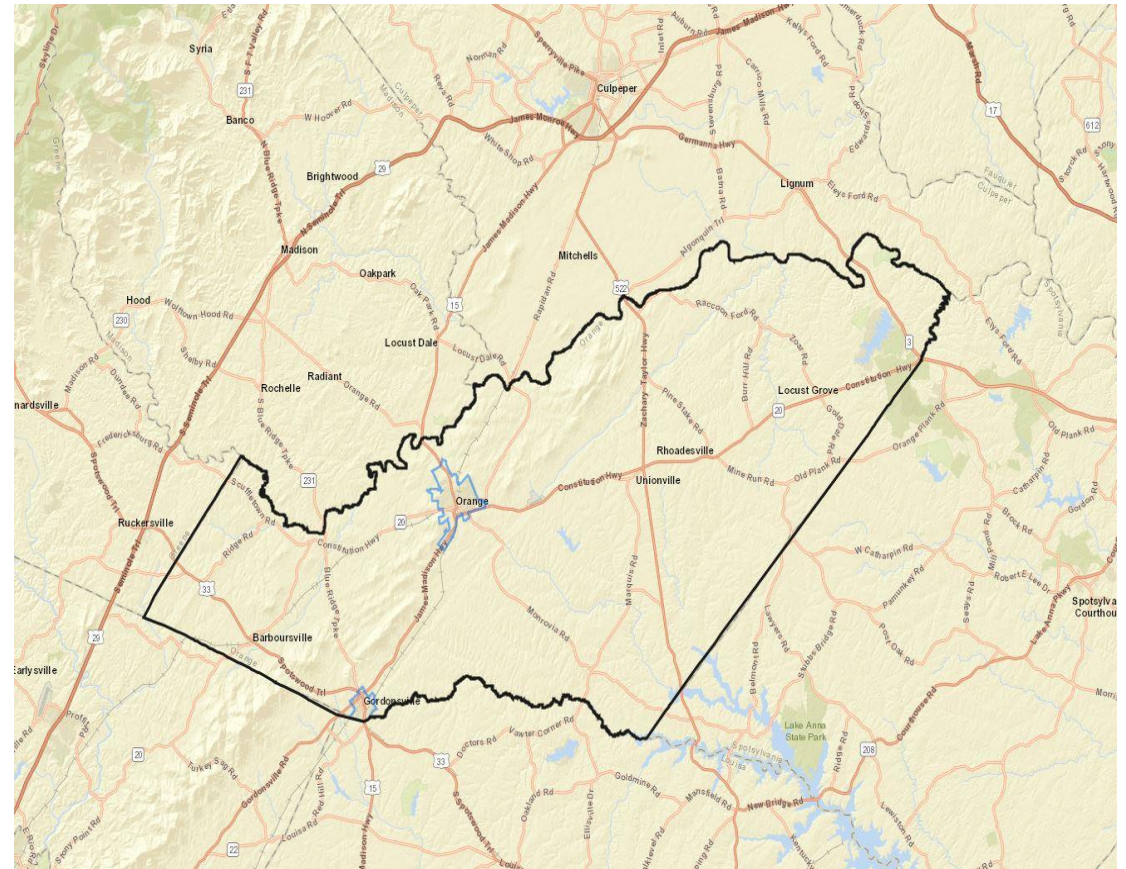# Orange County Broadband Initiative

June 2019

Overview

o Large variation in high-speed broadband availability in Orange County's predominately rural geography. Private sector broadband companies unable to provide affordable, high-speed broadband service due to large upfront capital expenses and a relatively small potential customer base to produce profitable revenue

o OCPS has a need for a Wide-Area Network (WAN) to provide reliable and secure transmission of voice, video, and data via the Internet for testing; Classroom Instruction; Administrative Connectivity & Communication

o The Orange County Board of Supervisors and Orange County Broadband Authority recognizes there is an increasing residential and commercial demand for affordable and reliable high-speed broadband as well as an inescapable need to use broadband to deliver efficient and effective local government services and promote economic development

o **Solution: A multi-faceted, public-private broadband solution that touches all areas of Orange County with high-speed broadband**

2016

- OCPS applies for USAC Grant with County funds to install 33 mile fiber network connecting school buildings ("Core Network")
- County "up-sizes" strand count to 288 (84 for OCPS)
- OCBA formed with goal to create an "Open Access" Fiber Optics Network and implement the *Rural Broadband Initiative*

2017

- USAC grant awarded for self-provisioned fiber network ($1.7 million)
- "Core Network" construction begins
- LMR P25 contract awarded to Harris Corporation, engineering phase begins
- Opportunity to leverage dark fiber with components of the LMR system for economy of scale and function

2018-19

- Construction continues for Core Network (USAC delays)
- P25 tower sites chosen, engineering and environmental assessments completed, permits in process

Joint Public Safety Land Mobile Radio (LMR) & "Open Access" Fiber Optics Network Projects

o Opportunity to leverage *dark* fiber with components of the LMR system for economy of scale and function

o Opportunity to achieve over time high-speed broadband services through a combination of direct fiber service to unserved businesses along the network route and to induce private sector Wireless Internet Service Providers (WISP) to utilize the LMR communications towers which will be designed to serve multiple tenants beyond public safety

o Overarching goal is to strategically integrate public sector services (education and public safety), and in turn significantly reduce the capital expense barriers for private-sector telecommunications companies to provide affordable, reliable high-speed broadband options for Orange County's citizens and businesses
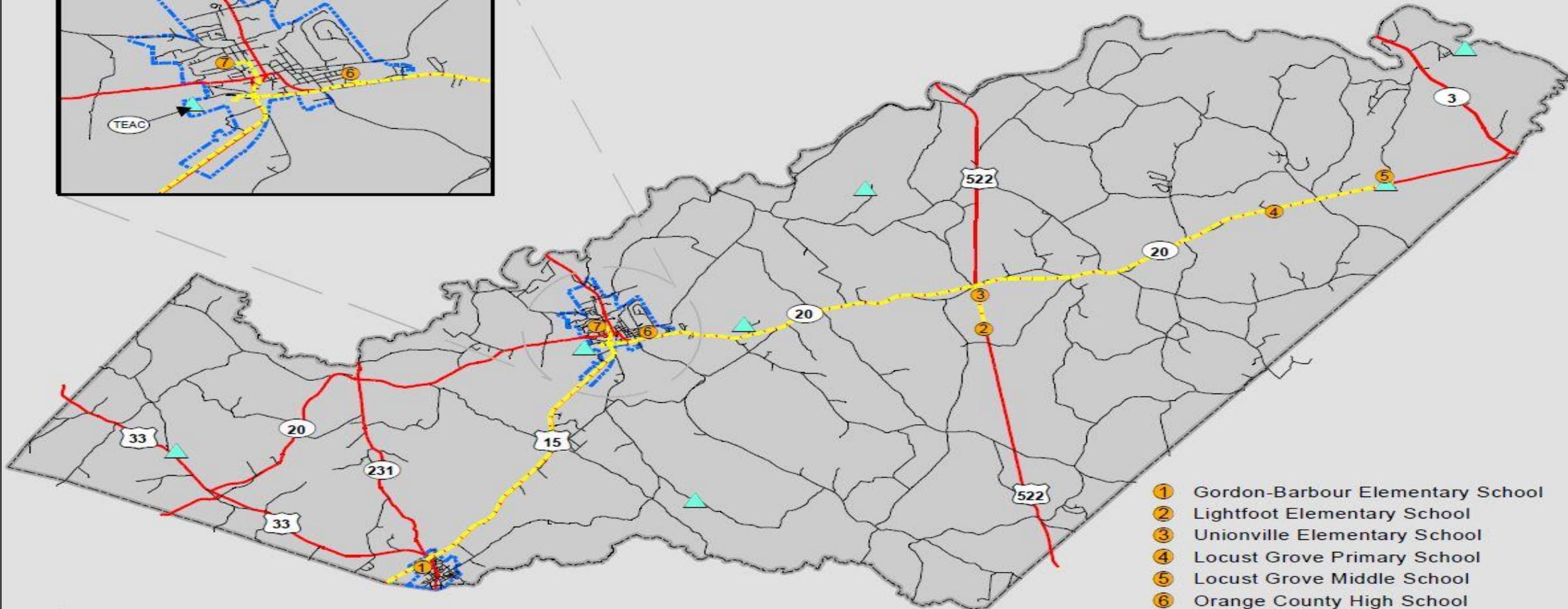
FIBER NETWORK

Network Visualized by Orange County GIS
March 5, 2019

Location: County of Orange
Virginia, United States

N
W E
S

Supporting Data/Infrastructure

— Core Network   ● Schools
— Primary Road   ▲ Tower Site
— Secondary Road   ⬚ Town Boundaries

TEAC

522

3

5

4

20

3

2

20

522

20

33

231

33

15

1

0   2   4   8   Miles

① Gordon-Barbour Elementary School
② Lightfoot Elementary School
③ Unionville Elementary School
④ Locust Grove Primary School
⑤ Locust Grove Middle School
⑥ Orange County High School
⑦ Orange Elementary School
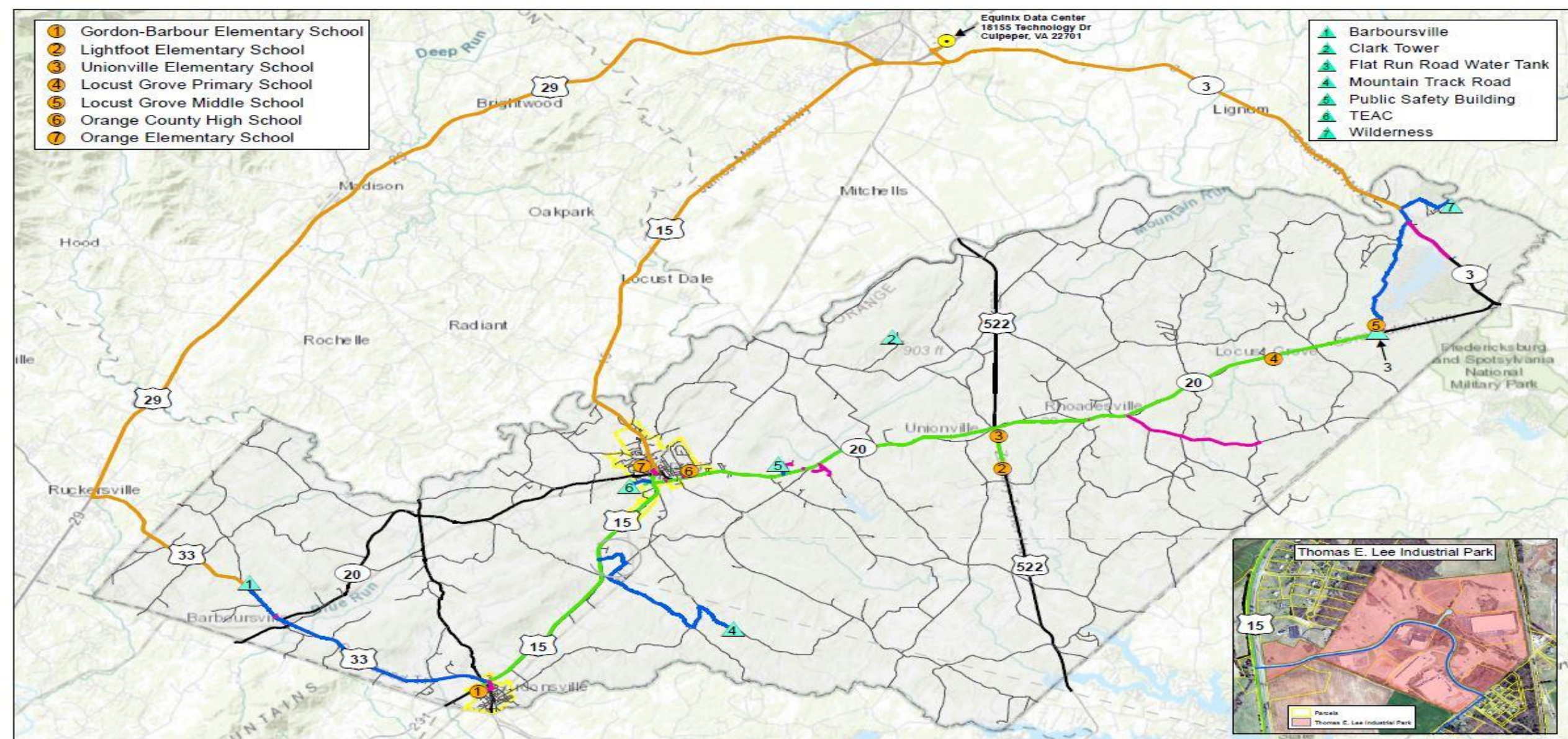
ORANGE COUNTY FIBER-BROADBAND NETWORK

Legend (Schools):
1. Gordon-Barbour Elementary School
2. Lightfoot Elementary School
3. Unionville Elementary School
4. Locust Grove Primary School
5. Locust Grove Middle School
6. Orange County High School
7. Orange Elementary School

Legend (Tower Sites):
1. Barboursville
2. Clark Tower
3. Flat Run Road Water Tank
4. Mountain Track Road
5. Public Safety Building
6. TEAC
7. Wilderness

Equinix Data Center
18155 Technology Dr
Culpeper, VA 22701

Thomas E. Lee Industrial Park
Parcels
Thomas E. Lee Industrial Park

Orange County GIS

Gordon Building
112 West Main Street
P.O. Box 111
Orange, VA 22960

DESIGNED
DRAWN   JHW
DATE   06/13/19

1
Mile

Equinix Data Center
Schools
Tower Sites
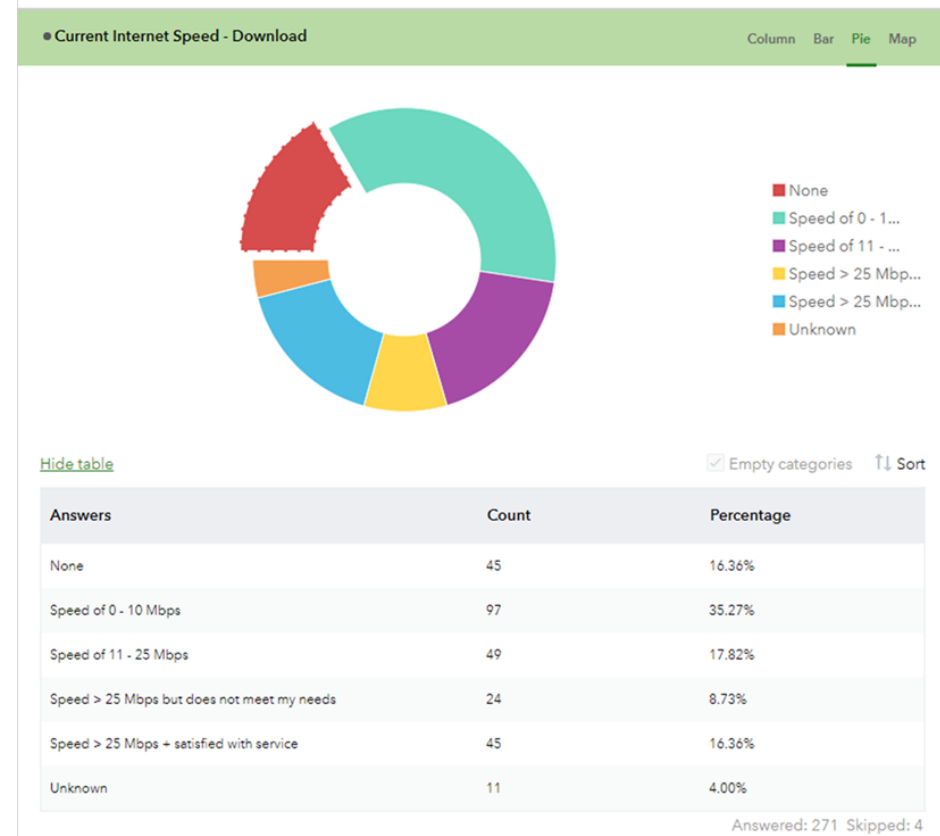
Phase 1 - Schools Main Route
Phase 2 - Tower Laterals
Phase 3 - Equinix Routes Proposed
Phase 4 - County Facility Proposed

Primary Road
Secondary Road
County Boundary
Town Boundaries

FIGURE
1

Next Steps

o Project Update: "Core Network" Construction

o Request for Information (Due June 2019)
  o Private Sector Grant Partner(s)

o Community Survey (293+ Responses in 2 Weeks)

o Pilot Programs (Grant Opportunities, Varying Technological Components)

o Future Phases (Phases 2-4)
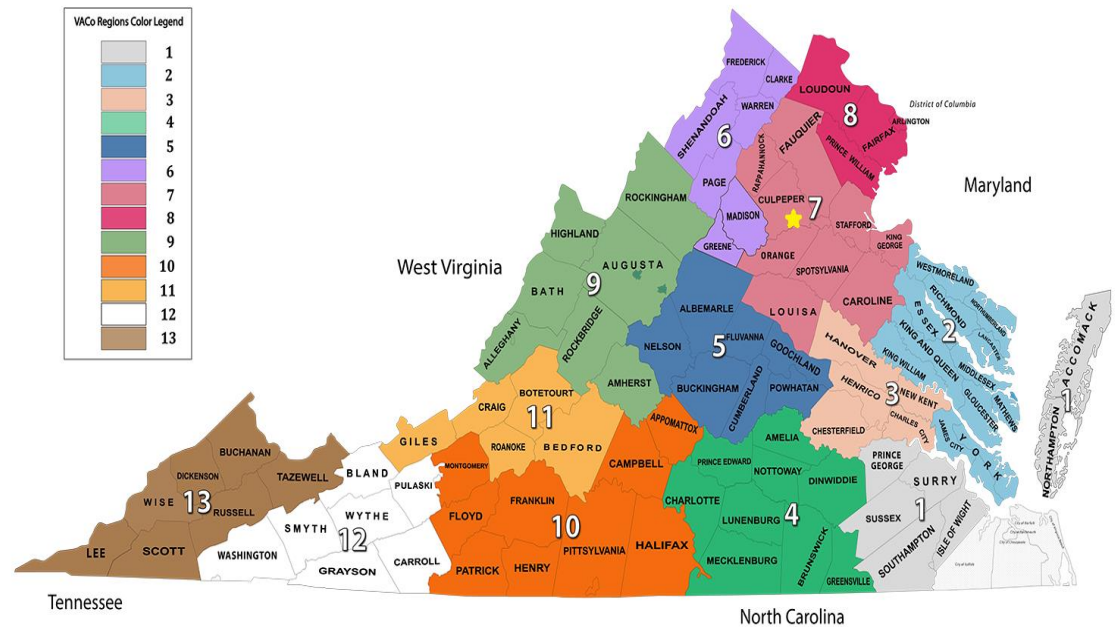
o Regional Grant Opportunities (State & Federal)

● Current Internet Speed - Download   Column Bar Pie Map

■ None
■ Speed of 0 - 1...
■ Speed of 11 - ...
■ Speed > 25 Mbp...
■ Speed > 25 Mbp...
■ Unknown

Hide table   ☑ Empty categories ↕ Sort

Answers	Count	Percentage
None	45	16.36%
Speed of 0 - 10 Mbps	97	35.27%
Speed of 11 - 25 Mbps	49	17.82%
Speed > 25 Mbps but does not meet my needs	24	8.73%
Speed > 25 Mbps + satisfied with service	45	16.36%
Unknown	11	4.00%

Answered: 271 Skipped: 4

Community Survey Results as of 6/7/2019

Regional Collaboration

o Public Safety Communications Network (P25 Towers & Fiber Runs)

   o Dual Core/Data Storage

   o Fiber to Tower Connectivity/Redundancy

o VDOT Right of Way Access

   o State Permits vs. Locality Permits

o Equinix Access

o Regional Grant Opportunities (State & Federal)

Virginia Association of Counties Regions

Chairman Jim White
Orange County Board of Supervisors, and
Orange County Broadband Authority

Lewis Foster
Broadband Program Manager
Orange County Broadband Authority

Stephanie Straub
Director of Management Services
Orange County, VA

www.orangecountyva.gov