



TOWN OF CONCORD MUNICIPAL UTILITIES

ELECTRIC | WATER | SEWER | TELECOMMUNICATIONS

November 2023 – Broadband Updates

Concord Broadband is pleased to share the following updates and information from the past month. Please do not hesitate to contact us at broadband@concordma.gov should you have any questions, concerns, or feedback.

Operations

Recruitment continues for a new Network Engineer. We continue to screen candidates while we work through the negotiation process with a candidate.

Concord Broadband is working on our winter operations plans and preparing for what Mother Nature brings. There are a variety of policies and procedures surrounding inclement weather and outages, and we always review these with staff to make sure any response is as smooth as possible. We maintain an annual contract with a third party to be able to provide a robust response in the event there is a large amount of fiber broken or taken down.

The inventory process was moved a couple weeks to the future, but our staff are now working on the process of reviewing inventory. We continue to review the workflows and processes surrounding the deployment of equipment to result in as few issues as possible.

We are procuring a new Optical Time-Domain Reflectometer (OTDR) for Broadband that will help with testing, diagnostics and repair of damaged fiber. These devices also provide validated reports on the condition and length of fiber when it is provisioned for dark fiber, which we did very recently as we onboarded a new dark fiber customer.

When do people use Concord Broadband?

Concord Broadband staff spend a good deal of time looking at metrics for several reasons:

- To understand and manage available bandwidth
- To schedule maintenance windows at the least impactful time
- To plan for peak capacity

It might not surprise people to find out that 9pm each night is usually the peak for traffic, likely when people are home and watching video streaming services. It's about twice the rate of traffic as what we see at 12 noon. The low each day is almost always 4am, when most people have gone to sleep and few are using the internet.

Key to the graphic below:

1. When usage begins to head higher after 4am

Upcoming Maintenance

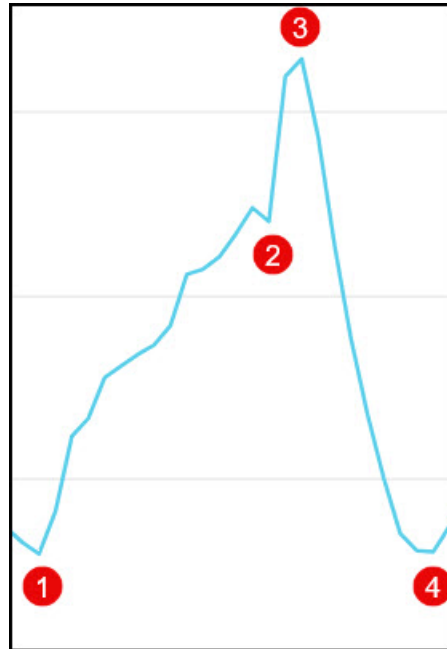
There is no maintenance scheduled in December, but we are planning on scheduling one for early January. We will be targeting the Town website, News and Notices email subscribers and posting updates on the website below.

The purpose of the upcoming maintenance is to upgrade the firmware on all Broadband devices, which will impact service for 5-15 minutes (between 1-4am).

You can learn more about maintenance windows here:

<https://concordma.gov/3144/Broadband-Maintenance>

- 2. A brief dip when people commute home
- 3. The peak between 8-9pm
- 4. The low at as we approach 4am



Walking through the FCC National Broadband Map

All internet providers are required to submit data biannually to the FCC for the purpose of assembling a National Broadband Map. One of the goals is to help determine where further investment is needed to expand high speed internet access to all Americans. You can find the data here: <https://broadbandmap.fcc.gov/home>

Each home or business has a point on the map; clicking on a point brings you additional information.

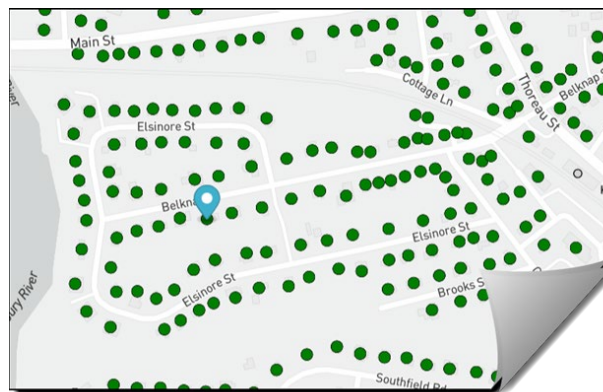


Figure 1: FCC National Broadband Map address points (Concord, MA)

Concord Broadband submits data, which includes both what speeds and technology we offer as well as how many customers we have on each tier by census block. Below, you can see a sample address along with some of the attributes you can see once you select an address.

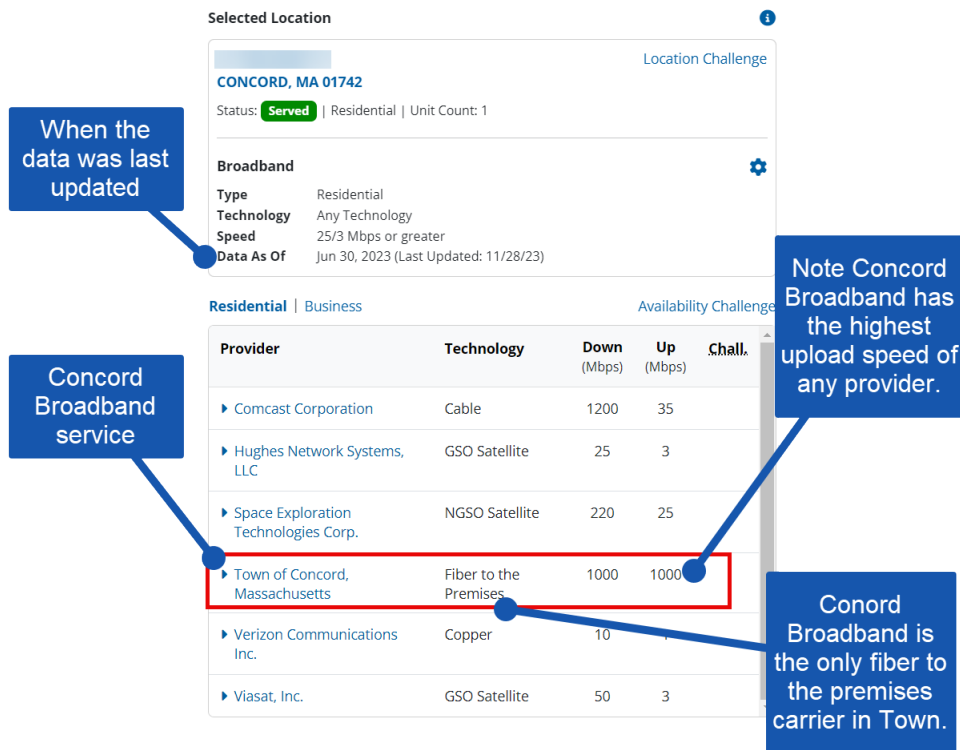
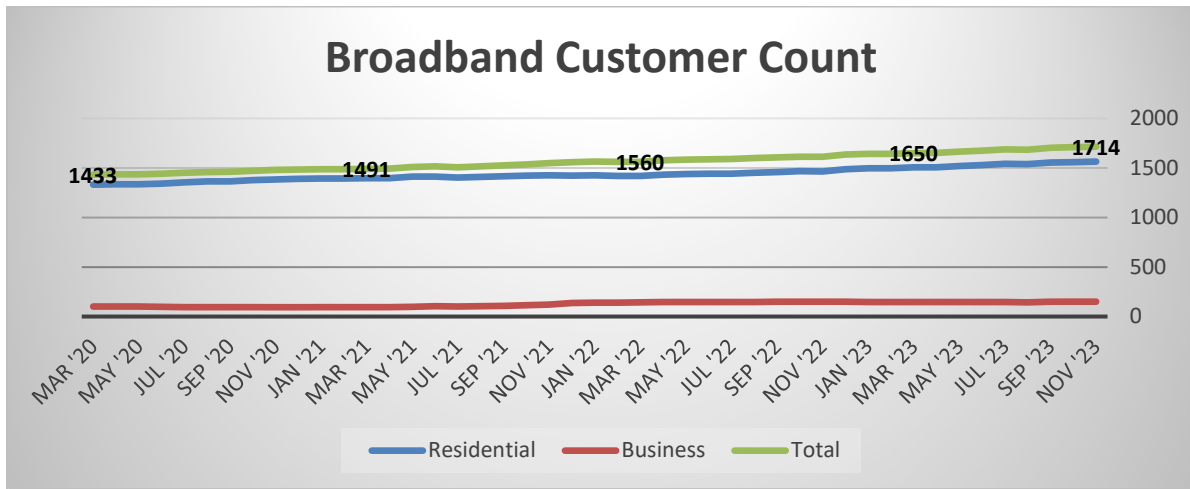


Figure 2: Broadband provider details for a particular address (actual data).

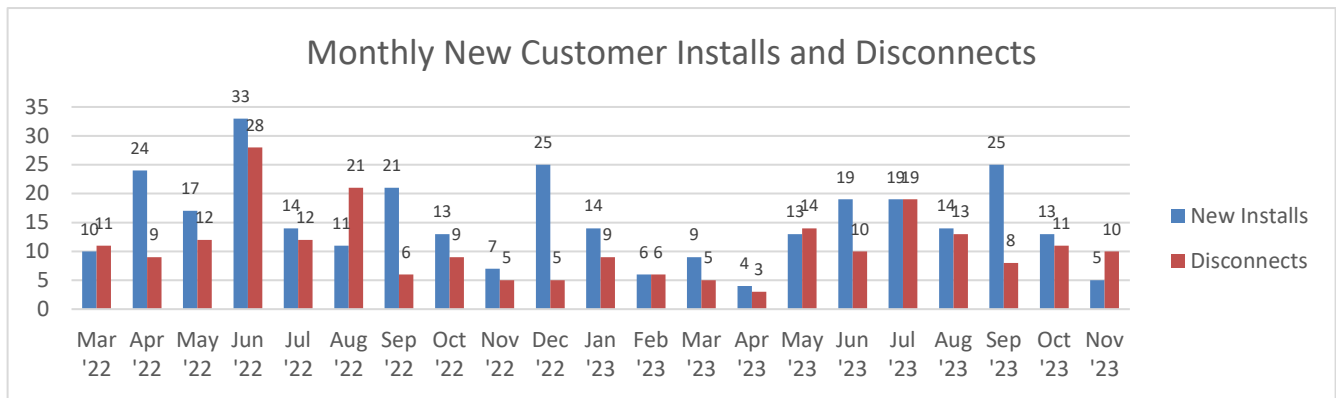
There are several takeaways that demonstrate what we think the superior product that Concord Broadband offers. First, Concord Broadband is the only Fiber-to-the-Premises offering in Concord. This means a fiber optic cable goes all the way from our head end in the data center to our customers’ homes or businesses. Fiber has several advantages over other technologies, including speed and security (if you cut fiber to try to gain unauthorized access, it stops working). And because our network was designed from the ground up to serve high speed internet, we have symmetrical speeds that include incredibly fast upload speeds. These fast speeds are great for video streaming, uploading files, cloud backups, and gaming.

Concord Broadband welcomes processes and data collection like this to provide more transparency to consumers. If anyone has a question associated with this information, please send an email to broadband@concordma.gov.

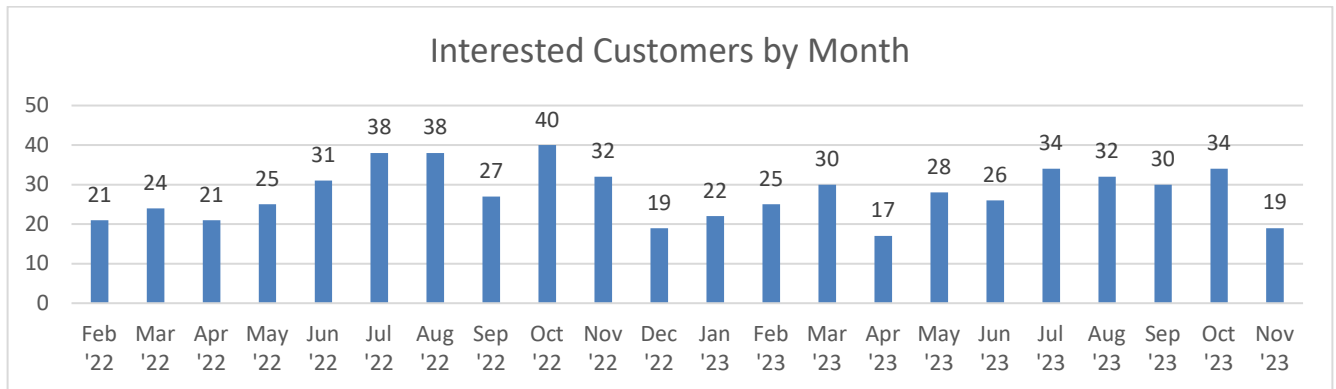
Monthly Metrics and Business Data



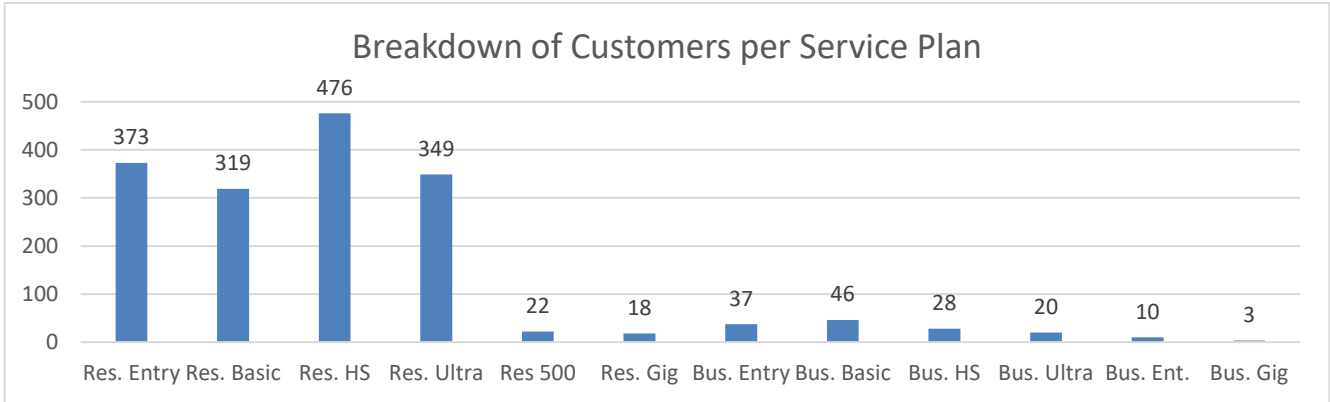
(Customer count: March 2020 – November 2023)



(The number of new installations and disconnects completed each month.)

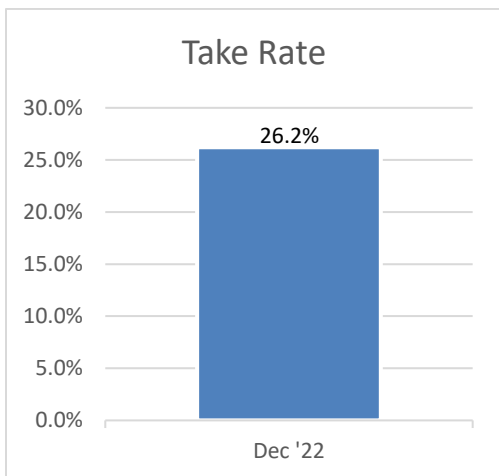
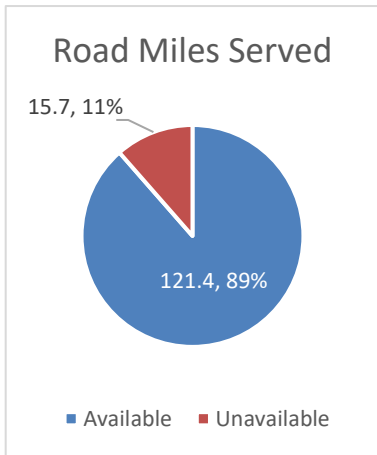
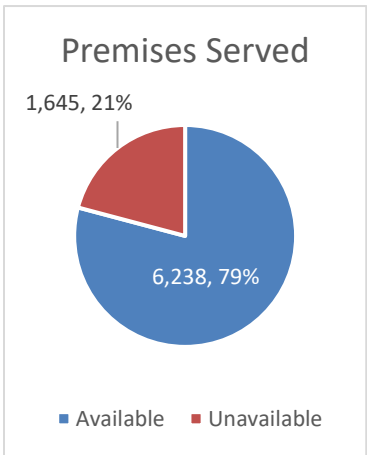
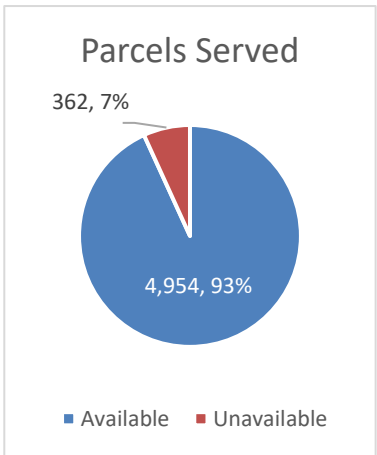


(This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.)



(This is the number of each customer on our different service plans as of 11/30/2023.)

Quarterly Metrics



(As of 12/1/2023)

Appendix

Fiber Broadband Completion Task Force's Draft Report Goals

Goal	Type	Priority	Responsible Party	Additional Info.
Policies (p.39)				
• Universal Access	Policy	Highest	Select Board/Town Meeting	
• Expansion outside current territory	Policy	Low	Select Board/Town Meeting	
• Support Economic Vitality, Sustainability, Equity & Inclusion	Policy	High	Select Board/Light Board/TM Economic Development	Rate subsidy available
• Affordable Housing	Policy	Medium	Select Board/Housing Groups	Rate subsidy available
• Public Safety	Policy	Medium	Select Board/Town Manager	
• Education	Policy	Medium	Select Board/School Dept.	
• Government Access (PEG)	Policy	Medium	Select Board/PAAC	
Recommended metrics for tracking (p.41)				
• Parcels served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Premises served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Road miles served	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Subscribers	Metric	High	Town Staff/Light Board	Complete; will report monthly
• Take rate	Metric	Medium	Town Staff/Light Board	Complete; will report quarterly
• Churn	Metric	High	Town Staff/Light Board	Complete; included in monthly report
• Installations	Metric	Highest	Town Staff/Light Board	Complete; will report monthly
Governance (p.39)				
• Track progress against completion	Metric	Highest	Light Board/Town Staff	We have been cleaning up the Master Address Table and will have something new to report soon. (11/2023)
• Rate of return policy	Policy	High	Light Board/Town Staff	
• Financial goals with regular reporting	Policy	High	Light Board/FinCom	
• Retained earnings and reserve policy	Policy	High	Light Board/FinCom	

Goal	Type	Priority	Responsible Party	Additional Info.
Strategic Planning Goals (p.43)				
• Marketing and growth	Metric	High	Light Board/Town Staff	
• Business return	Policy	High	Light Board/Town Staff	
Budgeting Process for Fiber Expansion (p.41)				
• Expand to fill existing opportunities	Planning	High	Light Board/Town Staff	
• External funding sources	Research	Medium	Light Board/Town Staff	Working on this
• ARPA Relief Funds Allocation, incl. Lost Revenue	Finance	Highest	Select Board/Town Manager	ARPA funds managed through the budget process.
• Review/Confirm Internal Loan Findings	Finance	Highest	Financial Audit Comm/Staff	Complete
• Review and Rescind PILOF to MMN	Finance	High	Select Board/Town Manager	Complete
Capital Planning Process (p.42)				
• Review/Revise Debt financing schedule	Policy	Highest	Light Board/Town Staff	Working on this; do to positive financial situation, anticipating being able to repay faster than expected.
• Quantifying cost of expansion	Planning	Medium	Town Staff	Working on this
• How to fund expansion	Planning	Medium	Light Board/Town Staff	
• Revise/refine methods for computing ROI	Planning	Medium	Light Board/Town Staff	
Construction and Logistics (p.42)				
• Vibratory plow – direct buried fiber cables	Operations	Medium	Town Staff	Working on this
• Revise/Refine Communication conduit construction standards and guidance	Policy	Medium	Town Staff	
• Integrate Fiber construction with the Roads Program – focus on Streets without fiber that already have underground electric	Planning	High	Town Staff	Working on this

