



Fixing the Digital Desert in Rural Ohio

The absence of reliable, high-capacity broadband in rural Ohio detrimentally impacts the economic, educational, and cultural well-being of our residents, from school children and working-age adults to the elderly. The digital desert leaves residents of rural Ohio at a distinct disadvantage, deepening the gaps in employment, wages, educational attainment and access to healthcare.

As rural communities work to address the challenges presented by the global pandemic, these conditions are exacerbated. Residents are pressed to work remotely, access public resources online, complete educational activities electronically, and conduct and operate their businesses in alternative ways.

The persistence of the digital desert in many parts of rural Ohio ties to two key factors:

- a. **The existing copper telecommunications infrastructure is beyond end-of-life and must be replaced.** The decrepit copper, much of it 50+ years old, cannot support high-speed broadband and no longer delivers reliable telephone service, resulting in significant life/safety risks.
- b. **Low population densities** inherent across rural Ohio prevents the creation of profitable broadband businesses in the absence of significant subsidies.

The areas served by the large incumbent telephone companies typically experience the greatest deficits in service in rural Ohio. By comparison, small independent local exchange carriers (ILECs) have often performed much better, making necessary investments in their infrastructure to provide adequate broadband service.

Addressing these shortcomings on behalf of the residents of rural Ohio requires **bold action now** to rebuild the telecommunications infrastructure across rural Ohio, replacing the no-longer-usable copper cables. In areas with rugged terrain and/or heavy foliage cover, fiber-to-the-premise offers the most cost-effective option. In areas with less challenging geography, high-quality fixed wireless services offer an alternative technology to meet the needs.

Further, the FCC definition of broadband as being a minimum of 25 Mbps download and 3 Mbps upload (25/3) has become outdated, particularly when planning how to invest funds for deployments. We recommend a revised minimum of 100 Mbps download and 20 Mbps upload (100/20).

Example from the field:

Research undertaken in southeast Ohio revealed that the extent of the “digital desert” is more pervasive than is widely understood. Data informed research indicates that 70% to 80% of households in the 8-county Buckeye Hills Regional Council rural service area still lack service operating at the FCC-defined minimum of 25/3 despite claims of service providers to the contrary. More data and information from recent research, supported by the Appalachian Regional Commission, Athens County Economic Development Council, and the Ohio University Voinovich School, are available at <http://buckeyehills.org/broadband>.

Rebuilding the telecommunications infrastructure serving these 60,000 unserved households will require a subsidy of \$360 million, equivalent to the cost of building 20 miles of highway. Extrapolating across Appalachian Ohio the unserved household count rises to 270,000 requiring a subsidy of \$1.7 billion, equivalent to 90 miles of highway construction. Pending extrapolation across the remainder of rural Ohio will complete the statewide picture.

Example from the field:

Benton Ridge Telephone Company, a small ILEC operating in northwestern Ohio, participated in the FCC’s Connect America Fund Auction 903 in 2018. They won significant funding to address the broadband needs across wide swaths of the Ohio plains. Now operating under the name Watch Communications, the company is deploying a combination of fiber and fixed wireless to be completed over the next few years. (Connect America Fund was the precursor of the Rural Digital Opportunity Fund.)

Power of Public-Private Partnerships

As the state of Ohio and our Federal partners develop programs and guidelines to assist with the deployment of broadband to unserved and underserved rural residents, public-private partnerships provide crucial local oversight functions to assure that expenditures of public funds achieve the promises made by ultimate recipients of the funding such as internet service providers. In the absence of such oversight rural Ohio risks the continuation of suboptimal spending.

For instance, the explicit mission of the Universal Service Fund (USF) administered by the FCC is to level the playing field between urban and rural areas in terms of telecommunications services. The FCC dispensed \$70 billion of USF funding to incumbent telephone companies over the past twenty years across the country, yet the digital highway in rural America is missing in action and service is hampered by dilapidated copper infrastructure.

We can turn again to the FCC for an example of how to make public-private partnership work. In the Rural Health Care Pilot Program, the FCC awarded funds to healthcare systems and consortia. The awardees conducted competitive bidding to select a private carrier partner focused on achieving the best value for the funding available. Only when the selected carrier met specific deployment milestones did the awardee approve payments, monies that went directly from the FCC to the carrier.

This same strategy could be utilized for all Federal and State broadband funding in which multiple programs may allocate funding to cover a specific geographic area. The public partner in that area conducts the competitive bidding and monitors compliance, thus controlling the flow of payments to the carriers to ensure that the commitments are met before the monies are disbursed.

To make this model work, the funding programs must also pay for the public partner's administrative costs, capped to a reasonable percentage of the overall funding. The FCC's refusal to cover administrative costs in the Rural Health Care Pilot Program limited success to those recipients with pockets deep enough to cover these programmatic management costs.

Example from the field:

The Southern Ohio Health Care Network (SOHCN) won \$16 million from the FCC under the Rural Health Care Pilot Program in 2008. Through competitive bidding, the SOHCN awarded a contract to an independent local exchange carrier (ILEC). The ILEC built and operates the network, providing services to hundreds of health care facilities and delivering world-class business broadband in dozens of small towns. As project milestones were reached, verified by SOHCN personnel, payments by the FCC to the ILEC were authorized.

Competitive Bidding Versus Reverse Auction

Establishing a set amount of funding for a given geographic area and using competitive bidding to select one or more carriers to provide services will make better use of available funding than reverse auctions. The competitive bidding approach will deliver the **maximum possible service/speed** provided to the maximum number of consumers given the allocated funding. Reverse auctions have done a good job of reducing expenditures but at the expense of achieving the best possible outcomes for the end user.

Public Disclosure

Full public accounting of all expenditures under both Federal and State programs will be crucial in rebuilding trust. As an example, many parties have sought access to the detailed data about how incumbent carriers spent the \$70 billion in Universal Service Funding allocated to them by the FCC over the past twenty years. The FCC explicitly denies public access to these spending details claiming the protection of trade secrets.

This lack of transparency prevents crucial watchdog functions and has clearly resulted in sub-optimal results with rural America now saddled with decrepit copper instead of usable telecommunications infrastructure. One condition of all future Federal and State funding needs to be complete transparency in cost accounting.

Strategies for Delivering Broadband in Rural Ohio

Quick Fixes

Limited wireless deployments in targeted areas. Homes and small businesses within fixed wireless reach of existing fiber assets could be served relatively quickly. For instance, fixed wireless services could be launched from fiber-served schools, libraries, healthcare facilities and government offices by adding bandwidth at these community anchors. The selected fixed-wireless provider would deploy “head-end” equipment and small towers to extend the reach. These deployments, though small, could serve as an important stop gap.

Creating a sustainable business model will require 100% grant funding for the cost to establish the fixed-wireless “head-end” and for the cost to serve. Pre-negotiated agreements regarding rates charged to customers and additional subsidies for low-to-moderate income households could be offered in addition. Revenues generated would cover the ongoing operating costs.

Extend existing 4G and mobile services. Signal boosters and 25-foot masts could be quickly deployed to expand the reach of 4G signals in areas with marginal service, taking a ¼ bar signal and turning it into a strong, usable service. This effort could be locally led and focused on connecting key personnel, e.g. teachers, healthcare professionals, etc. We recommend 100% grant funding for the booster, mast and installation.

Deploy mobile hotspot equipment on public vehicles. Public vehicles including transit vehicles and school busses could be outfitted with multi-carrier LTE routers to provide mobile hotspot services. Equipment for these deployments is common and could be obtained for as little as \$1,000 per vehicle for a very basic deployment. This model is being executed in some Ohio locations including the Princeton City School district in Cincinnati. We recommend 100% grant funding for all equipment necessary to retrofit the selected vehicles as well as for the monthly recurring costs for the LTE services.

Clearing the Path Through Public Policy

Cap or subsidize pole ‘make ready’ costs. “Make-ready” costs related to pole infrastructure in aerial fiber deployments can compose up to half of the project’s costs. These make-ready costs in themselves can vary up to 40%. Having limits on pole make ready costs or offering subsidies toward these costs could ease concerns of providers and increase bid response rates.

Support the involvement of electric and broadband cooperatives, local government, and regional councils in the resolution of the digital desert. Such regional entities focus on serving residents and ensuring sufficient broadband services without a short-term focus on investment rate-of-return. These

groups can be locally focused around existing utility service areas or other area of interest as determined by stakeholders.

Pass multi-use easement legislation. This action could be taken quickly to ease the burden on providers attempting to formulate and execute fiber deployment projects. The proposed legislation would authorize any entity expanding last-mile broadband access to install fiber on existing utility poles without separate easements. Such legislation should also require restoration of any damage by the installation of the fiber on the property.

County government property tax waivers. The property tax burden on deployment of broadband services can deter such investments, tipping the business case into the “red.” Waiving property tax on new telecommunications infrastructure will help incentivize investment and may be able to count as match with some funders.

Long-Term Broadband Solution for Rural Ohio

Create public programs to rebuild Ohio’s rural telecommunications infrastructure, providing the necessary subsidies and grant funding. All areas lacking residential broadband services operating at 100/20 or above need to be included in the funding solutions, prioritized by level of need. The decrepit state of the existing 50+ year old copper infrastructure particularly affects the “rural expanse,” where population densities are below twenty households per square mile.

Creating a sustainable business model will require 100% grant funding for the cost to pass the households and 25% grant funding for the cost to connect a subscriber. Pre-negotiated agreements regarding rates charged to customers and additional subsidies for low-to-moderate income households could be offered in addition. Revenues generated would cover the ongoing operating costs.

Create a Rural Ohio Broadband Fund, supported through state general revenue or new bonding authority. Through the Development Services Agency/BroadbandOhio/Governor’s Office of Appalachia, this fund would provide up to \$50 million per year in state matching funds, subsidies and direct investment in fiber-intensive broadband infrastructure until the policy goals are achieved.

Leadership of Ohio Rural Development Alliance and Its Members

The Ohio Rural Development Alliance (ORDA) and its individual members offer the optimal nonprofit/public partner to work with Federal and State agencies as well as the private providers who would ultimately build and operate the networks in rural Ohio.

ORDA was established to ensure economic parity for Ohio's rural communities. ORDA's members advocate for policies that create sustainable and diverse economic growth and prosperity in rural communities. Visit www.ohiorda.org for more.

Example from the field:

Buckeye Hills Regional Council (BHRC) is a founding member of ORDA. A council of governments established pursuant to chapter 167 of the Ohio Revised Code, Buckeye Hills works in close collaboration with and on behalf of local governments and their representatives. Buckeye Hills orchestrates and delivers projects averaging \$57.7 million in federal, state and local funding annually to: support improvements to public infrastructure, positively impact economic development, improve access to healthcare, and provide supportive services to our region's seniors.

Buckeye Hills has also formed the Buckeye Hills Foundation, a 501c3 designated organization designed to provide research, education, and training to stakeholders in southeastern Ohio to address unmet community needs and to build capacity in local leaders and governments.

Buckeye Hills also maintains a strong relationship with Reid Consulting Group LLC located in Athens Ohio. Reid Consulting is a regional leader in formulating strategies for broadband deployment and advocacy.

Buckeye Hills continues to work with fellow ORDA members, including the Ohio University Voinovich School, OhioSE, and OMEGA, to advance rural broadband research and advocacy.