KATE MACGREGOR
DEPUTY CHIEF OF STAFF
EXERCISING THE AUTHORITY OF THE
DEPUTY SECRETARY OF THE INTERIOR
NANCY WEISS
GENERAL COUNCIL
INSTITUTE OF MUSEUM AND LIBRARY SERVICES
LIGHTNING TALKS

IMPACT OF BROADBAND ON NATIVE COMMUNITIES
Jemez-Zia Pueblo Tribal Consortium
San Diego Riverside (NM Charter) • Walatowa High School (NM Charter)
Jemez Tribal Library • Zia Tribal Library

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
### MRG CONSORTIUM MEMBERS

<table>
<thead>
<tr>
<th>School/Library Name</th>
<th>Connection Type/Qty</th>
<th>Current Speed (Mbps)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Santa Ana Community Library</td>
<td>Microwave</td>
<td>70</td>
<td>$960</td>
<td>$13.71</td>
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<td>2 x T1s</td>
<td>3</td>
<td>$700</td>
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<td>Santo Domingo Tribal Library</td>
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<td>LTE Mi Fi</td>
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### JEMEZ / ZIA CONSORTIUM MEMBERS

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<tbody>
<tr>
<td>Jemez Pueblo Community Library</td>
<td>1x DSL</td>
<td>12</td>
<td>$95</td>
<td>$7.92</td>
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<tr>
<td>Jemez Day School</td>
<td>6x T1s</td>
<td>9</td>
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<td>12</td>
<td>$1,200</td>
<td>$100.00</td>
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<tr>
<td>Walatowa Charter High School</td>
<td>3x T1s</td>
<td>4.5</td>
<td>$550</td>
<td>$122.22</td>
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<tr>
<td>T'siya Pueblo Elementary School</td>
<td>1x T1</td>
<td>1.5</td>
<td>$303</td>
<td>$202.00</td>
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<td>Pueblo of Zia Tribal Library</td>
<td>Ethernet</td>
<td>10</td>
<td>$0</td>
<td>$0.00</td>
</tr>
</tbody>
</table>
**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
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
Our Approach

Tribal Consortia

- Network Design – Aimed for 505 Marquette
- Aggregated Demand
- Geography-based Approach Tribal Schools and Libraries Tribal Libraries Partner
- Critical partnerships: Santa Fe Indian School, AMERIND Risk, University of New Mexico
- New Mexico Broadband Deficiencies Correction Program – NMPED, NMDoIT, PFSA, E-rate Central, Education Superhighway
- Industry partners: Layer 1 Construction (Kelly Cable of NM) and Carrier Electronics (Juniper)
Middle Rio Grande Pueblo Tribal Consortium
Jemez-Zia Pueblo Tribal Consortium

Fiber Optic Backbone
- Two Networks
- Connects 2 Schools and 6 Libraries
- Intended to also connect 3 BIE-operated Schools
- 12 Strand 60-mile network from Albuquerque to Cochiti
- Leased Dark Fiber
- Utilizes DWDM equipment
- ~ $4 million asset

Benefits
- Coming from within the tribes
- Tribally-Owned and Operated
### Before / After

#### BROADBAND SPEEDS

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<tr>
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<tbody>
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<td>70</td>
<td>100</td>
</tr>
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<td>San Felipe Pueblo Community Library</td>
<td>3</td>
<td>100</td>
</tr>
<tr>
<td>Santo Domingo Tribal Library</td>
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<td>100</td>
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<tr>
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#### BROADBAND COSTS

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<th>Old Cost/Mbps</th>
<th>Old Cost/Mbps w/E Rate</th>
<th>New Speed (Mbps)</th>
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NICOLE UMAYAM

DIGITAL INCLUSION LIBRARIAN, ARIZONA STATE LIBRARY, ARCHIVES AND PUBLIC RECORD
IMPACT OF BROADBAND ON NATIVE COMMUNITIES

ANN TREACY, MODERATOR, BLANDIN FOUNDATION
TYLER SCRIBNER, NATIONAL CONGRESS OF AMERICAN INDIANS
KIMBALL SEKAQUAPTEWA, SANTA FE INDIAN SCHOOL
NICOLE UMAYAM, ARIZONA STATE LIBRARY, ARCHIVES, AND PUBLIC RECORD