

Saratoga County Town Broadband Feasibility Study



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1. Executive Summary

Saratoga County contracted with ECC Technologies, Inc., based in Penfield NY, to provide a Broadband Feasibility Study and mapping exercise regarding broadband service availability in the towns of Corinth, Day, Edinburg, Hadley and Providence.

This study provides information on existing broadband infrastructure and identifies unserved and underserved areas. This information will be used for a broadband deployment plan and assist the county with the challenging process of Federal and State mapping.

Previously ECC conducted a Broadband Availability and Adoption Toolset (BAAT) Program for these five towns. This data, summarized in a separate report, was collected through a web-based application that allowed documentation of demand for broadband services within Saratoga County, with marketing component, data, and mapped responses all captured within one portal. The BAAT includes a Speed test component, which helps in the assessment and the identification of internet “speeds” of respondents who are online via DSL, broadband, or those who are accessing the device via a mobile device.

This study is focused upon two main components:

- To identify where infrastructure is in place for coaxial or fiber optic cables throughout the five towns and position it to provide opportunities for growth, expansion, or improvements in service efficiency.
- In consideration of the current and planned fiber network, assess opportunities for unserved with a focus on enhancing these areas to provide 100% broadband capability to all properties in each of the five towns.

The data collected from this effort will be utilized to address the lack of broadband in unserved and underserved areas of these five towns to provide a buildout solution to address these issues. The inventory process includes the collection of field infrastructure from various providers and a spot check field inventory of existing broadband infrastructure, including the fiber optic, coaxial cable, and tower infrastructure. Based upon the data gathered from NYS Department of Public Service (DPS) and Federal Communications Commission (FCC), ECC designers created maps of the County’s infrastructure into an ESRI GIS database.

From this process the study will provide as follows:

- Mapped out the coverage areas of current Internet Service Providers (ISP) across the project area, as well as identified which ISPs may be able to extend coverage to reach unserved/underserved.
- Provided mileage and cost estimates for broadband extensions to unserved/underserved areas.
- Make recommendations on next steps.

2. Broadband – Unserved Areas

The data and accompanying maps that were created not only show where fiber-based broadband exists today but provide insight into areas that need additional infrastructure for the expansion of broadband services. Critical broadband access/telecommunications infrastructure information is included in this report that can lay the foundation for broadband improvement plans.

The maps created for this report started with the FCC Broadband Serviceable Locations (BSLs) as identified in the FCC broadband map. In the process of collecting this data through analysis and discussion with local providers and community members, ECC has identified 79.2 miles of new infrastructure that would be required to provide fiber optic broadband service to 353 unserved residents and businesses in the five towns in Saratoga County. ECC did not find any underserved addresses, based on data reported to the FCC. Figure 1 is a map of all five towns showing unserved addresses with broadband infrastructure gap miles, indicating a route that broadband providers would need to utilize from the last known broadband infrastructure in that area.

The estimated budget to construct fiber optic infrastructure along these roads, along with associated distribution and electronics to all unserved addresses is \$5,148,000 based upon an estimated average of \$65,000/mile. This cost per mile is calculated from an average provided by ISP's doing business in various counties in New York State. The cost per mile is known to vary from \$50,000 up to \$75,000, depending on the current broadband footprint of a particular provider.

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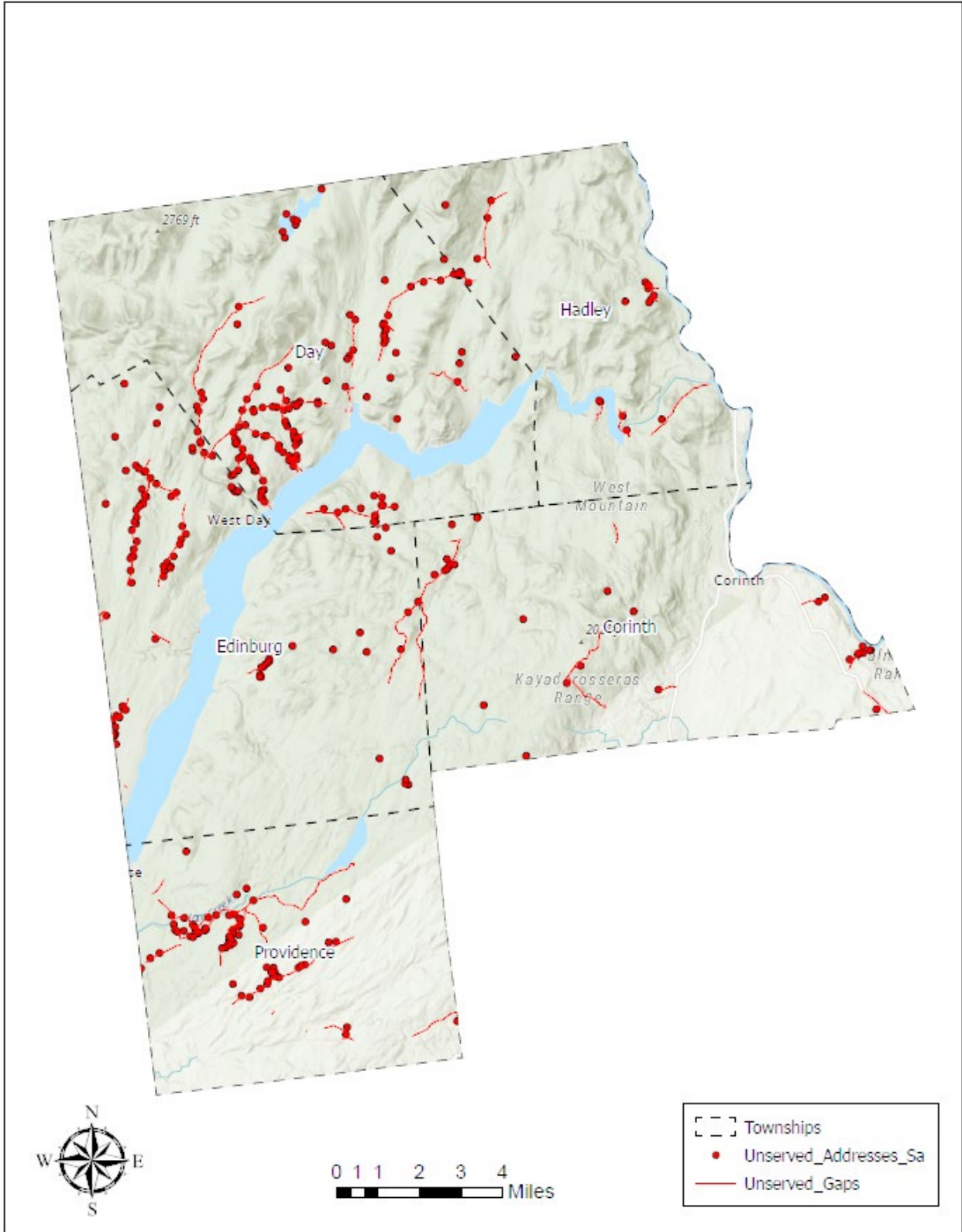


FIGURE 1: UNSERVED ADDRESSES AND INFRASTRUCTURE GAPS

Town Overview

This section is an overview of each of the five towns in Saratoga County. Each section provides the number of unserved and addresses, a town map, and the cost to bring 100% coverage to each municipality. Unserved addresses are those lacking access to at least 25 Mbps download and 3 Mbps upload internet speeds. In each section below the gap miles refers to the miles from the nearest broadband wireline infrastructure to the unserved addresses in the town.

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Town of Corinth

Corinth has a population of around 6,500 and contains one village, also named Corinth. The town has 28 unserved addresses and nearly 9 broadband gap miles. The total estimated cost to serve the remaining unserved in the town with fiber to the home infrastructure is \$578,500.

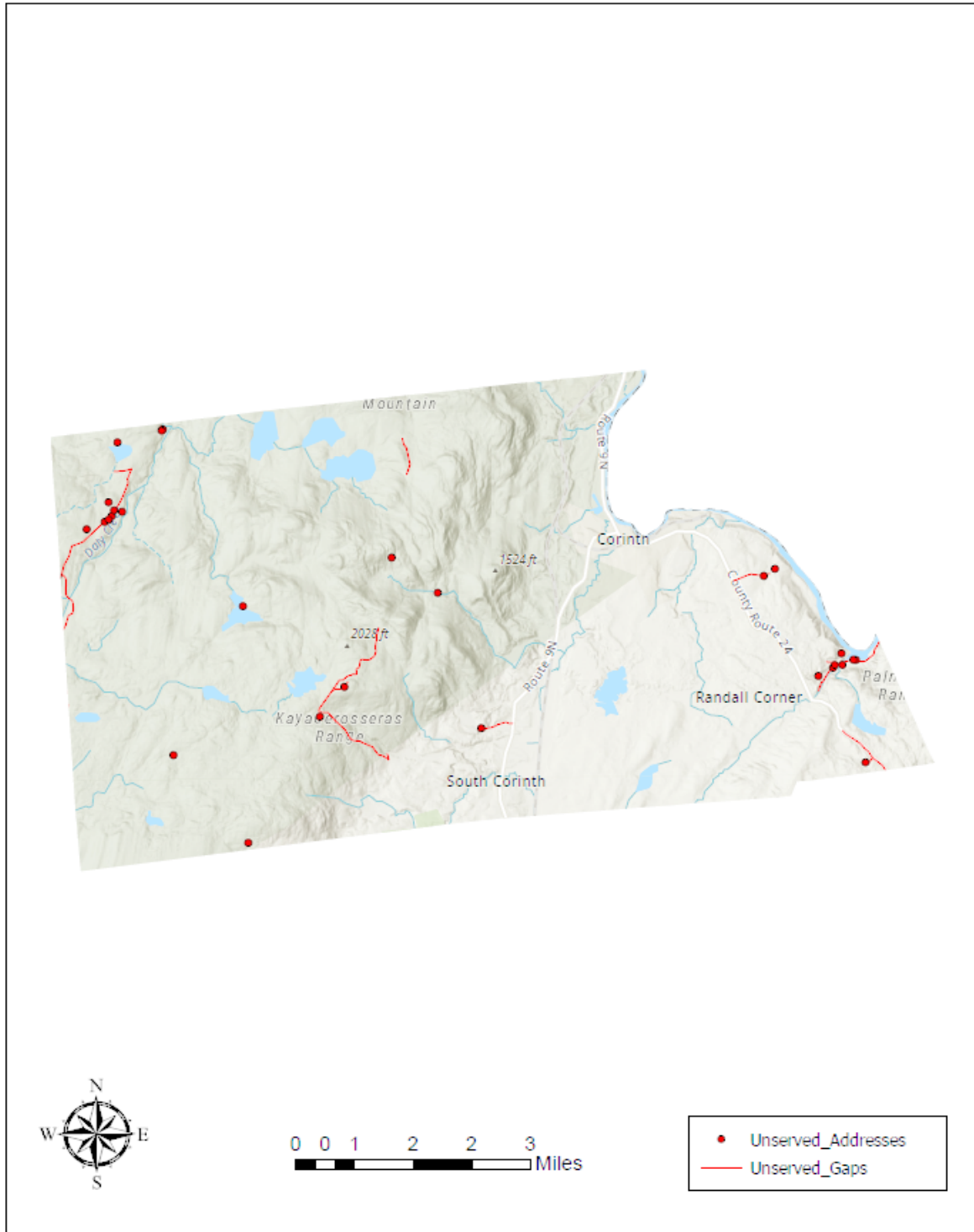


FIGURE 3: CORINTH UNSERVED ADDRESSES AND GAP MILES

Town of Day

The Town of Day is located inside the Adirondack Park and has a population of approximately 820 residents. It is the least populated of the five towns in the study. The town has 135 unserved addresses and nearly 28.5 broadband gap miles. The total estimated cost to serve the remaining unserved in the town with fiber to the home infrastructure is \$1,846,000.

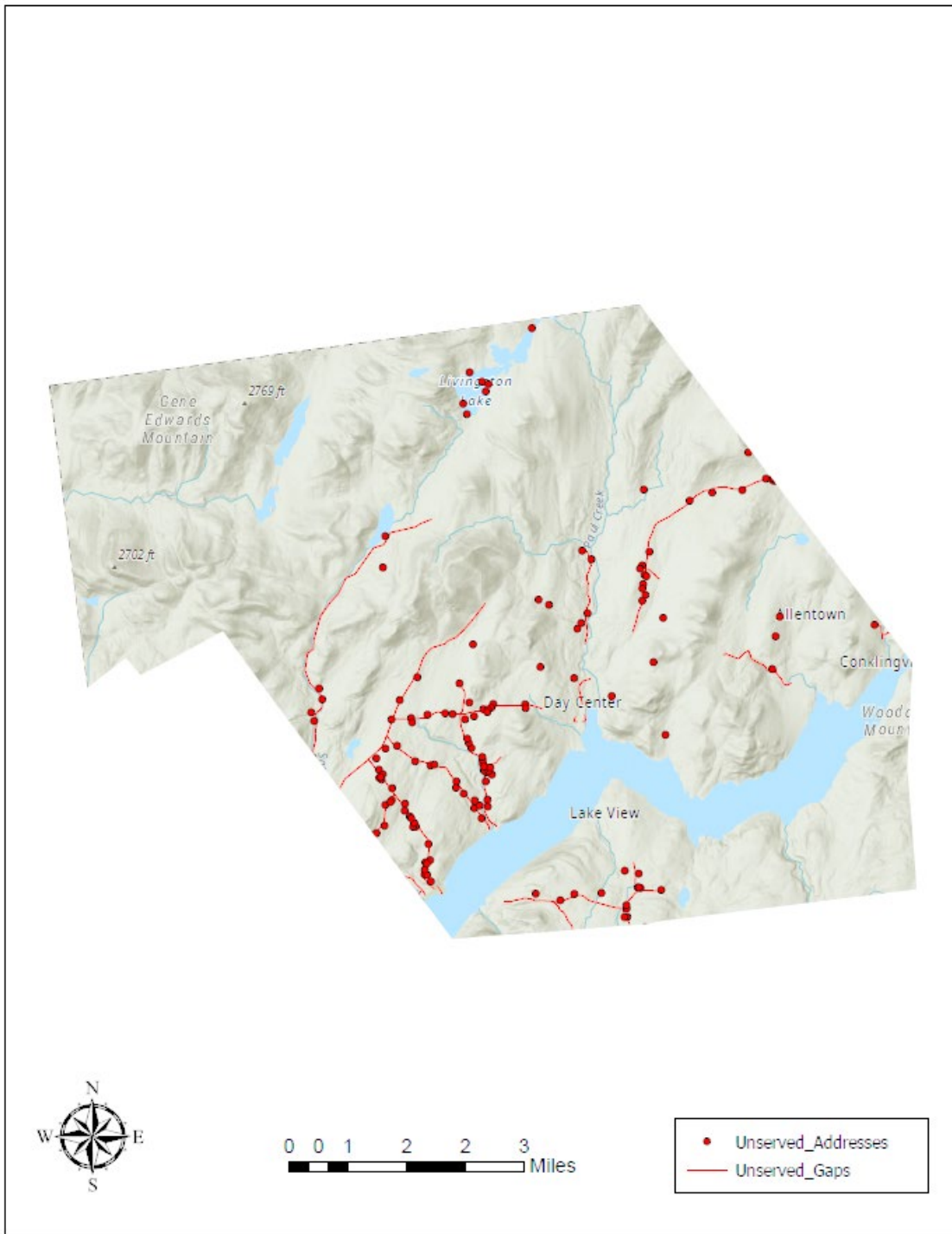


FIGURE 4: DAY UNSERVED ADDRESSES AND GAP MILES

Town of Edinburg

The Town of Edinburg is in the Adirondack Park area with a population of about 1,330. The Batchellerville Bridge crosses Great Sacandaga Lake, connecting parts of the town on either shore. The town has 98 unserved addresses and 15 broadband gap miles. The total estimated cost to serve the remaining unserved in the town with fiber to the home infrastructure is \$975,000.

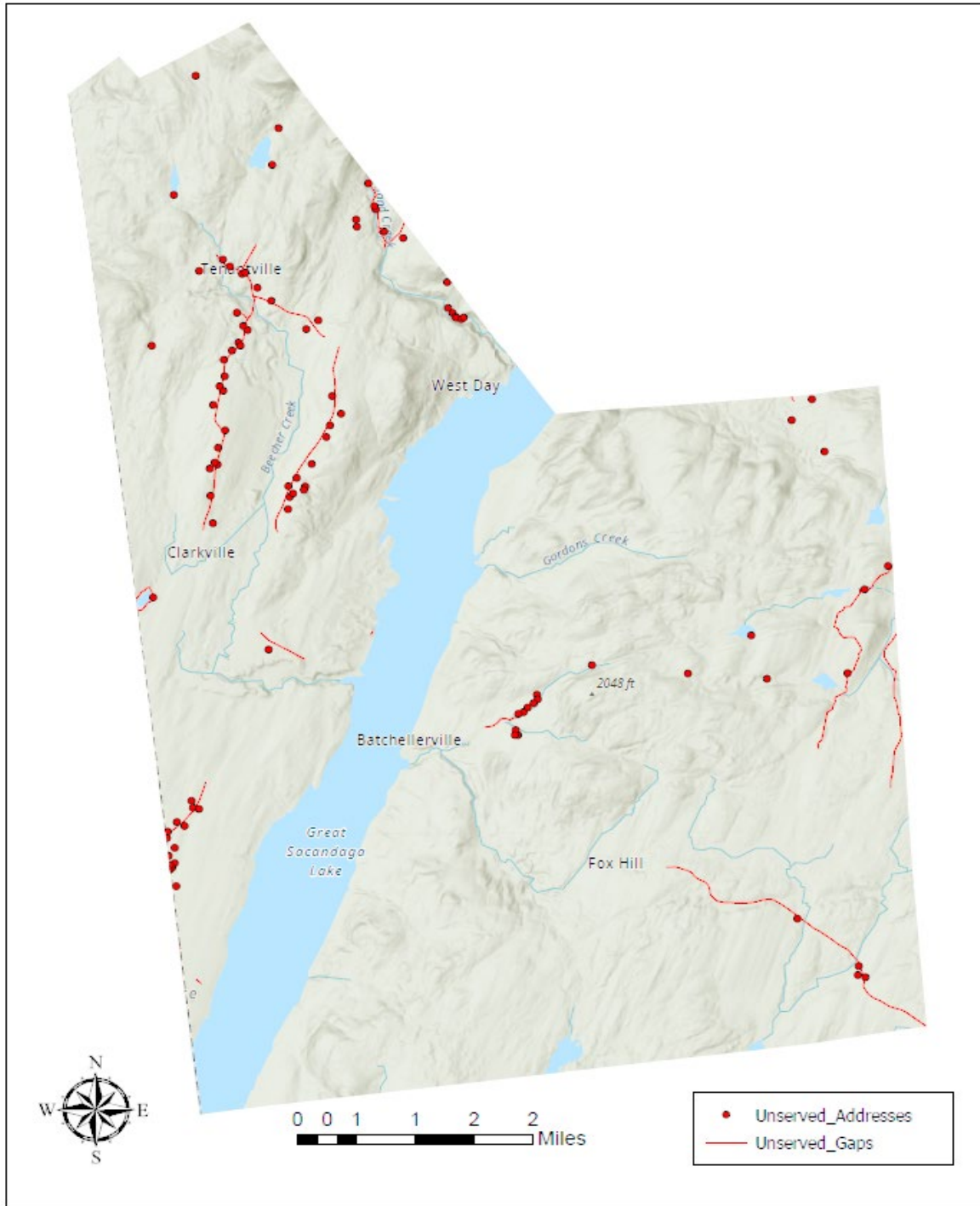


FIGURE 5: EDINBURG UNSERVED ADDRESSES AND GAP MILES

Town of Hadley

The Town of Hadley has a population of approximately 1,975. The town has 23 unserved addresses and 7.6 broadband gap miles. The total estimated cost to serve the remaining unserved in the town with fiber to the home infrastructure is \$494,000.

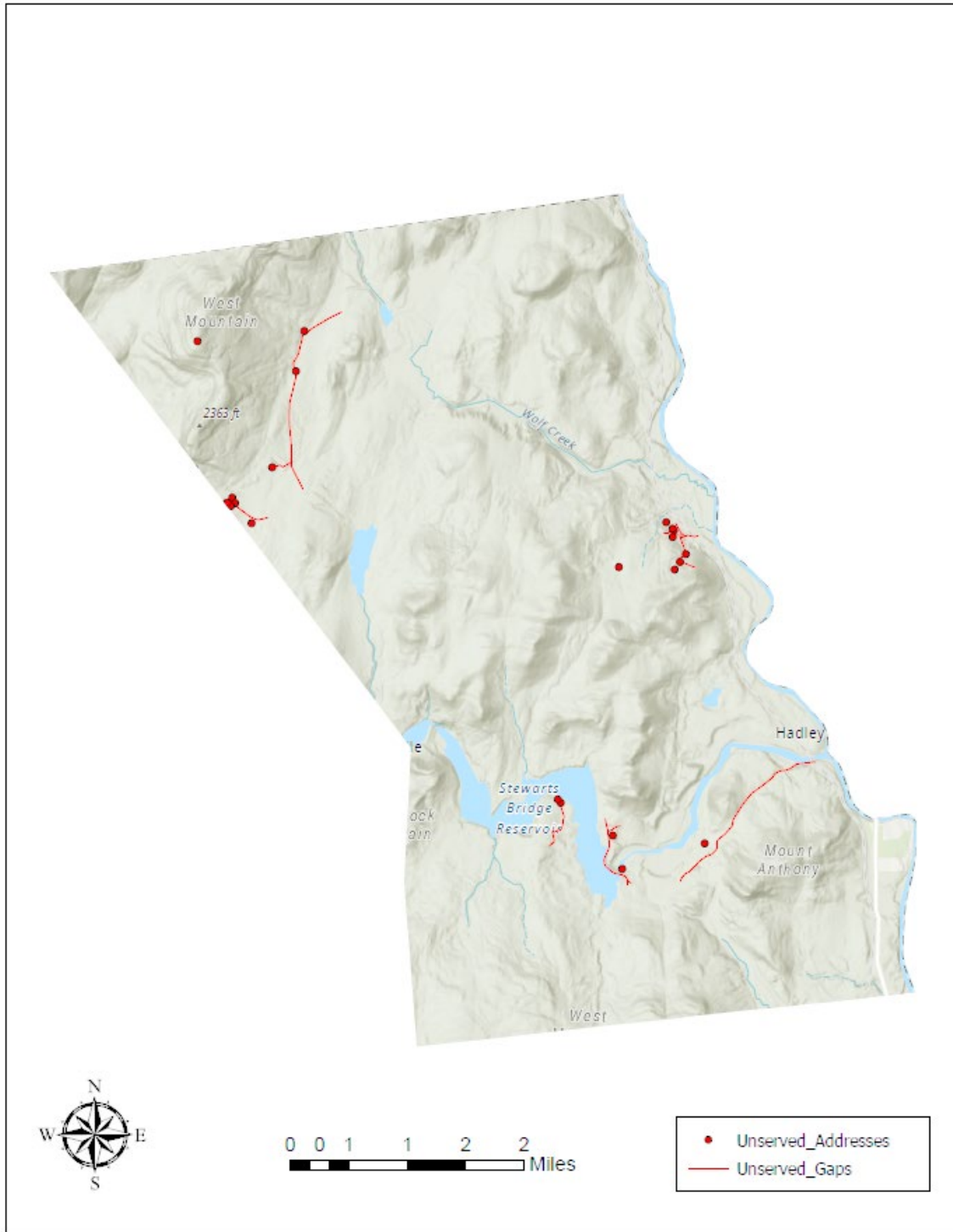


FIGURE 6: HADLEY UNSERVED ADDRESSES AND GAP MILES

Town of Providence

The Town of Providence has a population of approximately 2075. More than half the town is located within the Adirondack Park and the town borders Great Sacandaga Lake. The town has 69 unserved addresses and just over 19 broadband gap miles. The total estimated cost to serve the remaining unserved in the town with fiber to the home infrastructure is \$1,254,500.

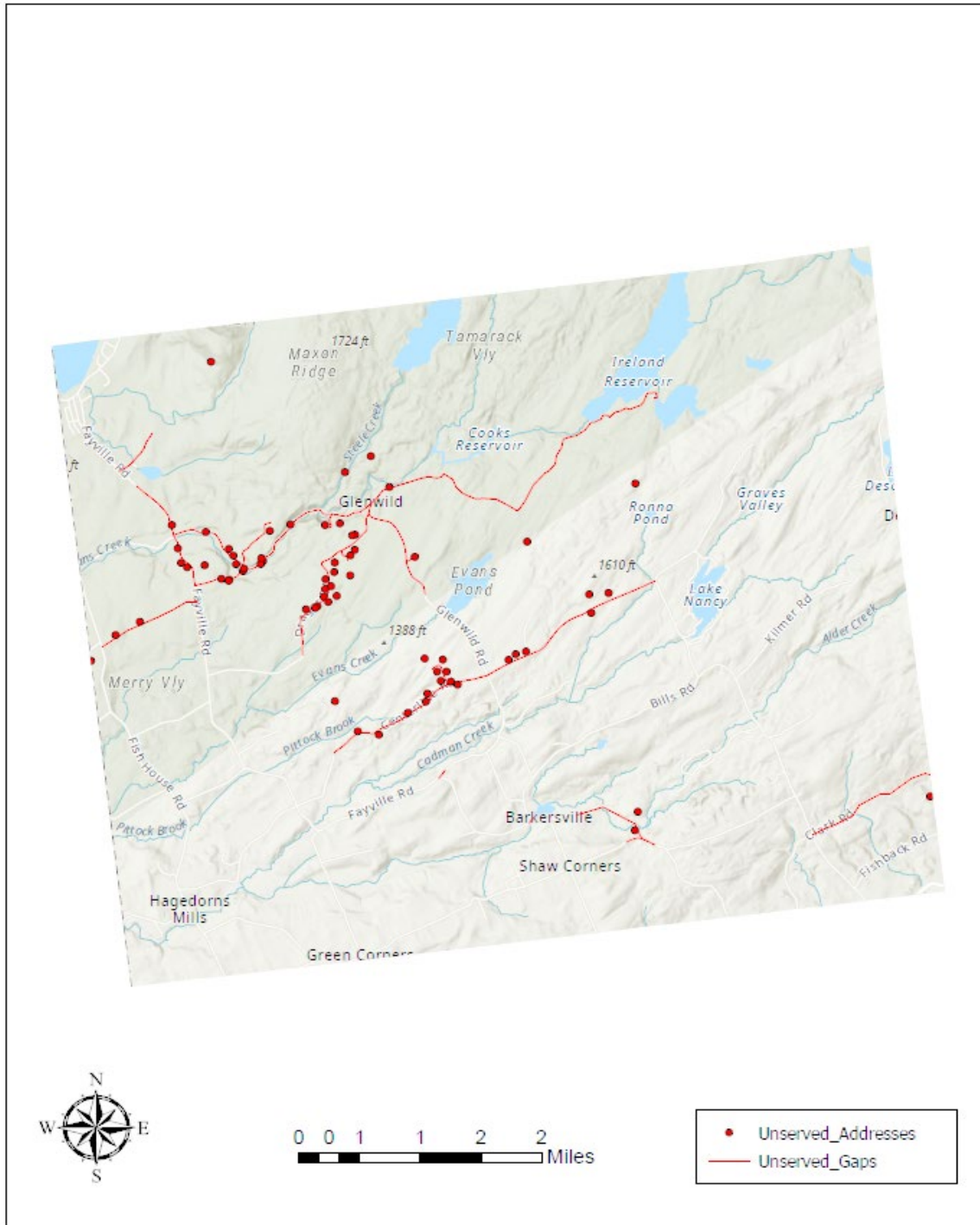


FIGURE 7: PROVIDENCE UNSERVED ADDRESSES AND GAP MILES

3. Current Internet Service Providers in Saratoga County

Saratoga County Internet Provider List	Technology Provided
Verizon	Fiber/Copper/5G
Spectrum-Charter	Coaxial Cable/Fiber
Frontier	DSL/Fiber
Viasat	Satellite
HughesNet	Satellite
Starlink	Satellite

Verizon

Verizon is an internet, telephone, and television service provider. Verizon utilizes a fiber optical network to reach some of its customers, marketed as Verizon Fios. However, in some of the areas Verizon services are still a copper solution or Digital Subscriber Line (DSL). DSL is not a future proof technology and is not considered a viable option for internet connectivity by the FCC, given that many federal and state broadband grant programs require 100/20 Mbps internet service.

Spectrum-Charter Communications

Spectrum is a national cable TV provider that provides commercial and residential triple play services of voice, internet, and cable TV. They are the largest provider of this type in the region.

As part of the Charter Communications/Time Warner Cable merger that formed Spectrum, New York State required Spectrum to expand its network to pass 145,000 unserved and underserved homes in rural areas of the State. On September 3, 2021, Spectrum reported to the Public Service Commission that they have completed network extensions to 145,855 homes as of August 31, 2021.

Cable TV (CATV) providers, such as Spectrum, use a hybrid fiber optic/coaxial (HFC) network to provide high-quality video, high-speed data, and voice services to their customers. In most cases the fiber provides a connection from the signal origination, referred to as the headend, to a node where an optical to electrical signal conversion is made. Then coaxial cable connects the node to the customer site.

CATV utilizes cable modem technology, which uses a single coaxial cable TV connection to a customer location to support the simultaneous transmission of voice, TV programming, and internet. In Saratoga County broadband access is available in many areas via this HFC infrastructure installed by the incumbent cable TV provider, offering internet speeds up to 1000/35 Mbps.

Frontier

Frontier Communications is an American telecommunications company, also known as Citizens Communications, providing internet, digital television, and computer technical support. In some locations, there are also telephone services in the county. Frontier is providing mainly DSL services in Saratoga County. DSL (Digital Subscriber Line), while once a popular and widely used technology, indeed faces limitations when it comes to future-proofing. Because of speed constraints, limited upgradeability, slower

speeds and an aging infrastructure it is not considered a viable option for internet connectivity by the FCC. Additionally, many federal and state broadband grant programs require markedly higher speeds of at least 100/20 Mbps for internet service.

Viasat, HughesNet and Starlink

There are several Satellite providers, however, these are also not viewed as a viable alternative to a physical connection of coax or fiber. This is due to the relatively low service speeds currently provided by this technology and thus it is not part of the FCC solution. Satellite internet is typically seen as a last resort due to latency or lag.

ISP Coverage in Each Town

Internet Service Providers (ISP) currently serving each town. The areas Satellite service providers are Starlink, HughesNet, and Viasat. While the percentage of coverage for Spectrum/Charter is high, their fiber is limited to 2% reach within the entire county.

Corinth

The Town Corinth has the following Internet Service Providers (ISPs) and the percentage they serve with certain technologies, per each ISPs report to the FCC Broadband Data Collection:

ISP	Service Type	Percentage of Coverage
Spectrum/Charter	Cable and Fiber	88 to 94% of the town
Frontier	DSL	52% of the town
T-Mobile	5G	10 to 12% of the town
Verizon	5G and DSL	13% of the town

Day

The Town of Day has the following Internet Service Providers (ISPs) and the percentage they serve with certain technologies, per each ISPs report to the FCC Broadband Data Collection:

ISP	Service Type	Percentage of Coverage
Spectrum/Charter	Cable and Fiber	75 to 82% of the town
Frontier	DSL	34 to 48% of the town

(Note: Frontier indicates it does have some Fiber infrastructure in the town with limited DSL service.)

T-Mobile	5G	17% of the town
Verizon	5G and DSL	14% of the town

(Note: Verizon indicates they do not have full 5G coverage in the area.)

Edinburg

Edinburg has the following Internet Service Providers (ISPs) and the percentage they serve with certain technologies, per each ISPs report to the FCC Broadband Data Collection:

ISP	Service Type	Percentage of Coverage
Spectrum/Charter	Cable and Fiber	88 to 94% of the town
Frontier	DSL	52% of the town
T-Mobile	5G	10 to 12% of the town
Verizon	5G and DSL	13% of the town

Hadley

Hadley has the following Internet Service Providers (ISPs) and the percentage they serve with certain technologies, per each ISPs report to the FCC Broadband Data Collection:

ISP	Service Type	Percentage of Coverage
Spectrum/Charter	Cable and Fiber	82% of the town
Frontier	DSL	34% of the town

Providence

Providence has the following Internet Service Providers (ISPs) and the percentage they serve with certain technologies, per each ISPs report to the FCC Broadband Data Collection:

ISP	Service Type	Percentage of Coverage
Spectrum/Charter	Cable	91 to 94% of the town
Frontier	DSL	12 to 40% of the town
T-Mobile	5G	13% of the town
Verizon	5G	7 to 22% of the town

(Note: Verizon does not provide DSL service and the 5G service is extremely limited.)

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4. Funding Opportunities

The five towns in Saratoga County have options to consider when evaluating how best to move forward with resolving unserved addresses within these towns. The County must weigh each option to determine which one or a combination of options will provide the best outcome for the County and the residents of these towns. In most options, the County may be required to commit a level of financial support to assist in subsidizing the build-out of infrastructure needed to support and expand broadband services to the targeted areas.

Broadband Equity Access and Deployment (BEAD) Program

The BEAD Program, established by the Infrastructure Investment and Jobs Act (IIJA) and administered by the National Telecommunications and Information Administration (NTIA) of the US Department of Commerce, was appropriated \$42.45 billion for States, Territories, and the District of Columbia (DC) to for broadband deployment, mapping, and adoption projects. Funding priorities for the program are sequential with the first funding priority to provide broadband service to unserved areas (defined as those below 25/3 Mbps), followed by underserved areas (those below 100/20 Mbps), and community anchor institutions (1,000/1,000 Mbps).

On June 26, 2023, the NTIA announced state allocations for the BEAD Program. New York State was allocated \$664.6 million. By December 27, 2023, all states were required to submit an Initial Proposal to NTIA for how these funds will be spent to address the unserved and underserved. Once NTIA approves the Initial Proposal, states will be permitted to request access to at least 20% of the allocated funds. States will then select subgrantees and will have one year to complete the selection process and submit a Final Proposal to NTIA. At this point, NTIA will award the remaining 80% of funds upon approval of the Final Proposal and states will initiate their subgrants. ***It is important to note that states are not allowed to provide funding directly to counties.*** However, states can have counties oversee any projects to ensure coverage to the unserved and underserved is accomplished.

On September 28, 2023, New York State released their BEAD 5 Year Action Plan ([Five-Year Action Plan \(ny.gov\)](#)) this plan outlines the state's goals and priorities in their Initial Proposal. The following broadband projects were mentioned in this plan.

State Digital Equity Plan and Broadband Deployment Proposal

On November 7, 2023, the NYS ConnectALL Office (CAO), which is overseen by the Empire State Development Corporation, released their plan for broadband deployment ([Broadband Deployment Initial Proposal | ConnectALL Office \(ny.gov\)](#)). This draft plan describes how the CAO will determine the unserved and underserved locations that will be eligible for BEAD funding and the criteria it will use to select internet service providers to reach those locations. Following a public comment period, CAO will submit the documents to the NTIA at the Department of Commerce, which oversees the federal funding programs. Once NTIA has approved New York's Broadband Deployment Initial Proposal, CAO will begin the grant program with ***awards anticipated in 2025 based on the timeline of the federal program.***

Municipal Infrastructure Grant Program (MIP)

Part of CAO's plan includes \$228 million in funding for the Municipal Infrastructure Program (MIP) for municipalities, nonprofits, and other entities to construct open and accessible public broadband infrastructure. The MIP grant guidelines were released in September 2023, followed by a release of the grant application on January 22, 2024. MIP will provide grant funding directly to: 1) public entities, 2) municipal utilities, and 3) utility cooperatives to enable last mile connectivity.

Eligible uses for MIP funding include:

- 1) Last-mile fiber connections to addresses, including wireless spectrum.
- 2) Fiber connections to internet exchange points or data centers, including middle-mile fiber and networking equipment, such as routers, switches and other equipment.
- 3) Related infrastructure improvements, including Make-Ready and pole replacements.
- 4) Acquisition of existing infrastructure assets.

NYS has a goal of providing at least 20,000 households with connections to an open access municipal network by 2030. At this time, the MIP does not appear to be a viable funding option for Saratoga County, given the program's focus on municipally owned networks and publicly-owned open access networks.

Rural Broadband Grant Program

Another CAO program, utilizing BEAD funding, is the Rural Broadband Grant Program. This grant program was first identified in the 2022-23 NYS Budget as the WIRED Act. In January 2022, NY Governor Hochul noted that the Rural Broadband program would be funded in part by the Infrastructure Investment and Jobs Act (IIJA) to support rural broadband access, including last-mile connections and middle mile projects, which would later become the BEAD program. This program's goals include:

- 1) Openness - The openness goal includes applications from both public and private entities with scoring criteria rewarding open access, provide enhanced broadband competition and mobile deployment.
- 2) Fairness – Transparent scoring criteria, a competitive process encouraging applicants to submit innovative proposals and a review process free from conflicts of interest.
- 3) Competition – Broad eligibility and participation among many entities, including incentives for open access over newly funded broadband networks, allowing multiple service providers to use the same infrastructure, thus promoting competition.

This program will start with a subgrantee selection process, that will prioritize BEAD funds for projects that commit to build fiber to the premises. CAO plans to define project areas through a Grant Area Determination Process in which it will design and specify the geographic boundaries of the Grant Areas for which prospective subgrantees can bid. CAO will provide information regarding the Grant Areas available to potential applicants at the time of release of grant materials. This will be in the form of polygons or descriptions of geographic boundaries. Applicants will be required to reach 100% of unserved and underserved locations in the Grant Area.

The table below lists a tentative timeline for the BEAD Grant Process, as published in CAO’s Initial Proposal, Volume 2. As of the date of this Broadband Feasibility Study, the NTIA has not approved the state’s Initial Proposal, therefore delaying this timeline.

NYS BEAD Grant Process Overall Timeline*

Process Element	Date (2024)
Prequalification materials released	February 15
Prequalification applications due	April 1
Announcement of prequalification determinations	May 1
Challenge Process	February 1-May 1 (tentative; dependent on NTIA approval of Initial Proposal Volume I)
Grant Area Determination Process	June 1 to 30 (tentative; dependent on timing of NTIA Challenge Process Validation)
BEAD grant application materials, including Grant Areas, released	July 1 (tentative; will be timed to align with the completion of NTIA’s Challenge Process Validation, but no awards will be made until at least 60 calendar days have passed from public release and submission of eligible locations to NTIA)
BEAD grant applications due	September 1 (tentative; within 60 days of release of BEAD grant application materials)
Announcement of provisional BEAD determinations, subject to NTIA approval of the Final Proposal	November 1 (tentative; within 60 days of receipt by CAO of the BEAD grant applications)
Submission to NTIA of the Final Proposal	Within 365 days of NTIA approval of the Initial Proposal Volume II

* Tentative timeline, as published by CAO on 11/7/2023

[U.S Department of Agriculture ReConnect Loan and Grant Program](#)

Since 2018, the Federal government has appropriated funds for the ReConnect Program that provides loans, grants, and loan/grant combinations to facilitate broadband deployment in rural areas. The program is designed to fuel long-term rural economic development and opportunity in rural America.

Rural Utilities Service (RUS), is a Rural Development Agency of the United States Department of Agriculture (USDA), that manages a program that has issued three Funding Opportunity Announcements (FOA) since its creation in 2018. The maximum amount that can be requested in an application is \$25,000,000. On February 21, 2024, the USDA announced Phase 5 for ReConnect funding totaling \$772.6 million.

ReConnect grants have been awarded to Livingston, Madison, and Yates Counties. Two items to keep in mind when considering applying for ReConnect grants. The county must own the network and the application process and implementation/reporting process for this program are onerous. Additionally, the Phase 5 criteria includes a requirement that 90% of households lack access to internet speeds greater than 25/3 Mbps. Given these requirements, this program is not a viable option for the five towns.

5. Conclusion

Broadband access needs to be reliable and affordable, as well as multi-megabits per second symmetrical internet speeds to meet both today and tomorrow's needs. This type of network is intended to serve a diverse set of industries, including agricultural production, nonprofits, and small business, among other lines of business. It should also function as a catalyst for rural prosperity by enabling efficient, modern communications between rural American households, schools, and healthcare centers as well as markets and customers around the world.

As noted in this report, NYS has \$664 million in BEAD funding that will be distributed over the next several years. Saratoga County should monitor BEAD funding and provide input on the county's broadband needs to the ConnectALL Office (CAO). The County should discuss solutions and costs to bring high-speed broadband to unserved areas in the Towns of Corinth, Day, Edinburg, Hadley and Providence.

In New York State's Five-Year Action Plan for the BEAD Program, they acknowledge that BEAD funding is insufficient to build fiber to every unserved address in the state. Given the lack of funds to provide 100% broadband coverage, ECC believes that due to the effective relationships Saratoga County has built with the existing providers, it would be in the best interest of Saratoga County and its residents to leverage these relationships and explore incentives to the providers to expand their networks to those unserved areas of the five towns. This may be the most efficient way to provide coverage to all.

Upon completion of the feasibility study, the County and ECC engaged in a thorough review and discussion of the findings. To expand broadband coverage to the unserved areas, the County has decided to reach out directly to ISPs to obtain quotes on the costs to extend their network to the unserved areas. These quotes should include the amount that the ISPs are able to contribute toward the network buildout.

By obtaining these quotes, the County will have a clear understanding of the total project costs to bring 100% coverage to these five towns, as well as the funding that ISPs can contribute. This process can be used to guide the CAO as they determine how to spend BEAD funding in the most effective way, as well as assist with the makeup of BEAD grant areas in Saratoga County. NYS has stated that counties will play a role in the makeup of grant areas, which are expected to be finalized by the state in late summer/early fall, with federal approval expected in the first quarter of 2025.

The table below shows the estimated costs and contributions per entity, as estimated by ECC Technologies. The ISP or Private investment is 25% of the total project cost, as this is the typical percentage required by federal or state grant programs. The County portion would be 25% of the remaining total project cost after the Private contribution, with the NYS portion being 75% of the remaining project cost.

Saratoga County Unserved Addresses & Gap Miles						
Town	Unserved	Gap Miles	Total Cost	County	NYS	Private
Corinth	28	8.9	\$ 578,500.00	\$ 108,468.75	\$ 325,406.25	\$ 144,625.00
Day	135	28.4	\$ 1,846,000.00	\$ 346,125.00	\$ 1,038,375.00	\$ 461,500.00
Edinburg	98	15	\$ 975,000.00	\$ 182,812.50	\$ 548,437.50	\$ 243,750.00
Hadley	23	7.6	\$ 494,000.00	\$ 92,625.00	\$ 277,875.00	\$ 123,500.00
Providence	69	19.3	\$ 1,254,500.00	\$ 235,218.75	\$ 705,656.25	\$ 313,625.00
Total	353	79.2	\$ 5,148,000.00	\$ 965,250.00	\$ 2,895,750.00	\$ 1,287,000.00

This process will provide Saratoga County with an understanding of the path forward to expand coverage and meet the broadband needs of its residents. Simultaneously, this will provide specific costs and options for consideration by the County in consultation with the NYS ConnectALL Office.