



Federal Reserve
Bank of Dallas

Community Broadband Solutions in Response to COVID-19

Strategies for Local
Governments & School
Districts

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Community Development
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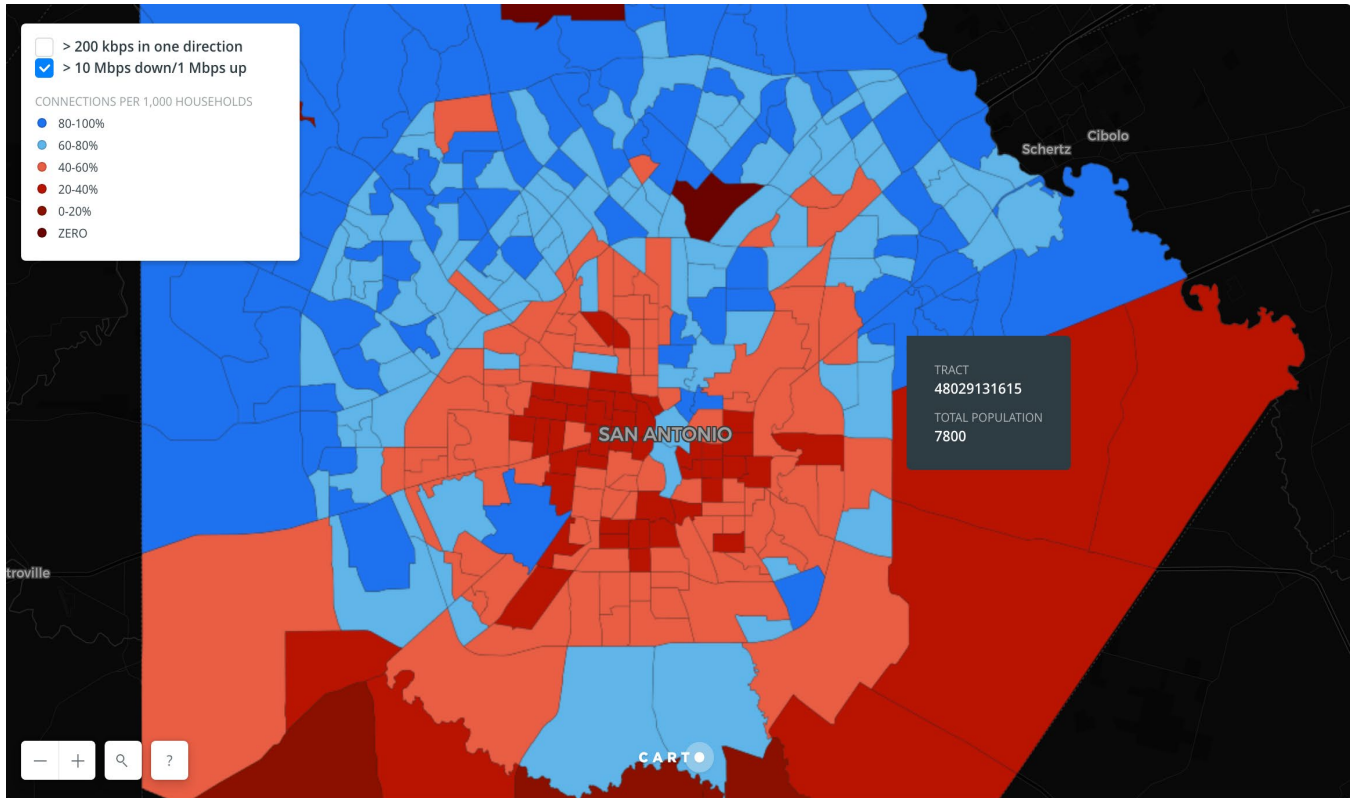
IDRA Webinar for School
Districts

The views expressed are my own and do not necessarily reflect official positions of the Federal Reserve System.

Quick Response Broadband Solutions

- Local Governments and school districts are well-positioned to narrow the digital divide during the COVID-19 Pandemic to meet the directives for social distancing, sheltering in place, and telemedicine required of employers, schools, and the public.
- The goal is for those on the wrong side of the digital divide to have access to remote work, online learning, online banking, telemedicine, ordering online for groceries and supplies, staying in touch with loved ones and coordinating care, etc.

San Antonio's Digital Divide



The Homework Gap

- The homework gap, problematic under normal circumstances, is compounded when schools have to shut down and move to online platforms.
- In the U.S., in most urban areas, 30 percent of households earning less than \$50,000 a year do not have an internet subscription, according to the U.S. Census Bureau.
- Within the San Antonio Independent School District (which covers parts of the Westside, Central, Eastside, and Southside neighborhoods) 60 percent of high school students do not have access to the internet at home.
- Lanier High School, one of the schools in the heart of the Westside, has 75 percent of students without access. By comparison, in Northeast and Northside Independent School Districts, nearly 90 percent of students have access to the internet at home (Rivard Report, March 2, 2020)

Overview

Immediate Solutions Within School District and Local Government Control:

- Redirect Existing and New Building WiFi Hotspots Outward to Serve Public.
- Leverage Public Network & Vertical Assets to Support Neighborhood Wireless Solutions
- Mobilizing Expansion of Internet Service Providers' (ISPs) Low-Income Offerings
- Incentivize Wireless Carriers and Computer Industry to Donate Connectivity Devices
- Longer-Term: Expand Municipal and Public Partner Networking Assets to Support Community Broadband Solutions
- Additional Resources: CRA and FRB Online Learning Tools

Redirect Existing and New Building WiFi Hotspots Outward to Serve Public

- Existing Public Buildings (schools, libraries, etc.) with WiFi Hotspot
 1. Adjust antennas to transmit outside of building
 2. Leave on WiFi hotspot 24/7
 3. Establish policies for connecting users to the network (SSID and password)
 4. Connecting from some nearby homes will be possible, and connecting from parking lots (rules to stay in car can be implemented during pandemic)
 5. Set policies to lessen the risk of network congestion

Redirect Existing and New Building WiFi Hotspots Outward to Serve Public (cont.)

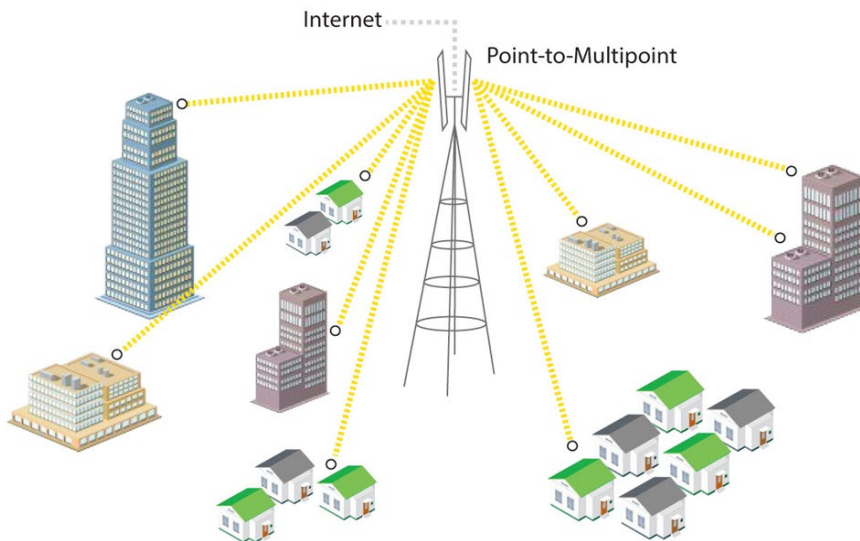
- Create Public Building WiFi Hotspot
 1. Ensure there is adequate backhaul to building
 2. Install WiFi hotspot
 3. Follow items 2-4 above
- On March 23, 2020, the FCC's Wireline Competition Bureau confirmed that community use of E-Rate supported WiFi networks is permitted during school and library closures due to the COVID-19 pandemic.
 - “We leave it to individual schools and libraries to establish their own policies regarding use of WiFi networks during closures, including hours of use.”
 - Here is a link to the order:
<https://docs.fcc.gov/public/attachments/DA-20-324A1.pdf>

Leverage Public Network & Vertical Assets to Support Neighborhood and Housing Authority Multi-family Sites with Wireless Solutions

- Build Single-to-MultiPoint Neighborhood Wireless Network
 1. Each unit serves neighborhood area of 5x5 miles
 2. Divide service area into four quadrants (50 to 150 homes per quadrant)
 3. Receiver devices installed at each home
 4. Identify public vertical asset with line-of-sight over each quadrant - 5GHz (or 900 MHz w/o line-of-sight)
 5. Leverage municipal fiber for backhaul to vertical asset
 6. Establish policies for connecting users to the network
 7. Set policies to lessen the risk of network congestion
- Example based on Pharr-San Juan-Alamo ISD & City of Pharr free internet pilot project for Digital Opportunity for Rio Grande Valley

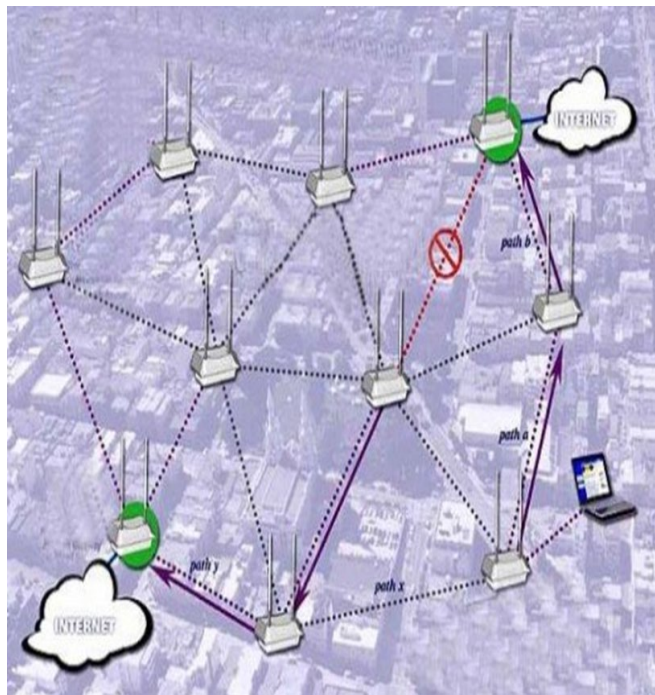
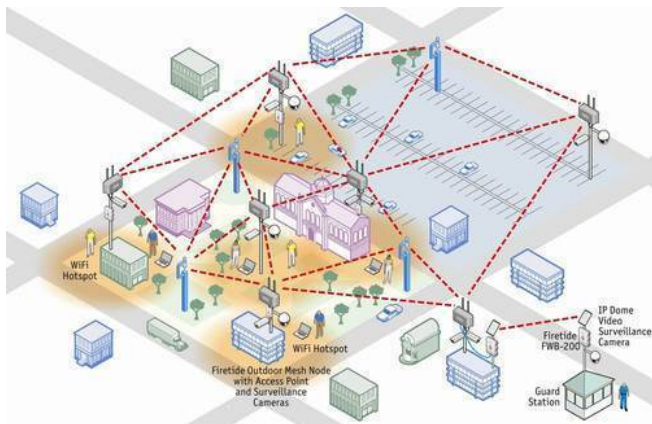
Leverage Public Network & Vertical Assets to Support Neighborhood Wireless Solutions (cont.)

- Single-to-Multi-Point Wireless Network Topology that can cover a neighborhood



Leverage Public Network & Vertical Assets to Support Neighborhood Wireless Solutions (cont.)

- WiFi Mesh Network for public buildings, parking lots (below)
- Same conceptual Mesh Network can be applied to cover a neighborhood (right)



Leverage Public Network & Vertical Assets to Support Neighborhood Wireless Solutions (cont.)

- Support expansion of San Antonio Housing Authority's SMARTI model— solar powered mobile WiFi mesh network to connect families in their homes for an entire housing authority multifamily development.

Mobilizing Internet Service Providers (ISPs) to Respond to Pandemic Crisis

- Many incumbent ISPs have low-income broadband products that are not well subscribed
 - Call on ISPs to offer free service on a temporary basis, irrespective of prior outstanding balances
 - Expand WiFi hotspots in low-income residential areas to provide free access
 - *Work with ISPs to create a campaign to advertise low-cost products, and Lifeline \$9.25 subsidy program for low-income households; work with ISPs to increase households utilizing Lifeline.*
 - After the free period during the national emergency, the goal should be to keep people connected using Lifeline or other subsidy programs that can be developed. *This will require community leadership.*

Mobilizing Internet Service Providers (ISPs) to Respond to Pandemic Crisis (cont.)

- Ex: Spectrum Internet Assist - \$17.55/mo, including:
 - Free internet modem
 - Internet speed up to 30 Mbps
 - In-home WiFi for \$5/mo extra
- National Digital Inclusion Alliance Low-cost internet guide:
<https://www.digitalinclusion.org/free-low-cost-internet-plans/>

Incentivize Wireless Carriers and Computer Industry to Donate Connectivity Devices

- Work with wireless carriers (i.e., AT&T Wireless, Verizon, and T-Mobile/Sprint) to create or expand personal WiFi hotspot account programs with schools and other nonprofits.
- Reach out to computer industry to expand programs for WiFi enabled laptops, tablets, cell phones, and related connectivity devices.
- Digital Inclusion Alliance San Antonio (DIASA) member organizations, schools, and the private sector collaborate to meet the needs for computers/devices, and online digital skills training and support.
 - Goodwill's computer refurbishing program

Longer-Term: Expand Municipal and Public Partner Networking Assets to Support Community Broadband Solutions

- Government-owned fiber networks may be utilized to bridge the digital divide in communities across the country.
- The COVID-19 pandemic has revealed the extent to which the digital divide is a principle vulnerability that prevents the development of resilient communities with catastrophic public health, educational, and economic consequences to the entire nation.
- **Because of their obligation to protect public health, grow the local economy, manage public rights-of-way, convene stakeholders, and in many cases, their control over fiber infrastructure, cities are uniquely qualified to close the digital divide.**
- See forthcoming Dallas Fed publication, “Tipping Point: Broadband Is Essential Infrastructure—A Guide for Local Governments,” by Jordana Barton and Gabriel Garcia, 2020.

Community Reinvestment Act (CRA)

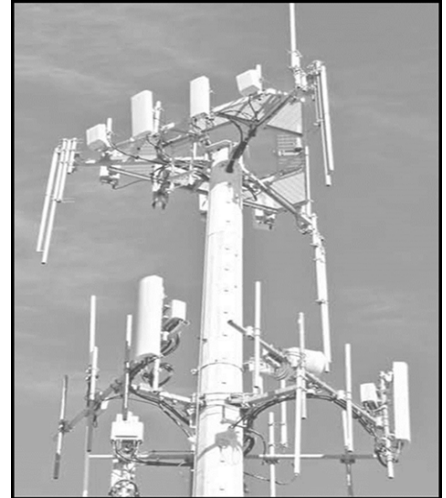
- Federal law passed in 1977 to address redlining—the denial of credit and access to financial services to individuals based on where they live.
- Encourages banks to make loans and investments (including grants) and provide services in low- and moderate-income (LMI) communities.
- The CRA defines community development as encompassing affordable housing for LMI individuals; community services targeted to LMI individuals; activities that promote economic development by financing businesses or farms with gross revenues of \$1 million or less; activities that revitalize or stabilize LMI geographies, designated disaster areas or distressed or underserved nonmetropolitan [rural] middle income geographies.
- Intended to be *broad, flexible* and *responsive*.

2016 CRA Interagency Q & A Guidance

- Broadband is included as a form of infrastructure investment—an essential community service.
- Under the CRA service test, banks should show evidence that their “alternative delivery systems” using online, mobile banking and financial technology are being adopted and are effective in providing services to LMI individuals. Opportunity for innovation.
- Digital Inclusion:
 - Workforce Development was already included in CRA. Digital skills gap; preparing workers for the changes in industry and the digital economy; closing the homework gap; remote work; attracting business/jobs/the ecosystem for entrepreneurship
 - Small Business Development was already included in CRA. Added an example to include supporting technical assistance for businesses in the use of technology
 - Expanding access to financial services/access to capital for small business through digital technology

Broadband: A Platform for all Areas of CRA and Community Development

- Essential Infrastructure
- Workforce Development & Education
- Access to Financial Services
- Small Business Development
- Affordable Housing/Essential Infrastructure
- Health Care
- Disaster Recovery/Resilience



Federal Reserve Online Learning Tools

- **Building Wealth:** *Building Wealth* is a free personal finance education resource designed for consumers, community leaders, teachers and students. *Building Wealth* helps individuals to develop and plan for building personal wealth. It is widely used by community organizations and banks as a resources for financial education workshops. The Texas State Board of Education approved *Building Wealth* as a resource for personal finance learning standards in high school economics classes.



Federal Reserve Online Learning Tools

- **Navigate: Exploring College and Career:** *Navigate: Exploring College and Career* was developed by the Dallas Federal Reserve in response to an identified need within our public school systems. Since the creation of this publication six years ago, over 1 million copies have been distributed. Students and their families may not be familiar with the pathways to education after high school and *Navigate: Exploring College and Career* provides information to begin preparing for success. It guides students through an exploration of skills and interests and then helps them chart an educational path through high school so when they graduate they are ready and prepared to take the next step, whether that is career or college.

Website Links:

- Building Wealth: <https://www.dallasfed.org/-/media/microsites/cd/wealth/index.html>
- Economic Education: <https://www.dallasfed.org/educate>
- Navigate: Exploring College and Career: <https://www.dallasfed.org/educate/navigate.aspx>
- Everyday Economics: <https://www.dallasfed.org/educate/everyday.aspx>

Q & A

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Publications on broadband and digital equity:

- [Preparing Workers for the Expanding Digital Economy](#)
- [Telehealth Initiatives Highlight the Need to Close the Digital Divide](#)
- [Closing the Digital Divide: A Framework for Meeting CRA Obligations](#)
- Forthcoming, “Tipping Point: Broadband Is Essential Infrastructure—A Guide for Local Governments,” 2020.