

**Kansas Department of Commerce
Broadband Middle-Mile Testimony
Jade Piros, Director of Broadband
Transportation Committee
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Room # 582 N**

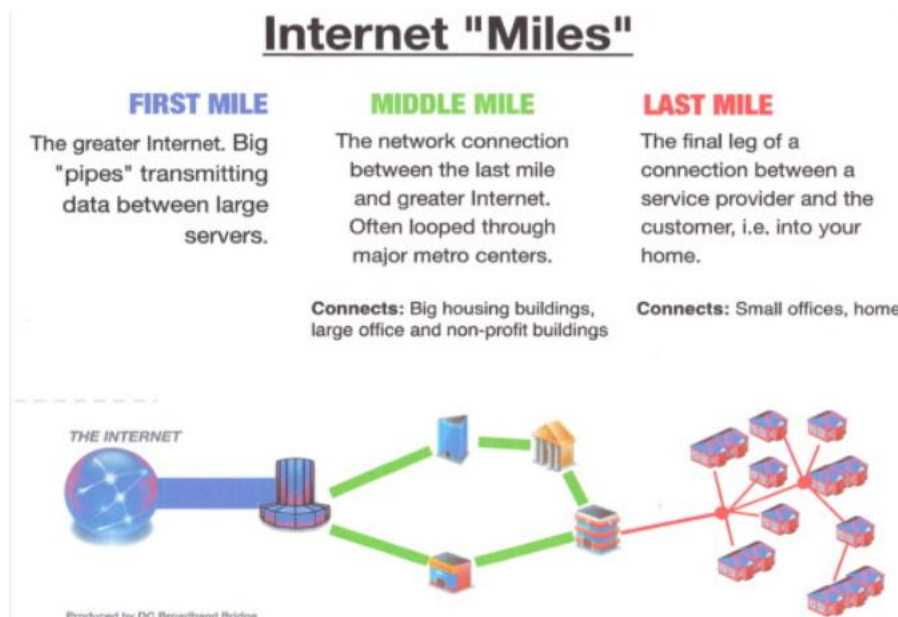
A middle-mile broadband network that is accessible to any provider is important to Kansas' goal to connect all Kansans with affordable, high-speed broadband. Recently, the State of Kansas applied for a competitive federal grant to facilitate the deployment of a middle-mile network. Below is an overview of middle-mile broadband, the state's application, and the importance of middle-mile to connecting more families and businesses to high-speed internet.

Background

Middle-mile is the section of the broadband network that connects the first mile (international) network to the last mile network which brings internet directly into homes and businesses.

Internet service providers pay monthly fees to connect to middle-mile networks. These lease fees can be high and are negotiated at different rates for different companies. These rates can prevent providers from going into rural areas where the return on investment cannot justify the buildout costs. High fees are also passed on to the internet customer, making monthly broadband costs higher in rural areas without middle-mile infrastructure.

Middle-mile networks, also called open-access networks, allow an internet service provider to connect to middle-mile infrastructure at the same wholesale rate that any other provider is charged. Driving down the access fees for middle-mile infrastructure through an open-access model would enable more providers to enter previously unserved markets.



Middle-Mile Benefits

A robust middle-mile network in Kansas will solve broadband gaps across multiple agencies, partners and the public.

Kansas Department of Transportation

Intelligent Transportation Systems (ITS) is a component of Kansas' 10-year, IKE transportation plan.^[1] KDOT has a need for fiber construction along primary and secondary freight routes to meet innovation demands outlined in the IKE plan. Kansas has earmarked \$10M annually for next-generation communications services for public safety, transportation management, connectivity, and other innovations. A middle-mile grant would allow Kansas to bring that planned investment forward, building next-generation infrastructure *today* and elevating Kansas to a leader in ITS. Capturing federal funding will also allow the state to save state highway funds for other transportation priorities or further broadband investment.

Emergency Management

Currently, over 85% of public safety in the state relies on land mobile radio (LMR) that is only partially connected with fiber. Many aspects of communications rely on wireless technology that do not provide future capacity requirements. Broadband usage by first responders in Kansas has grown exponentially as services become available. Middle-mile fiber expansion in Kansas will greatly enhance our responders' capability as well as the speed-of-response to better protect the citizens of Kansas.

Research and Education

Kansas is the only state in the region and one of only a few in the U.S. that does not have a dedicated fiber optic Research and Education backbone network.^[2] As such, they are required to lease fiber at high costs for our state universities. Most higher education institutions are not just internet customers but contain all the aspects of a small municipality (residential, government and commercial interests) within their campuses, and thus need the same level and grade of external connectivity that a carrier serving a small town would. Kansas anchor institutions –particularly public universities – would benefit greatly from a middle mile strategy.

Residents

More middle-mile fiber in the state would allow non-incumbent providers to enter unserved and underserved markets. New competitive entrants will drive down the cost of broadband to the consumer.

Commerce

Kansas has wide swaths of rural areas that are open for business, but these communities are missing the connectivity that allows them to be competitive in the global market. Bridging the physical divide in rural parts of our state with a virtual connection is how

Kansas not only sustains commerce, but grows it. Further, the post-COVID workforce is looking for economically competitive remote areas of work, creating opportunities for Kansas to grow our population and our workforce. Kansas has become a top state for economic development, as evidenced by large scale investments like Panasonic's new battery plant in DeSoto. These types of innovative operations require world class connectivity from a diverse range of service providers.

Agriculture

The agriculture industry is heavily technology dependent with more Internet-of-Things (IOT) devices being used in the field. This has led to an increased need for strong and stable internet connections to deliver real-time information. Investments in a statewide backbone will support the baseline infrastructure needed to support precision agriculture applications. This need has been made even more apparent by some agriculture businesses helping fund broadband projects through private matching dollars on grant applications.

Network resiliency

Middle-mile networks provide redundant options if a network pathway fails. This prevents long internet outages that negatively affect businesses and residents, Today the transport options in several rural markets are reliant on one provider and if that provider's network fails, it impacts available critical connectivity in that community.

Enabling Middle Mile Broadband Infrastructure (EMMBI)

A statewide open-access middle-mile network will enhance broadband connectivity in Kansas. Kansas currently lacks a network of this kind and has no funding at the state level to implement a middle-mile program.

The state applied for the competitive Enabling Middle Mile Broadband Infrastructure (EMMBI) program that was created through the Infrastructure Investment and Jobs Act. EMMBI is a competitive grant administered by the National Telecommunications and Information Administration (NTIA) and is focused on the construction, improvement, or acquisition of middle-mile broadband infrastructure. Kansas Office of Broadband Development partnered with the Kansas Department of Transportation, Kansas Research and Education Network (KanREN) and private providers, with input from Kansas Department of Agriculture and Kansas Division of Emergency Management, to submit a middle mile application in September 2022. The request was for nearly \$43 million with \$26.5 million in private and public matching funds. Award announcements will be made in March.

If awarded, this grant will be a strong start to a statewide middle-mile network of 550 miles. The network will deliver open-access opportunities at all layers of the broadband technology stack: conduit, dark fiber, and lit services. If awarded, Commerce and KDOT will work with our competitively selected private vendors, IdeaTek and Connected Nation. IdeaTek will design, build, maintain, and operate the proposed fiber network on an open-access basis to maximize use

of the new fiber facilities by a wide range of internet service providers, anchor institutions, and other users. Connected Nation will, in a neutral manner, market and lease the open access microduct, connected to open exchange points. The network will be owned and controlled by KDOT, with substantial fiber assets retained by KDOT for state and public purposes. This includes assets for the Kansas Research & Education Network (KanREN) to meet the needs of the education sector. As the lead agency in the application, the Kansas Office of Broadband Development will house a grant-funded middle-mile manager for oversight of the program.



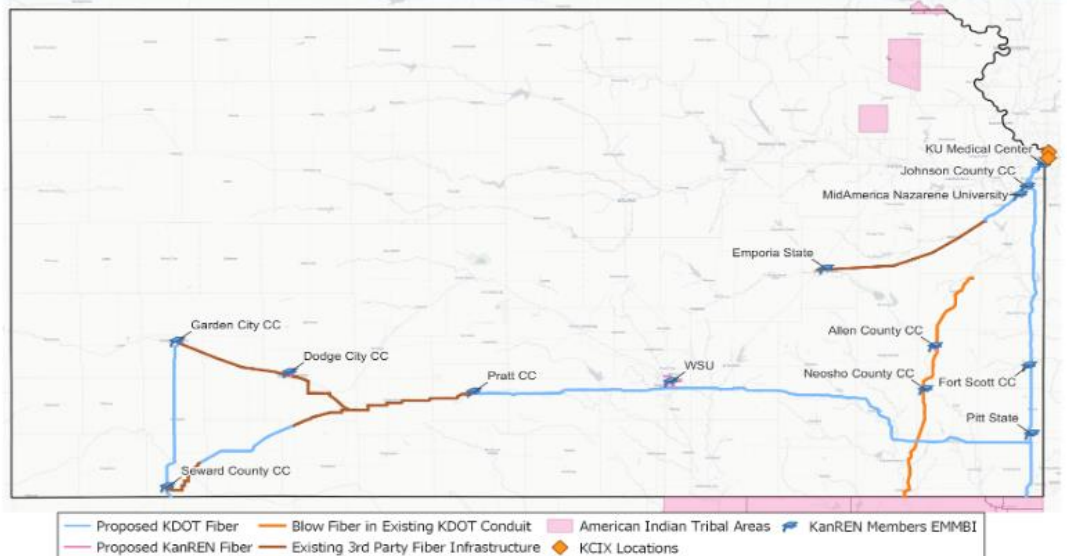
KANSAS OFFICE OF BROADBAND DEVELOPMENT MIDDLE-MILE PARTNERSHIP PROPOSAL

KDOT, KANREN, anchor institutions and Kansas communities will benefit from a middle-mile project.

DESIGNATED ROUTES

New Infrastructure

- **US-83: Liberal to Garden City** - 70 Miles
- **Pratt - Wichita** - 79 miles
- **Kismet - Minneola** - 43 miles
- **US-400/US-54: K-96 & US-54 junction to US-69 junction** - 158 miles
- **US-69: Stateline to Kansas City location** - 157 miles
- **Wellsville - KC IPX** - 41 miles
- **US-169: US-166 to Greeley Regeneration Building** - 106 miles



[1] <https://www.ksdotike.org/about/program-details>

[2] <https://www.kanren.net/>