



M O O N F A R M E R



UCEDA: Ellenville Wireless Broadband

Board Meeting
February 5, 2019



Recap: The “Problem”

- Original Findings: Many residential and rural areas and don't have access to quality broadband outside of satellite.
- This is a disincentive to business development and residential development.
- Previous exploration of bringing fiber to the area via Crown Castle yielded no financially viable solutions.



Recap: The “Idea”

- Develop a wireless connection between a county owned uplink site and the Ellenville / Wawarsing area.
- This connection would service the downtown district primarily, allowing for provisioning of a broadband network
- This connection would provision the ability to set up additional downlink sites in the broader, more rural areas.



Core Goals

- Concept a path for alternative rural broadband via Point-to-Multipoint (PtMP) wireless networking
- Develop a proof of concept service in the form of a wireless network serving the Ellenville business district.



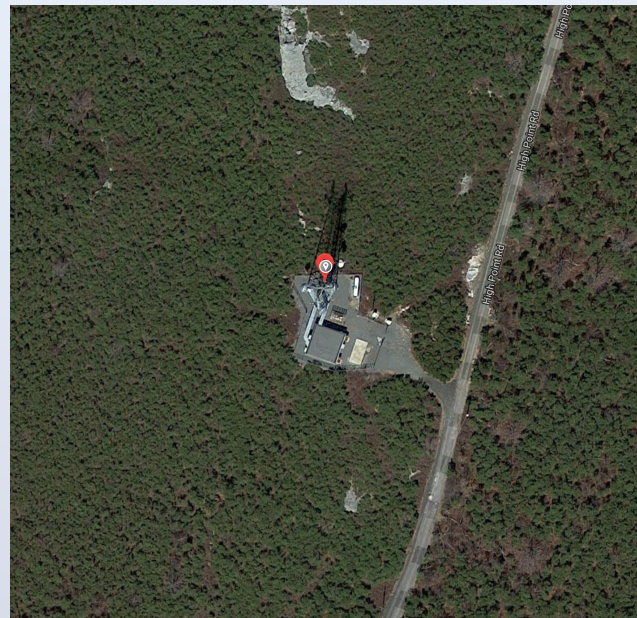
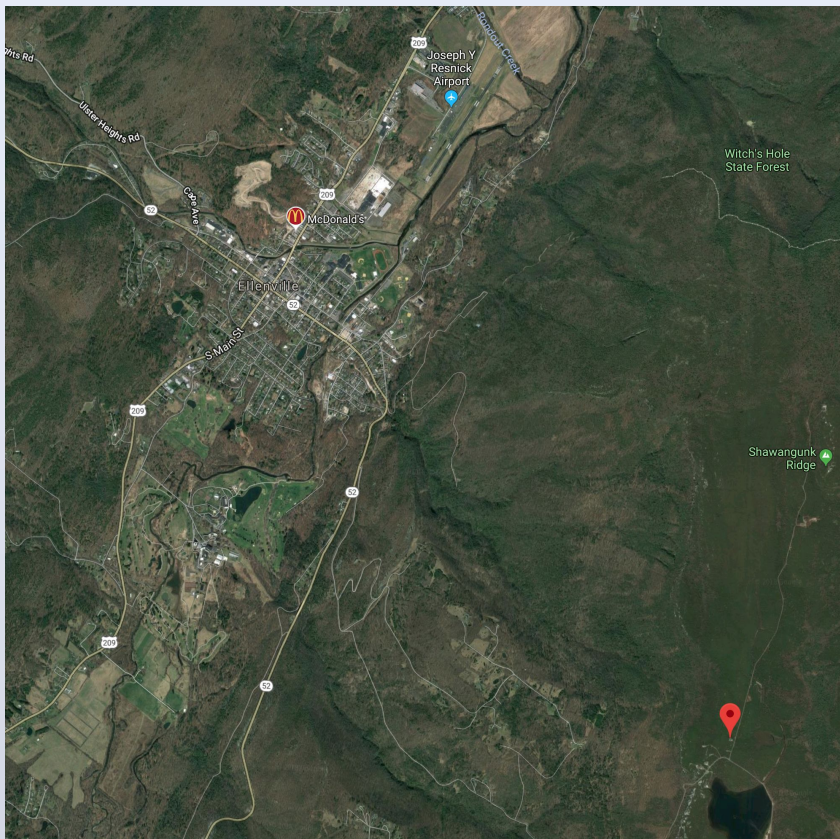
Our Work: Sam's Point

- Identified the "Sam's Point" tower on the Shawangunk Ridge as a potential relay location.

New York Communications Co., Inc.	54 West Cedar Street Poughkeepsie, NY 12602	41.68386844 -74.355576926	41°44'1.9" 74°21'20"	83 Sager Road	91.-1-22.200	1964/146	No
Goosetown Enterprises	50 N Harrison Ave, Suite 15, Congers NY 10920	41.68361733 -74.35633177	41°44'0.8" 74°21'22"	79 Sager Road	91.-1-22.300	2969/203	No
NYS DEC	625 Broadway Albany, NY 12233	41.684496 -74.355180	41°41'04.2" 74°21'18.7"	(no #) Sager Road	91.-1-33	1171/564	No
Palisades Interstate Park	c/o NYS Office of Parks Recreation & Hist Pres, Sandra Burnell, One Empire State Plaza, Albany, NY 12238	41.685081 -74.355984	41°41'6.2" 74°21'21"	(no #) Sam's Point Road	Portion of 91.-1-2.200 <i>(lot to the west)</i>	5680/203	Yes <i>(to Clear Channel Broadcasting)</i>
Palisades Interstate Park	c/o NYS Office of Parks Recreation & Hist Pres, Sandra Burnell, One Empire State Plaza, Albany, NY 12238	41.685596 -74.353542	41°41'8" 74°21'12"	(no #) Sam's Point Road	Portion of 91.-1-2.200 <i>(lot to the east)</i>	5680/203	Yes <i>(to Ulster County)</i>



Our Work: Sam's Point



- Tower at: 41.685596, -74.353542
- Leased by Ulster County
- Line of site to Ellenville downtown



Our Work: Sam's Point



- Tower at: 41.685596, -74.353542
- Leased by Ulster County
- Line of site to Ellenville downtown



Our Work: Crown Castle

Identified three possible Shawangunk locations with reasonable access to crown castle fiber:

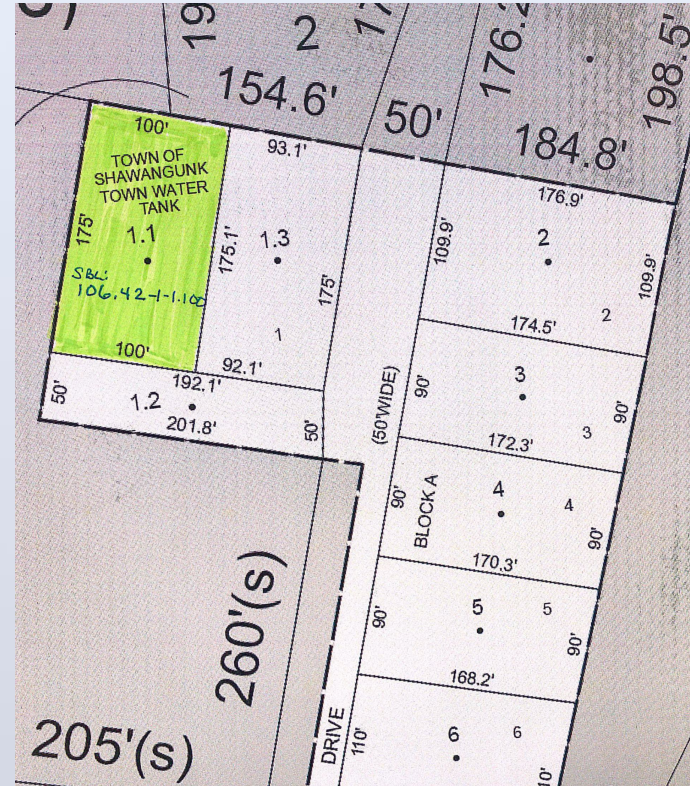
- Watchtower Farms (900 Red Mills Rd, Wallkill, NY, 41.639156, -74.260280)
- Tower Twin Ponds Ln (41.641112, -74.2207220)
- **Shawangunk Water Tower (215 Valley View Dr, Wallkill, NY, 41.611404, -74.166692)**



Our Work: Crown Castle

Shawangunk Water Tower (215 Valley View Dr, Walkill, NY, 41.611404, -74.166692)

- UCEDA began discussion with the town over the use of the water tower
- Existing right of way to the tower for servicing
- Some discussion about additional use
- Crown Castle estimated cost of servicing the water tower with Fiber at 25k - 30k





Broadband Network

Proposed specification for for municipal broadband in Ellenville:

- PtMP Broadcast Point atop the ‘Government Building’
- Line of site access to multiple locations in the business district
- Scalable number of access points depending on desired coverage areas

Component	Part	Price	Quantity	Total	Link
Muni Wifi	UAP XG US	\$ 735.00	3	\$ 2,205.00	https://www.ui.com/unifi/unifi-ap-xg/
Muni Wifi	Rocket Prism AC	\$ 220.00	3	\$ 660.00	https://www.ui.com/airmax/rocket-prism-ac/
Muni Wifi	AP-5AC-90-HD 90° Antenna	\$ 389.00	1	\$ 389.00	https://www.ui.com/airmax/airprism-sector/
Muni Wifi	Cloud Key Gen 2	\$ 199.00	1	\$ 199.00	https://store.ui.com/products/unifi-cloudkey-gen2-plus-1
Muni Wifi	Nanostation AC	\$ 119.50	3	\$ 358.50	https://www.ui.com/airmax/nanostation-ac/
Muni Wifi	Edgepoint Router EP-R8	\$ 459.00	1	\$ 459.00	https://www.ui.com/edgemax/edgepoint/



Recommendation

- The considerable effort in installing and servicing a Fiber connection at the Shawangunk tower is too great a scope for this project.
- Consider using the Sam's Point tower as a 'relay' location for less expensive broadband provisioning.
- Focus shift to provisioning the wireless network using PtMP technology, but using more cost effective broadband resources.
- Pursue local spectrum connection for internet sourcing via Government building or short distance local link.



Recommendation: Stretch Goal

- Continue work to site Sam's Point location as Ellenville / Wawarsing relay point for Wireless Mesh Network
- This site could serve as a relay point for variable sourcing of broadband from within the Ellenville area. Possible sites include:
 - Boices (Verizon Fiber)
 - UC Bandwidth per Crown Castle / Verizon Backbone
 - Other / residential cooperative



Thank you!