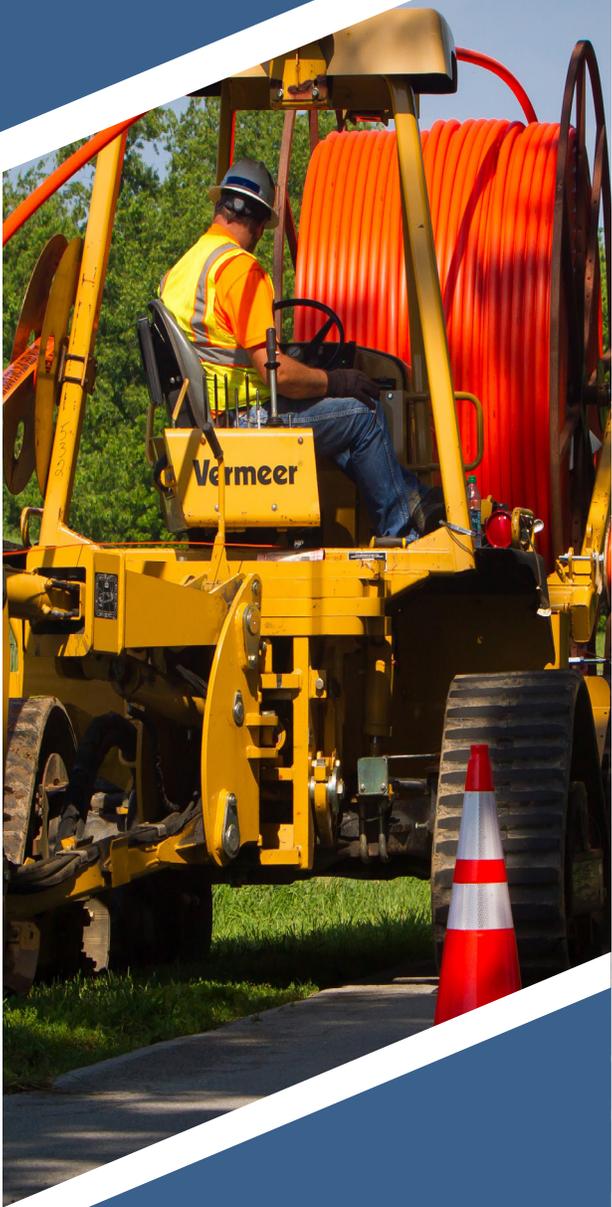


INFRASTRUCTURE CASE STUDY:

Kentucky Broadband



SUMMARY

| PROJECT TYPE | YEAR |
|--------------|------|
| Broadband | 2015 |

DEAL STRUCTURE

Design-build-finance-operate-maintain agreement

TOTAL COST

\$343.5 million

FINANCING

State bonds, senior tax-exempt revenue bonds, and senior taxable revenue bonds

FUNDING

Service fees, commercialization of excess capacity, and \$23.5 million in federal grants

PUBLIC BENEFIT

Improved service delivery to public sites and economic growth platform via expanded access to high speed internet across Kentucky



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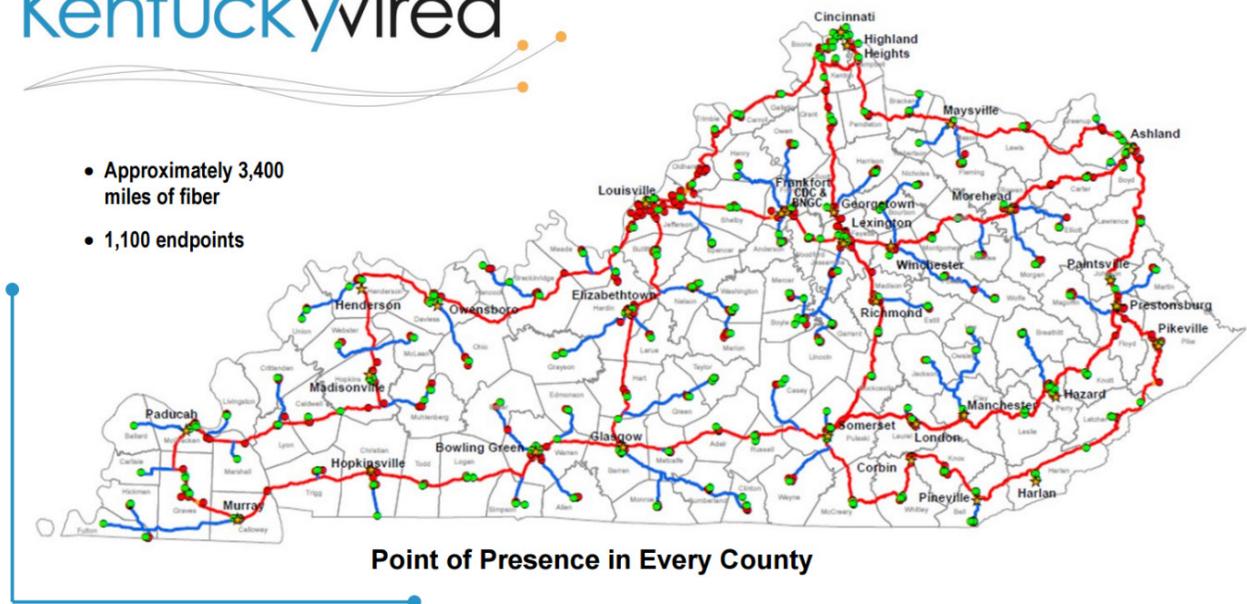
Background

KentuckyWired is a statewide broadband project to build the infrastructure for high-speed internet access. It has two main objectives: to significantly improve bandwidth speeds and service reliability to government sites throughout Kentucky, and promote growth by making the network's excess capacity available to commercial users. This capacity commercialization will be on an open access basis, making it far easier for Internet Service Providers (ISPs) to service customers in rural and remote areas of the commonwealth.

In 2015, the Commonwealth of Kentucky entered into a 30-year public-private partnership (P3) with Macquarie Capital along with five other private sector partners to design, build, finance, operate and maintain the broadband network.

Kentuckywired

- Approximately 3,400 miles of fiber
- 1,100 endpoints



Project Description

In 2012 and 2013, the Shaping Our Appalachian Region (SOAR) Broadband Working Group recommended that the state should invest in an expansive, high-speed fiber optic infrastructure to promote connectivity across Kentucky's rural, urban, and suburban communities.¹ In the past few years, Kentucky saw a considerable increase in the number of individual budget requests for funding for high-speed fiber network upgrades. Following the recommendation of the SOAR report, Kentucky's Finance and Administration Cabinet began a screening process to find the best way to improve internet access and speed across the commonwealth. It was determined that rather than fulfilling each request individually, the best approach would be a single initiative through a P3.²

In 2015, led by Rep. Hal Rogers (R-KY) and then-Gov. Steve Beshear (D-KY), this plan materialized as the "KentuckyWired" project, promising a network to connect all 120 counties in the commonwealth by 2019.³ Through the Commonwealth of Kentucky's procurement process, Macquarie Capital was selected to develop this project. While the commonwealth will maintain ownership of the system, it will be fully implemented by the private sector over a 30-year contract term, overseen by Macquarie Capital as the lead developer. To create the system, Macquarie Capital established a consortium with five other private companies, including First Solutions, Ledcor, Fujitsu Network Communications Inc., Black & Veatch,

and Bowlin Group. Macquarie Capital, Ledcor, and First Solutions are equity investors in the consortium, respectively holding 75 percent, 15 percent, and 10 percent of the company. Ledcor and Black & Veatch are 50 percent partners in the design/build venture, supported by Fujitsu and Bowlin as key subcontractors. Ledcor and Fujitsu will also be responsible for the system's operations and maintenance.

Along with \$30 million allocated from the state budget and \$23.5 million in federal grants, the Kentucky Economic Development Finance Authority issued \$232 million in senior tax-exempt revenue bonds, and \$58 million in senior taxable revenue bonds on behalf of KentuckyWired. Kentucky's public technology authority, the Kentucky Communications Network Authority, will manage the contract on behalf of the commonwealth and oversee the private partner's delivery of the KentuckyWired network.

When completed, this network will include over 3,200 miles of fiber-optic cable across the state and connect directly to approximately 1,100 government facilities (including K-12 schools, community colleges, and public universities), which will result in dramatically faster internet speeds in both rural and urban communities.

Approximately 50 percent of the fiber strands installed by KentuckyWired will be available for commercial use, by large scale enterprises and ISPs. This direct access to capacity should allow ISPs to offer higher speeds to homes and businesses. Macquarie Capital will lead formation of a network wholesaler to market this excess capacity to ISPs and plan to share a substantial portion of revenues generated from that activity with the commonwealth.

To generate revenue, the existing service fees will move from the carriers that currently hold service contracts to KentuckyWired. Kentucky is supporting the project with \$30 million of bond-financed equipment, and will pay the consortium a \$23.5 million milestone payment upon completing construction, in addition to a series of availability payments that are based on the system's performance.⁴

Benefits and Criticisms

As the definition of infrastructure changes to keep up with technology, broadband has carved out an important role. Today, Kentucky ranks 47th in the country in broadband speeds and capacity. During peak-usage periods, Kentucky has the nation's slowest connection speed, maxing out at only 38.2 megabits per second (mbps). 34 percent of Kentucky's residents do not have access to suitable broadband services (25mbps), and 16 percent have zero access.⁵ Recognizing these inadequacies and the shifting economic pressures from a decline in the coal industry, Kentucky's policymakers sought a solution. The envisioned service rate platform will extend from 100 megabits per second to 100 gigabits per second with multiple tiers within that range, far surpassing the Federal Communications Commission's (FCC) recommended minimum of 25 mbps.⁶

As the project is currently under construction, the full impact of the system has not yet been fully realized. However, KentuckyWired has partnered with a number of local providers to build significant portions of the network on behalf of the private consortium. The system's progression from concept to construction has been a factor in investigating citywide builds in cities and counties throughout Kentucky. Anecdotal evidence also suggests ISPs are reducing market pricing by up to a third for enterprise users to prepare for the competitive impact of the system's open access provisions.

From a deal-structure standpoint, the 30-year partnership has received praise as Bond Buyer's 2015 "Deal of the Year," reaching financial close within nine months while transferring the long-term operation and maintenance risks to the private partners.⁷ It was developed to avoid any additional budget appropriation requirements from the commonwealth. Additionally, as part of KentuckyWired's contract with the commonwealth, a minimum of 60 percent of the employees on the project will be from Kentucky. The consortium of private companies has also committed to hiring local companies and workers.

However, concerns have risen around a portion of funds from the FCC's E-Rate program that was previously allocated directly to public schools.⁸ When the commonwealth awarded KentuckyWired the contract to connect directly to public schools, AT&T contested the move as a conflict of

interest which would disqualify the project from \$11 million in federal funds. It is unclear if the state will need to replace the \$11 million or if a new bidding process will take place.

Gov. Matt Bevin (R-KY) did, however, confirm his full commitment to the KentuckyWired project in September 2016, noting in particular the system's ability to deliver economic benefits, "especially in the eastern part of the state," which has been most impacted by the downturn in the coal industry.

Criticism has also come from local telecom companies that are concerned the project would be duplicative of their own network expansions.⁹ Others argue that, given the state of Kentucky's network, an intervention in the form of a P3 was a necessity.¹⁰

Takeaways

The KentuckyWired broadband project is the first fiber optic P3 in the United States and is a monumental overhaul of the commonwealth's broadband networks. Given the existing and continuously expanding role of the internet, ensuring reliable high-speed access is critical to the commonwealth's continued economic competitiveness and growth. By essentially bundling the commonwealth's network needs, KentuckyWired attracted significant private sector financing while upgrading the infrastructure in rural and urban communities.

Endnotes

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