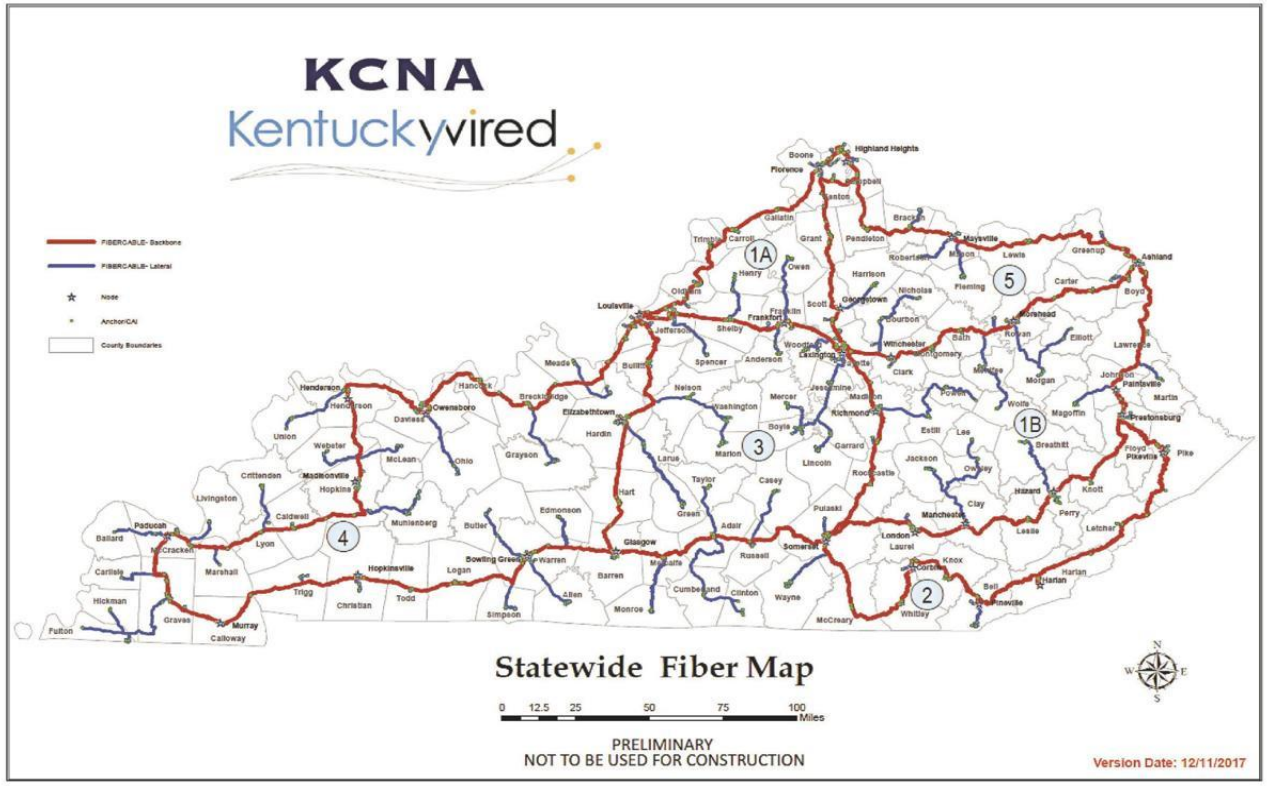


# KCNA Advisory Board

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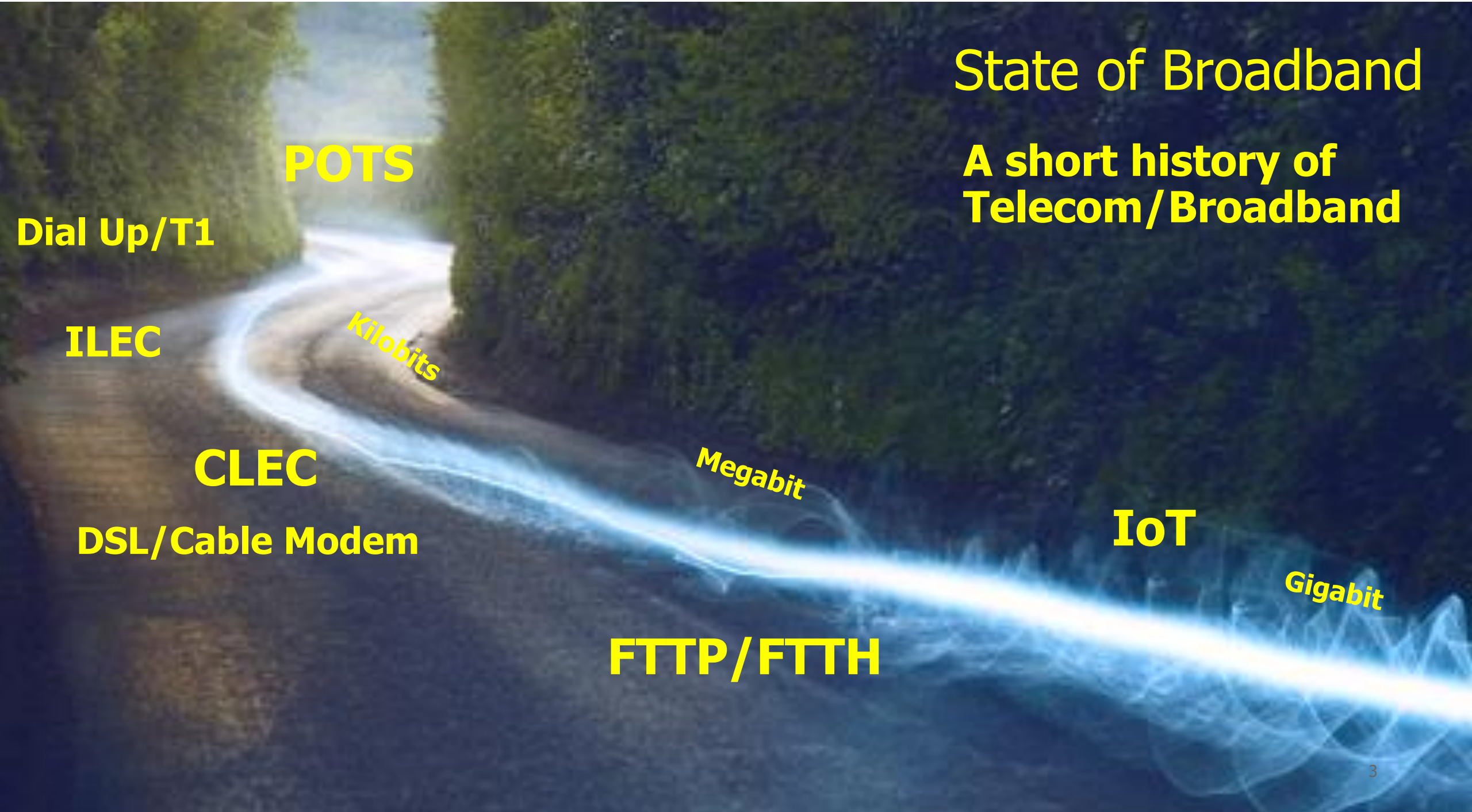
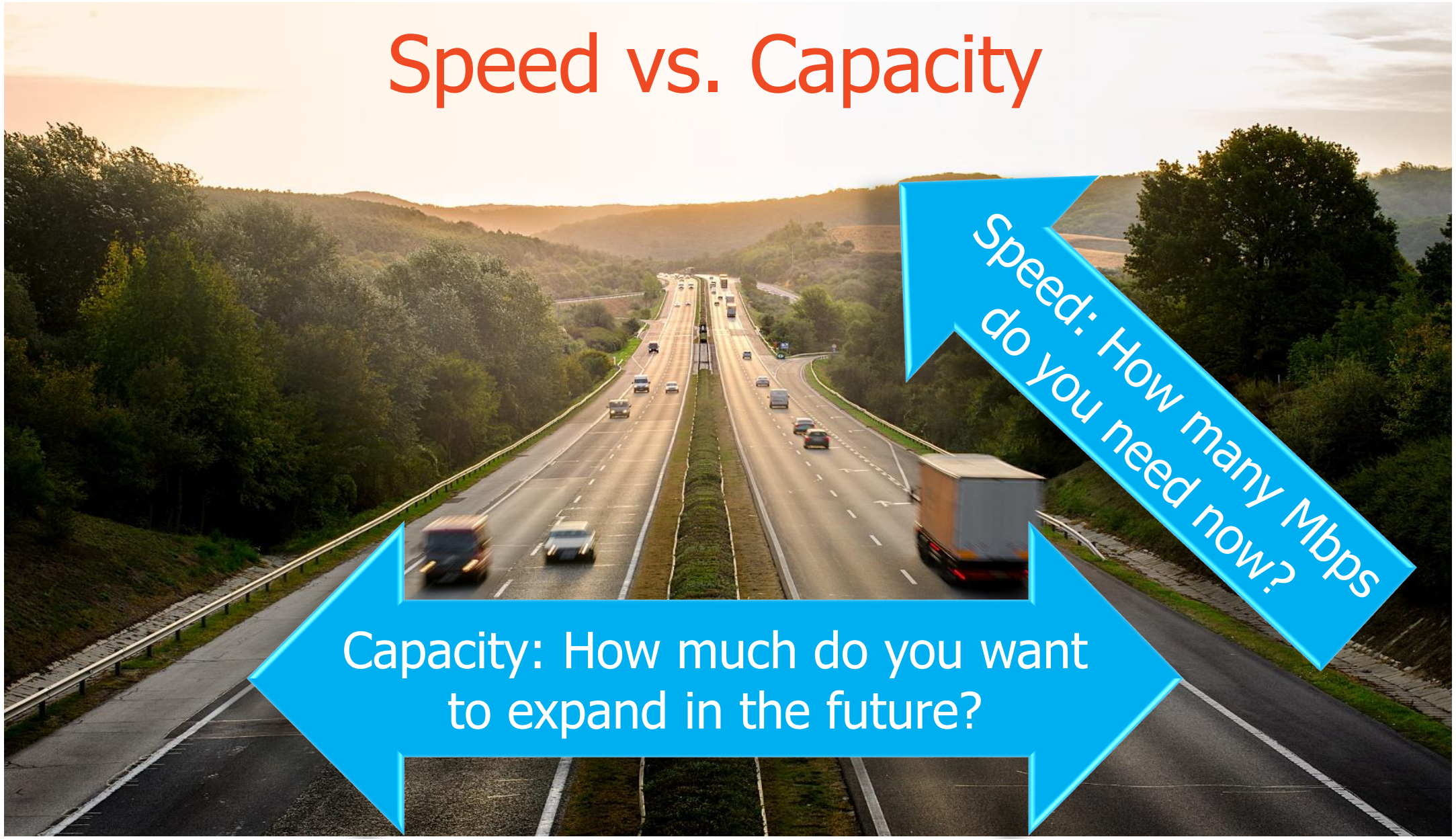
February 21, 2019

# Key Messages

- Broadband is the critical communications infrastructure for Communities/Counties to continue thriving and advancing their quality of life (like electricity/water/gas)
- KYWired is the Commonwealth's Broadband (Middle Mile) Network which will touch every county in KY. It will enable Communities/Counties to expand broadband availability to businesses, organizations and residents
- Communities/Counties can leverage KYWired by using it as an asset to support their local broadband strategic and tactical planning
- Community engagement is critical to the success of community broadband planning


State of Broadband
A short history of Telecom/Broadband
POTS
Dial Up/T1
ILEC
Kilobits
CLEC
DSL/Cable Modem
Megabit
IoT
Gigabit
FTTP/FTTH

# Speed vs. Capacity

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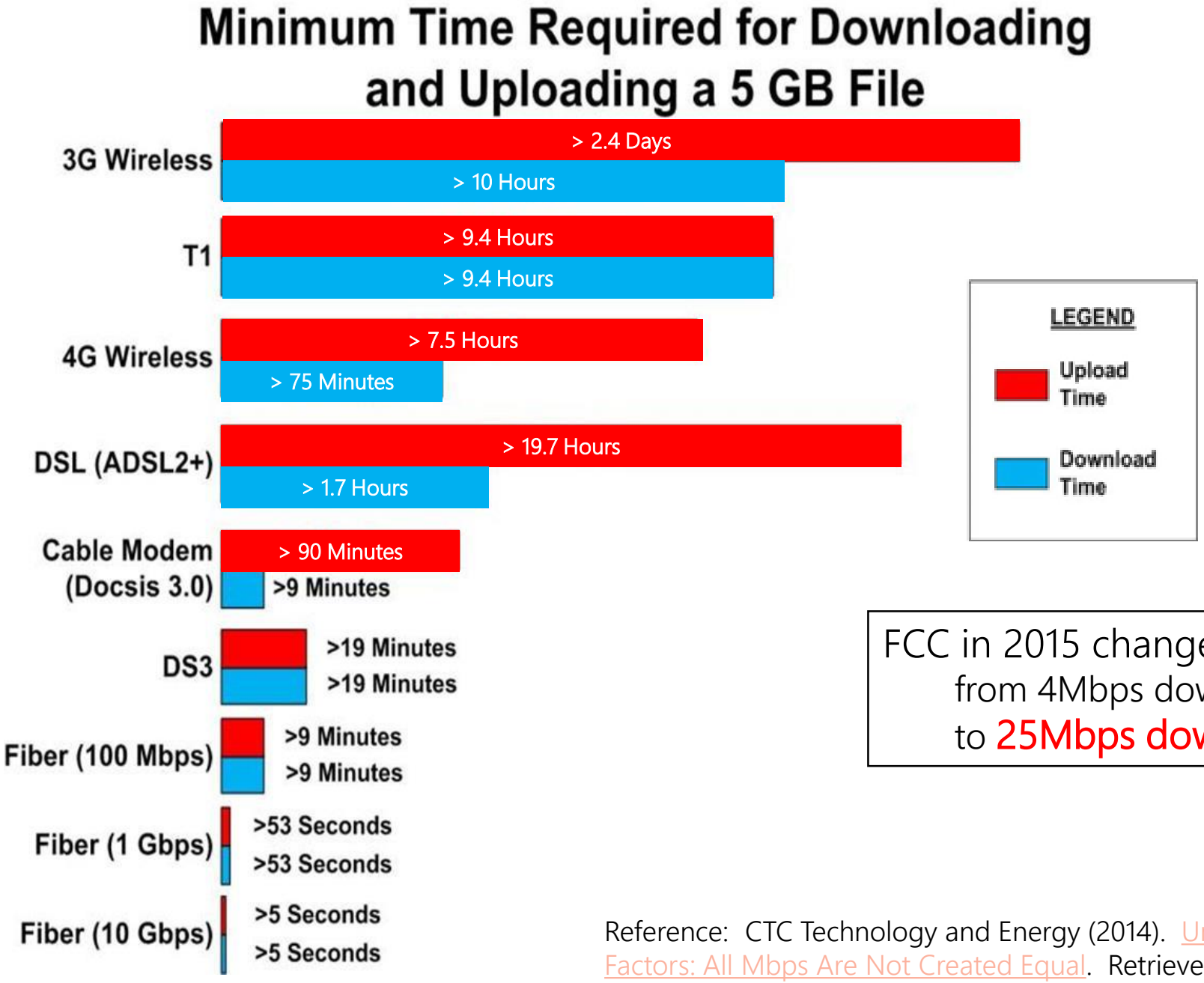
# Download Time

- a high definition movie
- an x-ray scan
- a music library
- an online training class




FCC in 2015 changed definition of "broadband"
from 4Mbps down/1Mbps up
to 25Mbps down/ 3Mbps up

Reference: CTC Technology and Energy (2014). Understanding Broadband Performance Factors: All Mbps Are Not Created Equal. Retrieved from: http://www.ctcnet.us

# KYW Impacts for Broadband

## Middle Mile

- Network connection between the greater Internet and the last mile
- "Interstate highway infrastructure system" connecting worldwide Internet to "exit ramps" closer to a community
- KYW is the Middle Mile network opportunity for the Commonwealth
- KYW is routed through every Kentucky county.

## Last Mile

- Final leg of connection between middle mile and the customer (office/home).


Reference: CBS News; https://www.cbsnews.com/news/rural-areas-internet-access-dawsonville-georgia/

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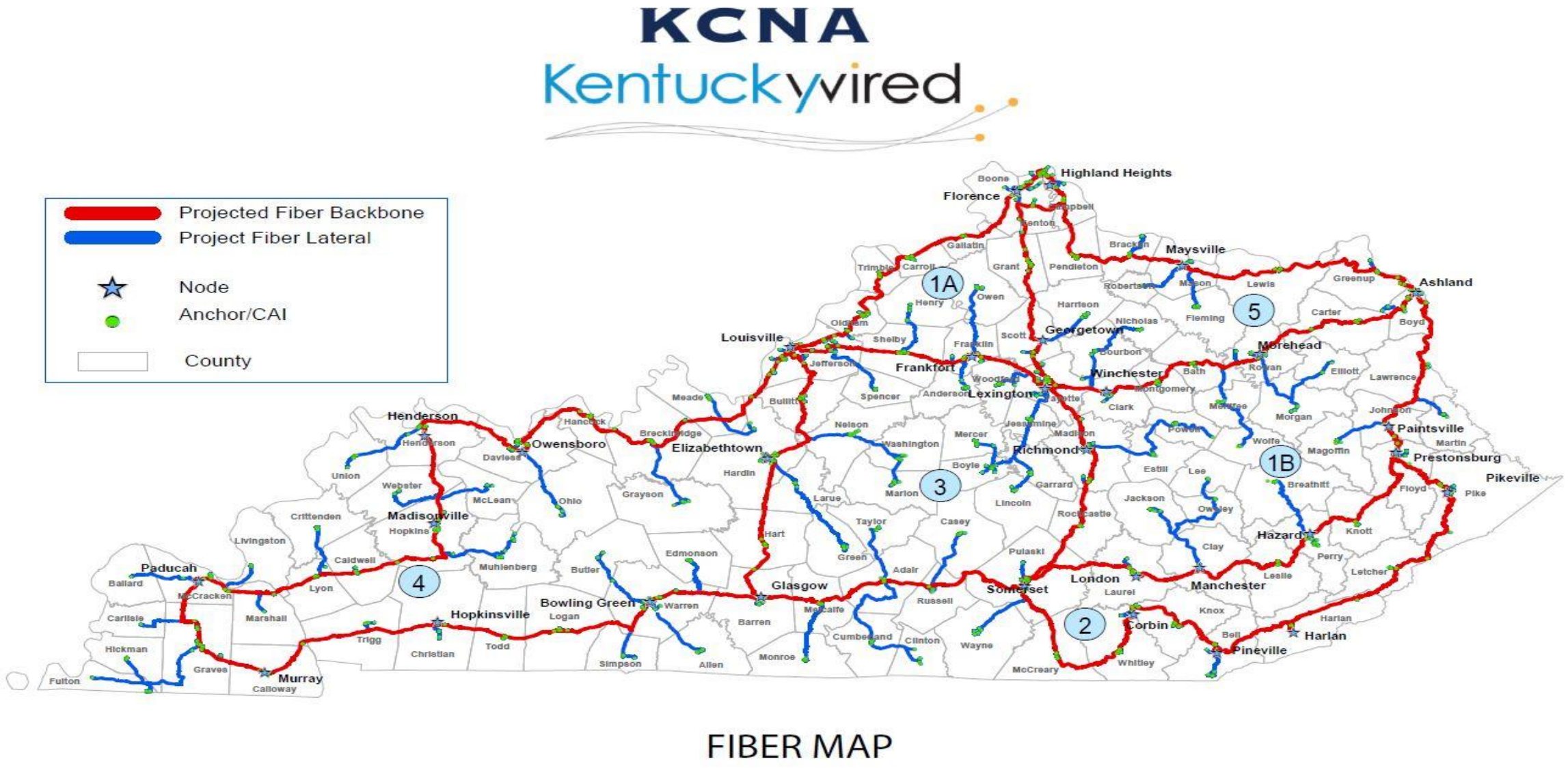
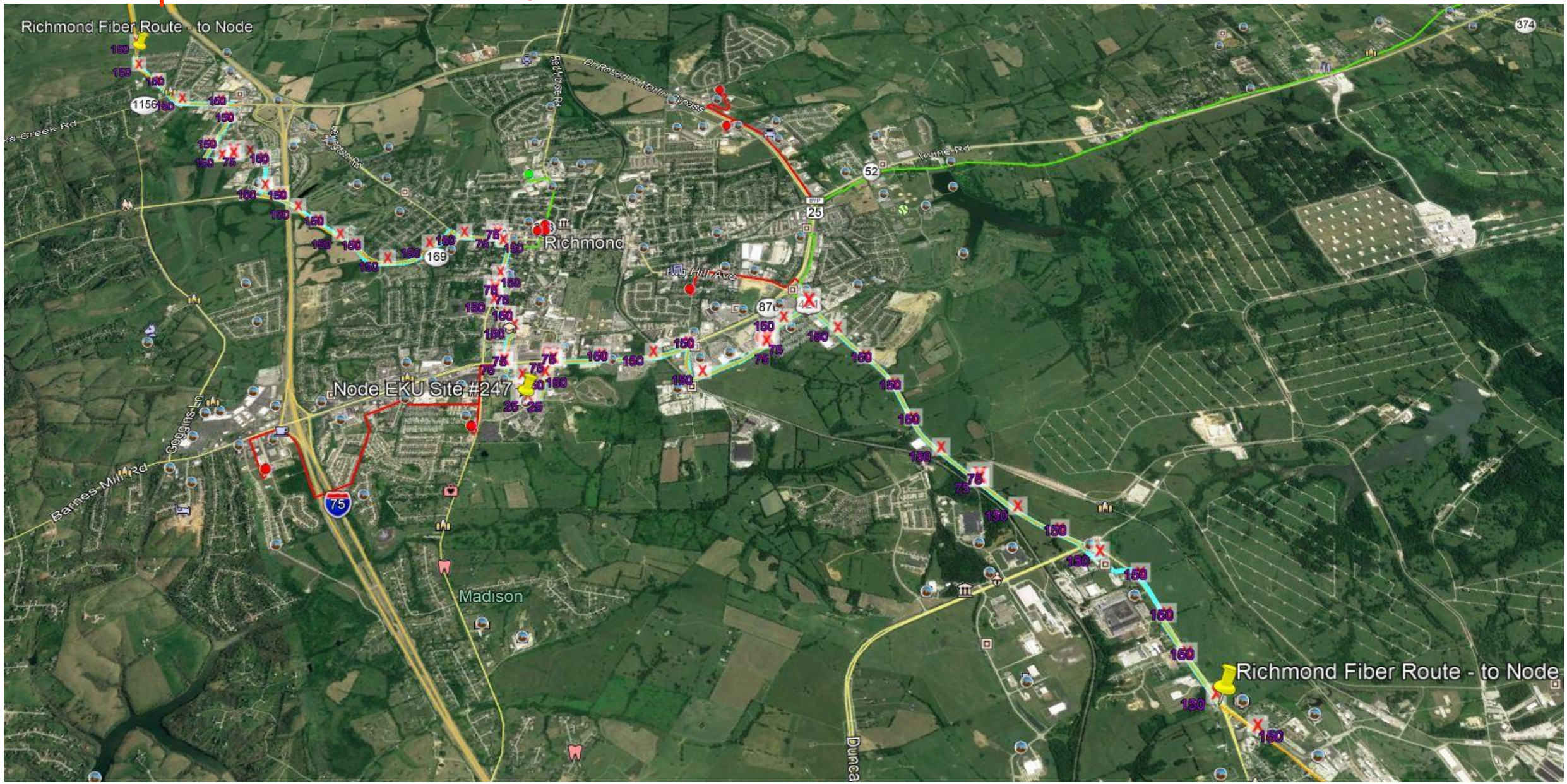
# “Middle Mile”


KCNA
Kentuckyvired
Projected Fiber Backbone
Project Fiber Lateral
Node
Anchor/CAI
County
Highland Heights
Florence
Maysville
Ashland
Louisville
Georgetown
Frankfort
Lexington
Winchester
Morehead
Owensboro
Elizabethtown
Richmond
Paintsville
Prestonsburg
Pikeville
Henderson
Madisonville
Paducah
Hopkinsville
Bowling Green
Glasgow
Somerset
London
Corbin
Hazard
Manchester
Harlan
Pineville
Murray
1A
1B
2
3
4
5
FIBER MAP
Map Date: 01/9/2019

# KYWired – Fiber Asset for Communities/Counties

- KYWired Backbone overbuild
  - Foundation for broadband planning
    - Government services network
    - Anchor institutions network
    - Fiber-to-the-Home (FTTH)/Fiber-to-the-Premise (FTTP) network
    - Wireless infrastructure
    - Rural area infrastructure
    - Leasing revenue
- KYWired Lateral
  - Community/County access to dark fiber without construction cost

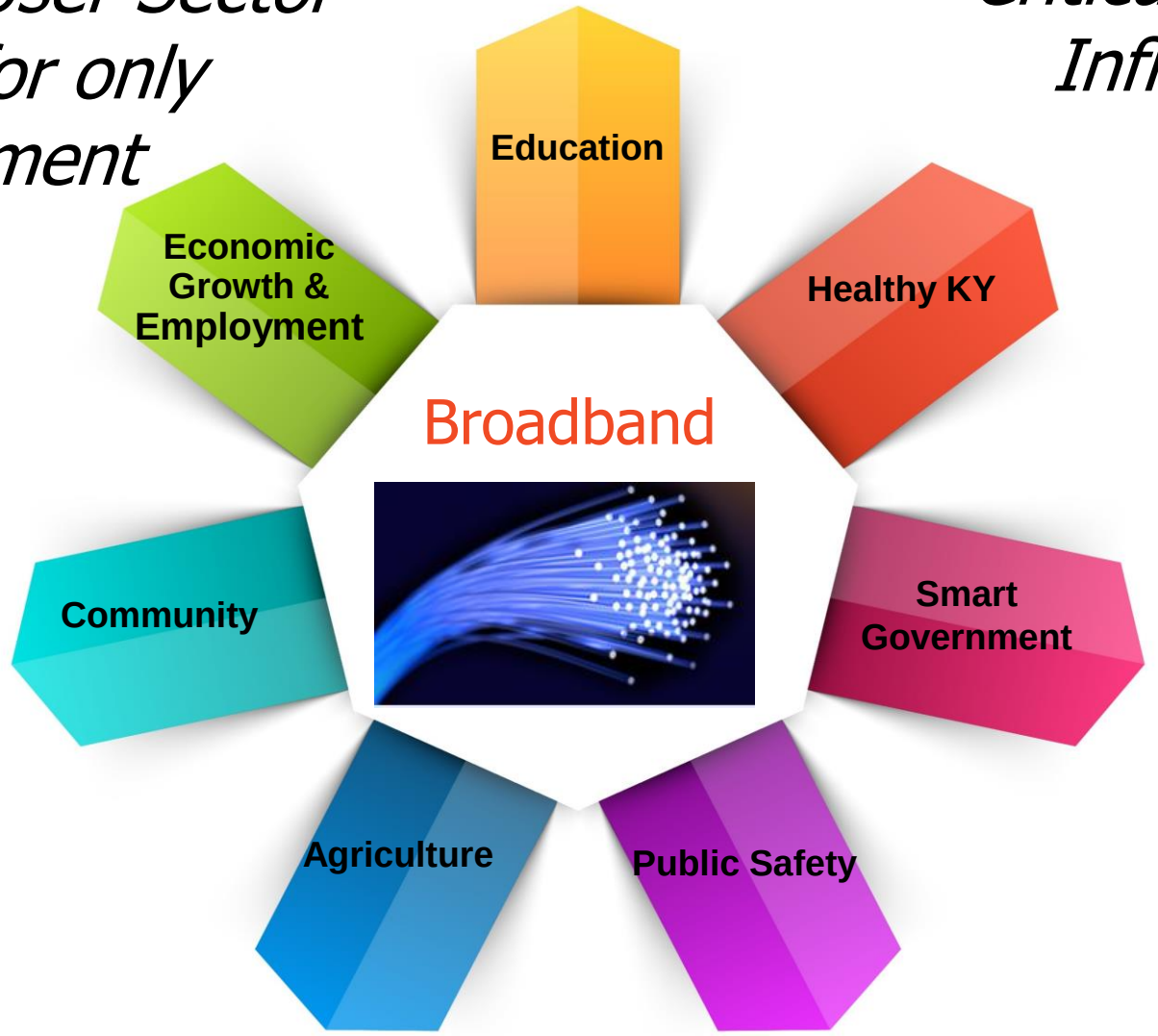
# Example: Richmond, KY Overbuild



# What can Broadband do for a Community?

*Benefits every User Sector*
*No longer for only entertainment*

*Critical Community Infrastructure*

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# Community


## Bad Broadband = Low Population Growth

"Counties that lag other counties in their state in access to good broadband are actually losing population; counties with the best broadband in their states are growing quickly." - Steve Ross

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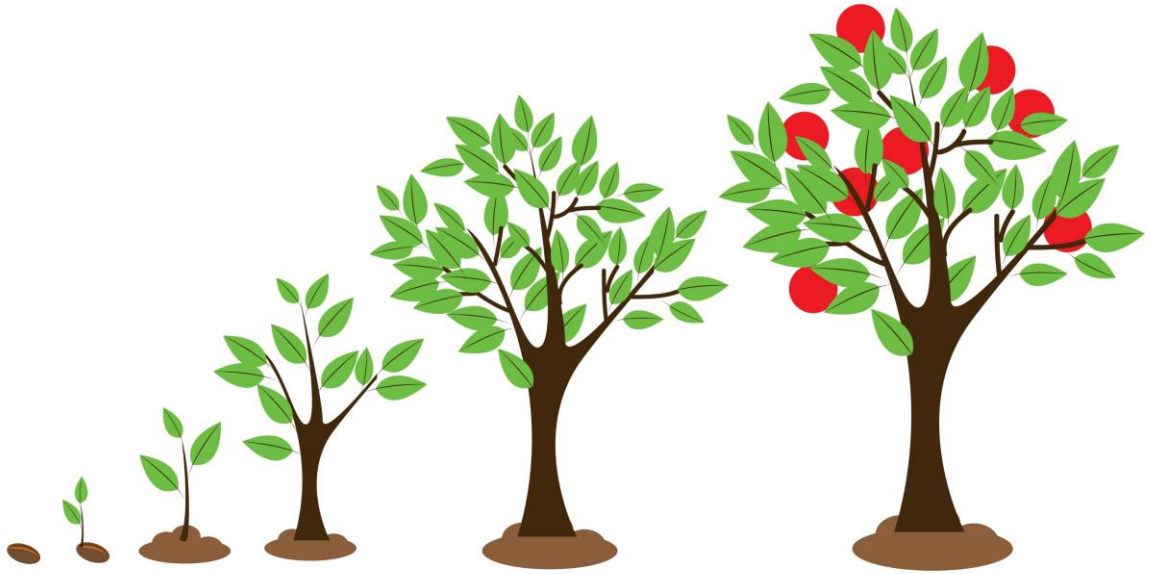
Ross, Steven S. (2014). Bad Broadband Equals Low Population Growth. Retrieved from: http://www.bbpmag.com/

# Broadband => Employment & Economic Growth enabler

- Digital Economy/Gig Economy/Global Economy
- Keep/draw in businesses (Large/Small/Entrepreneur)
- Enable working from home
- Job Training
- Employment



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# Health Care

## 3 Ways the Internet of Things Is Improving Healthcare


Electronic Medical Records
Radio Frequency ID Tags

Quicker Expertise Response
Remote monitoring

Reduced Manual Processes
More Patient Care Time
More Medical Care Innovation & improvements

Health Management and Information Systems Society (2015)

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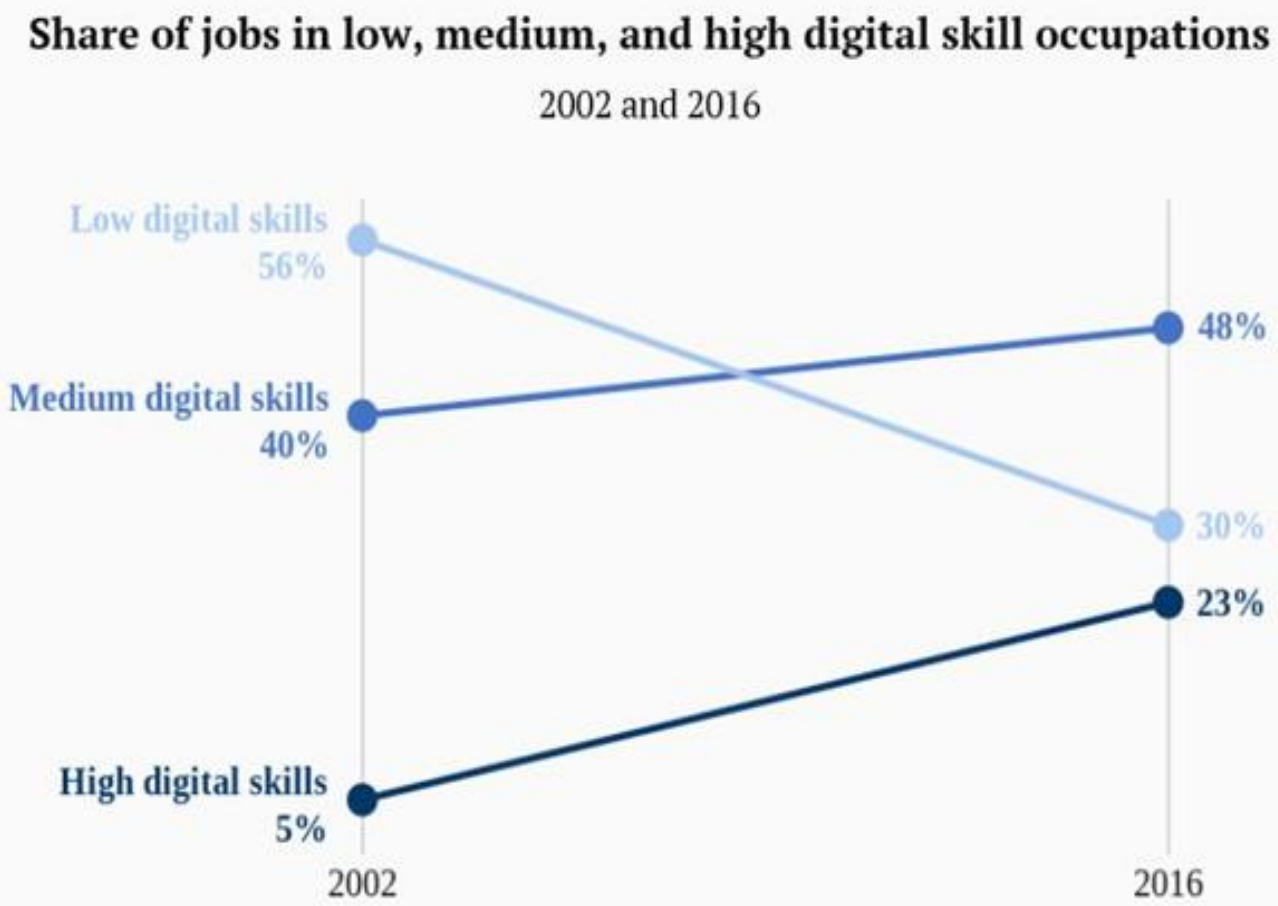
# Education




In 2002, 56% of the jobs studied required low amounts of digital skills. Nearly 40% of jobs required medium digital skills and just 5% required high digital skills.

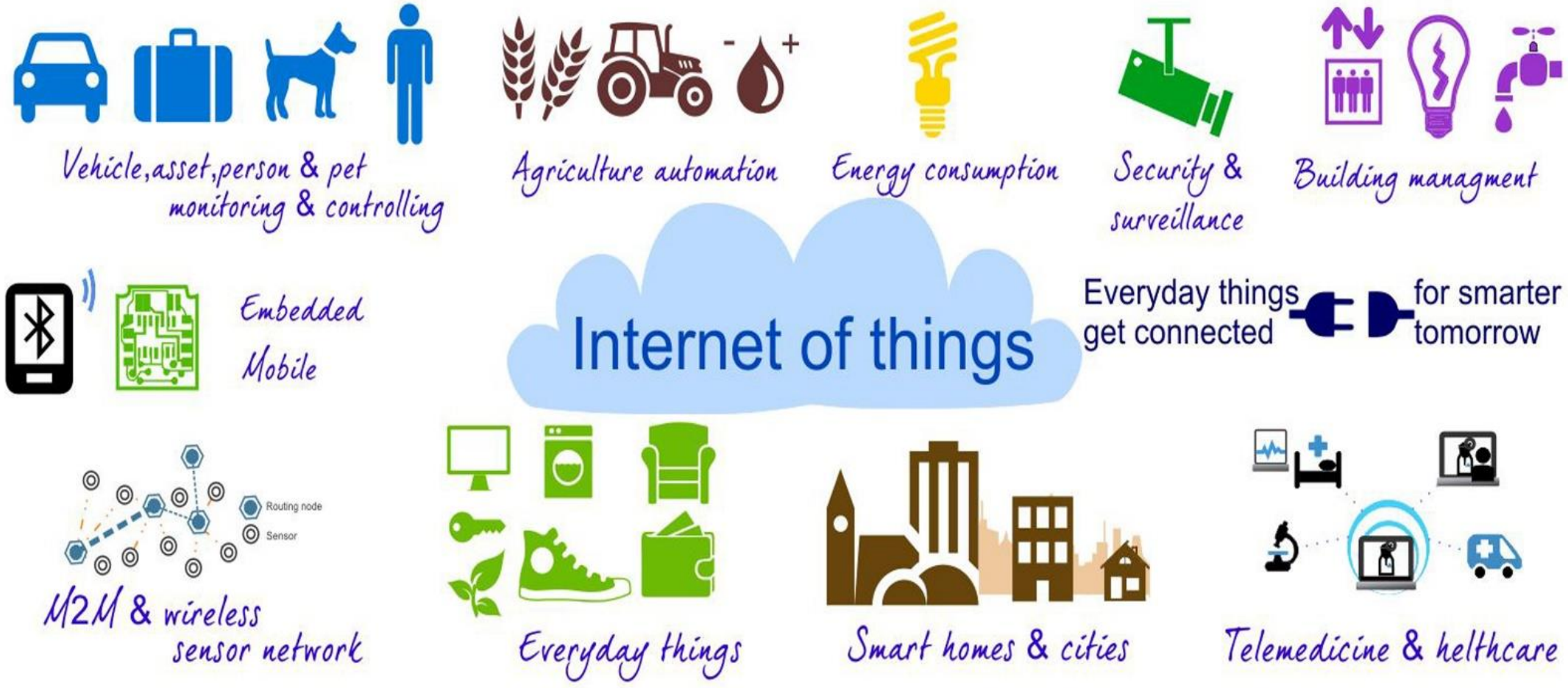
**A lot has changed.** By 2016, the share of jobs requiring high digital skills had jumped to 23%. The share requiring medium digital skills rose to 48%. And in a huge shift, the share of jobs requiring low digital skills fell from 56 to 30%.

Source: Brookings analysis of O'Net, OES, and Moody's data.

Retrieved from: www.inventron.com

# Future of Internet – Internet of Things (IoT)

IOT Video Clip





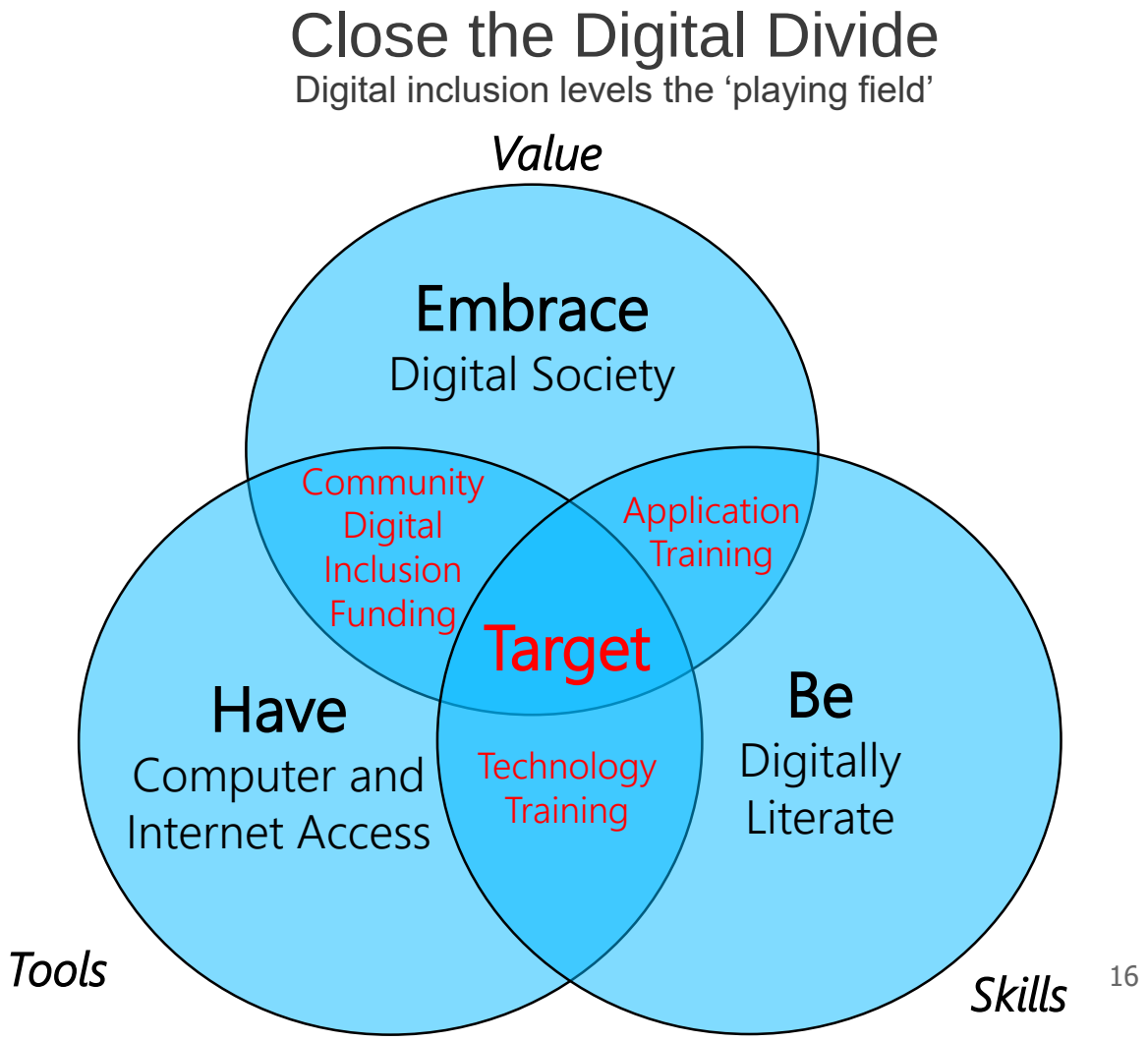

Reference: Clark, Drew (2016). What the Internet of Things Means for Local Government.; http://www.publicceo.com/

# State of Rural vs Urban Digital Divide & Impact

In spite of advances in both policy and technology, the barriers to Internet adoption existing in rural communities are complex and stubborn.

“Despite the large amount of funding coming from the Rural Utilities Service and F.C.C, rural American had not seen broadband deployed and adopted at the same speed and effectiveness that it had with electricity and telephone service almost a century ago.”[1]

Reference: NTIA State of Rural/Urban Digital Divide

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[1]We Need a National Broadband Plan, Christopher Ali, February 6, 2019

# Last Mile Planning Project Components

## Inclusive Community Engagement and Education

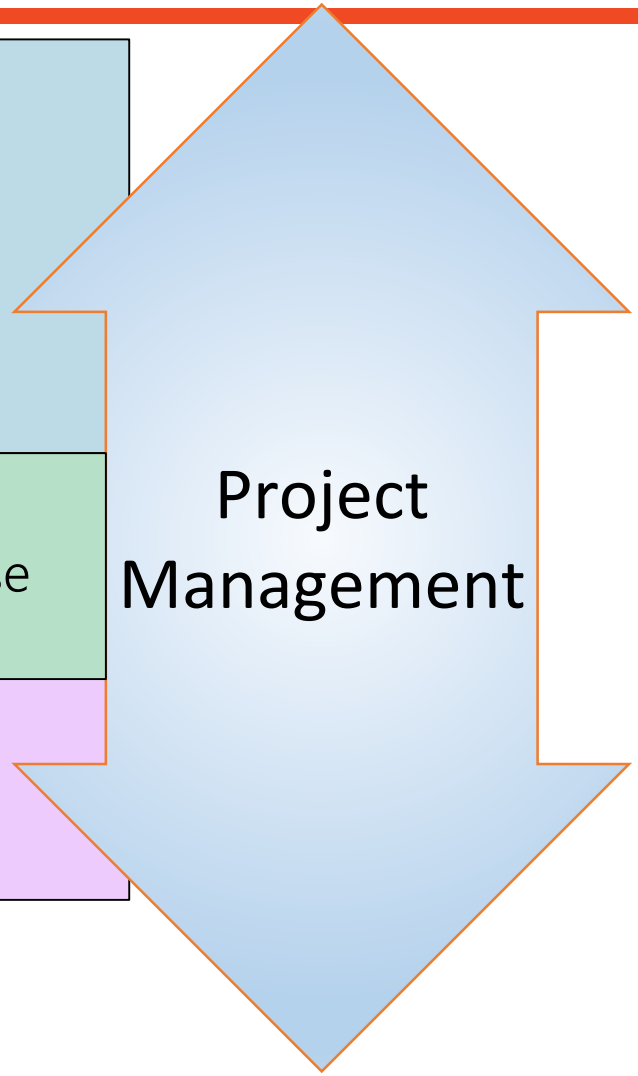
- Involvement of all residents/user sectors in planning and community advocacy
- Shared understanding of Broadband as a community infrastructure & quality of life benefits

## Strategic Thinking/Planning

Community-wide strategic thinking for successful Broadband access & use

## Tactical Planning/Actions

Actions to effectively accomplish strategies

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# Broadband Community Support & Engagement

## What is it?

- Educates/Informs
- Seeks input/feedback from all stakeholders


## What are success factors?

- **Involvement** of all stakeholders -Community wide
- Active Leadership & Sponsorship
- Customized for community
- Sustainment

## Why is it important?

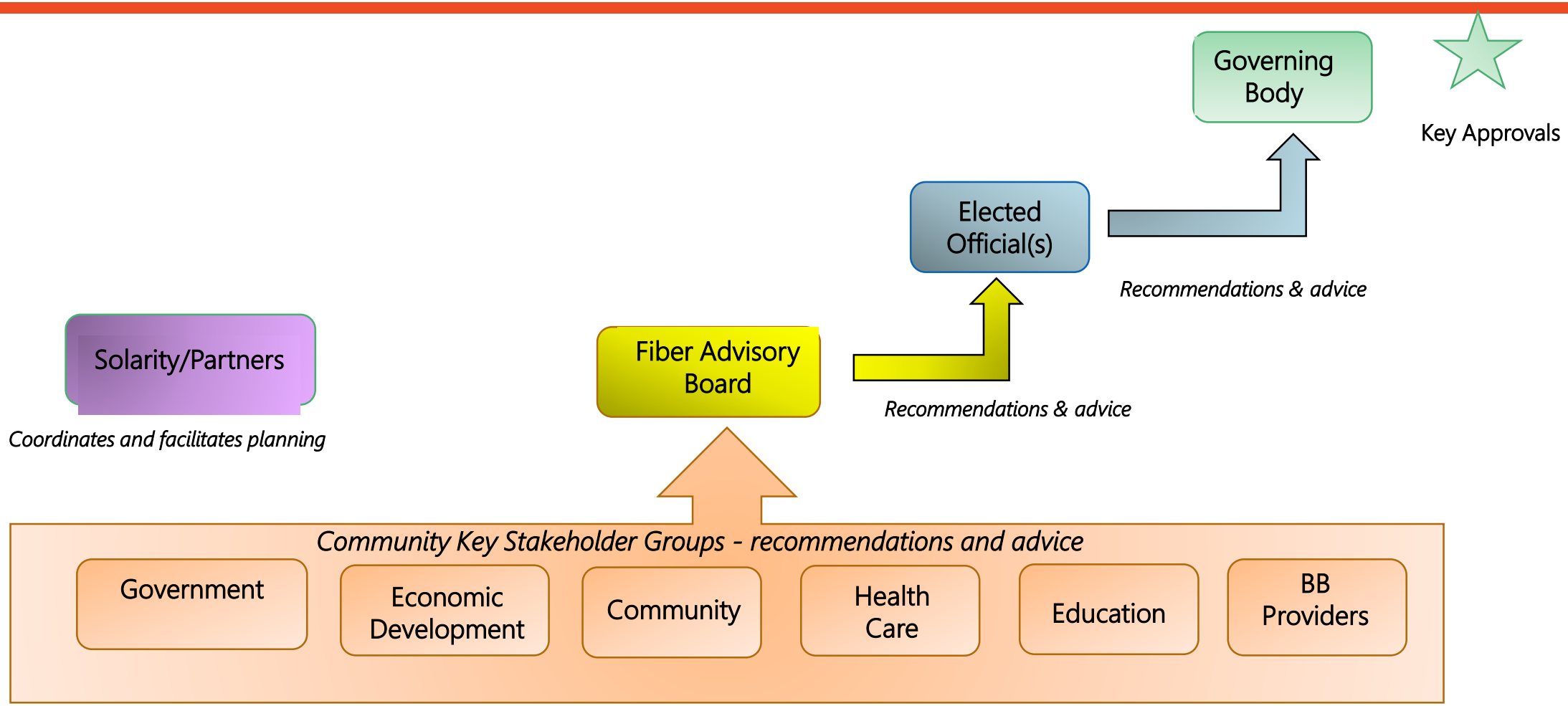
- Clarifies Purpose
- Strengthens Partnership/Communication
- Officials to understand and act on input from constituents

## What are its successful outcomes?

Community wide:

- Support for Last Mile Solution
- BB Adoption for Meaningful Use

# Leadership: Possible Organizational Structure & Roles

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# Planning

Think strategically for the long term…..

…..to build a roadmap to act practically in the short term!

~ Think Strategically & Act Practically ~


*"Start with the end in mind."* – *Stephen R. Covey*

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# Broadband Planning: A Roadmap to Success


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# Each community must find its best 'Last Mile' solution

## Examples:

- **Public Owned?**
- **Private Owned?**
- **Public/Private?**


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# Control, Risk, Benefit

## Interwoven Issues

1. Control – who owns the network and decides how it operates

2. Risk – the investment associated with developing and running the network balanced against revenue generated

3. Benefit – rewards (social, economic, political) achieved through successful implementation of the project

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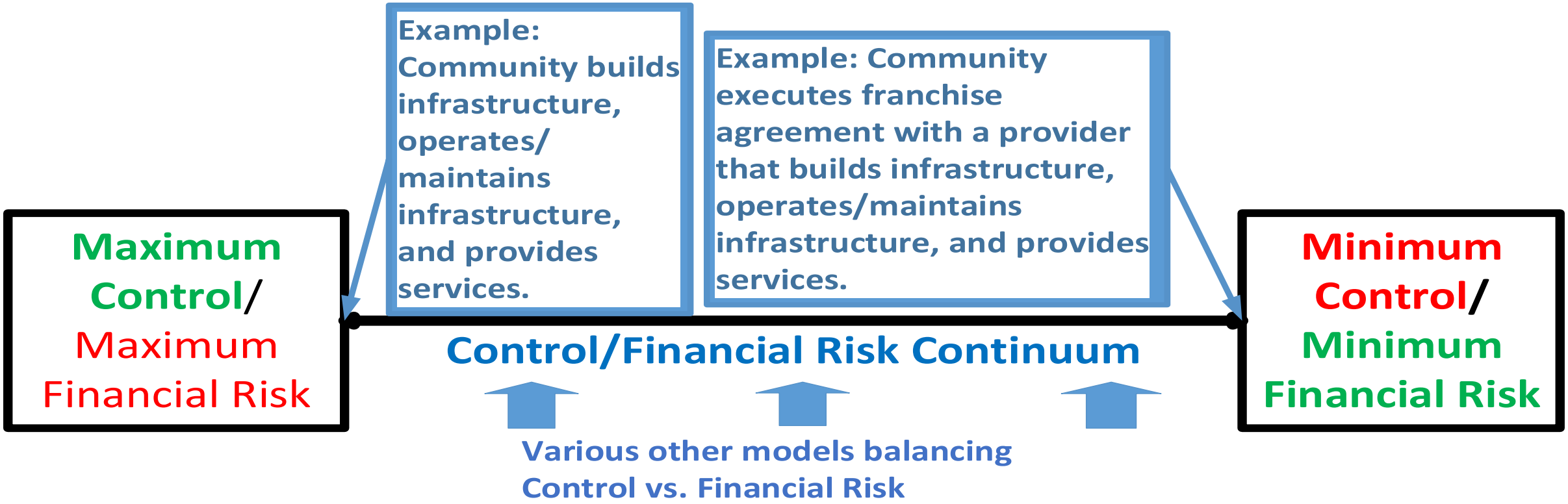
Reference: Hovis, Joanne; Lennett, Ben; Lucey, Patrick; Afflerbach, Andres; Hussain, Hibah; Russo, Nick. "The Art of the Possible: An Overview of Public Broadband Options." Open Technology Institute, CTC Technology and Energy & New America's Open Technology Institute: https://www.newamerica.org/

# Control vs. Financial Risk Continuum




**Stakeholder Benefits – Affordability and Access**

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# Contact


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# Questions & Comments



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