AGENDA

1. DANC Overview
2. Broadband things to consider
3. Tupper Lake Project
4. Technology Options
5. Grant Opportunities
6. Contacts
7. Questions

TUG HILL COMMISSION BROADBAND SERIES

June 16, 2021

Who We Are & What We Do

- Public benefit corporation established by NYS Legislature in 1985 to develop & manage infrastructure required by reactivation of 10th Mountain Division
- Revenue-driven, Authority receives no operating funds from New York State
- 85 employees
- Unique among public authorities, DANC owns and operates a number of revenue-based infrastructure facilities including water and wastewater facilities, an extensive fiber optic network, engineering services, community development and a regional landfill.

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Partners in Development

- World Class Carrier Network
- High-Speed Broadband
- Reliable & Diverse Network
- Wide Array of Services & Customers

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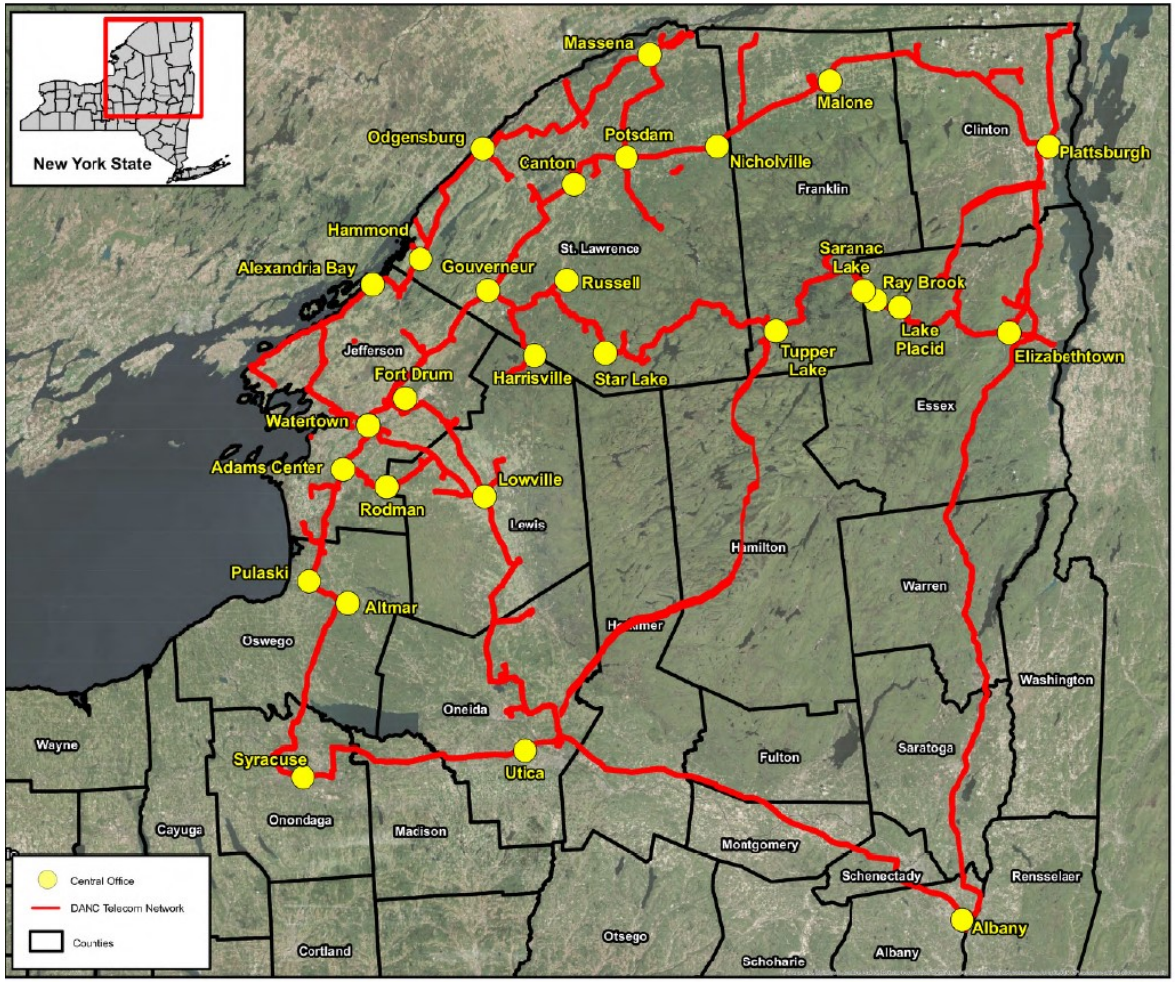
Telecommunications

- 1,800 miles of broadband network connecting Watertown with Syracuse, Utica, Albany, Plattsburgh; ensures NNY has global access
- 30 Central Offices to deliver services over the network
- A regional/middle-mile network providing transport services for telecommunications carriers



Things to Consider

- Start with Goals
  - Impacts design/strategy/Communication
  - Unserved (Availability)
  - Cost (Affordability)
  - Competition (Underserved)
  - Schools
  - Economic Development/Technology Development
- Determine Services
  - Internet, Voice, CATV, streaming
  - value add – Public emergency, wi-fi corridor, healthcare apps,
- Check if already funded through some program
  - Stay on top of grant awards
  - When will the service be built (RDOF)
- Determine Available Options
- Consider all alternatives
- Select Best Solution to Match your Goals
  - Service Provider
  - Technology

Tupper Lake Project

- Background
  - Broadband Committee started 3 years ago
  - Surveyed downtown corridor
    - 53% had speed issues, 40% had cost issues, majority of complaints were service related (too long, hard to get in touch, slow response, etc.)
  - Many comments from unserved
- Start with Goals
  - Provide better solution for downtown corridor/business community
  - Service unserved locations
  - Wifi corridor
  - Discussed several value add – telemetry, tech center, student configs
- Determine Services
  - Drove every road in Town to verify service
  - FTTP For downtown – existing infrastructure
  - Wireless for unserved
- Check if already funded through some program
  - No other funding
- Determine Available Options
  - NBRC Grant
  - Use existing infrastructure
  - Town network with partner Service Providers –RFI, Brand TBD

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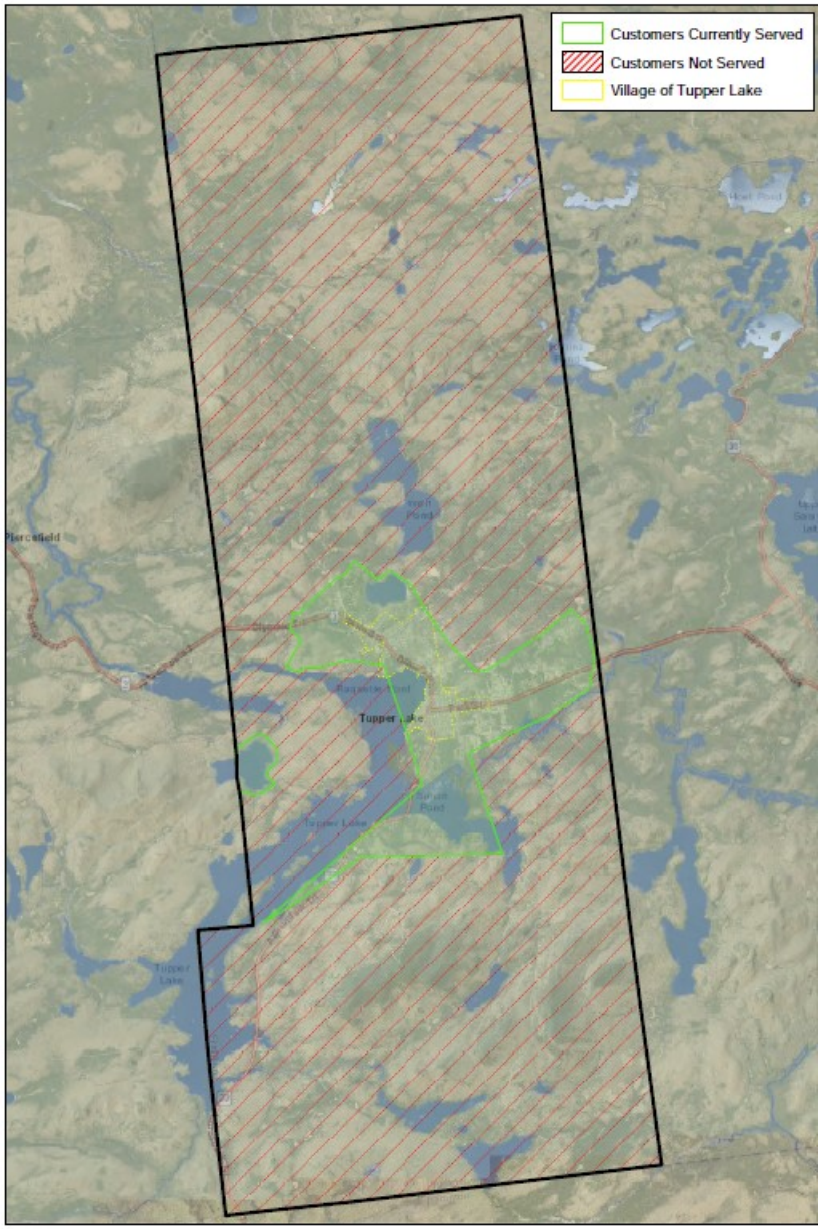

Green is served area
- 90+% Served
- Drove all roads
- 125 unserved
- Used mapping

To find unserved
- Did not count

State and logging Land
- 3 Wireless nodes

To serve
- Mt Morris

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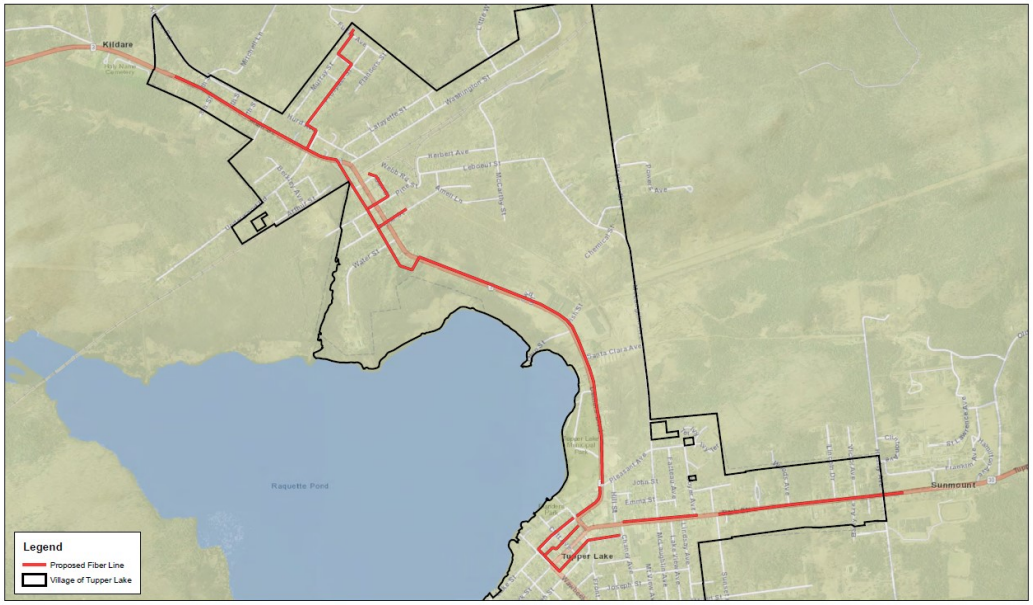

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Engineering Division, GIS
23557 NYS Route 37
Watertown, NY 13601

Map 1 - Fiber to the Premises Network

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Engineering Division, GIS

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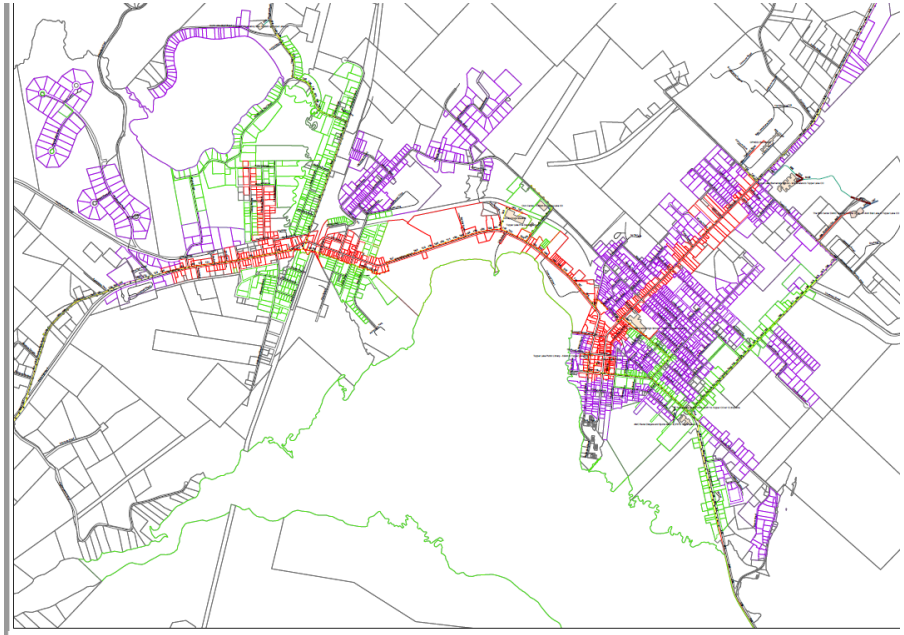
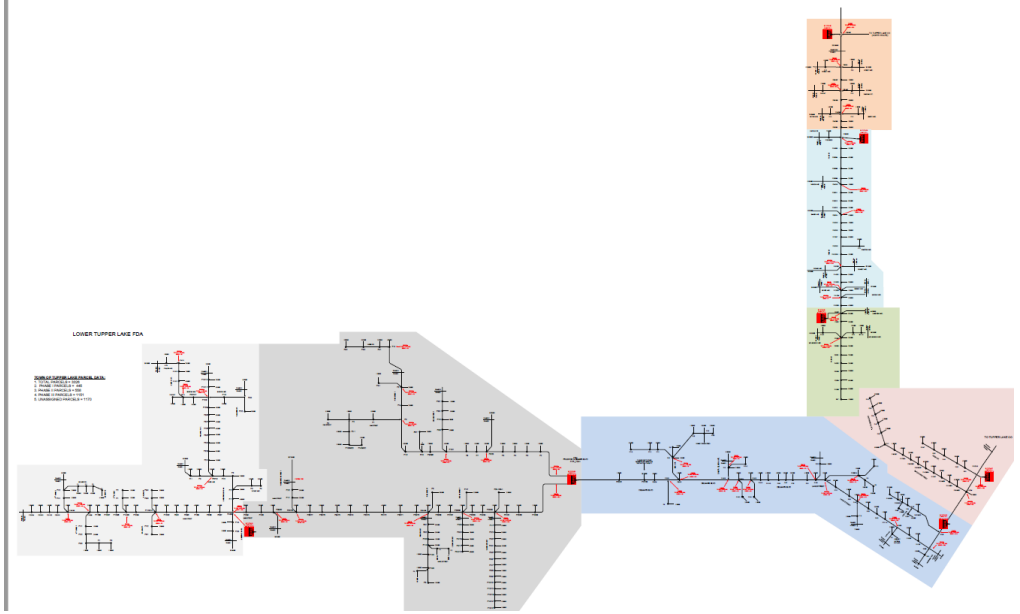


Design for Growth



Need Detailed Designs

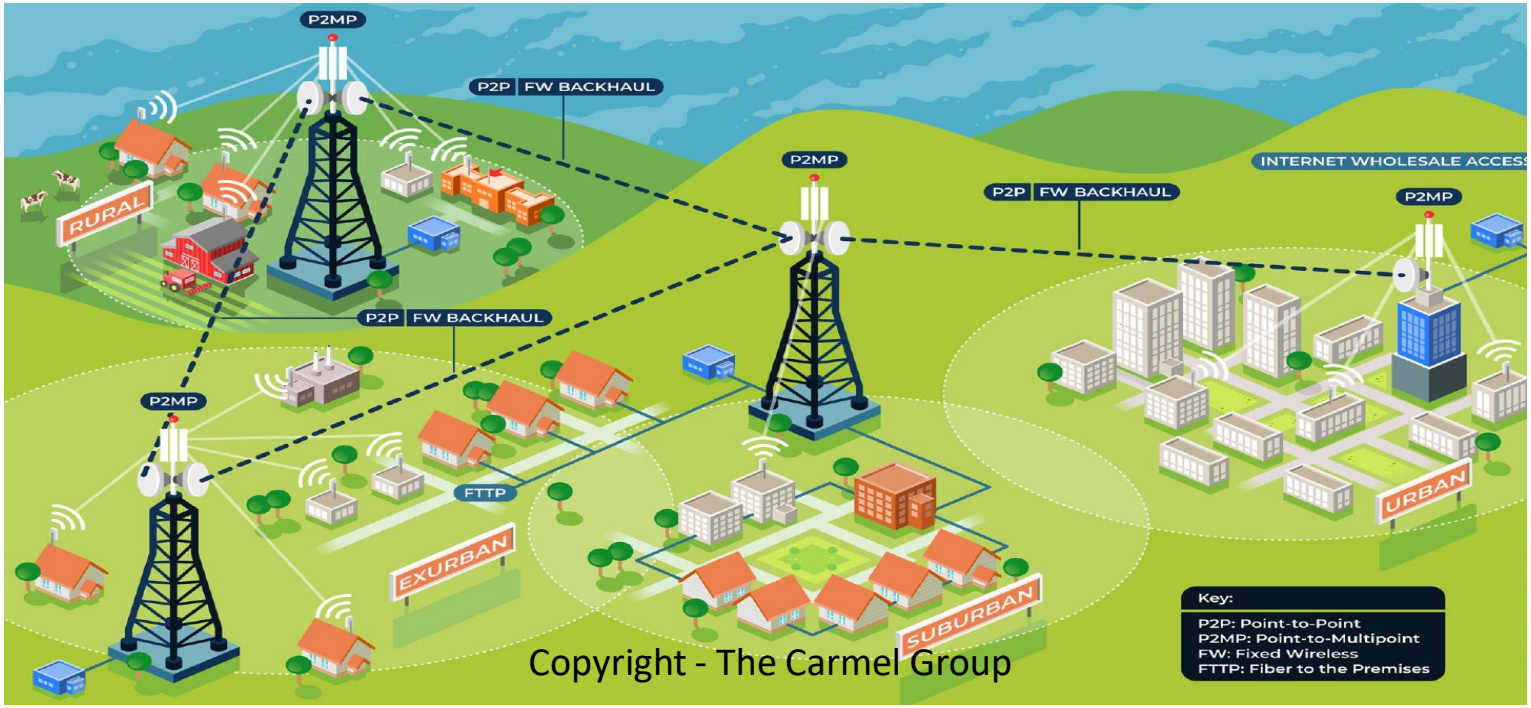
Technology Choices

- WIRELINE
  - Fiber to the premise (FTTP, FTTH, GPON)
  - Cable TV (Coax or Fiber)
  - Generally more costly and time consuming
  - Should be future proof

- WIRELESS
  - Fixed Wireless – Wireless Internet Service Providers (WISP's)
  - Point to Point
  - Point to multipoint
  - Typically more cost-effective
  - Scalability and usage must be watched
  - Licensed versus unlicensed frequencies
  - Mobile
    - 4G versus 5G
    - 5G Prep (use as second choice)

FROM HUDSON VALLEY WIRELESS

Fixed-Wireless



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2021 FIXED-WIRELESS AND HYBRID ISP INDUSTRY REPORT

FREQUENCY	470-600 MHz	902- 928 MHz	2.4 GHz	2.5 GHz	3.55 – 3.7 GHz	5.15 - 5.35 GHz, 5.47 – 5.85 GHz	5.925-7.125 GHz	24.05-24.25 GHz	57-71 GHz
BAND NAME	TVWS (White Space)	ISM	ISM	EBS/ BRS, 3GPP Band 41	CBRS, 3GPP Band 48	U-NII	U-NII-5, U-NII-7	24 GHz	60 GHz
LICENSE	Exempt (1); database query	Exempt (1)	Exempt (1)	Licensed; usually mobile	GAA exempt (SAS control) or PAL (1)	Exempt (1)	Exempt (requires AFC control)	Exempt (1)	Exempt (1)
OPERATOR UTILIZATION LEVEL (2)	Low; niche	Medium	Medium	Low; leased	Medium; growing	High	Uncer-tain/ pending (2021)	Medium; point-to-point only	Low; growing
AVAILABLE BAND SIZE	Varies By Location	26 MHz	83.5 MHz	186 MHz	150 MHz	Up to 580 MHz	Up to 850 MHz	200 MHz	14 GHz
NON-LINE OF SIGHT PERFORMANCE	Excellent	Excellent	Fair	Good	Fair	Poor	Pending	None	None
PRIMARY TECHNOLOGY	Propri-etary TDD	Propri-etary TDD	802.11 variants	TDD-LTE	Mixed: TDD-LTE, Propri-etary non-LTE	Propri-etary TDD, some LTE-U, LAA	802.11 variants; propri-etary TDD, some LTE-U	Propri-etary	802.11 ad, 802.11ay variants, including Terra-graph

Choosing the right tool for the job

LTE - UE

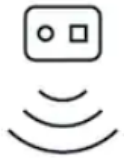
Smartphone

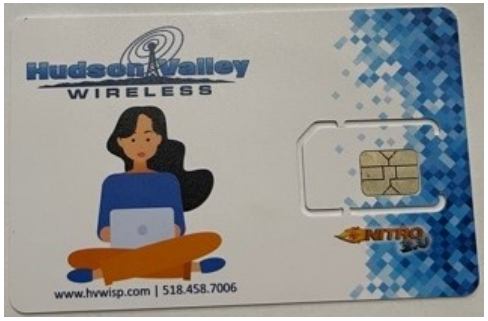
Tablet

Laptop

Camera

Gateway


Sensor



Category A

≤1 Watt
< 6m Outdoor

Category B

- 1 to 50 Watt
- > 6m Outdoor
- Certified Installer

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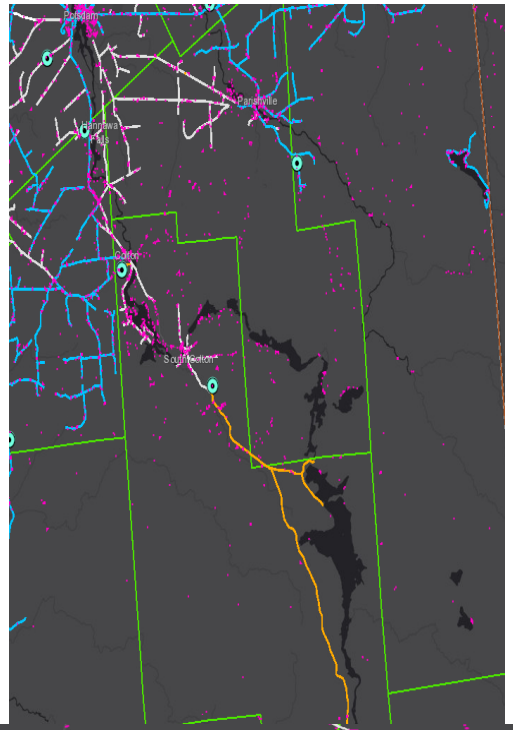
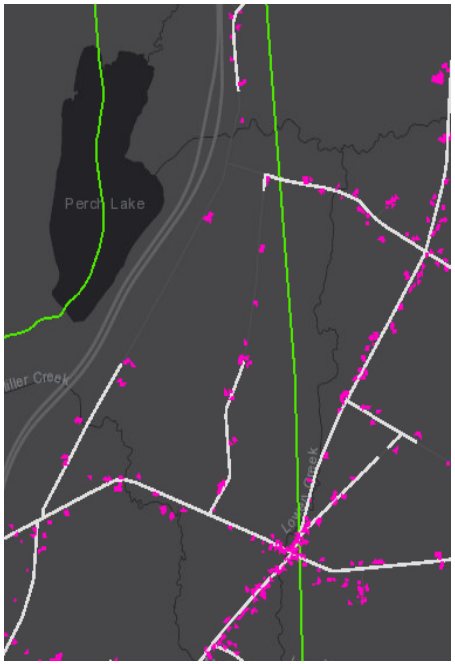
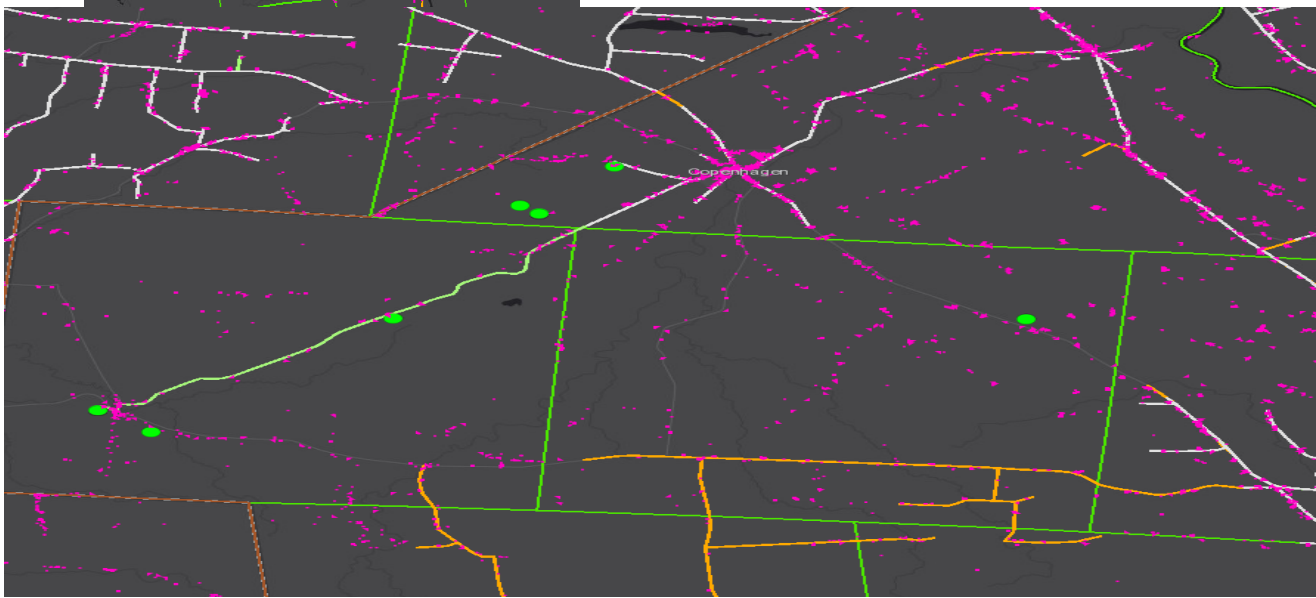
Technology Choices







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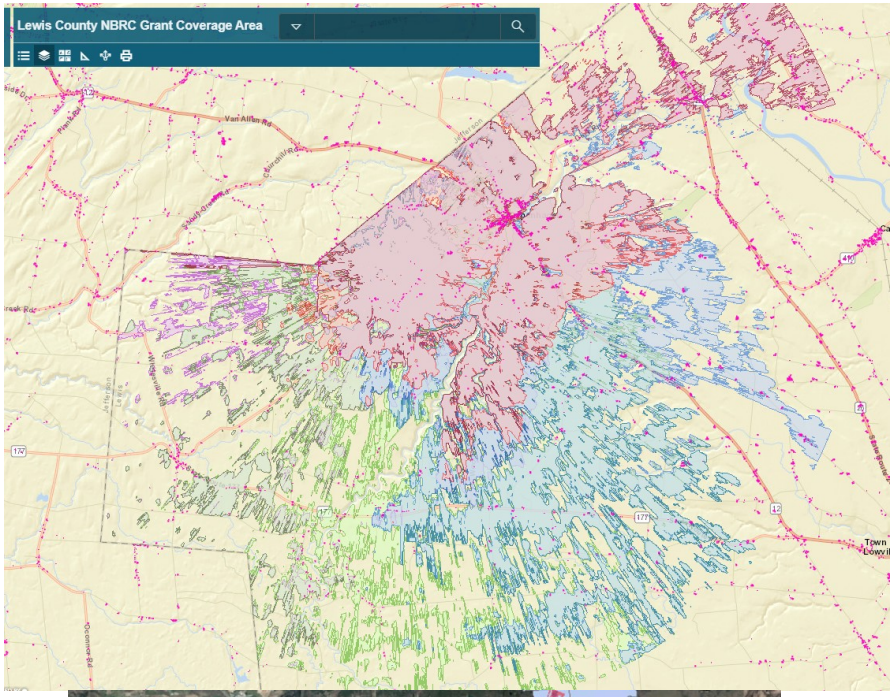

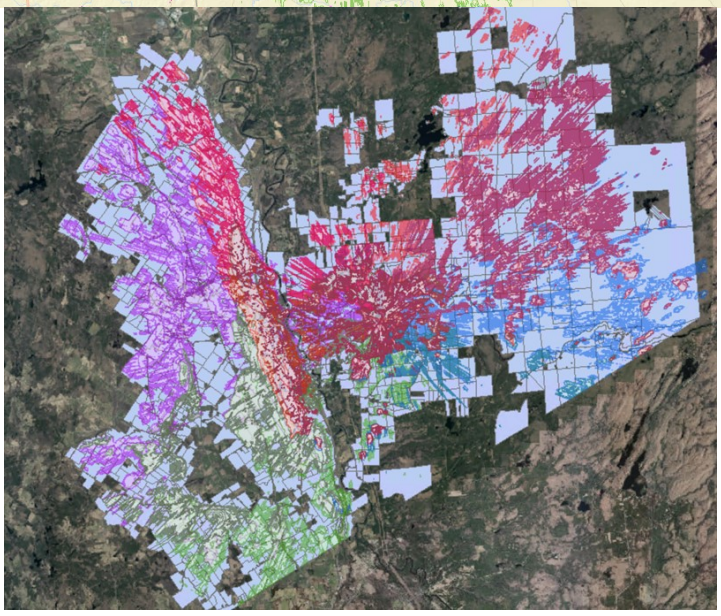

Things to Consider

- Service Provider
  - Wireless or Fiber
  - Local technicians
  - Call Center
  - Reputation
  - Community Support
  - Community involvement
- Operations Support
  - Network monitoring/management
  - Installs
  - Customer Service/Repairs
  - Provisioning
  - Billing and Collections
- Sustainability
  - Financially Viable
  - Ability to Upgrade/Grow Network
  - Ability to add services
- Project Tracking
  - Is it a success – ties to goals
  - Best to develop some key performance indicators in advance and document them

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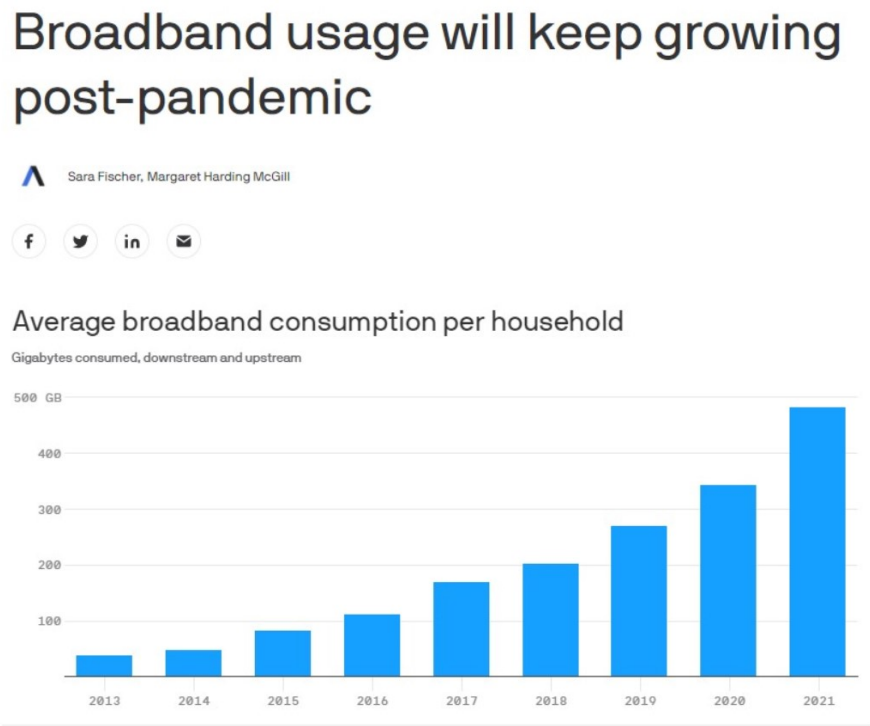
Things to Consider-Continued

- Speed
  - 25x3, 100x20, 100x100
  - Usage continues to increase, per US Telecom 2020 Broadband Pricing Index – Price per megabit are down 37.9% for most popular service and 56.1% for highest speeds compared to 2015
- Scalability
  - Ability to increase speeds, add services, extend network



WHAT CAN WE DO

- Identify Assets
  - Municipal Assets like water towers, public emergency infrastructure, conduits, buildings, telemetry locations, your own telecom expenses, etc.
- Identify needs – many grants would be aided with assistance for municipal needs like telemetry and public emergency
- Tax Incentives – In very rural areas
- Stay Informed
  - Meet with Grant awardees
  - Track grants opportunities and progress. Invite service providers to work with you.
- Develop Goals in advance
- DANC Projects
  - Joint builds, revenue share, asset leases, swaps, etc.
- Plan for public private partnership structures/ideas
  - What organizational structure for partnering
  - Willing to own assets and work with SP?
  - Wireless assets
  - Temp tax incentives

GRANT OPPORTUNITIES

- Emergency Broadband Benefit
  - Commenced May 12th
  - $50/month subsidy for low-income
- Emergency Connectivity Fund
  - $7.2 Billion for Schools and Libraries
  - PC's, tablets, wifi hotspots, broadband connections for students, staff, and libraries
  - 45 days for application so be prepared
- NTIA Consolidated Appropriations Act
  - $300 million fund
  - Must be public/private partnership
  - Open now, due August 17
  - Prefer service at 100/20
- NTIA Tribal Grant
  - $1 billion fund
  - Tribal Government, organizations, communities – can partner with ISP's
- ReConnect Phase 2 – Closed 4/15 but watch for winners
- American Rescue Plan
  - $350 Billion for States
- PSC Settlement Fund
  - Small amount, may help to fill small gaps, opening Sept. 2021
- Public Safety Grants
- RDOF Phase 2 - $4.4 Billion
  - Rural Development Opportunity Fund
  - Waiting for better mapping

https://www.internetsociety.org/wp-content/uploads/2021/03/Guide_to_Federal_Broadband_Funding_Opportunities_in_US-EN.pdf.

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Contacts

SERVICE PROVIDER CONTACT INFO

FIBER TO THE HOME

COMPANY	NAME	CONTACT	GEOGRAPHIC AREA
SLIC Network Solutions	Kevin Lynch	kevin.lynch@slicfiber.com	St. Lawrence, Franklin, Clinton, Essex, Hamilton, Warren, Washington, Saratoga Counties
ADK Techs	Chuck Robertson	chuck@adirondacktechs.com	varied
Verizon			NY State, Gouverneur
Frontier			NY State
Spectrum			NY State
Citizens of Hammond			Hammond, Alex Bay
TDS		855-220-2292	Jefferson, St. Lawrence Counties
Westelcom/Chazy Westport			
Firstlight			
Northland Networks			

WIRELESS ISP

COMPANY	NAME	CONTACT INFO	GEOGRAPHIC AREA
Hudson Valley Wireless	Jason Guzzo	jason.guzzo@hvwisp.com	Many areas
ADK Techs	Chuck Robertson	chuck@adirondacktechs.com	varied
Ridgeview Communications	Dan Churchill	dchurchill@ridgeviewtel.com	Jefferson, St. Lawrence, Lewis
Mohawk Networks	Colby Bradford	cbradford@mohawk-networks.com	St. Lawrence, Franklin, Lewis
Wireless Internet Now	Deanne	deanne@wirelessinternetnow.net	Franklin, St. Lawrence
Eagle One Wireless	Matt Miller	afterdark230@mac.com	Old Forge, Inlet
CV Wireless	Beth Schiller	beth@cv-wireless.com	Essex County
Rainmaker	Fred Engleman	fengelmann@icloud.com	Eastern NY

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Questions

dwolf@danc.org

- Reminders:
  - Develop Goals
  - Asset List
  - Community Needs
  - Meet with Grant Awardees
  - Stay in touch with service providers (liaison)
  - Expect demand to increase so plan ahead