

PROJECT TITLE: Wayne County Broadband Expansion

PROJECT Applicant: Wayne Economic Development Corporation (WEDCO)

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COUNTY(IES) SERVED: Wayne County, Pennsylvania. Wayne County is classified as a transitional county.
Census Tract: 9607

GOAL / STRATEGY:

ARC Investment Goal #3: Critical Infrastructure - Invest in critical infrastructure especially broadband; transportation, including the Appalachian Development Highway System; and water/wastewater systems. **ARC Objective 1-** Promote the productive and strategic use of broadband. **PA Goal 3-** Critical Infrastructure, **PA State Objective PA 4:** PA will bridge the digital divide in the Appalachian region by delivering broadband and other telecommunications resources to residents and businesses. **PA State Strategy 3.4.1:** Support the deployment of affordable access to advanced communications through the use of multiple technologies.

PURPOSE:

ARC grant funds are requested to purchase telecommunications equipment (two specialized routers) that would be used for an innovative solution to enhance broadband and telecommunications services in an underserved rural county.

FUNDING:

Source	Non-Construction Activity	Equipment	Construction	Total	Percent	Status of Funds
ARC:		\$148,750		\$148,750	50%	Pending
Local:		\$148,750		\$148,750	50%	Committed
TOTAL		\$297,500		\$297,500	100%	

PROJECT DESCRIPTION:

Wayne County, in general, is underserved in terms of telecommunication services. Specific municipalities have very poor or no broadband or cellular service (mapping from Essential Management Solutions, Pottsville, PA available). The County has engaged a consulting firm to proactively address this fundamental economic and community development need, while simultaneously engaging in upgrades to their 911 public safety system. The proposed solution to enhancing broadband within the County is the development of "Ultra-broadband Meet Points" or special access to a new intra-county / internet access network. This ARC grant request is for specialized routers that would function as these meet points. Each carrier / internet server provider (ISP) within the county would have access to state-of-the-art high-speed Internet Protocol switching (+1 TB/s), partner program caching, and intercarrier optical / microwave connections. Each connection would have equal access to bandwidth based on fair queuing and bandwidth availability. The County would provide a carrier-grade routing platform for the aforementioned services. The internet service router would provide a common platform for each local carrier to interconnect to each other's networks for the purpose of local traffic exchange and partner internet exchange point or peering. IXP final distribution would be carried out by the local provider's network (cellular, DSL, cable, fiber, wireless). This core service will provide incentive for the local ISPs to further build-out their services to unserved and underserved areas as well as provide enhancements to their core infrastructure for business growth.

Matching technology service routers will be placed at two locations within the county. This equipment is widely used in adjacent areas and offers economy of management and guarantee of technical integration with currently operational networks within the region (NECORE, FirstNET, Pike County, Monroe County, etc.) Each router will be connected via a leased fiber to an unserved location in the county. This pair would provide a core and remote edge to the county's new IXP / intranet. The core location will consist of a Nokia 7750 SR-2s. It would provide an internet aggregation point capable of switching partnering carriers and business with 10GB access nodes. The second location would consist of a Nokia 7250 IXR-R6. This router is capable of high density 10 GE and 100 GE ports and is a scalable distribution point for remote interconnection. The network interface cards are

upgradable against IP / MPLS infrastructure. The County would be able to aggregate and provide traffic distribution to the local partner connections as well as a 10 GB link to the remote site.

Period of Performance: October 1st, 2020-September 30th, 2021

STRATEGIC RATIONALE:

Wayne County, located in the northeast corner of Pennsylvania, is bordered on the east by the Delaware River, and has the hilly, wooded terrain typical of the Pocono Mountains. Total population is 51,276 with a density of 71 persons/square mile. Over 65% of the County's land mass is forested. The County has the longest north-south span in the Commonwealth, which sets up three micro-economies within its boundaries resulting from varying degrees of infrastructure, commercial amenities, and natural assets. The northern half of the County is predominantly agricultural, interspersed with small community hubs. The topography in this area, river border, and lack of highway and other infrastructure negatively impacts growth. The corresponding low population density does not attract commercial investment in broadband and contributes to large tracts being unserved or underserved. The timing of this grant request is significant because it corresponds to both a 911 upgrade in process within the County and would support unique challenges and development activity, including:

- **Rural Health Model** – Wayne Memorial Health System is one of five rural health systems within the Commonwealth that are piloting a new revenue model based on wellness (PA Rural Health Model). Pennsylvania is leading the nation with this innovative approach to sustaining rural health systems. Serving residents outside of the hospital setting will require advances in telemedicine and broadband connection to outlying areas.
- **Agriculture Development** – The *Agriculture Development Plan for Wayne County* was completed in 2018 (funded in part by the ARC). Unequivocally, the consultants heard about deficiencies in broadband, "Farmers, in particular, cannot quickly access online auctions or precision monitoring, thus barring them from utilizing all tools at their disposal to improve their operations. Currently, only 493 of 711 farms have internet service and only 170 of these are in broadband connections. Such a deficiency of coverage negatively impacts direct market farms and farms that must have EDI [electronic data interchange] connections with transportation companies in a significant manner." In order to implement the recommendations of the Agriculture Plan, broadband services must be enhanced.
- **Education and Workforce Development** - Increasingly, school districts are delivering curriculum content via digital channels. Wayne Highlands School District is the seventh largest school district (out of 500) in the Commonwealth in terms of geographic size. Some students have an hour drive to the high school and cannot take advantage of the school's technology resources. In Wayne County, we have incidents of families driving to the closest library or even the parking lot of the McDonalds so the children can finish their schoolwork. Workforce development is driving economic development and we must be able to provide distance learning opportunities to all areas of the County.

Given the importance of broadband access and corresponding lack of investment by service providers in building infrastructure in rural, outlying areas, it is imperative for Wayne County leaders to press for innovative solutions. As a Pennsylvania Class 6 county, Wayne is limited in ways it can generate revenue. Therefore, we are pursuing ARC grant funding to support this critically important project.

COLLABORATIVE PARTNERSHIPS:

The County Commissioners will lead this project in partnership with WEDCO's Technology Committee. The Committee generally meets monthly and includes the Wayne County Commissioners, County IT and GIS departments, representatives from economic and workforce development and industry professionals. The Committee has convened meetings with all ISPs serving Wayne County and has mapped their existing service areas. The proposed project will be done in conjunction with 911 upgrades within the County and ultimately will involve public-private partnerships for services.

Wayne County also has relationships with Pike County and Monroe County regarding broadband and telecommunication advances. The County shares a 911 switch with Pike County, LHTC Broadband now has a presence in Wayne and Pike Counties which was supported by WEDCO's Technology Committee, and WEDCO participates in Monroe County's 5G initiative. The proposed project is a model for rural broadband deployment and would be shared with neighboring counties as appropriate.

PROJECT SUSTAINABILITY & CAPACITY:

The overall goal is to establish a new intra-county / internet access network. The County will maintain the network and will work with their consulting firm to determine the operational model that ensures that the network will self-sustain based on the revenue generated from ISPs partners. The consulting firm will engage existing and potential broadband carriers, content providers and local stakeholders in an effort to identify existing and planned capabilities, development opportunities and desired outcomes. There are certain benefits to the intra-county / internet access network that will attract its use by the ISPs: leapfrogs currently deployed technology, brings content closer to end users, enables co-location of providers in the IXP,

provides a direct link to partner networks (Microsoft, Google, Amazon, etc.), and expands service speeds beyond “package speed” to partners.

The County has been actively engaged in broadband expansion through their involvement with the WEDCO Technology Committee, which provides both access to industry experts and strategic planning. A current project is the Southern Wayne Broadband Expansion – the extension of a 144-count fiber line from South Canaan Township to the Sterling Business & Technology Park in Sterling Township. The County also has an internal Information Technology department; experienced personnel are providing technology support for computers, the network, and VOIP throughout the County departments and the County’s 911 emergency management network. Existing County partnerships, the County’s experienced IT personnel, and the consulting firm would be actively working on this project.

IMPACT MEASURES: (To be completed within a 3-year timeframe.)

Outputs:

- Purchase of 2 specialized routers that would provide access to new intra-county/internet access network
- 28 Communities served
- 10 Organizations served
- 15 Business served (ISPs at a minimum)
- 100 Households served
- 25+ in megabits per second (Mbps) increased

Outcomes: (Routers would provide a core and a remote edge for the County’s new IXP / intranet.)

- Leverage investment by County of Wayne in a broadband solution for underserved/unserved areas within County
- 10 Organizations improved
- 28 Communities improved
- 15 Business improved
- 100 Households improved

Congressional and Legislative Districts of:

House of Representatives: Representative Matthew Cartwright, 8th District of Pennsylvania

PA State Senators: Senator Lisa Baker, 20th District of Pennsylvania

PA State Representatives

- Representative Jonathan Fritz, 111th District of Pennsylvania
- Representative Michael T. Peifer, 139th District of Pennsylvania