Phillip Brown
Executive Director
Kentucky Communications Network Authority
Thursday, February 1, 2018

Project Status Update

Benefits

Wholesaling

Closing

Project Status Update

Where are we today?

CONSTRUCTION

SCHEDULE

Make Ready Engineering/ Construction

CONSTRUCTION

- 619 miles of fiber deployed

- 16 of 19 communications huts have been installed

- 5 pole attachment agreements remain outstanding

- Make Ready Engineering is ~100% complete statewide

- Multiple partnerships with KY companies in negotiation

SCHEDULE

- KentuckyWired needs help ensuring stakeholders understand original schedule's "blue skies" assumptions

- Original completion date was August 2018

- Estimated delay of 18 months
  - Variables outside of project's control make forecast difficult

Make Ready Engineering/ Construction

Each line represents a company or organization ...

Poles can get very busy. Before KentuckyWir...

Each line represents a company or organization or government entity, but only one of them owns the pole. Pole attachment agreements give the others a right to attach

Poles can get very busy. Before KentuckyWired can send teams to hang its fiber, every pole has to be individually engineered. KentuckyWired's route includes 88,000 poles

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Benefits

"Fiber is good for you, and it's healthy for business."

- The KentuckyWired network will have a presen...

BENEFICIARIES

GOVERNMENT OFFICES

AGRICULTURE

BUSINESS

HEALTHCARE

EMERGENCY RESPONSE

EDUCATION

- The KentuckyWired network will have a presence in all 120 Kentucky counties, capable of carrying 100Gbps communications signals

- Greatly increases download and upload speeds

- Consistent and reliable connectivity to sites through ring redundancies

- Opportunity for private companies to offer high-speed, high-capacity internet service to underserved or unserved areas

- The Commonwealth will realize savings by supplying itself with the fastest, most reliable internet

- 5G wireless networks will require our high-speed, high-capacity network

BENEFICIARIES

- Government Offices
- Agriculture
- Healthcare
- Emergency Responders
- Higher Education
- Business

GOVERNMENT OFFICES

- Enables state, county, and city government offices to work faster and more efficiently

- Police and fire departments and outposts will have faster remote access to information

- Broadband quality parity at all sites, regardless of region

- Price stability from year to year

AGRICULTURE

- Use and demand for internet in agriculture is growing exponentially each year

 - Farmers today want to be more precise in utilizing their land. That means a greater need for remote soil and water analysis

- Precision AgTech allows farmers to collect more data from crop yields, fertilizer application rates, plant populations, soil moisture levels, plant health, crop maturity, weather conditions, insect damage, etc.

- Farmers need better access to the internet for marketing and research purposes

BUSINESS

- Broadband high-speed internet access is absolutely essential for business today. *However...*

- Kentucky ranks 48th in the nation for access to the internet (U.S. News & World Report)

- Completion of the KentuckyWired network should vault KY to the top of that list

- It is expected that the completion of KentuckyWired will attract many new businesses to Kentucky
  - 80% of businesses use broadband every day
  - 39% need faster service but cannot get it

HEALTHCARE

- The KentuckyWired network will help facilitate remote patient monitoring, improve the timeliness of healthcare, and allow specialists to remotely examine patients in rural areas

- Will enable online therapy, remote counseling, and interpreter services

EMERGENCY RESPONSE

- A high-speed, high-capacity network will allow first responders and emergency personnel to communicate during a major event while other networks might otherwise become congested

- Law enforcement can more readily access forensic information, cameras, blueprints, criminal records, traffic information, etc.

- When an emergency occurs in a rural area, expert assistance can be available over the internet

- Large data files, such as HD video and images, can be sent and received quickly and reliably

EDUCATION

- Students need access to computer programs and online-based curriculum materials

- High-speed network will allow online collaboration for group projects, online tutoring, and virtual field trips

- There are many stories of students going to fast food restaurants in order to access WiFi to complete research and homework assignments

- Students with limited access to technology grow up to be adults with limited career opportunities

Wholesaling

The Last Mile

WHAT IS THE WHOLESALER?

FIBER CAPACITY

WHOLESALER AGREEMENT

WHAT IS THE WHOLESALER?

The Wholesaler WILL:
—Market and provide access to excess capacity in the KentuckyWired network for commercial users, and provide common points of interconnection in each market
—Establish and charge, in conjunction with KCNA, Middle Mile Transport Fees on an open access basis
—Review market developments and periodically adjust Middle Mile Transport Fee levels
—Evaluate opportunities to promote economic development and catalyze investment in Final Mile Transport Infrastructure where economically feasible
—Market and provide access to a limited number of dark fiber IRUs within the KentuckyWired network
—Share a majority of net revenues generated from the commercialization of spare capacity with the Commonwealth

The Wholesaler WILL NOT:
—Act as an ISP, providing content services to retail end users

FIBER CAPACITY

KentuckyWired is "open access" meaning that cities, partners, and businesses may acquire access to the network to provide last mile services directly to customers.

Private companies will build the Last Mile portion of the network - this is what will supply homes and businesses. The network will have 50% of its capacity allocated for lease to private companies through a wholesaler.
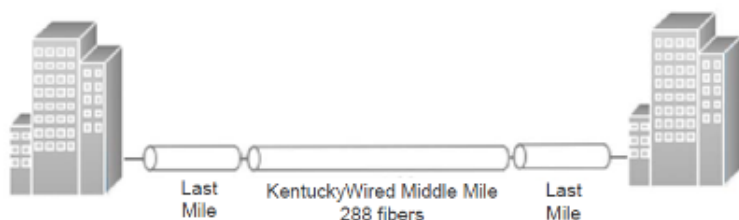
KentuckyWired's ability to bring accessible, competitive connectivity into each of Kentucky's 120 counties creates significant opportunities for ISPs
- Potential to access new markets without investing capital in expensive infrastructure
- Maximize service efficiency through connections at carrier hotels

WHOLESALER AGREEMENT

- KentuckyWired's contract gave Macquarie Capital option to operate as wholesaler
- Wholesale of excess capacity will provide funds over 30 years through revenue sharing
- OpenFiber Kentucky is operational name for Macquarie activity as wholesaler
- Significant and promising early interest in network capacity

Dark fiber provides the customer a closed pipe to transport data. The customer must 'light' the fiber by attaching its own equipment at handoff points on each end of the fiber circuit.

Last Mile — KentuckyWired Middle Mile 288 fibers — Last Mile

Dark Fiber
vs.
Lit Fiber
Transport

1. Wholesaler may construct / lease (via an IRU) a spur off the network to meet a Customer at its endpoint
2. Wholesaler is responsible for all outside plant and equipment up to the selected endpoint
3. Wholesaler is solely responsible for transport services and NOT origination/termination of services

PPP Fiber (Backbone & Lateral Segments) — Final Mile Transport Spur

P3 Node — P3 PoP — User End Point

Middle Mile Transport Fee — Final Mile User Charge

Closing

QUESTIONS?

Kentuckywired

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