FIBER OPTICS UPDATE

Gig for Lex Initiative

Environmental Quality & Public Works Committee

October 18, 2016

LEXINGTON

Agenda

- Vision and Goals
- Project Timeline
- Rural Fayette County Study
- Partnering with KYWired State Initiative
- RFP Goals and Options
- Fiber Deployment Status
- Next Steps
- Appendix

Announcement

FAYETTE COUNTY SEPTEMBER 9, 2014 2:16 PM

Mayor Gray wants Lexington to become a ‘gigabit city’

Gig for Lex Initiative

Vision for Lexington

GigforLex is a City-led project to ensure that:

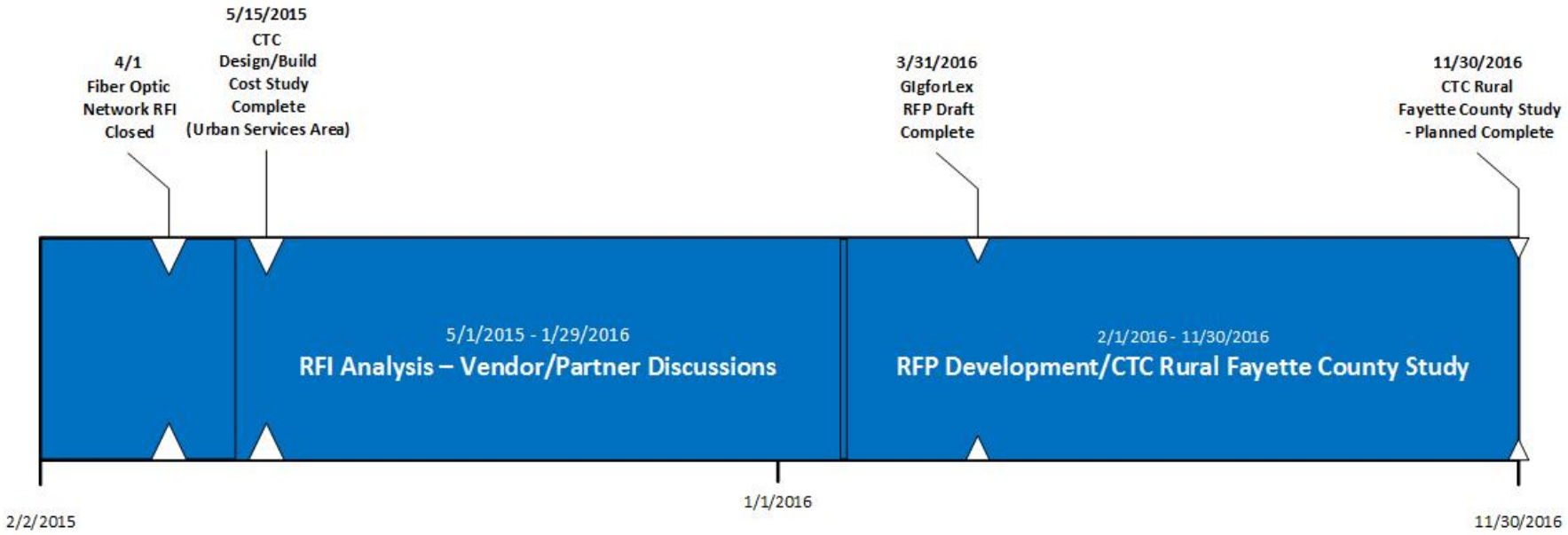
- every Lexingtonian can access advanced communications networks
- high-speed, high quality, fiber connections to the internet are available

Gig for Lex Initiative Goals

To have available:

- Competitively priced services (internet, CATV, telephone) to any customer connected to network
- Excellent customer service
- Highly reliable network
- Network with increased bandwidth for “internet of things” to come

Project Timeline



*RFP not released

CTC Study Goals

Opportunities for Rural Fayette County

- Create backbone network that is available for last mile deployment targets
  - Community anchor institutions
  - Larger businesses
  - Businesses central to County's equine industry
- Pass all addresses in the target service area
- Facilitate stakeholder discussions (needs assessment)
  - Fayette Alliance hosted kickoff session on 7/14/16
- Develop a public private partnership strategy
- Develop a financial model
- Provide a strategic recommendation

CTC Study Status

Fiber Opportunities for Rural Fayette County

- Next Steps
  - Issue stakeholder needs and infrastructure survey (9/30)
  - Map key stakeholder locations
  - Stakeholder infrastructure assessment
  - Initial engagement with fiber providers operating in the region
- Study to be completed by November 30, 2016

KYWired State Initiative

- Governor Bevin and Representative Hal Rogers reaffirmed project at press conference in September
- Opportunity to partner extended to all KY cities
- Lexington signed MOU with state for LFUCG fiber
- Louisville also working with KYWired

Partnering with KYWired for LFUCG

- KYWired to build 31 miles of 144 fiber cable dedicated to the city's ownership
- Access to city owned fiber cable will be aligned with LFUCG traffic and public safety requirements
- Big win for Lexington; city will own the fiber for use as an asset
  - Fiber can be used as part of the backbone for a FTTH network
  - Fiber can be used to provide enhanced city services
- Expected complete date second half of 2017

RFP Goals (Not Released)

To Provide:

- Competitively priced services (minimum, high-speed data service, potentially include video and/or voice services) to customers connected to the network
- Excellent customer service
- A highly reliable network
- A fiber network infrastructure to support internet services with increasing bandwidth demands (to support Internet of Things, Smart City apps, tele-education, medicine, public safety, cloud based applications, data services)
- Services to residences and businesses without “cherry-picking” (not selecting for income level or economic viability) of neighborhoods or communities

RFP Options

- Private-Public Partnership options

- Options available for bid:
  - A - Urban Services Area, or
  - B - Include areas outside the Urban Services Area, or
  - A and B

Fiber Deployment Update

- Alphabet / Google Fiber parent rethinking high-speed internet business proven to be more costly and time-consuming than originally thought
- Google looking at new technologies and suspended projects in number of cities
- Palo Alto said Google project suspended for 6 months
- Appears that Google Fiber looking for new business model
- Incumbent providers making promises for gig speeds but mostly where competition exists from Google Fiber

Fiber Deployment Update

- AT&T suing Nashville to stop ordinance designed to accelerate Google Fiber installation
- Charter sues Louisville to stall Google Fiber
- Lawsuits over ordinances to provide easier access to poles and pole attachments
- Many cities examining ordinances and assessing if they are feasible
- Some cities drafting agreements; San Antonio drafted standard agreement

Next Steps

- Review outcome of Rural Fayette County Study
  - Make adjustments to RFP if needed
  - Continue conversations with RFI responders; review potential scenarios
- Finalize design of the KYWired fiber for Lexington

Committee Structure

- Executive Steering Committee
  - Scott Shapiro, Chad Cottle, Todd Slatin, Jonathan Hollinger, Bill O'Mara, Andrea Brown, Aldona Valicenti, Terry Barnes (project manager), Joanne Hovis (CTC consultant)
- Fiber Team
  - Steering Committee members
  - Representation from every department
  - Representative from Vice Mayor's office
  - Library representative
  - Several private sector participants
  - UK represented

Gig for Lex Initiative

Scott Shapiro

Aldona Valicenti

Terry Barnes, Project Manager

Questions?

Appendix: Definitions

Broadband refers to the wide bandwidth characteristics of a transmission medium and its ability to transport multiple signals and traffic types simultaneously. The medium can be coaxial cable, optical fiber, twisted pair, DSL local telephone networks or wireless.

Fiber Optics (optical fiber) is a flexible fiber made of extruded glass (silica) or plastic, slightly thicker than a human hair. Optical fibers are widely used in fiber-optic communications, where they permit transmission over longer distances and at a higher bandwidth (data rates) than wire cables.

Appendix: Definitions

Fiberhood: Google's term that would allow residents to connect to the Google Fiber Optics Network for both internet and TV, where neighbors can, essentially, work together to compete for the service.

Dark fiber is optical fiber infrastructure that is in place but not yet in use. It is "unlit." The dark strands can be leased to individuals, companies, etc., who want to use it.

FTTH: Stands for Fiber to the Home

Appendix: Definitions

Gigabit internet: a fiber-optic cable internet connection offering speeds of 1,000 megabits per second. That kind of connectivity, according to Google, allows for the:

- downloading of a high-definition movie in about 30 seconds
- streaming five HD movies at once without so much as a hiccup
- transferring data over the web faster than is possible over a thumb drive.

Appendix: Definitions

Middle-mile: Components of a broadband infrastructure project that provide broadband service from an internet point of presence (POP) to one or more centralized facilities (i.e. the central office, the cable headend, the wireless switching station or other centralized facility), which allows a last mile provider to provide internet access to a home, business or anchor institution device.

Last-mile: Components of a broadband infrastructure project that provide service to end-user devices. In most cases, the last-mile connection goes to the end-user device in a home, business, or anchor institution.