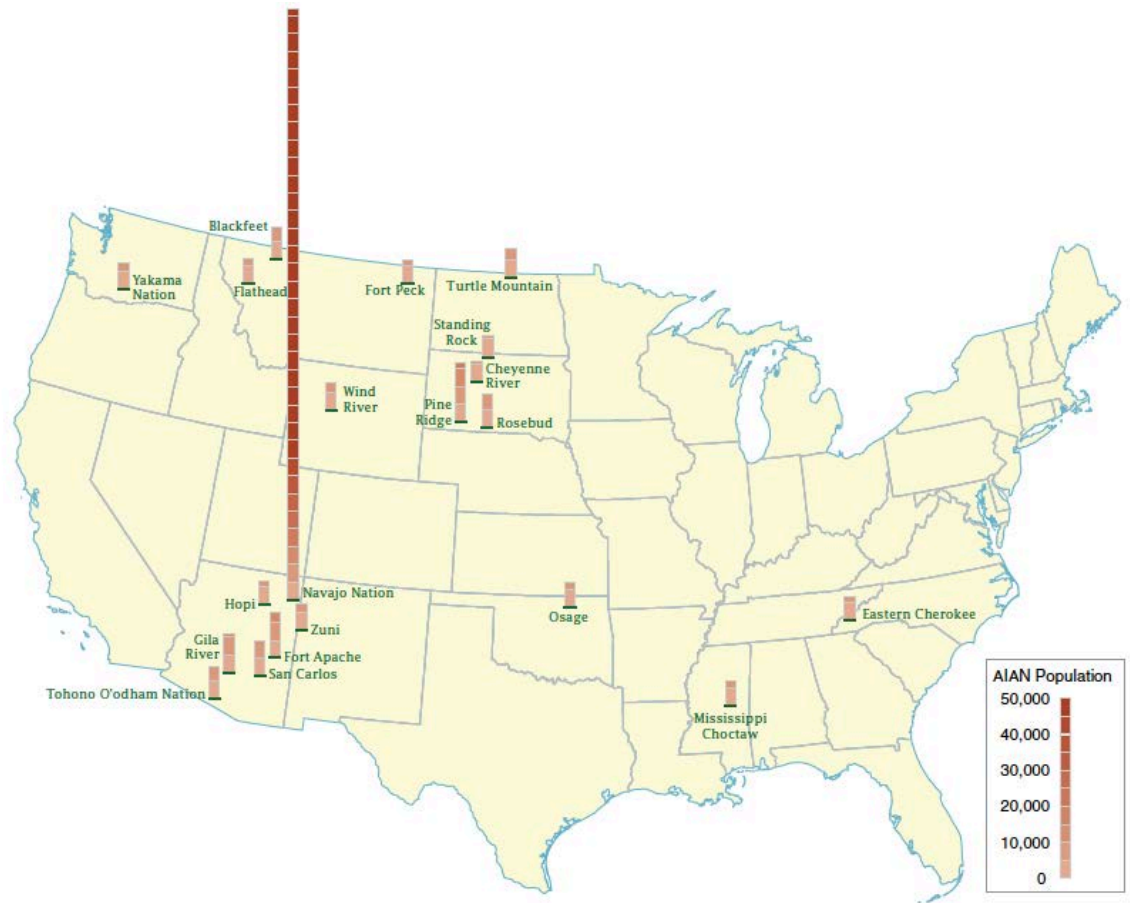


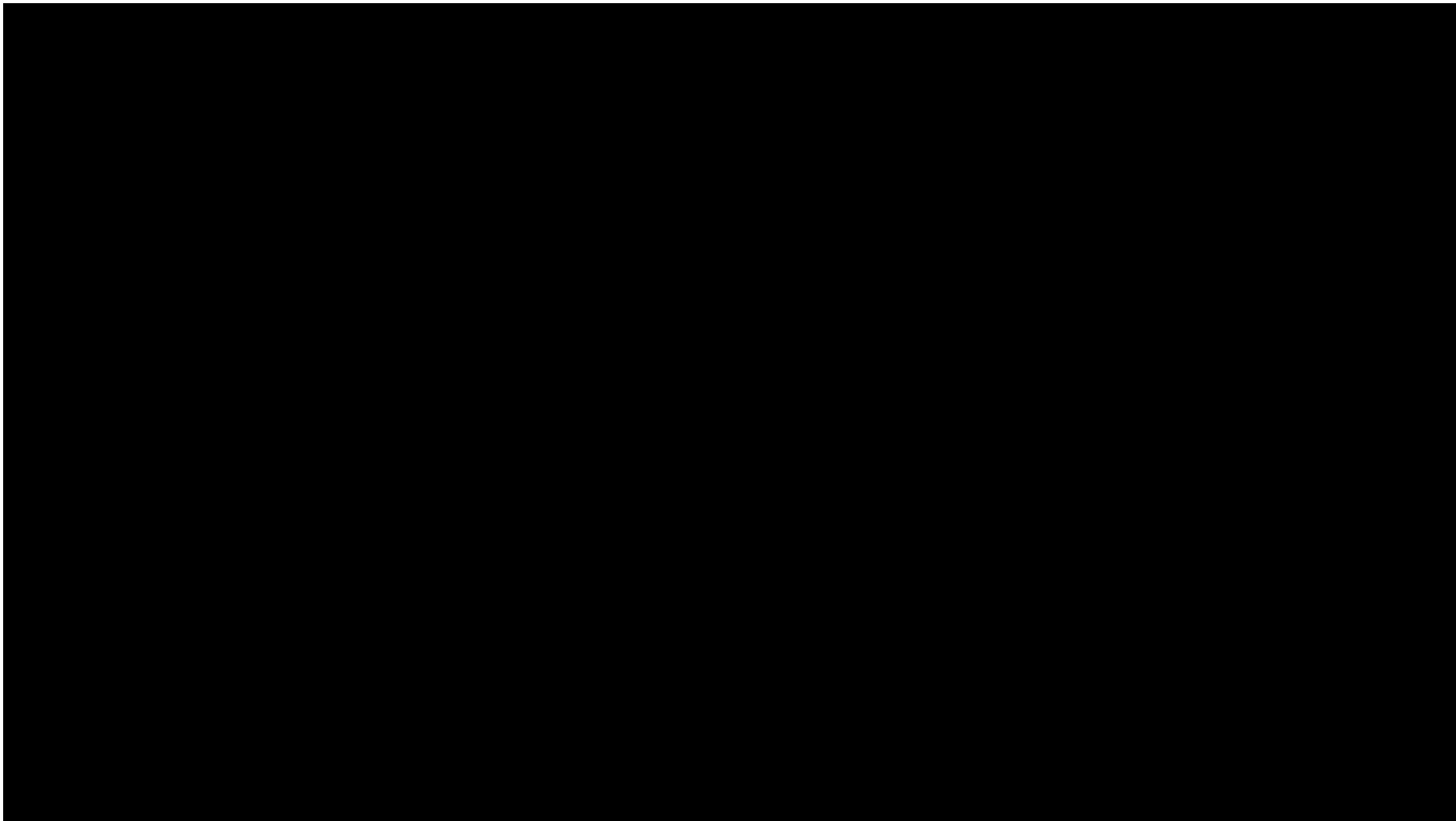
# APPENDIX –

## Tribal Nations Population (by geography)

### Top (20) Reservations with the Largest Native American Population

Note: Tribal Population density does not necessarily reflect Economic Development patterns. These figures show 'Tribal Membership' living **within trust boundaries** but does not depict overall tribal population or membership.





# Orleans Broadband Initiative

Funded by USDA - Community Connect Grant



## FIBER

This project runs 5 miles of Fiber Optic cable from the local provider into the community. Underground & Overhead Fiber Installation. (example Figure 1,2 & 3 shown below)

Figure 1

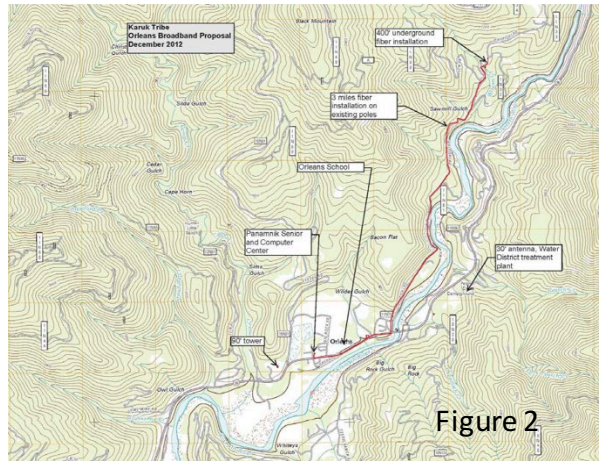
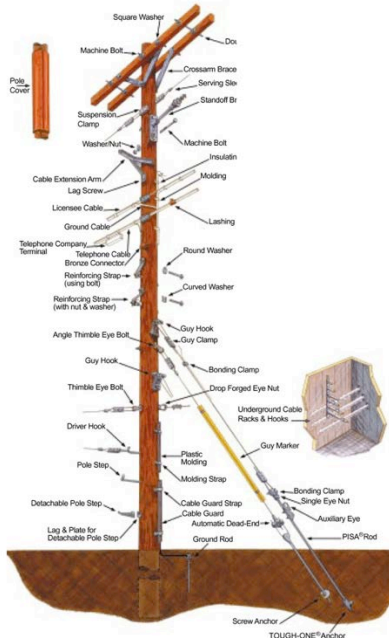


Figure 2

Figure 3





# Orleans Broadband Initiative

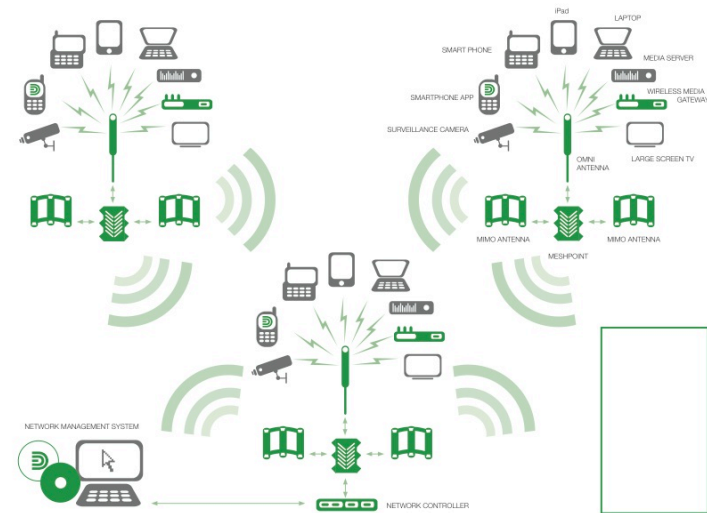
Funded by existing USDA Community Connect Grant



## WIRELESS

The Internet capacity will be broadcast over wireless radios to a 90' tower and then to the rest of the community through a robust WiFi network (example shown below).

Most of the wireless equipment will be roof, pole or tower mounted within the community thus minimizing environmental impact by reducing construction and ground disturbance. In the first phase the service will ensure communications among first responders, anchor institutions, Medical Clinic and educational facilities. The second phase is to provide High speed Internet to the rest of the Orleans Community.



# Wind River Indian Reservation

## Communications Projects



### Union Wireless

Union is one of a couple wireless service providers serving the reservation. They were awarded a grant to enhance service on the reservation. EnerTribe was initially contracted to ensure Union is following tribal policy and to assist in negotiations between the two tribes and Union.

### Northern Arapaho

The Northern Arapaho Business Council currently own and operate their own WISP. They are in the middle of Fiber build throughout the reservation. They are aiming to become their own service provider and potentially apply for their CPCN to become a Local Exchange Carrier.

### Eastern Shoshone

The Eastern Shoshone Business Council have their own communications plans that complement the NABC projects.

EnerTribe was initially contracted to help the local incumbent to work with the tribes however after hosting multiple meetings and community workshops both tribes have also found a need for our assistance with their overall communications strategy.



# California Tribe

## Communications Projects



### Challenges

- No existing service
- Funding
- Geographic's
- Demographics

### Project

The tribe has a need to enable cellular services indoors (DAS). After in depth discussions we saw there was a need for cellular services outdoors within the 4 mile stretch of the community. Since NO service currently exists we thought it prudent to have our engineers reach out to the local provider. They promptly stated it would be too costly to bring outdoor coverage there and they had no plans to. We requested approval to build our own indoor/outdoor DAS setup and after careful consideration we were given approval to build a system that would be owned by the tribe and a portion leased from the local provider.

### Solution

- The tribe is hiring us to design and install the system.
- They are partnering with the local provider to lease the head-end
- The tribe exercises sovereignty by owning their infrastructure



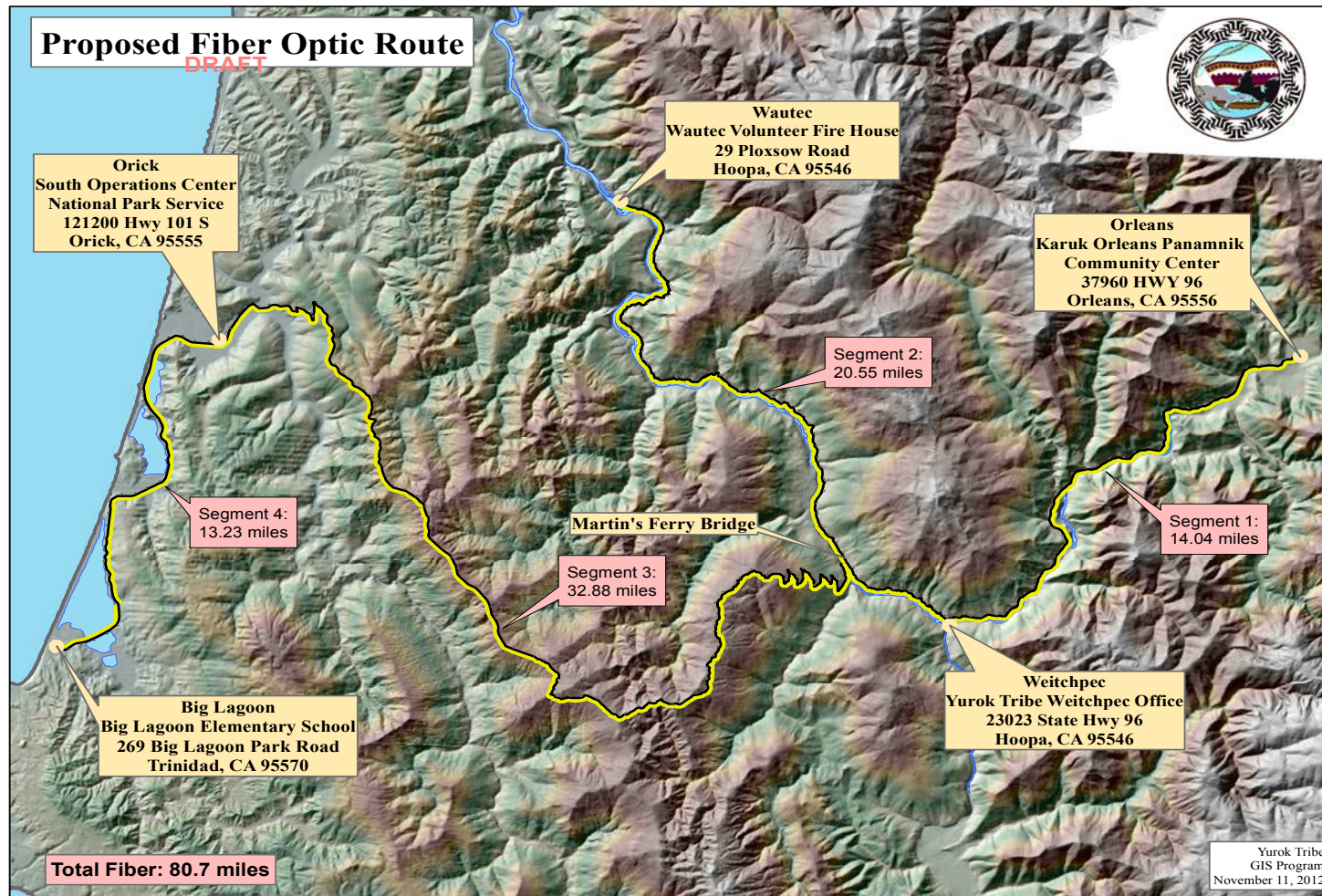
# Klamath River Rural Broadband Initiative

[www.krrbi.com](http://www.krrbi.com)

CASF Grant from Public Utility Commission



The CASF Project is an expansion of the Orleans Broadband Project & the Yurok's High Energy Project. EnerTribe wrote a grant to the CPUC for \$6,602,422.00 and the CPUC released a draft resolution for it to be awarded. The final decision and signatures were announced on October 17<sup>th</sup>



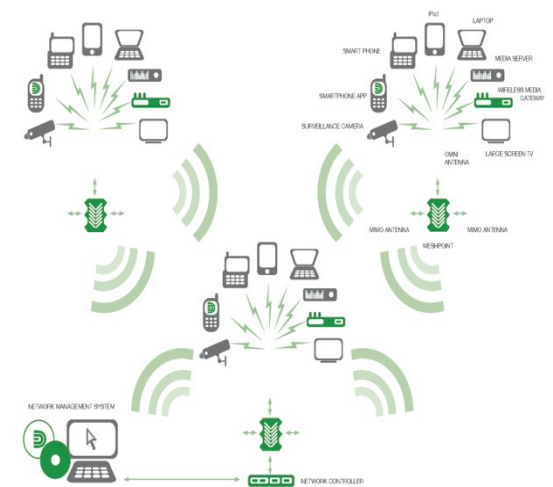
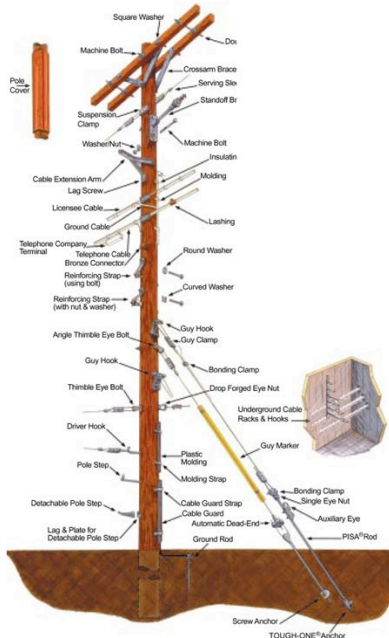
# Klamath River Rural Broadband Initiative

[www.krrbi.com](http://www.krrbi.com)



## FIBER, TOWERS & WIRELESS

- 82 miles of Fiber Optic cable from the local provider into the community. Underground & Overhead Fiber Installation. (example shown below)
- Wireless nodes will be placed throughout each community providing Point-To-Point, Point-To-Multipoint & Wifi Hotspots.



# KRRBI & Orleans Broadband

Partnerships (all native owned)



## ENERTRIBE

- Funding
- Project Management
- Program Management (grant services)
- Permitting for the project



## EARTHPRINT TECHNOLOGIES

- Wireless design
- Engineering
- Construction
- Job Shadow and training







**100% Native Owned Company**  
**Built by Indian Country... for Indian Country**

President & CEO

Forest James

Direct: 541.999.6861

Office: 971.319.3372





