Digital Inclusion and K-12 Education: The Impact of COVID-19 on Students and Educators

NTIA Webinar Series

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Conference Line: 800-593-7190 Passcode: 984-4951#

October 21, 2020
Participants

Moderator:
• Emy Tseng, Senior Broadband Specialist, NTIA’s BroadbandUSA

Presenters:
• Kimball Sekaquaptewa, Chief Technology Director, Santa Fe Indian School, Santa Fe, New Mexico
• Dr. Christine Diggs, Chief Technology Officer, Albemarle County Public Schools and Michael Culp, Director of Information Technology Department, Albemarle County, Virginia
• Joshua Edmonds, Director of Digital Inclusion, City of Detroit, Michigan
Helpful Information

Questions
• Please type questions in the Q&A box on the right hand side of the screen. Questions will be taken after the final presenter.

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Kimball Sekaquaptewa, Chief Technology Director, Santa Fe Indian School
Pre-COVID State of Internet on Tribal Lands

- **People:** 41% of people living on tribal lands lack access to broadband, with the deficit jumping to 68% for those living in rural areas. (FCC, 2016)

- **Homes:** With lack of computers/Internet in homes people rely on Tribal libraries other Public Wi-Fi, expensive and often pre-paid cellular plans

- **Schools:** Bureau of Indian Education schools can pay significantly more than non-BIE schools in the same locations. Ch’ooshgai Community School $20,750/mo. vs. NM PED School District $6,005/mo.

- **Tribes:** In 2020, some tribal governments in New Mexico still connect with T1s (1.5 Mbps), or about 10% of a single LTE cell phone

- **And then came COVID-19: The Digital Divide ➔ Digital Chasm**

- **COVID-19 revealed the existing fault lines and puts a face to the discrimination against students that aren’t connected.**
Pre-COVID State of Internet on Tribal Lands

Santa Fe Indian School Student Connectivity

SFIS is an off-reservation boarding school that serves 702 students from the 19 Pueblos, Apache, and Navajo Tribes of New Mexico

- School Closure sent kids home to 22 rural and tribal lands, least connected in NM, and likely the US
- 44% No Home Internet
- Students ‘find’ the Internet in many ways:
  - 32% Use Pre-Paid Internet
  - 27% Use Public Wi-Fi
  - 21% Go to their Tribal Library
  - 8% Relative’s House or Work
- Cellular Coverage Very Spotty
  Despite the heavy reliance on mobile Internet, user experience is poor in many areas
- No Cable options on Tribal Lands
## 2020 COVID-19 Tribal Responses

<table>
<thead>
<tr>
<th>Response</th>
<th>Timeframe</th>
<th>Technology</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immediate Rapid Response</td>
<td>SY19-20</td>
<td>• Cellular Hotspots</td>
<td>• Immediate connectivity</td>
<td>• Cellular Hotspots: Expense band-aids</td>
</tr>
<tr>
<td></td>
<td>School Closures</td>
<td>• A lot of Chromebooks</td>
<td>• Cheap devices</td>
<td>• Over-reliance on Pre-Paid contracts</td>
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<td></td>
<td></td>
<td></td>
<td>• CARES eligible</td>
<td>• Delays in Supply Chain</td>
</tr>
<tr>
<td>Mid-Term</td>
<td>SY 20-21</td>
<td>• Hotspots/ Devices Cont'd</td>
<td>• Wi-Fi: Affordable</td>
<td>• Spotty Cellular Coverage</td>
</tr>
<tr>
<td></td>
<td>Doing better in the Fall</td>
<td>• Promote Low-Income ISP offers</td>
<td>• Wi-Fi: Extends existing Internet Connections</td>
<td>• Chromebooks dependent on the Internet for best use</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Help low-income apply for FCC Lifeline Tribal Subsidy ($34.25/mo discount)</td>
<td>• Serves many students</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tribal Wi-Fi</td>
<td></td>
<td>• Parking lot Wi-Fi: Hot/cold vehicles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>→ 100+ locations</td>
<td></td>
<td>• Lack of transportation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Not great space to study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Winter is coming fast!</td>
</tr>
<tr>
<td>Long-Term Goal</td>
<td>Fall Onward</td>
<td>• Residential Internet Access!!</td>
<td>• Permanent Infrastructure, tribally-controlled</td>
<td>• CARES funding spending deadline of 12/30/20</td>
</tr>
<tr>
<td></td>
<td>Setting up for the Long Haul</td>
<td>• At least 8 Pueblos installing wireless networks before 2021!</td>
<td>• Leverages existing fiber backbones</td>
<td>• Not all tribes have fiber backhaul</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Many Tribes can now use licensed spectrum</td>
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</table>
Connectivity: Previous Efforts Pave the Way

Tribes as Partners – and as Internet Providers

- Since 2008, 11 of 19 Pueblos have constructed fiber optic backbones ➔ Stages home connections
- In 2020, in the first ever FCC Tribal Priority Window for the 2.5 Ghz band, over 400 eligible tribes (of ~475) applied for a free spectrum license
  - 400 Tribes will be building WISPs
  - Or partnering with local tribal and non-Tribal ISPs, such as Sacred Wind in New Mexico, or Mescalero Apache Telecommunications Inc.
- On-Going collaboration with NM State Effort and Carriers
  - Improve coverage on tribal lands through Carrier network investments
  - Deploy Disaster Recovery Assets, such a Cellular on Wheels (CoW)
Low-income schools underperform without an established technology-rich teaching pedagogy

- NM LFC Report, “Learning Loss Due to COVID-19 Pandemic” (6/10/20)
  - Low income schools, students suffer most
  - Lack of Broadband Access a factor

COVID-19 Notwithstanding – Educational Priorities

- Professional Development to develop a technology-rich teaching pedagogy
- Homework Gap: In-Home Broadband is Essential
- Connectivity for ALL schools, including the least connected BIE-operated schools
- Creating a NM State Education Network – 23 Other States have them!
Digital Inclusion and K-12 Education: The Impact of COVID-19 on Students and Educators

Thank you, Kimball!
Dr. Christine Diggs, Chief Technology Officer, Albemarle County Public Schools

Michael Culp, Director of Information Technology, Albemarle County Public Schools
Albemarle County Government & Albemarle County Public Schools: Partnering to Expand Internet Access
Albemarle County Overview:

- Located in Central Virginia
- Covers 726 Sq. Miles
- Blue Ridge Mountains, Trees, Rolling Hills
- Established Albemarle Broadband Authority (ABBA) to Expand Connectivity
ABBA History & Timeline / 2017-2019

Virginia Telecommunication Initiative History

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>$118,400 from DHCD</td>
<td>$473,366 from DHCD</td>
<td>$301,748 from DHCD</td>
</tr>
<tr>
<td>Locations Passed</td>
<td>284 Locations Passed</td>
<td>178 Locations Passed</td>
<td>341 Locations Passed</td>
</tr>
<tr>
<td>Allocations</td>
<td>Albemarle and CenturyLink</td>
<td>Albemarle and Comcast</td>
<td>ABBA and CVEC/FireFly</td>
</tr>
<tr>
<td>Source</td>
<td>Albemarle Broadband Authority (ABBA) Incorporated</td>
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</tbody>
</table>


Virginia Telecommunication Initiative

**2020**
- $291,300 from DHCD
- 837 Locations Passed
- ABBA and CenturyLink Project Underway
- Delivery by March 15, 2021

**2021**
- $3,676,566* requested from DHCD
- 2,322 Locations Proposed
- ABBA and CenturyLink Award Notice
- End of 2020/Start of 2021

**FUTURE**
- CARES Act
- Digital Equity
- Redundant Fiber Rings for the Region
- CVEC/FireFly Continued Work
- Additional Partnerships
Our Partnership Goal: Digital Equity and Universal Broadband

**Countywide survey** to report internet access speeds and school division family surveys (online and phone) to determine areas of no or low connectivity

**Red Circles**: ACPS Family Reported Internet Access Areas

**Pink Polygons**: Broadband expansion areas

The public has access to this [interactive map](#)
CARES CRF Process

May:
Distribution of CRF Funds

June:
County CRF Review Process and Teams Established

July 1:
BOS Authorized CRF Budget for Technology and Broadband Projects

July 1-24:
Development of CRF Plans: Procurement and Legal Review + CRF Review Team

July 22:
Broadband Authority Approves CRF Use

July 25:
CRF Review Team approval; *Contract Reviews Begin

Aug. 1-15:
Staff Finalize Contracts and Service Orders

Work Begins on Two CRF Projects Thanks for the VLBN Support
Challenges & Opportunities

Challenges Despite Having Funding

• Capacity to Plan the Work
• Workers to Perform the Work
• Amount of Time Required
• CARES Funding Deadline

Projects Currently Being Planned

• Electric Cooperatives
• Use of ACPS Educational Broadband Service (EBS)
• Community Center Installations
• FireFly Expansion

ABBA partners with Internet Service Providers, Citizens, Business and Governments to advance broadband to every citizen and business in Albemarle County.
Albemarle County Public Schools (ACPS)

- Vision for Student Learning: “All learners believe in their power to embrace learning, to excel, and to own their future.”
- Comprised of 26 buildings surrounding Charlottesville; includes a mix of rural, urban, and suburban schools serving 13,500 students
- Over 30% of the population economically disadvantage and approximately 10% identify as English Language Learners
- Internet connectivity for students at home is a critical component for meeting the learning needs of all students
- ACPS@Home Project established December, 2019
Multi-Prong Approach: ACPS@Home

• Partnering with County Government to expand broadband
• Utilizing public-private partnerships to expand connectivity for students, including Shentel, Kajeet and Comcast
• Established a digital equity position within the technology department by re-allocating an existing position
• Issuing hotspots to students
• Serving as the financial sponsor for providing broadband service from the partner internet service provider (ISP)
• Funding these efforts enabled by leasing the ACPS Educational Broadband Spectrum to Shentel, a commercial internet provider
Determining Needs for Start of School:

- All students in grades 3-12 historically issued an ACPS laptop
- Students in grades K-2 needed to be provided an ACPS iPad (historically had been at a 2 to 1 student to device ratio)
- Teacher Professional Development (PD) needs and resources for delivering virtual instruction both synchronously and asynchronously
- Data Dashboard illustrating low/no internet data reported by families
Supporting Our Students & Teachers

- ACPS@Home Project greatly accelerated to support 97% virtual learning for fall 2020
- [Return to School website](#) to provide families support and answers to questions and issues; multiple avenues to access technology support
- School based technology staff: 14 Learning Technology Integrators and 15 Technology Support Specialists (TSS)
- Teacher [Professional Development & Technology Resources Library](#)
- Policies for [students](#) and [staff](#) to support successful use of technology
- Family “Tech Nights” offered by building based technology staff in partnership with teachers
- Family “[Field Guide](#)” to technology in 2 languages
Current State & Moving Forward

• Kajeet Wifi “smartspots” – over 1700 active, each using avg of 8GB/day
• Comcast ‘Internet Essentials’ participants – 47 households and growing
• Unprecedented number of support needs being met 7 days/week
• Students with no internet, or internet we cannot improve working on virtual learning in our school buildings
• School WiFi signal extended to school parking lots for community access
• Continuing to address connectivity needs as they arise, realizing these are interim measures until our long term sustainable goal is reached

Shared Goal with Albemarle County Government: Broadband to every citizen and business in Albemarle County
Digital Inclusion and K-12 Education: The Impact of COVID-19 on Students and Educators

Thank you, Christine and Michael!
Joshua Edmonds, Director of Digital Inclusion, City of Detroit
Connect 313 X Connected Futures
2019 + 2020 “Major Wins” Timeline

- City hires first director of digital inclusion (Q1-2019)
- Mayor Duggan approves “Connect 313” (Q1-2019)
- City hosts first Digital Inclusion Summit (Q2-2019)
- City distributes 75 laptops + 6 months of free internet to DHC families for Christmas (Q3-2019)
- City hosts Digital Inclusion Funder Convening and Congressional Testimony (Q4-2019)
- Human I-T signs Focus Hope lease and Connected Futures (Q2-2020)
## Data Framing

<table>
<thead>
<tr>
<th>Topic</th>
<th>%</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>% W/O Internet Access</td>
<td>29.4%</td>
<td>Internet of any type</td>
</tr>
<tr>
<td>% W/O Computers</td>
<td>45%</td>
<td>Desktop/Laptop</td>
</tr>
<tr>
<td>% W/O Wired Broadband</td>
<td>52%</td>
<td>High Speed Internet</td>
</tr>
<tr>
<td>% Cellular Only</td>
<td>20%</td>
<td>Cell Phone Only Hh</td>
</tr>
<tr>
<td>DPSCD <em>Under connected</em></td>
<td>90%</td>
<td><strong>Struggling to maintain internet/computer</strong></td>
</tr>
</tbody>
</table>
Core Function Partners (Outside of Funders)
## The Pieces & Parts

<table>
<thead>
<tr>
<th>Organization</th>
<th>Core Digital Inclusion Role(s)</th>
</tr>
</thead>
</table>
| Detroit Public Schools Community District (DPSCD)                 | • Fundraising  
• Device User Testing  
• Data Provider/Aggregate  
• Account Holder                                                                 |
| Human I-T                                                         | • Family Tech Support  
• Long-Term Device Replacement Partner  
• Data Aggregate/Intake                                                                 |
| T-Mobile                                                         | • LTE Provider (6months)                                                                     |
| DTE                                                              | • Project Management  
• Funding Support                                                                 |
| Comcast                                                           | • Home Internet Provider (Internet Essentials)                                                 |
| City of Detroit                                                   | • Subject Matter Expert/Chief Advocate  
• Funder Convener/Co-signer  
• Sustainability Plan Developer  
• Ecosystem Owner                                                                 |
Major Funders (100k+)

• Detroit Public School District
• DTE Energy
• Kellogg Foundation
• Dan Gilbert Family Foundation
• TCF Bank
• United Way of Southeast Michigan
• Skillman Foundation
• Ralph C. Wilson Jr. Foundation
• Quicken Loans Community Fund
• JP Morgan Chase
• FCA
• General Motors
• Hudson-Webber Foundation
• Fisher Foundation
• John Kennedy
• Anonymous Donor

Total Raised: $23 Million on behalf of 51K Students
The Larger Picture
Digital Inclusion and K-12 Education: The Impact of COVID-19 on Students and Educators

Thank you, Joshua!
Digital Inclusion and K-12 Education: The Impact of COVID-19 on Students and Educators

Questions and Comments

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How Broadband Enhances Local Economies

November 18, 2020

2:00 pm EST

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BroadbandUSA is available to help communities with their broadband access and digital inclusion efforts

**For General Information:**

- 202-482-2048
- broadbandusa@ntia.doc.gov
- https://broadbandusa.ntia.doc.gov/resources

**To Request Technical Assistance (TA):**

- Broadband TA Request Form - https://broadbandusa.ntia.doc.gov/ntia-common-content/how-we-can-help

**BBUSA Resources**

- Implementing a Broadband Network Vision: A Toolkit for Local and Tribal Governments
- Community Broadband Roadmap Toolkit
- Guide to Federal Funding of Broadband Projects
- Using Partnerships to Power Smart Cities