



CAPE COD
COMMISSION

Regional Broadband Needs Assessment

OVERVIEW

AUGUST 2024

Fixed and Mobile Broadband Needs Assessment Prepared for Barnstable County by CTC Technology & Energy, and Rural Innovation Strategies, Inc. Summary overview prepared by Cape Cod Commission staff. Funding provided by Coronavirus State and Local Fiscal Recovery Funds provided by the U.S. Department of the Treasury through Barnstable County.

Summary Overview

PURPOSE



Access to fast and reliable internet service is essential to support vibrant communities. Connection to the internet through devices such as cell phones, tablets, and computers is necessary to work, learn, and engage in our society. Households, community institutions, and businesses across Cape Cod depend on high-speed broadband across nearly all essential activities and aspects of life. Accordingly, maintaining a strong and consistent connection must be a critical economic development and community planning priority for our region.

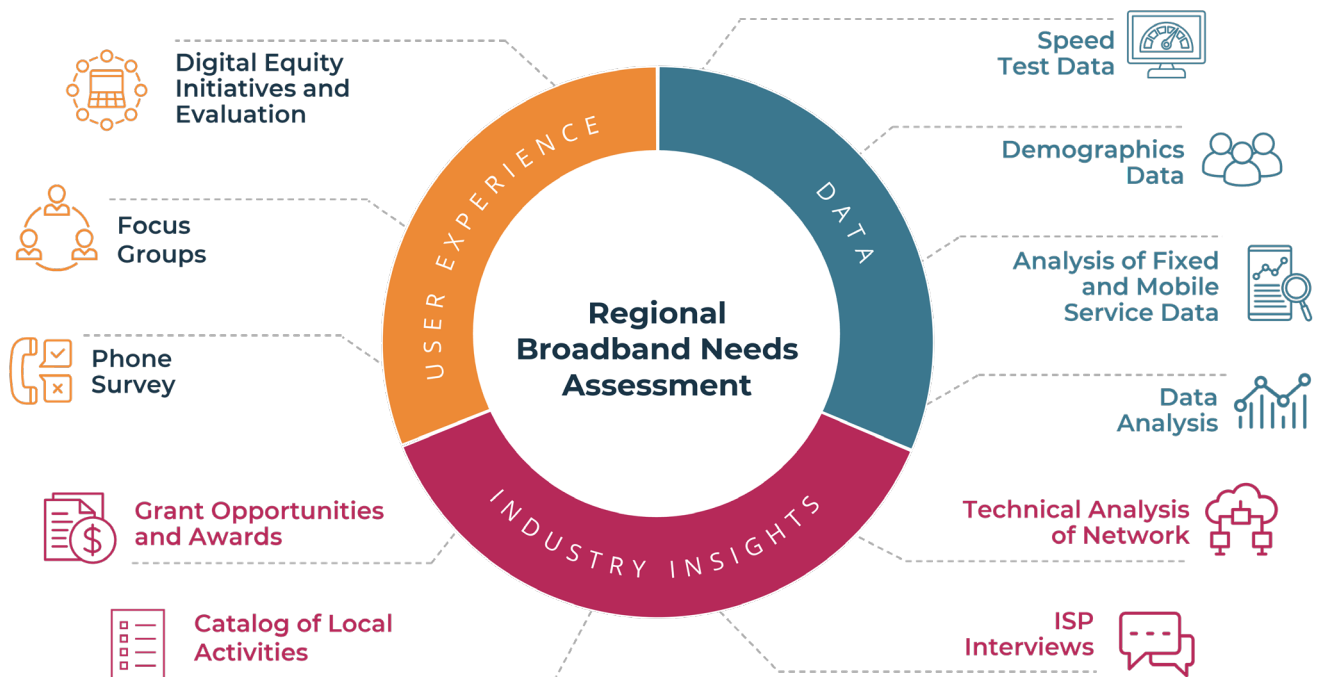
Internet demand and accessibility varies seasonally on Cape Cod, with a summer population swell that must be accounted for throughout all local infrastructure planning efforts. Additionally, the population of the region has increased over the past decade, particularly as a result of the COVID-19 pandemic which promoted a more commonplace virtual workplace culture. As work, public meetings, healthcare, and other essential services continue to be offered in a virtual setting, maintaining an effective internet network is more critical than ever before.

The Regional Broadband Needs Assessment represents a significant step towards understanding the functionality of the region's existing internet network and potential for upgrades or expansion to increase access to high-speed broadband. It is important to note that the connectivity landscape is ever-changing and is particularly dynamic at the time of publication given funding opportunities at both the state and federal level. The intention of the Needs Assessment is to support strategic decision-making processes and collaboration for Cape Cod and its municipalities in this rapidly evolving environment.

REPORT CONTENT

The Regional Broadband Needs Assessment includes presentation and analysis of:

- Quantitative and qualitative data on fixed broadband (cable, fiber, DSL, and fixed wireless services) and mobile service availability, as well as gaps or deficiencies in these services
- Challenges with respect to affordability, digital skills, digital literacy, and device access as determined from a survey conducted as part of this project, Commission staff observations, and additional data
- Information and perspective on recent and evolving market developments that may lead to fiber-to-the-premises (FTTP) deployments
- Information on how municipalities can pursue and leverage deployment of FTTP through a variety of approaches, the levels of risk and control involved, and recommendations based on the data.



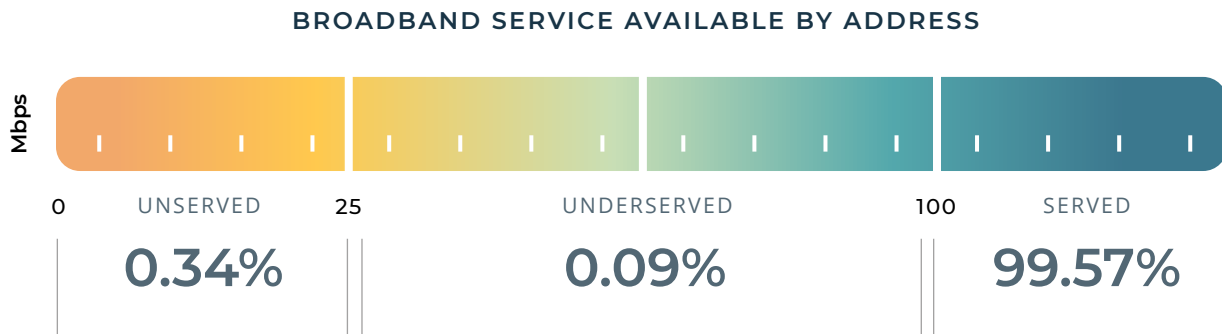
KEY COMPONENTS

The Regional Broadband Needs Assessment included robust data collection and analysis as well as an internet speed test. Industry insights were provided by project consultants and among other aspects, include interviews with internet service providers (ISP) and review potential grant opportunities. The user experience section refers to qualitative information from both a phone survey and targeted focus groups, along with digital equity initiatives from within the region and recommendations based on state-wide digital equity efforts.

Key Findings

General Broadband Access

According to Federal Communications Commission (FCC) data, broadband services at advertised speeds above 100/20 Mbps is available to nearly all Barnstable County residents. As detailed in the study, the speeds experienced by residents can differ from advertised speeds, particularly in the summer season.



Lack of Competition and Affordability Issues

There is very little competition for high-speed service, with 99.6 percent of residential and business addresses served by Comcast. The lack of competition results in the highest internet prices in the Commonwealth* and significant issues with internet affordability.

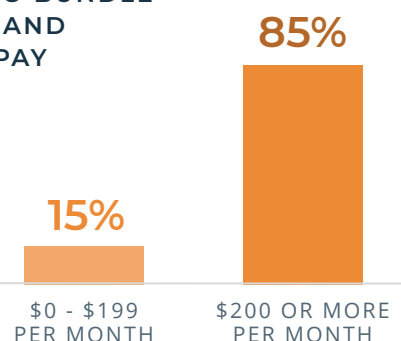
MORE THAN HALF OF INTERNET SUBSCRIBERS PAY OVER \$100 FOR INTERNET SERVICE ALONE

46.4% less than \$100
53.6% \$100 or more

Monthly Price for Internet Service Only

MANY CHOOSE TO BUNDLE INTERNET SERVICE WITH EITHER CABLE, PHONE, OR BOTH. 85% OF THOSE WHO BUNDLE INTERNET, CABLE, AND PHONE SERVICES PAY \$200 OR MORE PER MONTH

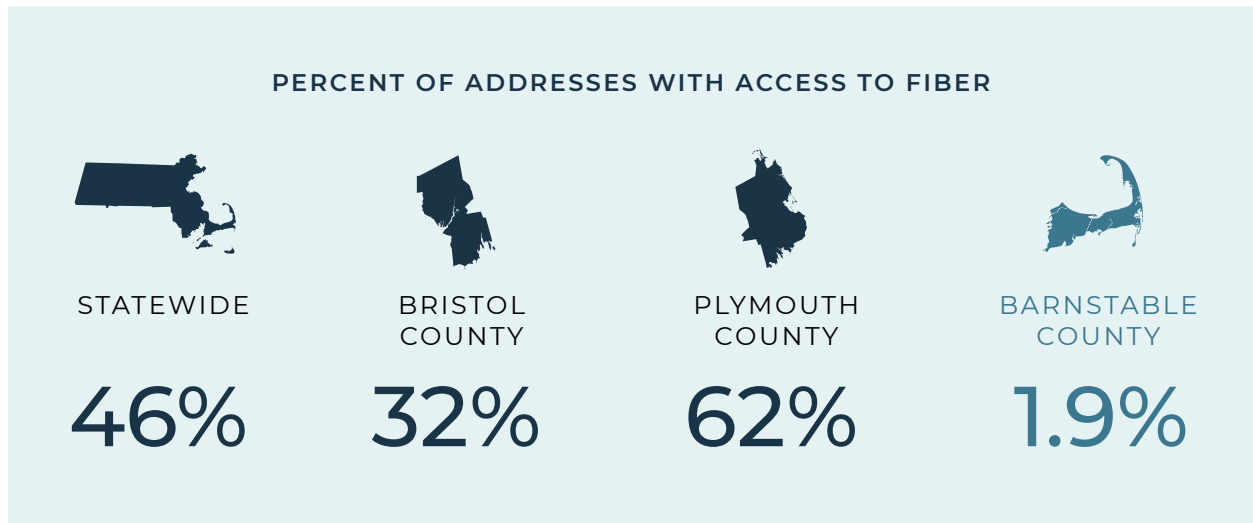
Monthly Price for Bundled Internet, Cable and Phone Services



**Massachusetts Digital Equity Plan*

Lack of Fiber

Less than two percent of Cape Cod addresses have access to fiber internet service. Fiber is considered “future-proof” infrastructure—meaning infrastructure that requires little extra cost to increase speeds in the future and lasts for decades.



Seasonal Degradation of Service

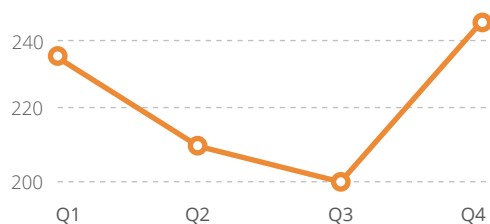
Speed tests show that Cape Cod experiences considerable seasonal degradation of fixed and mobile broadband service.

**47Mbps
DECREASE**



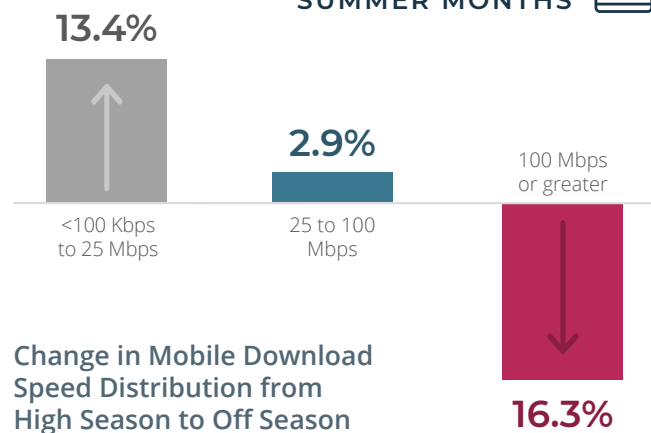
IN AVERAGE
FIXED DOWNLOAD
SPEEDS DURING
SUMMER MONTHS

Average Download Speed (Mbps)
for Fixed Broadband



16% DECREASE

IN HIGHEST SPEED MOBILE
DOWNLOADS DURING
SUMMER MONTHS



Consumer Dissatisfaction

Residents are concerned with the speed, quality, and cost of available cable broadband service. Similarly, large numbers of residents report problems with mobile voice and data services.

Approximately

39%



of survey respondents reported experiencing **slowdowns or drops at least one or more times per week**

Approximately

69%



of survey respondents who were not “very satisfied” reported that their **service was too expensive**

Digital Equity Challenges

Beyond broadband access and affordability, significant barriers exist for segments of the population related to computing devices and internet skills. In particular, challenges were noted for aging, immigrant, and low-income populations.

Approximately

14,400

households lack a desktop or laptop computer.

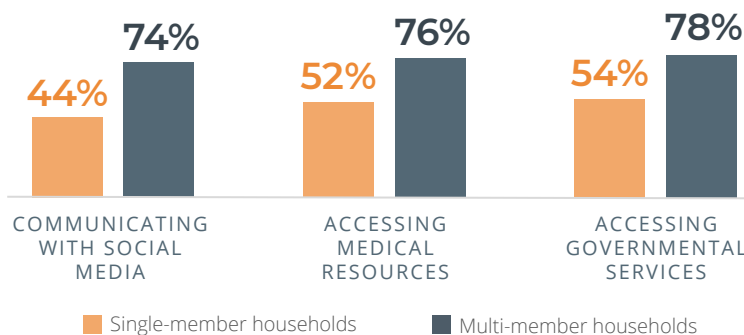


Roughly **3,900**

households rely on **smartphones** as their only device to access to the internet.



Just over one-half of those who live alone are very confident in accessing medical resources or government services online, compared with at least three-fourths of other respondents.



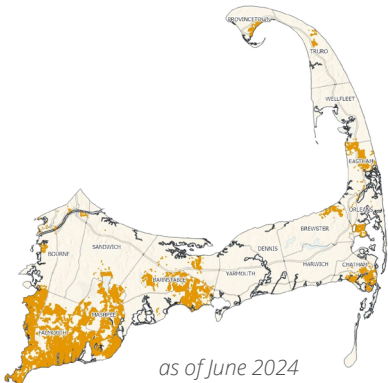
Current and Future Broadband Developments

This is an opportune time to plan for the region’s future broadband needs. With current funding opportunities, technological advancements, and strong support at national, state, and local levels for broadband and digital equity, the landscape is particularly dynamic. Several key entities interviewed for this study are already working on or planning network upgrades and expansions on Cape Cod.

Comcast Network Upgrades Increase Available Speeds

Comcast recently upgraded its network to provide faster speeds, primarily in areas of the Upper Cape. It represents a significant increase in locations with access to 2,000/200 Mbps service.

UNITS SERVED BY COMCAST WITH AVAILABLE 2,000/200 MBPS SERVICE

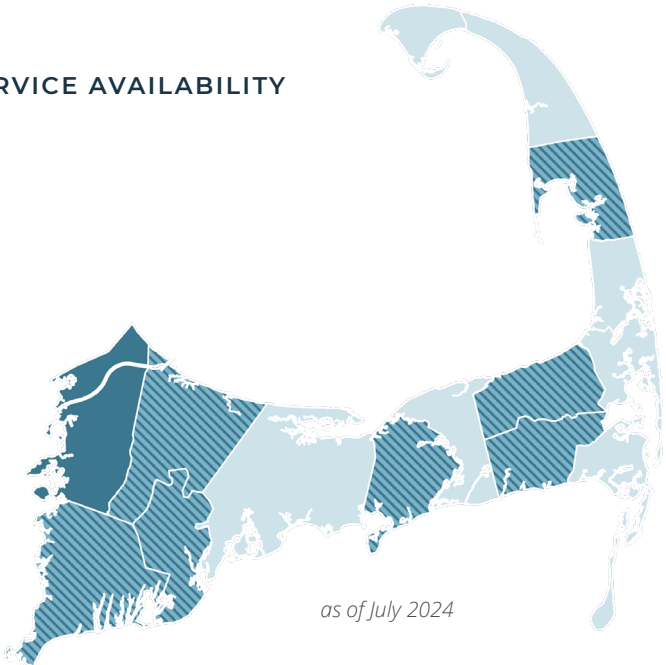


Possible Verizon FTTN Deployments

Verizon’s residential fiber service is currently limited to parts of Bourne, but future FTTN deployments may extend to seven Cape Cod towns. Verizon received grants from MBI’s Gap Networks Grant Program to address service gaps in Brewster, Falmouth, Harwich, Mashpee, Sandwich, Wellfleet, and Yarmouth, indicating potential plans for broader fiber deployment.

RESIDENTIAL VERIZON FIBER SERVICE AVAILABILITY BY TOWN

- Available primarily on the mainland side of the canal in Bourne (about 2,000 locations currently served)
- Anticipated service
- Not available



Options for Larger Businesses and Enterprise Customers

Competitive fiber providers including OpenCape and Comcast Business are available for larger businesses and enterprise customers. Since it went online in 2013, OpenCape has provided a critical new source of fiber service and competition for municipalities, institutions, and large and small businesses. OpenCape has deployed fiber for business zones in Falmouth, Buzzards Bay, and Hyannis and has been actively exploring FTTP deployment options.

More than

100

institutions are on the
OpenCape fiber network



OPENCAP
FIBER NETWORK
CONNECTS
CAPE COD, THE
ISLANDS AND
SOUTHEASTERN
MASSACHUSETTS



Expanding Broadband Planning and Advocacy Locally

In recent years, the 15 towns of Barnstable County and other entities, such as the Mashpee Wampanoag Tribe and community organizations, have taken significant steps toward highlighting broadband needs and achieving certain network and service improvements. These efforts include establishing fiber connectivity in downtown zones through OpenCape, organizing local task forces, obtaining grant monies to upgrade municipal (non-commercial) fiber networks, studying the adequacy of available broadband to serve the needs of local businesses and, the case of Falmouth, setting up a public entity that can allow the Town to enter the broadband business.

\$9.1

MILLION

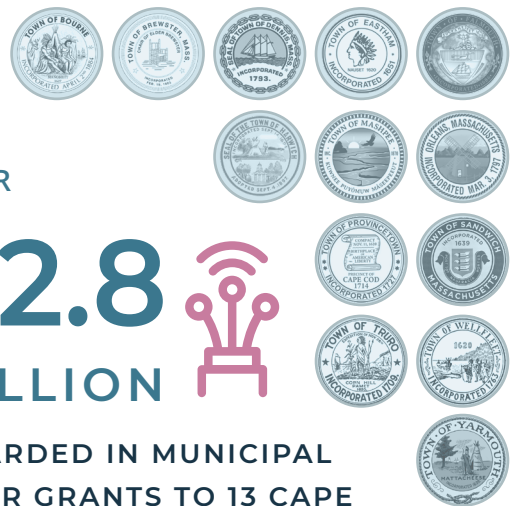
AWARDED TO THE MASHPEE
WAMPANOAG TRIBE FROM
THE NTIA TRIBAL BROADBAND
CONNECTIVITY PROGRAM TO
BUILD A FIBER NETWORK FOR
THE TRIBE



OVER

\$2.8
MILLION

AWARDED IN MUNICIPAL
FIBER GRANTS TO 13 CAPE
COD TOWNS SINCE 2022



Recommendations

The Regional Broadband Needs Assessment outlines 14 recommendations that address needs and opportunities identified across three broad categories: fiber and fixed broadband infrastructure, mobile network enhancements, and advancing digital equity on Cape Cod. The recommendations offer strategic approaches for municipal and regional leaders and other stakeholders to enact across Cape Cod.



FIBER/FIXED BROADBAND INFRASTRUCTURE

Fiber/fixed broadband infrastructure recommendations encourage increased internet service provider options and fiber rollout across Cape Cod, and emphasize the importance of robust fiber-to-the-premises (FTTP) deployments, leveraging municipal needs for infrastructure development.



MOBILE SERVICE




Mobile service recommendations focus on enhancing mobile network coverage to address service gaps and collaborating to gather high-quality mobile service data to develop solutions with mobile service providers.



DIGITAL EQUITY

Digital equity recommendations provide collaborative solutions to close the digital divide beyond connectivity challenges, focusing on efforts that build local and regional capacity for equitable connectivity, device access, and digital skills.



| CATEGORY | RECOMMENDATIONS |
|--|---|
|  <p>FIBER/FIXED BROADBAND INFRASTRUCTURE</p> | <ul style="list-style-type: none"> ■ Pursue the development of FTTP deployments through one of four broad categories of business models that differ regarding the role that Towns or partners play ■ Facilitate construction to encourage and reduce costs of deployment, regardless of model or how the project came about ■ Seek to leverage deployments to obtain fiber for current and future municipal needs, such as connectivity to municipal buildings, backhaul for public safety radios, and traffic or security cameras |
|  <p>MOBILE SERVICE</p> | <ul style="list-style-type: none"> ■ Implement a rigorous and repeatable drive-test data collection process that measures signal strength on all Cape Cod roadways at a granular level ■ Perform mobile broadband “walk tests” to measure signal strength in critical non-driving areas ■ Create a vertical asset database for areas surrounding identified coverage gaps ■ Use data collected and proactive posture to encourage collaborative solutions with mobile wireless carriers |
|  <p>DIGITAL EQUITY</p> | <ul style="list-style-type: none"> ■ Form a countywide Digital Equity Coalition and convene annual or biannual meetings to harmonize efforts and support outreach to funders ■ Consider augmenting state and federal digital equity funds with a regional grant program ■ Help pursue funding to Community TV stations to support digital skills programs ■ Promote digital navigator programs enhancing telehealth and other digital skills, such as those available through community health centers across Cape Cod ■ Facilitate the partnership between device provision entities with interested local community organizations on the Cape ■ Consider establishing a regional call center to assist in connecting residents with technical support resources and supporting enrollment in current or future broadband subsidy or low-cost programs ■ Consider approaches for connectivity in housing authority buildings—including procuring services from existing providers (a single-payer approach) or state programs to provide potential capital and operating support for Wi-Fi and for affordable housing wiring retrofits |



Positioned for Progress

With strong local and regional advocates and community organizations already at work, Cape Cod is well-positioned to address regional connectivity challenges and digital inequities. Local and regional actors, including bodies of government, community-based organizations, and individuals, should continue to pursue state and federal funding opportunities. This may include infrastructural funding mechanisms, such as through participation in the Broadband Equity Access & Deployment (BEAD) program, as well as grant opportunities to close the digital divide through increased connectivity, access, and adoption. Additional funding details are available within the report.