

Access, Range, Partnerships, Adoption

Case Studies of U.S. Broadband Projects

December 2022

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Executive Summary

The COVID-19 pandemic prompted mandatory state stay-at-home orders and highlighted the need for municipalities to improve and expand internet access with fiber optic technology. With a historic \$65B in federal funding, localities are employing innovative approaches to enhance local broadband connectivity. Our research group studied numerous cases across the United States and found that a lack of funding and political will, along with incumbent Internet Service Provider (ISP) resistance, were major impediments to expanding broadband internet. From our five selected cases, we learned that innovative partnerships helped resolve these challenges while providing local governments with numerous benefits such as increased funding, outside management expertise, and strategies to mitigate state preemption.

Methodology

- Determine if state preemption was an impediment to expansion
- Identify localities with creative and concerted approaches to enabling broadband access/expansion
- Select counties subject to state preemption: **FL, PA, TX, VA**
- Interview key stakeholders (public sector and private sector partners)

Case Studies

City of Brownsville, TX

- 📍 Urban
- 👤 186,738 (2020)
- 🏠 Median Household Income: \$40,924 (2020)
- 💰 \$19.5 million from ARPA + \$70 million from private partner
- 🌐 100 miles of city-owned middle-mile fiber backbone + 550 miles of private Fiber to the Home (FTTH) connections

COVID-19 “really laid very plain, raw and bare exactly what are the **consequences** born by a community that is **digitally disconnected**”

Palm Beach County, FL

- 📍 Urban
- 👤 1,497,987 (2021)
- 🏠 15% of students do not have internet access
- 💰 \$40 million from ARPA + \$15,750,000 from CARES
- 🌐 + \$70,000 from Title IV Part A
- 🌐 + \$962,939 from Education Foundation of Palm Beach County
- 🌐 > 1,000 miles of fiber optic cables
- 🌐 + 812 poles planted
- 🌐 + 11,000 radios covering 450 square miles
- 🌐 + 4,000 temporary hotspots & internet sponsorships
- 🌐 + 142,000 Chromebooks to students

“Florida statute 350.81 **prohibits** the county from delivering **broadband service** to the general public in areas **not owned** by the government (such as parks, libraries, etc.)”



Presentation



Full Report

Challenges

Accessibility



Adoption



Affordability



York County, PA

- 📍 Mostly rural
- 👤 458,696 (2021)
- 🏠 3/4 of the county do not meet the FCC 25/3 mbps standard
- 💰 \$25 million from ARPA
- 🌐 144 miles of city-owned middle-mile fiber backbone with affordability programs for private FTTH connections

“If we thought that the **private sector** could do this without us, then **we would get out of the way**”

Shenandoah County, VA

- 📍 Rural
- 👤 44,752 (2021)
- 🏠 Collaborative approach to broadband expansion with 3 salient actors; Shenandoah County Public Schools, County Government, and Shentel
- 💰 \$12.1 million from VATI, \$3.7 million from ARPA, \$17 million from Shentel
- 🌐 600 miles of fiber delivered to 58,000 homes in 1 year (2021)

99% of the County previously used **Digital Subscriber Line (DSL)** internet.

City and Borough of Wrangell, AK

- 📍 Unified Home Rule Borough
- 👤 2,055 (2021)
- 🏠 Wrangell does not feature state preemption
- 💰 \$15 million from ARPA
- 🌐 Pipeline: 2.5 GHz of broadband spectrum to bring 4G, 100 Mbps symmetrical wireless connectivity to roughly 10,000 homes

“We don’t have a population density problem, we have a **middle-mile problem**”



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Findings

Preemption not a major roadblock

In PA and TX, the state does not allow local municipalities to establish and provide a public broadband network to customers directly. In VA, preemptive law mandates that a broadband provider must conduct a feasibility study before expanding access to unserved and underserved communities. The funding (financing) risks associated with the broadband expansion projects in our cases were allocated across respective stakeholder groups. Brownsville, TX engaged in a formal P3 for its fiber optic network. Our cases in FL and VA showed diverse federal and state funding sources. In FL, the state law mandates that local projects are only eligible to receive one source of federal funding. Palm Beach County proceeded with their network expansion by breaking entire projects into phases and applying different federal grants to the separate projects. Finally, a recurring theme across our cases was the ability of incumbent providers to deliver additional funding (financing) and technical expertise for expanding broadband.

Lack of funding: a real challenge

Federal support, especially the ARPA Act, was instrumental in funding the cases that we examined. Without substantial funding toward broadband, projects do not get actualized.

“The availability of state, federal and Shentel funding closed the funding gap” for Shenandoah County, and without ARPA, “...the Tribal council [in Wrangell] would not be able to build out the necessary infrastructure required to access their exclusive mid-band broadband spectrum.” In Palm Beach, the CARES and ARPA Acts made the roadblocks of the last decade become nonfactors, and in both Brownsville and York ARPA enabled the municipalities to leverage private funding.

Partnerships matter

The "P3-style" approaches used in PA, TX and VA provided municipalities with additional funding for their projects, increased local knowledge in network planning, operation, maintenance and customer service and can help build a local workforce in broadband.

Political will is key

Political will played an important role in starting and progressing broadband projects. Many projects did not get off the ground until community leadership decided it was important. COVID-19 helped communities realize the importance of broadband.

Incumbent providers can be potential roadblocks

While not a hurdle for all the cases studied, incumbent providers did strongly resist municipal-led broadband projects in TX and PA. In the two cases, incumbents paid for advertising campaigns to boast their services, filed Freedom of Information Act requests demanding the release of proprietary business models, and argued that the project was unlawful. The municipalities prevailed with detailed survey data that showed inaction by incumbent providers.

Recommendations

Do it now!

There are numerous sources of funding available that can facilitate and expand local broadband efforts

No need to go it alone; partner up

Establishing partnerships with willing incumbent providers or external partners can increase financial feasibility of broadband and can help save on operation and maintenance

Preemption and state rules do not have to be a barrier

State-specific partnerships and creative solutions exist

