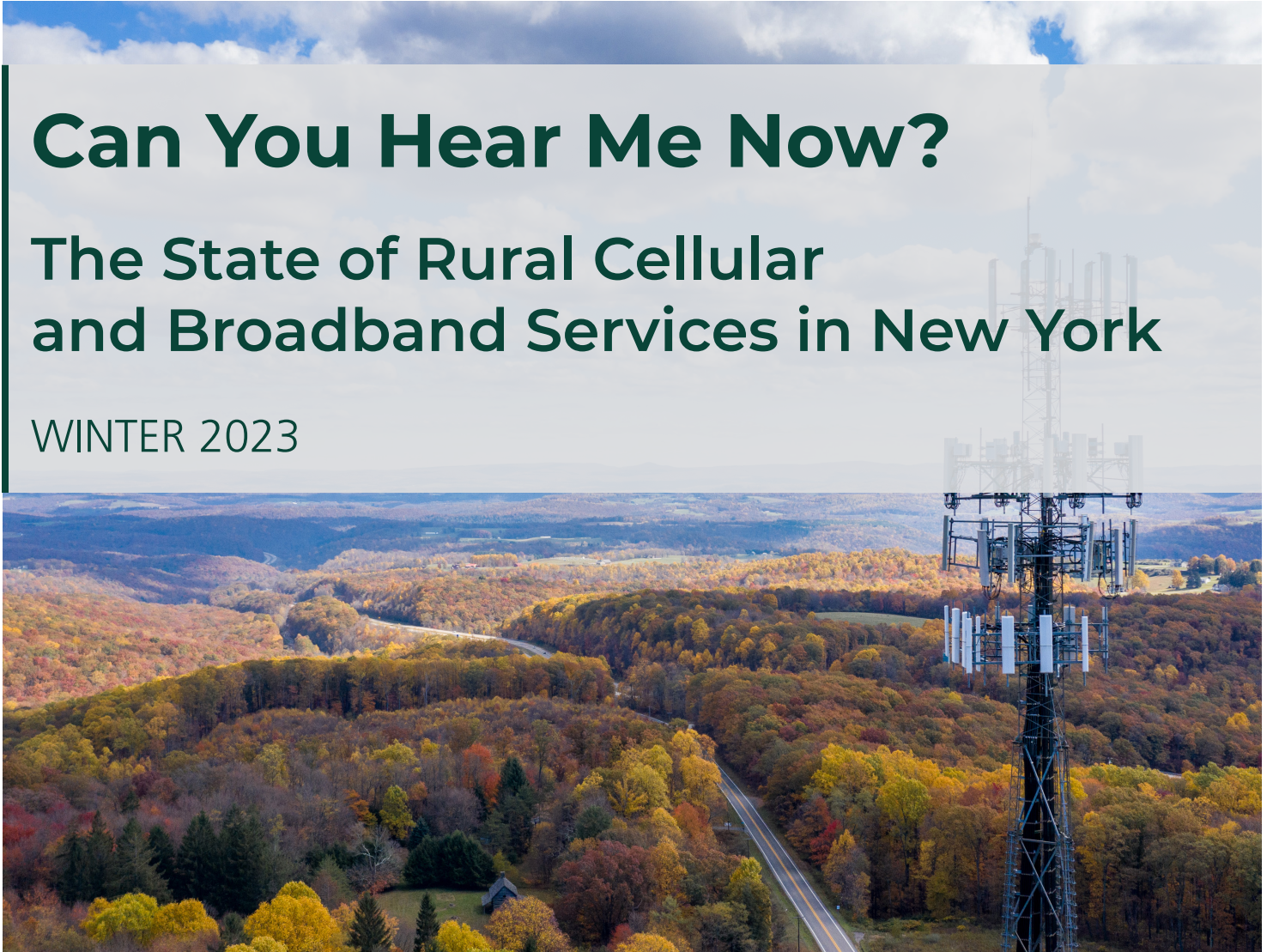


NYSAC
— NEW YORK STATE —
ASSOCIATION OF COUNTIES

Can You Hear Me Now?

The State of Rural Cellular and Broadband Services in New York

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Introduction

On May 11, 1935, President Roosevelt recognized the importance of providing electricity to every home and business in the United States by signing Executive Order No. 7037 establishing the Rural Electrification Administration (REA). Fast-forward 87 years, and once again, our country finds itself at a public utility crossroads.

Many portions of our state and nation are unserved or underserved by broadband and cellular technologies. According to a recent report from Verizon, as many as 132,000 New York households still do not have access to adequate broadband service.ⁱ Much like 1935 when electricity was seen as a gateway to the future, robust broadband and cellular technology is now the key to unlocking educational and economic opportunities, as well as filling gaps in public safety and communications access.

This report highlights state and federal efforts to expand access to broadband and cellular technology as well as county recommendations on ways to close this digital divide.

The Relationship Between Cellular and Broadband

A cellular network or mobile network is a type of wireless connection facilitated by cellular towers. To have access to the cellular network, mobile devices must be connected through a cellular provider (AT&T, T-Mobile, Verizon, Sprint, etc.) and their series of devices on cell towers.

The network can be accessed from almost anywhere as long as there are cellular towers nearby.

Theoretically, a mobile device has enough power to reach a cell tower that is up to 45 miles away. But external obstacles such as trees, buildings, and terrain can limit that reach to 22 miles. Therefore, the more towers in the area, the faster and more reliable a cellular network will be.

The speeds at which a cellular network operates will depend on the network connection (3G, 4G, 4G LTE, and 5G). Cellular devices will experience faster data, download, and upload speeds with a better network connection.

While most people use the cellular network for phone calls, streaming videos, and browsing the Internet, cellular networks can also be used to broadcast a Wi-Fi

signal. Portable Wi-Fi hotspots or cellular modems connect to the cellular network through a cellular provider and convert cellular data into Wi-Fi signal for devices like personal computers, and other non-cellular devices.

Even though cellular networks can be used to broadcast Wi-Fi signal for internet use, cellular and Wi-Fi technologies are very different. The main difference between cellular and Wi-Fi is that cellular devices (smartphones, tablets, and portable Wi-Fi hotspots) require a data plan and cell phone towers to support internet access. On the other hand, Wi-Fi requires wireless devices (smartphones, tablets, and laptops) to connect to a router for internet access.

Wi-Fi, or fixed broadband, is typically deployed via fiberoptic cable. Wireless broadband, or cellular, is typically deployed via cellular towers (which are connected with fiber).

However, there are new, emerging technologies like “small cell” and projects such as satellite internet constellations (i.e. Starlink) that may provide promising results in future years.

Background

Bridging the digital divide, which is the gap between those that have access to modern information and communications technology and those that do not, has been a priority of the federal and state government for more than two decades. In fact, the federal government has been working on this problem since the Telecommunications Act of 1996, which was signed into law by President Clinton to task the Federal Communications Commission (FCC) with providing affordable Internet access to all Americans.ⁱⁱ

New York State has also long recognized that some parts of the state—particularly low-income and rural communities—lack adequate cellular and broadband coverage. Empire State Development (ESD) commissioned a report in 2007 entitled “Policy Alternatives Supporting Deployment of Broadband Services in Rural Areas of New York State,”ⁱⁱⁱ and Senator George Winner, the Chairman of the NYS Legislative Commission on Rural Resources, prepared a similar report in 2008.^{iv}

In February 2017, the FCC allocated \$4.53 billion to establish a new program to close the digital divide and connect rural America to cellular and internet coverage. The Mobility Fund Phase II (MF-II) was meant to create new mobile broadband coverage maps to determine the areas eligible for support in the MF-II auction. The FCC collected this data and released a map of eligible areas for 4G-LTE deployment in February 2018; however, the FCC never implemented the MF-II program.^v Instead, it was terminated and replaced by a new 5G Fund for Rural America program, which was announced in April 2020.



Fed up with inaction from the federal government and state government, counties in New York State wrote to Governor Andrew Cuomo in January 2019, calling for the creation of a new task force to formulate federal, state, and local policies to address the lack of cellular coverage. County officials also implored the Governor and State to create a new program to incentivize private development of cellular infrastructure in rural areas.

In response, the Governor announced the creation of a new Upstate Rural Cellular Coverage Task Force as part of his 2019 State of the State Address. In announcing the Task Force, the Governor stated, “Every New Yorker should be able to access a stable cell connection, yet our upstate regions have struggled for too long to make the connections that are vital to everyday life and commerce.” He established this Task Force with cellular service experts, elected representatives and environmental advocates to work together to develop policies to build a better infrastructure in a sustainable way.

The Task Force reviewed existing policies, potential constraints, and available resources to develop recommendations for enhancing cellular coverage in unserved areas, including the Adirondacks and Catskills. Its report was made public in 2021 and identified \$610 million in capital infrastructure improvements that would need to be completed to reach all unserved areas of the state.^{vi}



The Federal Government Response: 5G Fund for Rural America

After terminating the MF-II program in 2019, the FCC announced its new 5G Fund for Rural America program in April of 2020. This new program would use multi-round reverse auctions to invest up to \$9 billion in bringing voice and 5G broadband service to rural areas of the United States.^{vii}

Prior to deploying these funds, the FCC is undertaking a new data collection effort to develop new broadband maps. Then it will deploy a two-phased approach to expanding rural cellular access in un- and underserved areas. In Phase I, the FCC will target all eligible rural areas that lack unsubsidized 4G LTE and 5G broadband service. In Phase II, it will focus on the deployment of technologically innovative 5G networks that facilitate precision agriculture.^{viii}

To date, no plans have been announced to expand access to cellular service.

New York State Cellular Broadband "Dead Zones"

areas where 4G LTE mobile wireless broadband is nonexistent

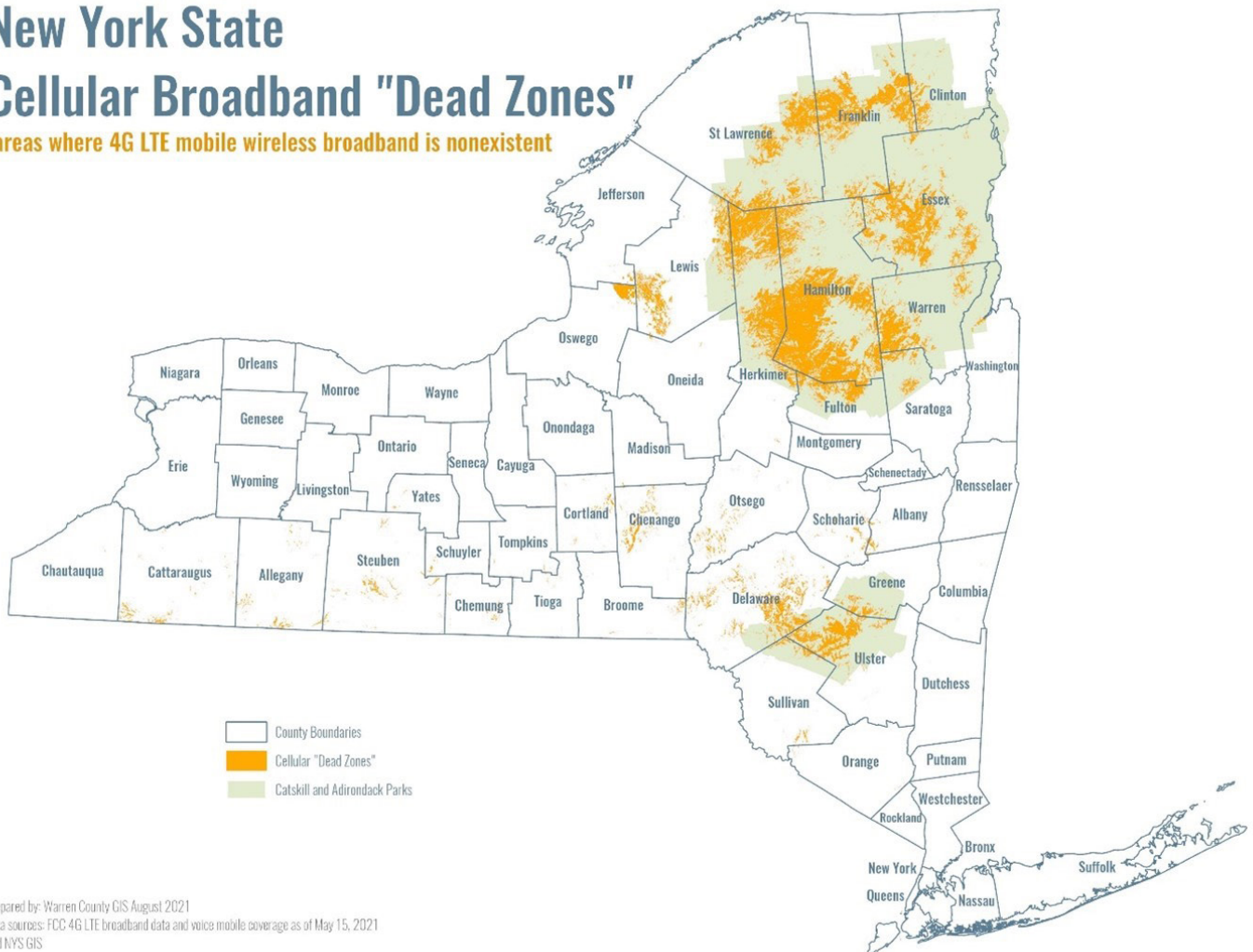


Figure 1: Cellular Dead Zones in NYS. Map developed from <https://www.fcc.gov/BroadbandData/MobileMaps/mobile-map> updated on May 15, 2021.

The Upstate Cellular Coverage Task Force^{ix}

The Upstate Cellular Coverage Task Force was charged with developing implementable recommendations for enhancing cellular coverage in uncovered areas, particularly in Upstate New York.

The Task Force met four times in 2019 and 2020. In addition, the Broadband Program Office, an arm of Empire State Development, engaged an advisory team to provide technical expertise to support efforts of the Task Force, including measuring cellular coverage, evaluating regulatory policies, and estimating coverage costs. This included driving 1,382 miles of roadways in the Adirondack and Catskill regions to provide more accurate estimates of uncovered areas across the state.

The results of this drive testing are shown in Figures 10 and 15 from the report. The Task Force also solicited input from local representatives on the routes of highest priority. A significant number of the routes described as “covered” by the FCC’s existing cellular maps were found to have no coverage.^x

Figure 10: Adirondack Region Combined Carrier Drive Test Results

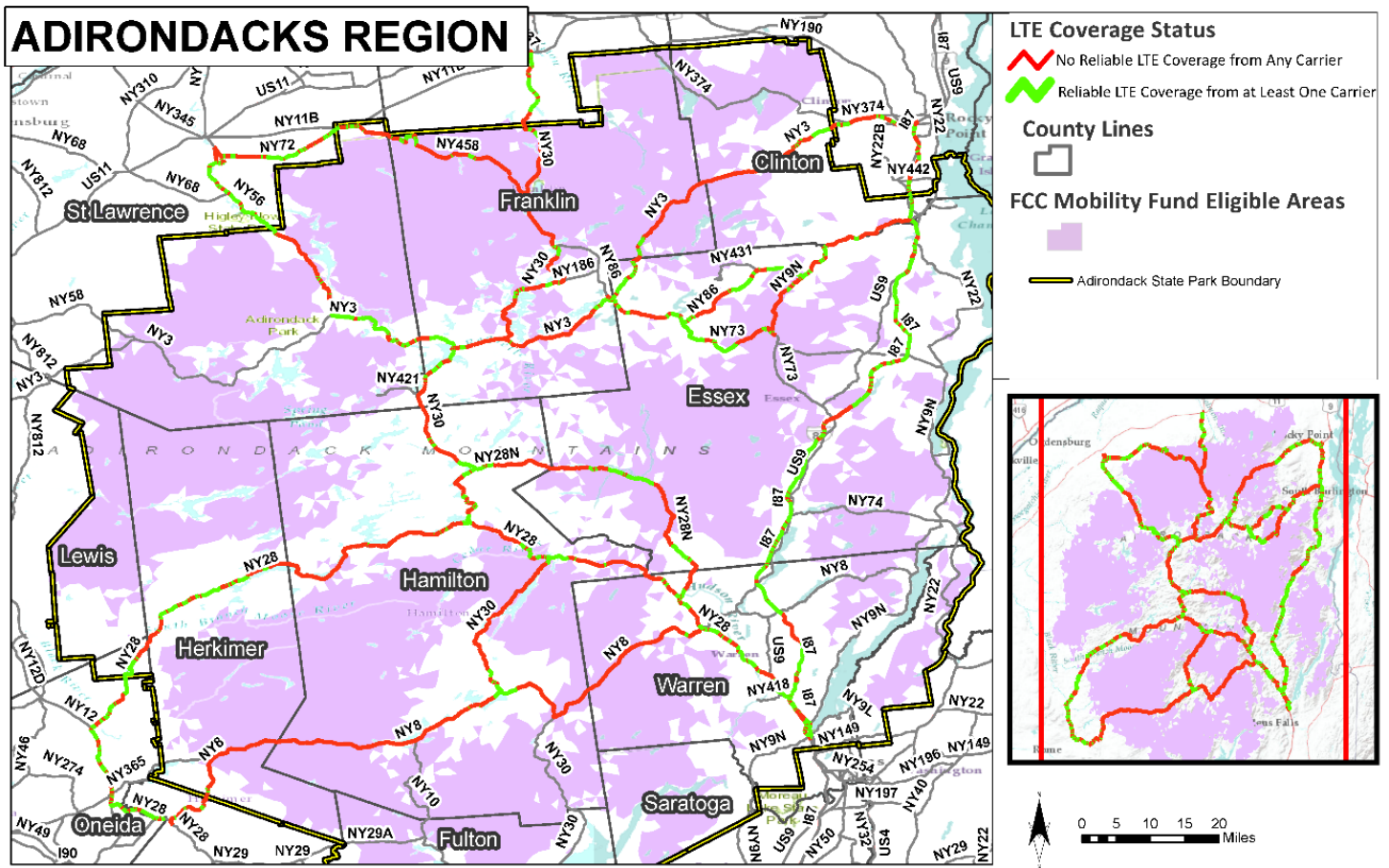
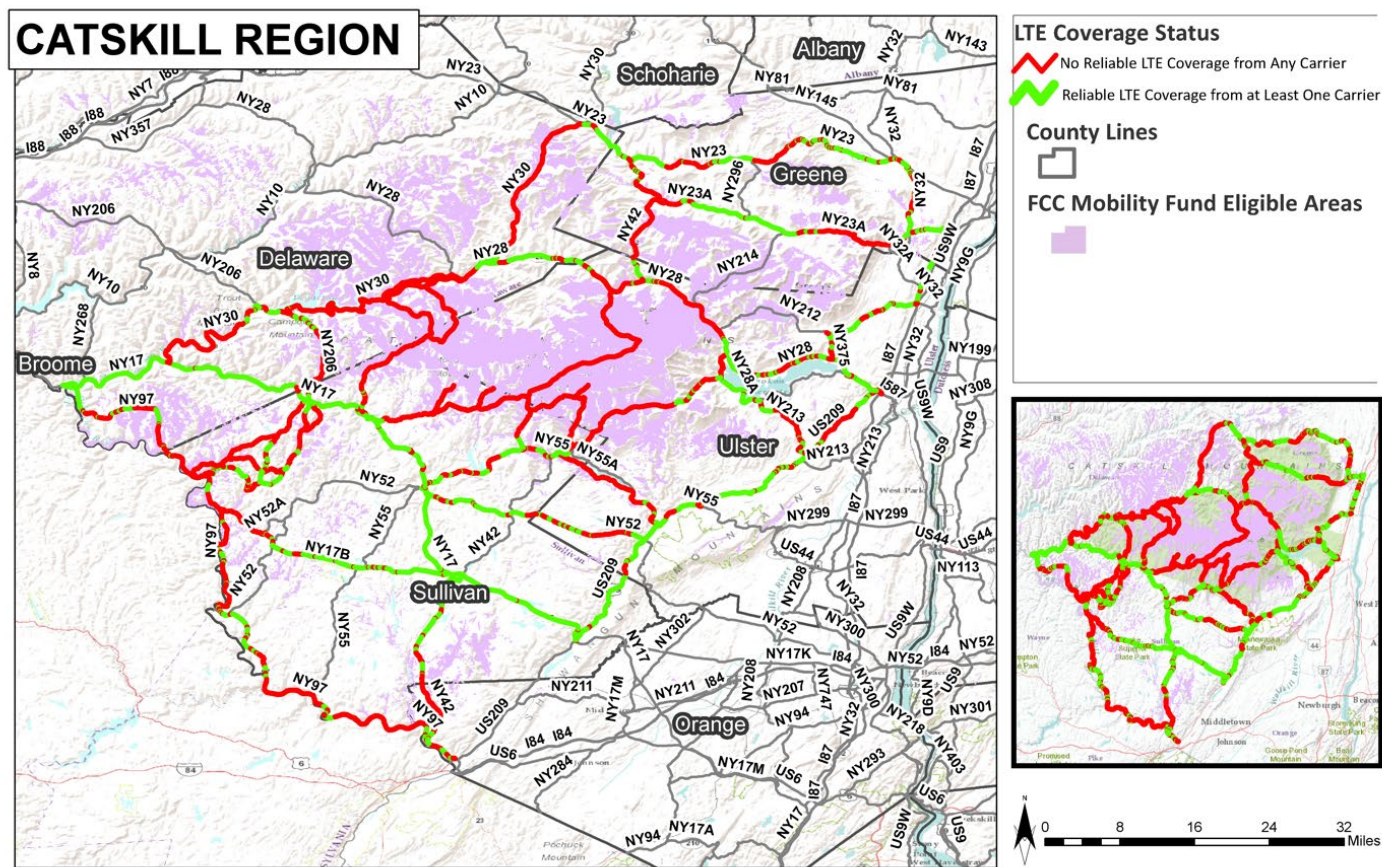


Figure 15: Catskill Region Combined Carrier Drive Test Results



Regulatory Environment in NYS

The Upstate Cellular Coverage Task Force report identified three primary areas of regulatory challenges impacting cellular coverage deployment in Upstate New York: permitting complexity, challenges to right-of-way access, and limited availability of land.

The report concluded that state regulations, including the State Environmental Quality Review Act (SEQRA), makes it difficult for carriers to “navigate a complex and inconsistent patchwork of municipal and state regulations and ordinances.” It said the lack of uniformity across jurisdictions created a significant issue because unclear permitting processes delay the deployment of cellular infrastructure.”

While state and local rights-of-way (ROWs) were seen as potential land on which to expand cell tower coverage, the siting process across the state is not uniform and areas such as the Adirondacks and Catskills lack population density and have more stringent regulations for this development. In addition, “licensing and permitting programs designed to maximize revenue for the State may create a disincentive for investment where the economics of projects are marginal.”

Lastly, the report acknowledged significant “barriers to accessing property owned by the various instrumentalities of the State of New York takes a variety of forms. Access to forest preserve land and State Forest land is rarely, if ever, possible for commercial communication facilities. Other state lands are more readily accessible for infrastructure expansion but may have prohibitive regulation or unfeasible timelines.”

Estimated Costs to Deploy Cellular Coverage

The Task Force report separated deployment into three categories based on geographic representation: the costs to deploy cellular coverage across the state, the Adirondack region only, and the Catskill region only. The estimated cost to build out the infrastructure necessary to support cellular expansion across all interstates, U.S. and state highways, as well as major county and local roads across all of Upstate New York, is approximately \$610 million. It would cost approximately \$423 million in the Adirondack Region and nearly \$74 million in the Catskill Region. The chart from page 62 of the report (below) includes the breakdown by region.

Table 7: Estimated Capital Cost to Close Coverage Gap

Upstate (Includes Adirondack and Catskill Regions)				
Class	Total Upstate Road Miles	Estimated # of Uncovered Road Miles	Estimated Cost Per Mile of New Coverage	Estimated Total Cost (\$ Millions)
Interstates & US Highways	3,201	73	\$313,000	\$22.7
New York State Highways	7,521	1,537	\$313,000	\$481.2
Major County and Local Roads	6,841	339	\$313,000	\$106.0
TOTAL	17,564	1,949	\$313,000	\$610
Adirondack Region Only				
Class	Total Upstate Road Miles	Estimated # of Uncovered Road Miles	Estimated Cost Per Mile of New Coverage	Estimated Total Cost (\$ Millions)
Interstates & US Highways	612	69	\$313,000	\$21.7
New York State Highways	2,703	1,121	\$313,000	\$350.7
Major County and Local Roads	1,129	160	\$313,000	\$50.1
TOTAL	4,445	1,350	\$313,000	\$422.6
Catskill Region Only				
Class	Total Upstate Road Miles	Estimated # of Uncovered Road Miles	Estimated Cost Per Mile of New Coverage	Estimated Total Cost (\$ Millions)
Interstates & US Highways	280	1.4	\$313,000	\$0.4
New York State Highways	1,183	207	\$313,000	\$64.9
Major County and Local Roads	453	27	\$313,000	\$8.4
TOTAL	1,916	235	\$313,000	\$73.7

Task Force Recommendations for NYS Policy Leaders

The Task Force recommended several actions which will help the state achieve the goals of expanding cellular coverage, including the following.

Maximizing Private Investment

Carriers should deploy more capital in regions where they know they will be able to find sites and be able to permit those sites within reasonable and predictable timeframes.

Streamlining Regulatory Processes

- **Permitting:** Certain land use permitting requirements hinder cellular service expansion.
- **ROW Access:** Access to state and local ROWs should be streamlined and expedited.

- **Land Availability:** Proactive steps can be taken to encourage access to additional land for tower development.

Evaluating Economic Incentives

- State grant funding should require private co-investment. Grant funding should also be allocated based on a reverse auction, as was the case with the New NY Broadband Program, or other competitive process.
- The state should identify opportunities to leverage past investments in broadband infrastructure, as well as federal funding.

ConnectALL Broadband Program

As part of her 2022 State of the State address, Governor Kathy Hochul announced the \$1 billion ConnectALL initiative^{xi} – the largest state investment in broadband to date.

As part of this new initiative, the Comprehensive Broadband Connectivity Act of 2021 directs the Public Service Commission (PSC) to study, on an annual basis, the availability, reliability, and cost of high-speed broadband service in the state. The Broadband Assessment Program was created to help make this happen. The Broadband Assessment Program is administered by the Department of Public Service (DPS).

The ConnectALL initiative also supports local efforts to expand broadband by establishing three grant programs that provide funding for municipalities and other local entities to plan, engineer, and construct accessible broadband infrastructure. The state will coordinate with municipalities across the state to direct funding to where it's most needed and provide every community with the support and resources to effectively participate. The grant programs are focused on three primary efforts:

- **Local Connectivity Planning and 21st Century Municipal Infrastructure:** This program will provide grants to municipalities, non-profits and other entities to construct open and accessible public broadband infrastructure.
- **Rural Broadband:** This program will provide matching grants—plus hundreds of millions of forthcoming dollars from the federal Infrastructure Investment and Jobs Act (IIJA)—to support rural broadband access, including last-mile connections and middle-mile projects.
- **Connectivity Innovation:** This program will provide competitive grants to entities statewide to pilot and construct creative, innovative, and new solutions pioneering future breakthroughs.

The County Perspective: County Recommendations for NYS Policy Leaders

We cannot afford to wait another decade for regulatory and budget action to bridge the digital divide in New York State. Continued inaction magnifies the digital divide, forcing New Yorkers to relocate to areas of the country with more dependable and consistent broadband and cellular coverage.

NYSAC agrees with the recommendations of the Task Force and the intent of the ConnectALL program. To best serve our residents, counties are ready to partner with the state to deploy the ConnectALL program to areas that are currently un- and under-served by broadband services. We further urge that the ConnectALL program be broadened to specifically call for investments in cellular technology infrastructure to ensure the entire state is fully covered by cellular services.

Conclusion

Connectivity is no longer a luxury but a necessity. The State of New York has been a national leader in its allocation of resources to expand broadband services. We now have the opportunity to finally bridge the digital divide and we need state and federal leaders to continue taking bold action. Moving forward, we urge an emphasis on expanding both broadband and cellular services to ensure that all New Yorkers have access to the basic public safety and economic opportunities that require reliable cellular service. Our economy, public safety, and health depend on it. .

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