NATIONAL TRIBAL BROADBAND SUMMIT

HOW TO LEVERAGE E-RATE TO BRING BROADBAND TO YOUR COMMUNITY

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Agenda

1. The Context: Why connectivity matters for Native-serving schools

2. How It Can Be Done: New Mexico Tribal Consortium projects

3. The Power of Partnerships and Key Lessons Learned

4. Questions & Answers

5. Next Steps/Resources

21st Century Learning is increasing the demand for broadband
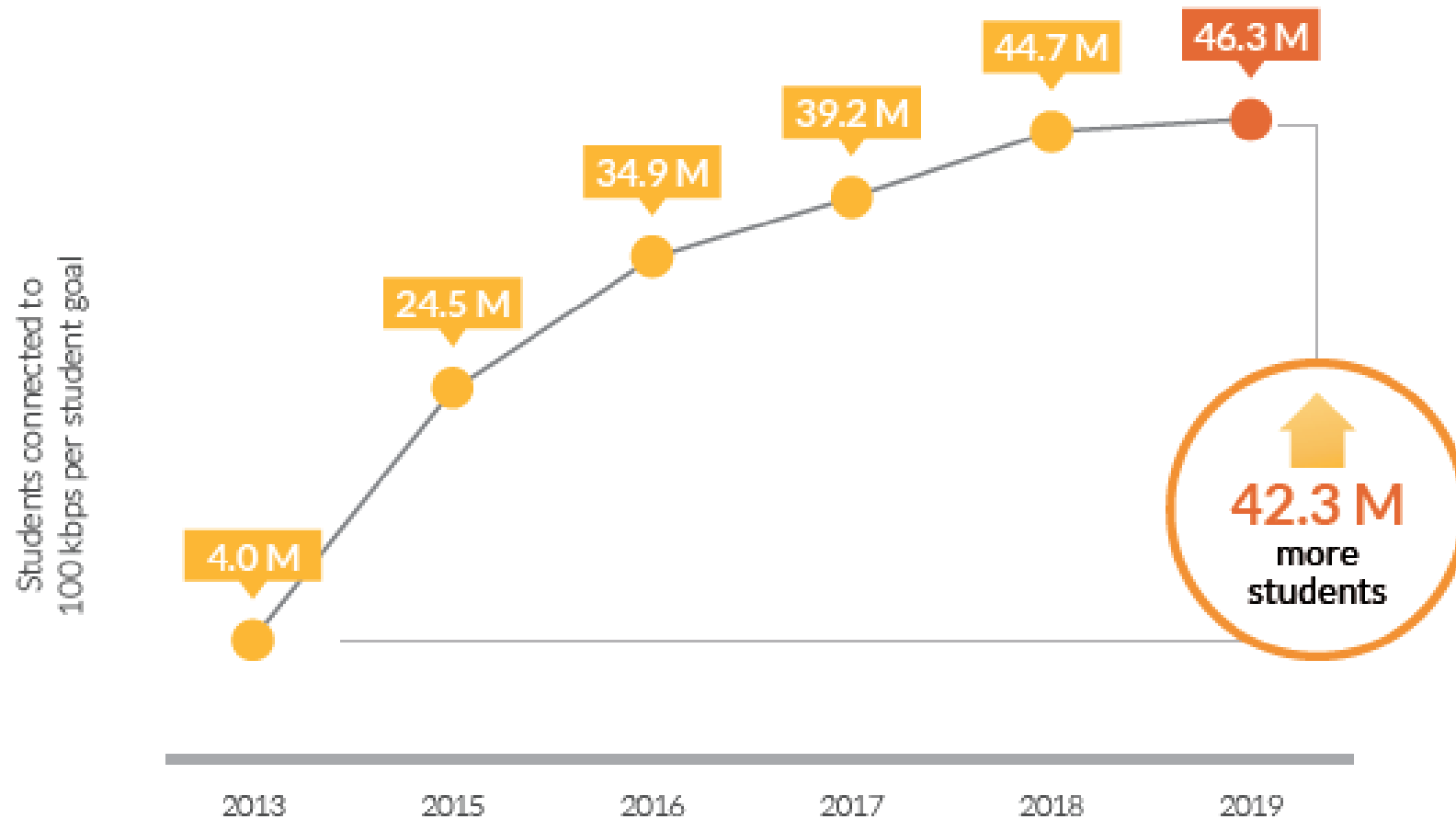
80% of schools use student devices **Every Day**

Three Fourths of schools have already deployed 1:1 student to device ratios

95% of schools expect to be 1:1 by 2021

NATIONAL TRIBAL BROADBAND SUMMIT
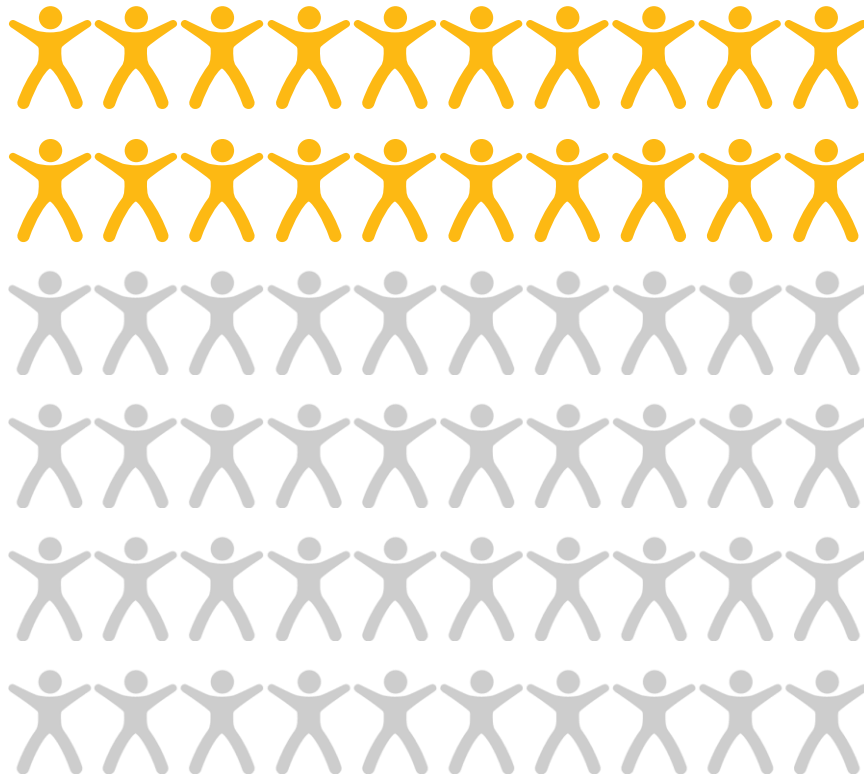
Education SUPERHIGHWAY

National progress has brought basic speeds to nearly every public school student

42.3 million more students have access to the broadband they need for digital learning since 2013
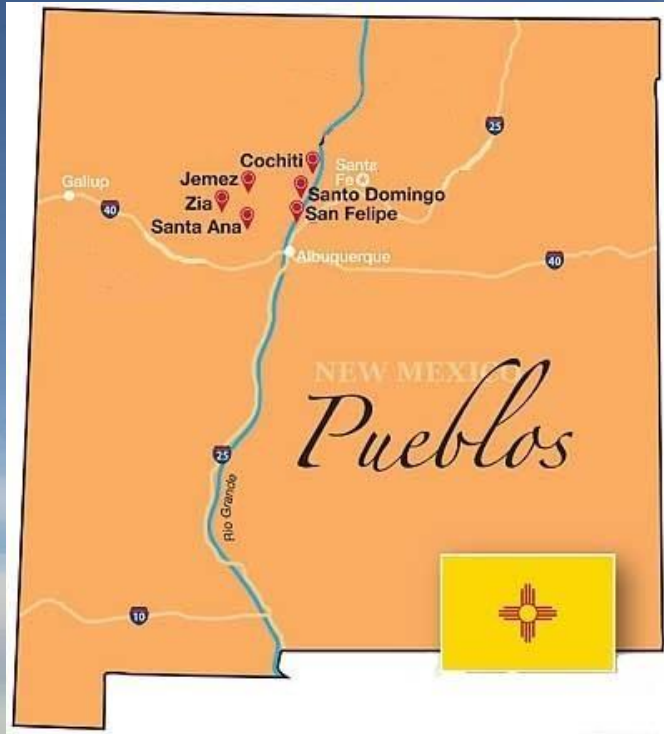

Students connected to 100 kbps per student goal

2013	2015	2016	2017	2018	2019
4.0 M	24.5 M	34.9 M	39.2 M	44.7 M	46.3 M

42.3 M more students

We need to close the gap for Native students

NATIONAL
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BROADBAND
SUMMIT

32,000

Native students attend
federally-supported schools
that do not have adequate
broadband connections

Education
SUPERHIGHWAY

E-rate

▶ **E-rate is a Universal Service program designated by the Federal Communications Commission** that provides discounts on connectivity costs for K-12 schools and libraries

▶ **96% of schools across the country participate in E-rate** by applying for funding on an annual basis

▶ **In 2017, E-rate approved $197 million in funding** for Native-serving schools at an average discount rate of 90%

Jemez-Zia Pueblo Tribal Consort
Jemez Day School (BIE) • San Diego Riverside (NM Charter) • Walatowa
Charter) Jemez Tribal Library • T'siya Day School Elementary School (BIE) •

Middle Rio Grande Pueblo Tribal Consortium
Pueblo de Cochiti Tribal Library • Santo Domingo Tribal Library
San Felipe Pueblo Community Library • Santa Ana Pueblo Community Library

Beginnings

MRG CONSORTIUM MEMBERS	BEFORE			
School/Library Name	Connection Type/Qty	Current Speed (Mbps)	Monthly Recurring Cost (MRC)	Current Cost/Mbps
Santa Ana Community Library	Microwave	70	$960	$13.71
San Felipe Pueblo Community Library	2 x T1s	3	$700	$233.33
Santo Domingo Tribal Library	Satellite	3	$116	$38.67
Pueblo de Cochiti Tribal Library	LTE Mi Fi	10	$1,400	$140.00

JEMEZ / ZIA CONSORTIUM MEMBERS	BEFORE			
School/Library Name	Connection Type/Qty	Current Speed (Mbps)	Monthly Recurring Cost (MRC)	Current Cost/Mbps
Jemez Pueblo Community Library	1x DSL	12	$95	$7.92
Jemez Day School	6x T1s	9	$2,549	$283.24
San Diego Riverside Charter School	2x DSL	12	$1,200	$100.00
Walatowa Charter High School	3x T1s	4.5	$550	$122.22
T'siya Pueblo Elementary School	1x T1	1.5	$303	$202.00
Pueblo of Zia Tribal Library	Ethernet	10	$0	$0.00

Tribal Libraries: Critical Community Computing Centers

Very Underserved Little IT Support

Barely Using E-rate

Broadband in Tribal Libraries

Critical community infrastructure for computer services

- K-12: After school homework and live tutoring often using cloud apps, Kahn Academy
- Adults: On-line classes for college degrees, GED, basic literacy, certificates, i.e. food handlers
- On-line college applications, scholarships, FAFSA
- Video-Conferencing for language and/or culture
- Website Portals for on-line banking, bill pay
- Required on-line testing for NM Drivers License, Food Handlers Classes, Permits and Safety course for NM Game and Fish
- Social services for senior, disabled and veterans e.g. Social Security, Medicare, Veteran benefits
- Filing federal and state taxes, managing refunds
- Job searches, applications, resume writing, unemployment claims
- Public Internet access for personal devices, including parking lot Wi-Fi
- Center for connectivity during emergencies

SD Youth ages 18-20 update their resumes and apply for federal and tribal financial aid for college

Winner of a logo contest receives an iPad that cannot be used in the pueblo due to connectivity issues

Broadband in Schools

Conduit of teaching, learning, and school operations
• Using Internet content in teaching and learning, *e.g.*, Kahn Academy, digital textbooks, YouTube
• Communication and collaboration with students and teachers, *e.g.*, Google Classroom
• Mobile devices provide new opportunities but require high-speed Internet, *e.g.*, iPads, Kindles, and Chromebooks
• NASIS Parent Portal to check assignments and grades (BIE)
• Mandatory online testing, *e.g.*, PARCC, MAPS
• Distance learning, *e.g.*, college dual enrollment
• Videoconferencing back to Tribes in native language classes
• Virtual field trips across the globe
• Administration: Online human resources, accounting, phone, safety, and e-mail systems

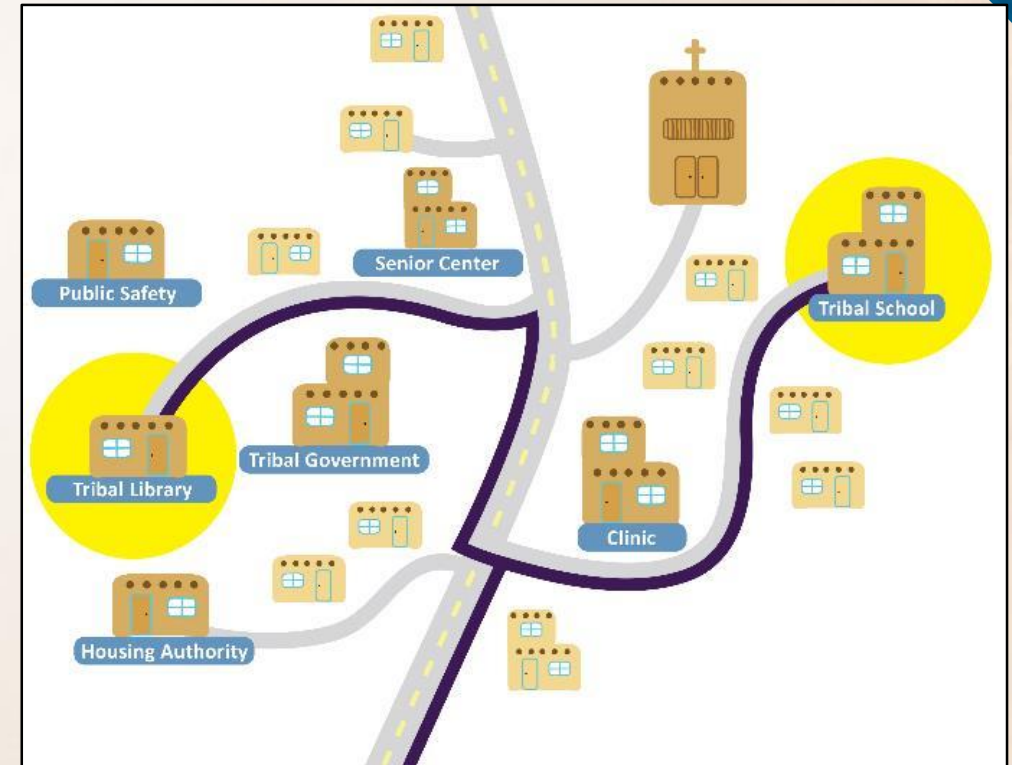**Santa Fe Indian School students use computers in all classes in all grades as part of instruction**

Funding Opportunity

FCC USF E-rate Program

- K-12 Schools and libraries
- Up to 90% discount off Internet bills
- New: Discounts on fiber construction
- Limited time: Additional 5% discount if match is from Tribal, state, federal source

Opportunity

- Bring Broadband – high-speed Internet – to schools and libraries
- Fiber optic benefits: Can be easily increased to meet future needs, symmetrical uploads and downloads
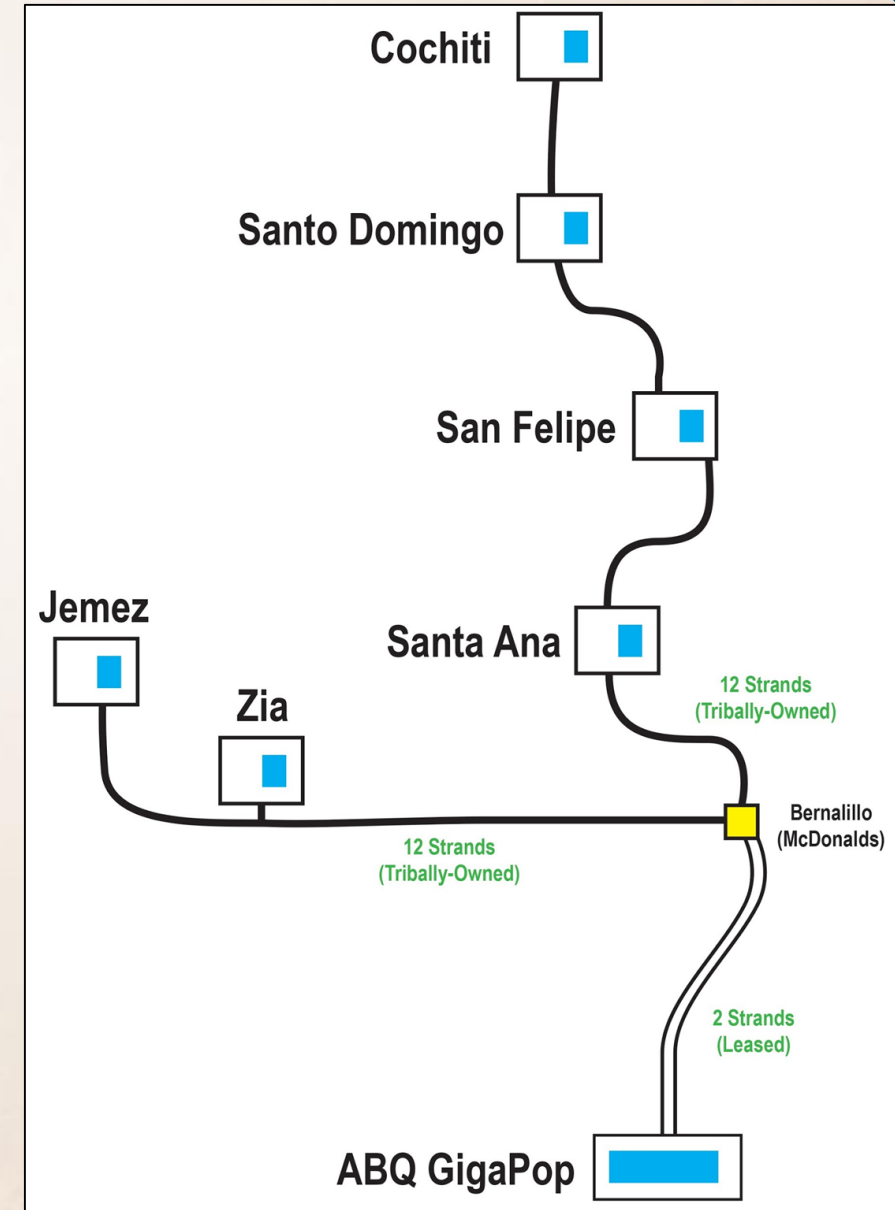- Tribal ownership

Fiber Optic Backbone to the schools and libraries
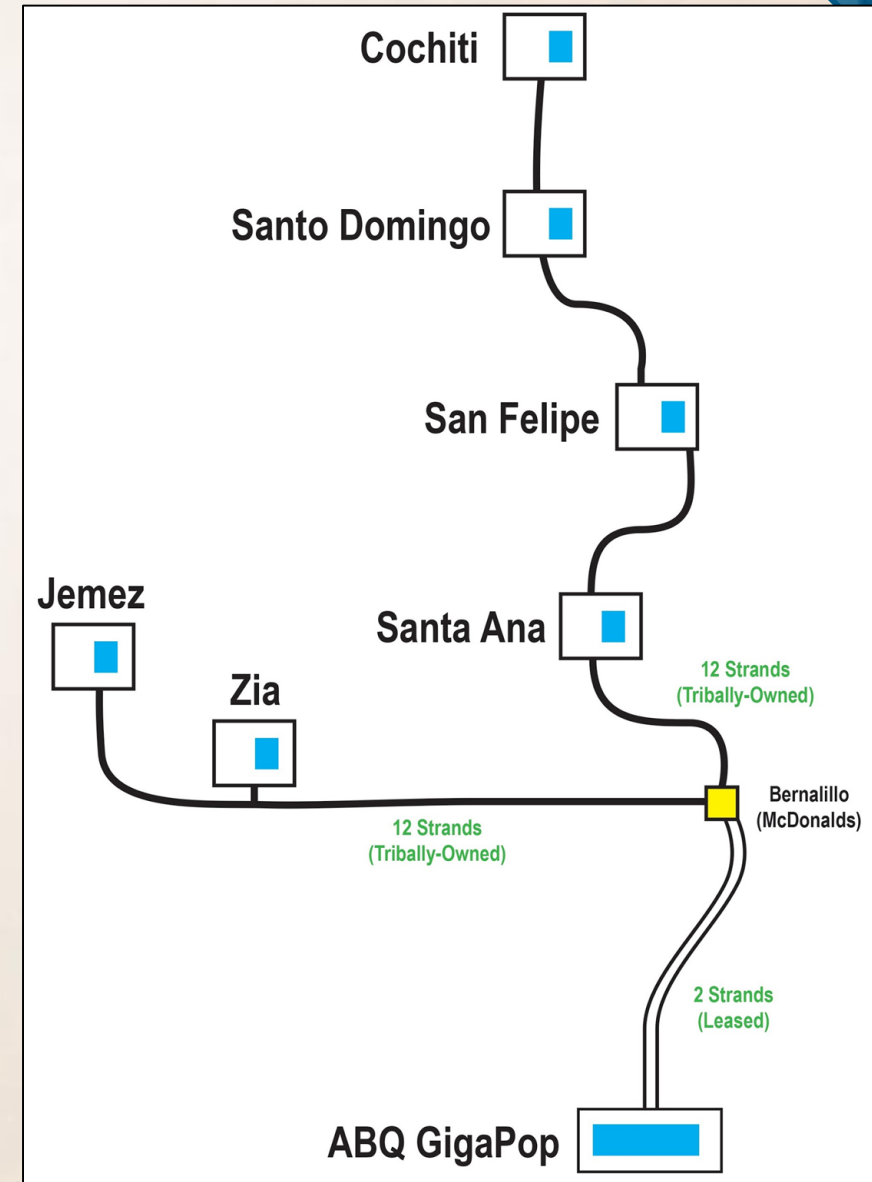
Our Approach

Tribal Consortia

- Network Design – Aimed for 505 Marquette

- Aggregated Demand

- Tribal School – Tribal Library Partnership

- Critical partnerships: Santa Fe Indian School, AMERIND Risk, University of New Mexico, Education Superhighway

- State – Indian Affairs, NMPED, NMDoIT, PFSA, E-rate Central

- Industry partners: Layer 1 Construction (Kelly Cable of NM) and Carrier Electronics (Juniper)

- The Solution: Coming from within the tribes

- Tribally-Owned and Operated

Middle Rio Grande Pueblo Tribal Consortium
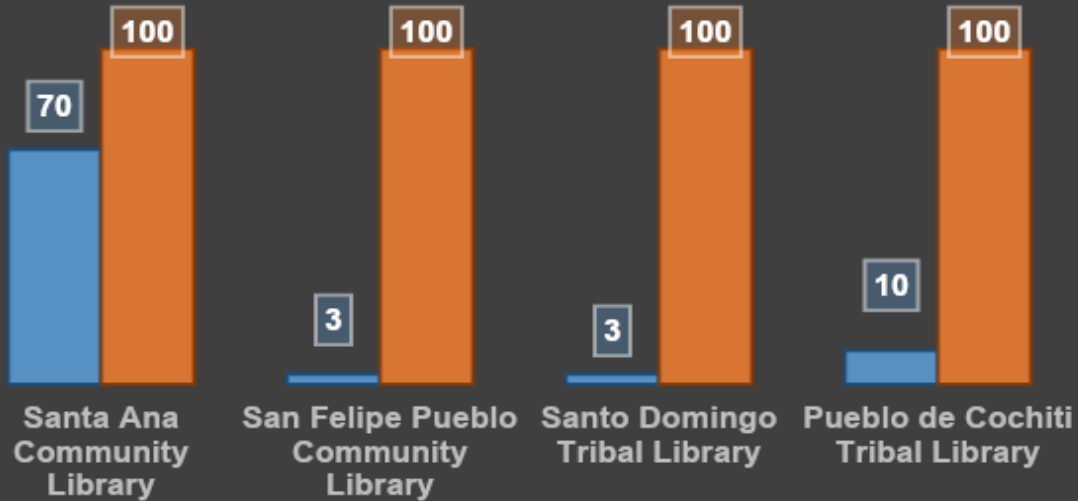# Jemez-Zia Pueblo Tribal Consortium

E-rate – Winning Proposal

- Two Networks

- Connects 2 Schools and 6 Libraries

- Should have connected 3 BIE Schools

- 12 Strand 60-mile network from Albuquerque to Cochiti/Jemez

- Leased Dark Fiber

- Utilizes DWDM equipment

- ~ $4 million asset

Before / After

Broadband Speeds — Current Speed (Mbps) vs Proposed Speed (Mbps):
- Santa Ana Community Library: 70 / 100
- San Felipe Pueblo Community Library: 3 / 100
- Santo Domingo Tribal Library: 3 / 100
- Pueblo de Cochiti Tribal Library: 10 / 100

Broadband costs — Current Cost/Mbps vs Proposed Cost/Mbps:
- Santa Ana Community Library: $13.71 / $3.00
- San Felipe Pueblo Community Library: $233.33 / $3.00
- Santo Domingo Tribal Library: $38.67 / $3.00
- Pueblo de Cochiti Tribal Library: $140.00 / $3.00

MRG CONSORTIUM MEMBERS	BEFORE					AFTER				
School/Library Name	Connection Type/Qty	Old Speed (Mbps)	Monthly Recurring Cost (MRC)	Old Cost/Mbps	Old Cost/Mbps w/E Rate	Connection Type/Qty	New Speed (Mbps)	Monthly Recurring Cost (MRC)	New Cost/Mbps	New Cost/Mbps w/E Rate
Santa Ana Community Library	Microwave	70	$960	$13.71	N/A	Fiber	100	$300	$3	30 cents
San Felipe Pueblo Community Library	2 x T1s	3	$700	$233.33	$23.33	Fiber	100	$300	$3	30 cents
Santo Domingo Tribal Library	Satellite	3	$116	$38.67	$3.87	Fiber	100	$300	$3	30 cents
Pueblo de Cochiti Tribal Library	LTE Mi Fi	10	$1,400	$140.00	$14.00	Fiber	100	$300	$3	30 cents

E-rate Next Steps

Build the Pueblo Education Network:

- Following other 23 State Network models
- Tribally-owned network hub at the Santa Fe Indian School
- Help NM Public Schools and Libraries
- Connect the Tribal schools and/or libraries to each other for increased collaboration, prioritizing language and culture
- Connect to the University of New Mexico Albuquerque GigaPop:
  - Peering with NM Higher Ed
  - Internet2
  - Caching with Google, Netflix, Microsoft, etc.
- Continued participation in E-rate through a consortium application
- Sandia National Labs – Cybersecurity grant award to develop the network
- Coordinate tribal libraries and schools to develop educational programs
- Work with tribal IT departments to grow next gen of IT professionals

New Mexico Pueblo Tribal Consortium

Success!

Partnerships are critical!

- New Mexico State Agencies
  - Public Education Departments, Public School Facilities Authority, Department of Information Technology, Indian Affairs Department
- Tribal Entities
  - Sovereign Nations, Tribal Libraries, Tribal Schools
- Service Providers
- External Partners
  - Education Superhighway
  - E-Rate Central
  - SETDA
- Federal Government (E-rate)

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LESSONS LEARNED

- Personal relationships are key. It takes time to build relationships and trust

- Time. Building relationships and trust and resolving complex issues takes time

- Celebrate success. Listen to stakeholders talk about how broadband has transformed their lives.

- It is the little things that add up. The student who can now do her homework. The librarian who can now download MARC records.

LESSONS LEARNED

- When determining needs, listen and be present

- New Mexico has made tribal broadband a priority and we have a number of agencies stepping up.

- What is the long game? Is it schools and libraries? Is it about making entire communities whole? Think of the long term plan for tribal communities

- Engage providers who are doing good things in our tribal communities

LESSONS LEARNED

- E-Rate is the beginning

- E-Rate opens the ground

- Permitting and procurement on tribal land is difficult
  - Forest Service
  - Interior including BIA
  - State agencies – Highway, land office, and historical preservation on state and local
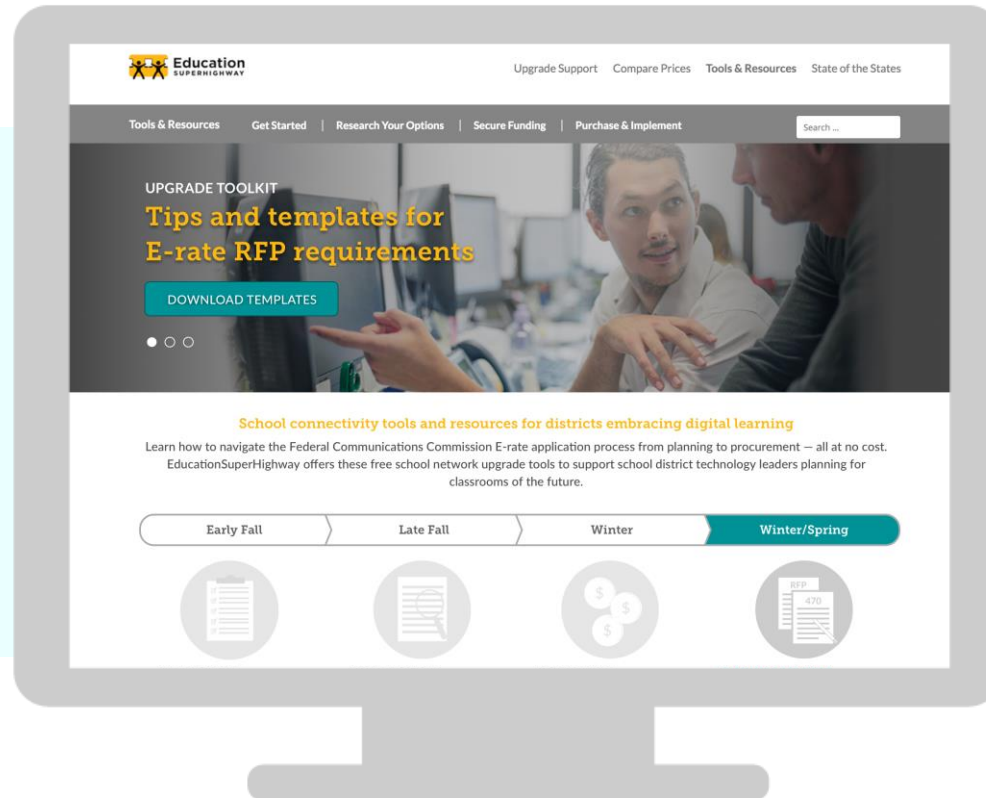
Next Steps / Resources

1. Sign up for USAC Tribal Liaison monthly call
2. Data Gathering - Look into the connectivity of the schools and libraries in your area
3. Talk to your State E-rate Coordinator about existing resources and support from the state (include SECA list of E-rate coordinators)
4. Work with BIE to bring affordable, faster speeds to all BIE schools
5. EducationSuperHighway has pro-bono tools and support for school broadband projects

Questions

Next Steps / Resources

1. Sign up for USAC Tribal Liason monthly call

2. Data Gathering: research the connectivity of the schools and libraries in your area

3. Talk to your State E-rate Coordinator about existing resources and support from the state: https://tools.e-ratecentral.com/us/stateCoord.asp

4. Work with BIE to bring affordable, faster speeds to all BIE schools

5. EducationSuperHighway has pro-bono tools and support for school broadband projects

School District Upgrade Toolkit

With the Upgrade Toolkit, you can:

- ▶ Understand how to get started with upgrades
- ▶ Research service provider options
- ▶ Learn about how to secure funding
- ▶ Gain best practices for procuring and implementing solutions

upgrade.educationsuperhighway.org

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