

Broadband

Comprehensive Plan Steering Committee
October 2, 2019

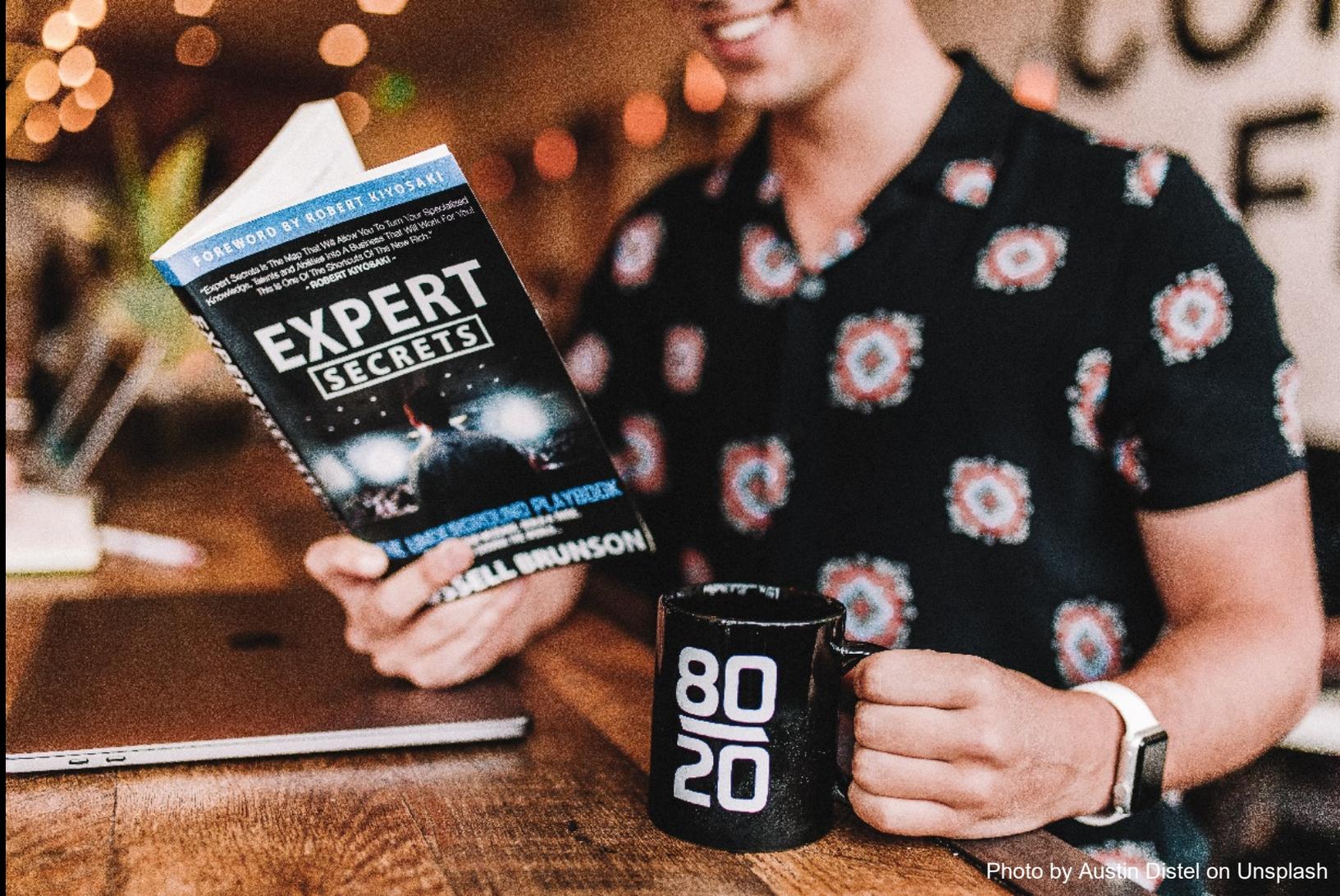


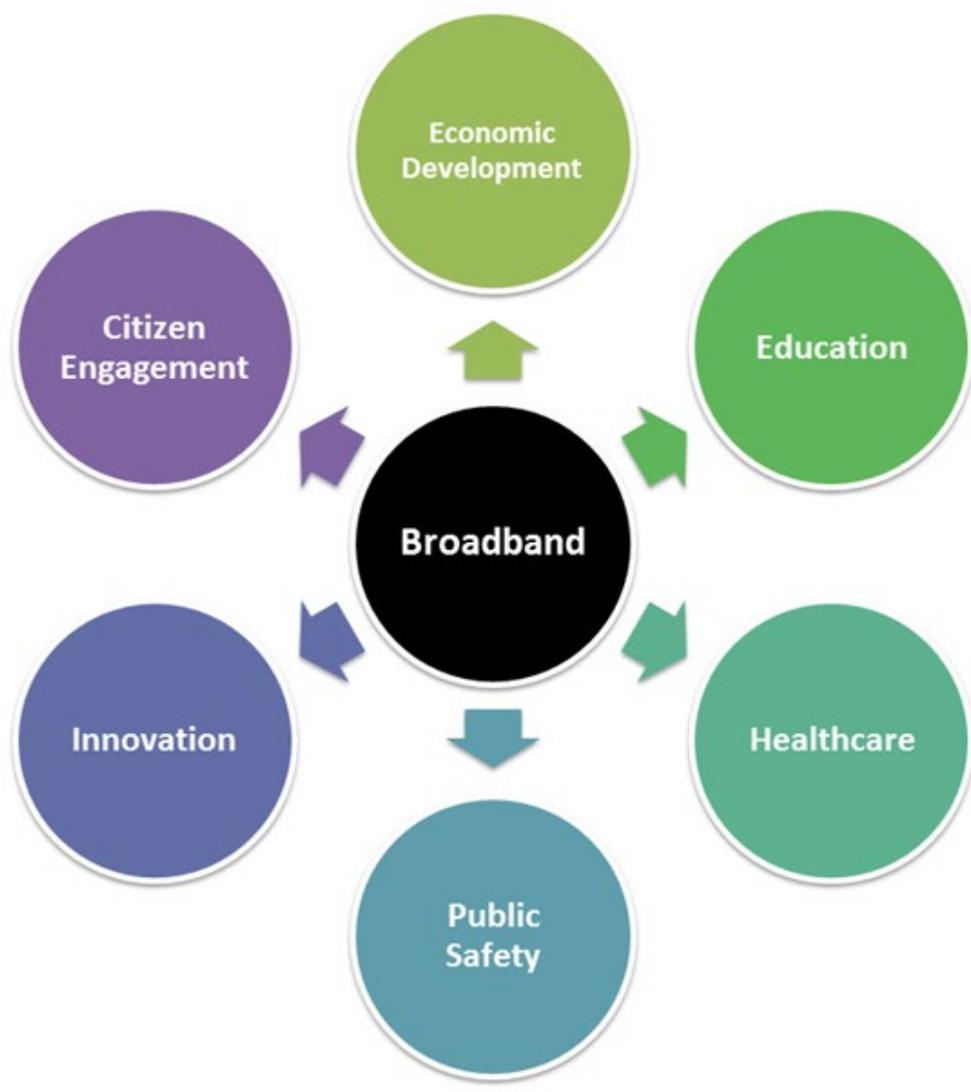
Photo by Austin Distel on Unsplash

The Near Future...

In the near future, coming home is going to be a lot more interesting...

Why is York County Talking about Broadband?

- Code of Virginia
 - 15.2-2223. Comprehensive plan to be prepared and adopted; scope and purpose.
 - The comprehensive plan shall consider strategies to provide broadband infrastructure that is **sufficient to meet the current and future needs of residents and businesses** in the locality. To this end, local planning commissions may consult with and receive technical assistance from the Center for Innovative Technology, among other resources.



Broadband 101

- Terminology
 - Bits - Base unit of information computing. Network speeds measured in “bits per second”.
 - 1 Kilobit (Kbps) = 1,000 bits per second
 - Dial up connections are 56 Kbps
 - 1 Megabit (Mbps) = 1,000,000 bits per second
 - About 30 seconds to download an MP3 song
 - 1 Gigabit (Gbps) = 1,000,000,000 bits per second
 - About 10 seconds to download an high-definition movie

Broadband 101

- Terminology
 - FCC definition of “Broadband”
 - Minimum speed of 25 Mbps downstream (download) and 3 Mbps upstream (upload)
 - Note many uses of connectivity require faster speeds than this minimum



Photo by Nathan Anderson on Unsplash

The Near Future...

In the near future, learning will never be the same.

Traditional Technology

- DSL
 - Copper telephone lines
 - Deliver access to the Internet
 - Downstream speeds
 - 0.5 to 6 Mbps
 - Sometimes up to 40 Mbps for those living close to equipment
 - Upstream speeds
 - 1.5 Mbps and rarely exceed 4 Mbps



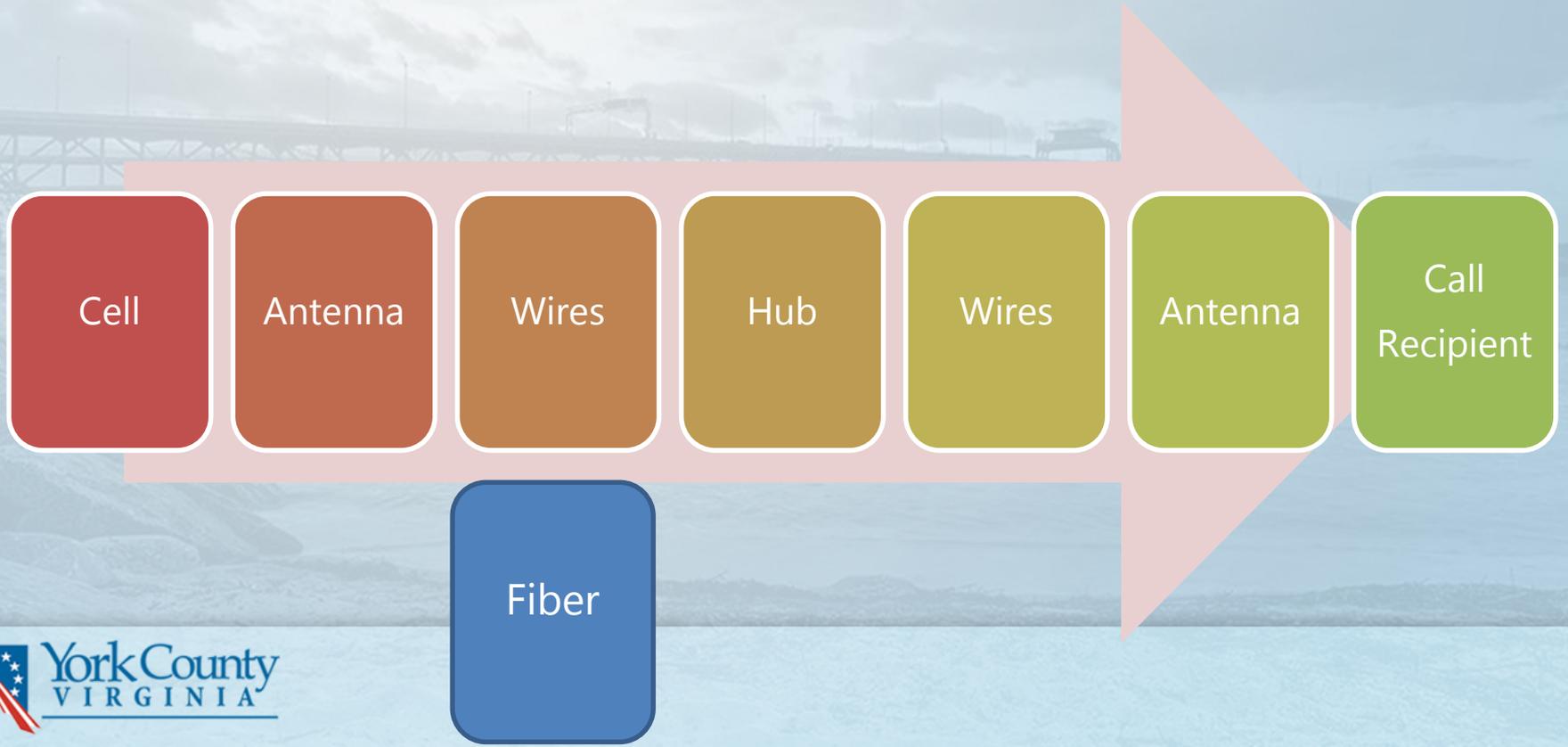
Traditional Technology

- Cable
 - Uses cable network to deliver Internet access
 - Downstream Speeds
 - 6 to 30 Mbps
 - Upstream Speeds
 - 1 to 3 Mbps
 - Note: Offer 100 Mbps down and 10 Mbps up for hefty premium; however, network is shared and can be limited during peak usage

Traditional Technology

- Wireless
 - Many different standards, speeds, issues
 - 4G LTE
 - Wi-Fi
 - Bluetooth
 - Speeds = 0.59 Mbps to 9.12 Mbps downstream
 - Wireless networks capped to limit usage

Wireless Key Points



Gold Standard Technology

- Fiber Optics
 - Lasers shoot pulses of light across very thin strands of glass
 - Networks are reliable, resilient, and nearly unlimited expansion
 - Fiber strands last for decades and capacity can increase by upgrading lasers
 - High cost of new fiber networks is mostly labor
 - Operating costs are lower than cable, DSL, or wireless

The Near Future...





Federal
Communications
Commission

"All the Internet-connected, data-hungry gadgets that are coming to market sent a strikingly clear message: we're going to need faster broadband networks."

- FCC Chairman Genochowski, 2013

Why Should We Care?

Broadband access can increase home values by an average of 3.1%

Telehealth reduces hospital admissions by 25% and overall length of stay by 59%

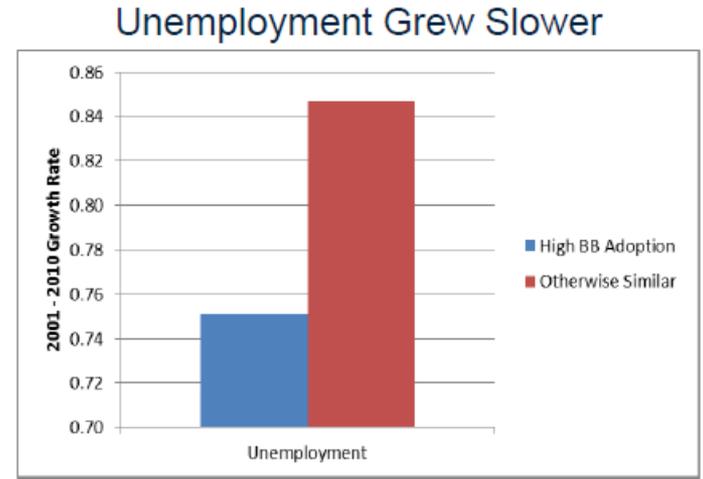
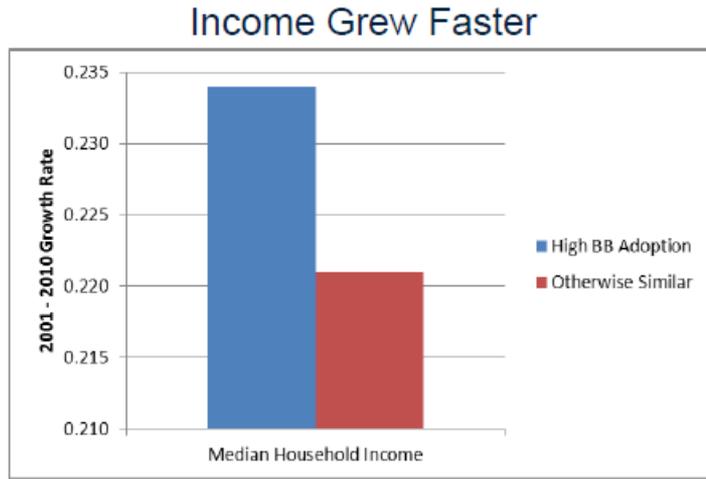
Having a home broadband connection gives households an estimated economic benefit of \$1,850 per year

Half of K-12 students surveyed said they couldn't complete homework due to lack of a connection at home and 42% received a lower grade because of it.

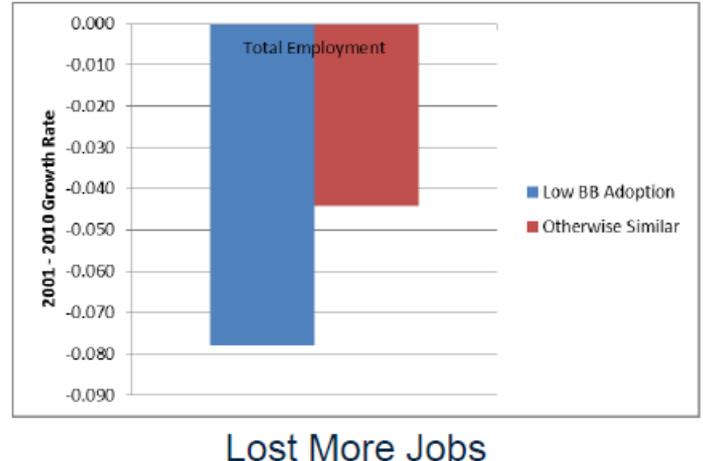
Retail jobs are shifting toward electronic shopping firms, which are located in areas with high connections speeds

Rural counties with at least two broadband technologies available have experienced significant in-migration compared to those without access

In rural counties with high broadband adoption, (60%+)...



In rural counties with low broadband adoption, (<40%)...

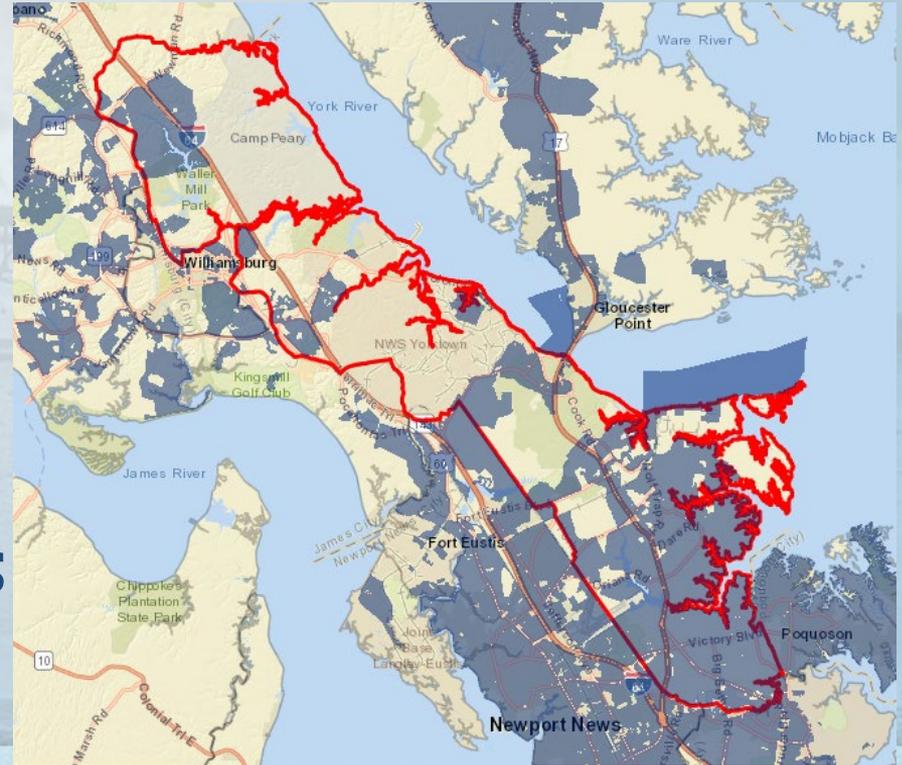


Sufficient Broadband

- Code of Virginia
- Comprehensive Plan
 - The comprehensive plan shall consider strategies to provide broadband infrastructure that is **sufficient to meet the current and future needs of residents and businesses** in the locality.

Broadband Mapping

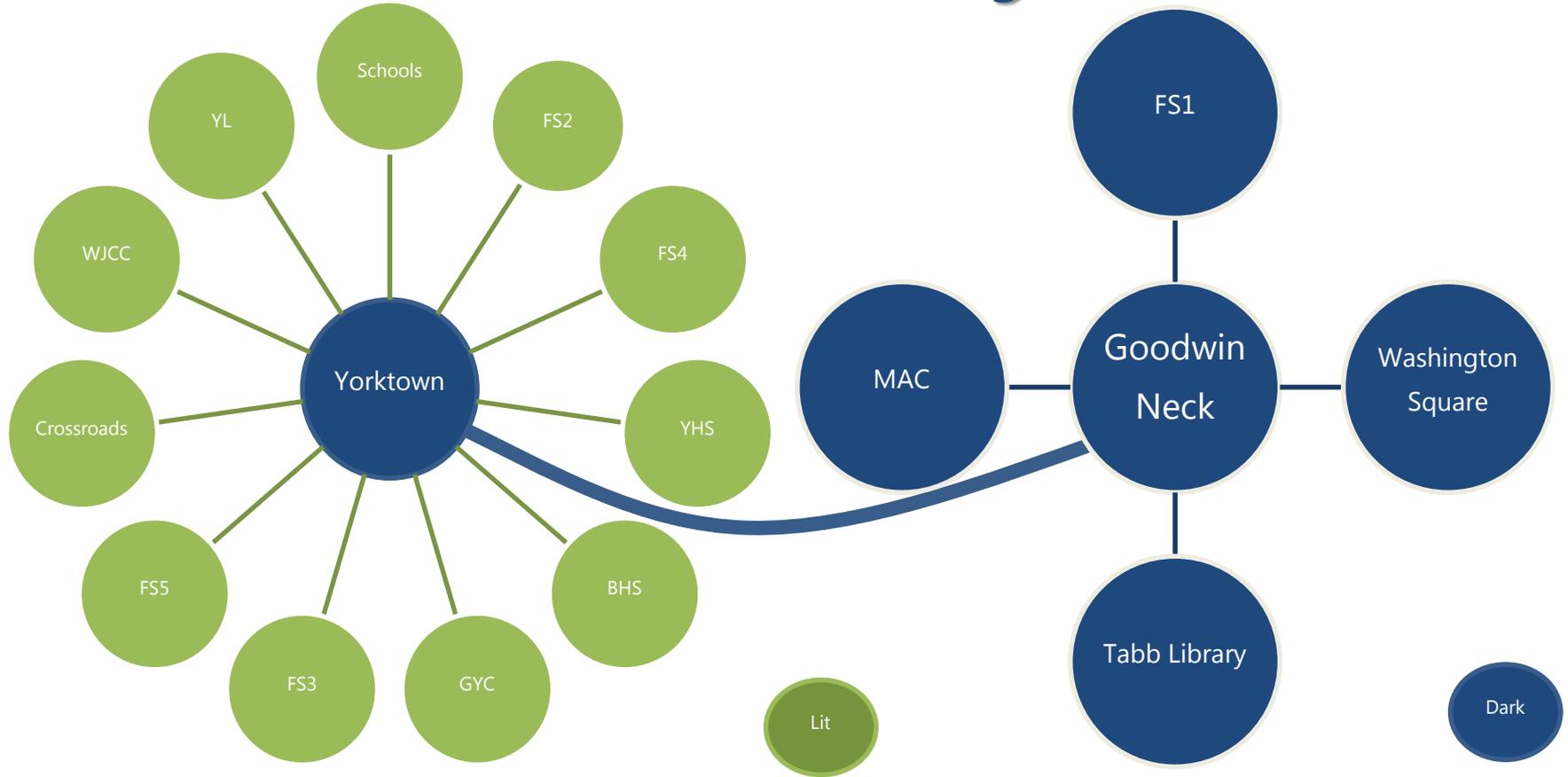
- Initiated in 2008
- Updated in 2011
- Fully funded by the General Assembly in 2015 as a continuous resource.



Fiber

- Lit Fiber (Public)
 - Owned by service carriers or providers
 - Many users
 - Equipment provided by carriers
- Dark Fiber (Private)
 - Owned by user (greater control)
 - No other users
 - Lit by users with own equipment

Current York County Facilities



The Near Future...

A photograph of a person walking away from the camera down a long, brightly lit hallway. The person is wearing a brown jacket and blue jeans. The hallway has white walls, a wooden floor, and a white baseboard. The lighting is soft and even, creating a sense of depth and perspective.

In the near future, growing older will never be the same again.

Comprehensive Plan Elements

- Promote high speed broadband (fiber) to drive economic development
 - Stimulate job creation
 - Develop and nurture new clean industry
 - Address current business/industry needs
- Increase broadband needs of K-12
- Create more efficient and integrated healthcare system

Comprehensive Plan Elements

- Promote broader use of telework and smart transportation
- Provide increased capability for first responders and emergency preparedness
- Improve residential speeds
- Increase reliability of the network

Discussion



Photo by Emma Frances Logan on Unsplash

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