



TOWN OF CONCORD MUNICIPAL UTILITIES

ELECTRIC | WATER | SEWER | TELECOMMUNICATIONS

October 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 are conducting background checks and hope to have positive news to report next month.

Concord Broadband is working closely with the Planning and Zoning divisions, the Deputy Town Manager, and the Zoning Board of Appeals to ensure that any proposed 40B projects will have adequate infrastructure in place to serve all residences with our fiber-to-the-home solution.

We want to congratulate Dale Hartling, our Broadband Manager, on one year of service! Thank you, Dale.

Recent Maintenance – Decoupling shared infrastructure

At the inception of Concord Broadband, it was soon clear that staff working at the Concord Municipal Light Plant needed access to equipment at various data centers. The easiest way to accomplish that was through shared equipment in a management ring already in use by the Town. Because the management ring was separated from the Town's and Broadband's production equipment, the two networks were technically separate, but still linked. Because it operated in a ring, there were mechanisms to prevent loops on the network, including automated triggers to shutdown ports on switches if a loop were detected.

Fast forwarding to recent times, in the past two years, we have taken several steps to decouple the Concord Broadband infrastructure from the Town's equipment. This includes deploying multiple servers collocated at our primary datacenter and adding battery capacity and generator power in the event of a power outage. But the management network still remained the same: connected to both networks.

Recently some scheduled, non-production maintenance at a Town facility impacted approximately 100 broadband customers, and the root cause was found to be unintentional loops created from these merged networks. While it was always our long-term plan to decouple these to increase stability, it was clear we needed to act quickly to prevent any future interruptions in service.

Upcoming Maintenance

A maintenance window is scheduled for 5-7am on Wednesday, November 15, 2023. While we do not anticipate any impact on customers, we would like to notify everyone in the unlikely event there is a disruption. The work being performed relates to improving the resilience, access, and security of the networking equipment that we use to manage production switches and routers.

You can learn more about this maintenance here:

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

Our network team spent a couple weeks designing and testing a solution to finish the decoupling, and that will happen on November 15 early in the morning.

We do not plan on any interruption to our customers, but we err on the side of caution and always advertise maintenance windows any time we are touching production equipment. While this is not technically production equipment, it is *connected* to production equipment, and we want to take every precaution.

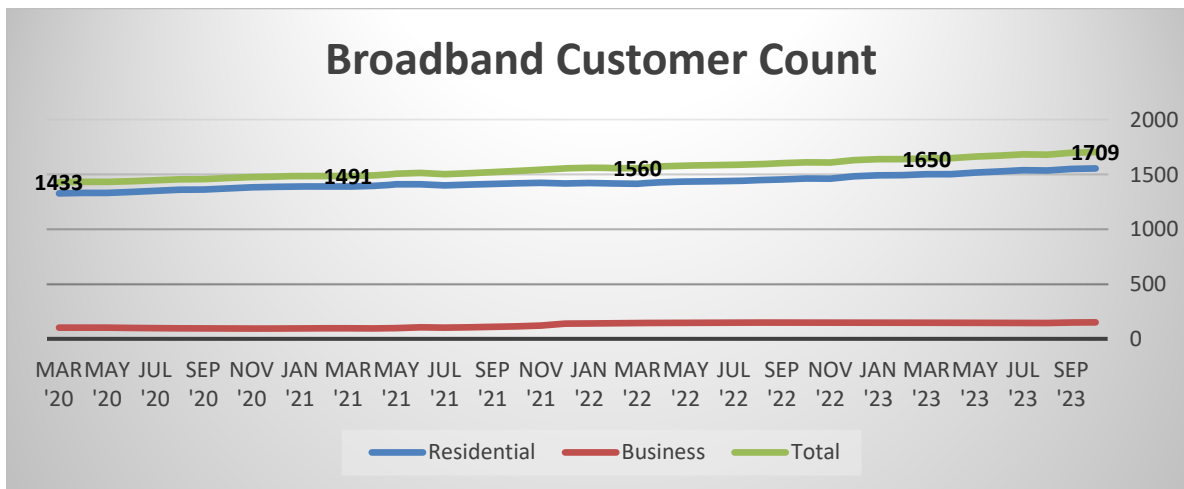
Using a UPS to keep your service up and running

If you use Concord Broadband, you might like to know that it's possible to purchase an inexpensive device that could keep your internet running for minutes or even hours in the event of a power outage. The fiber-to-the-home (FTTH) service we offer relies on pulses of light to transmit data to and from your home or business back to our data center. Since we have layers of redundant power in event of an outage, it means that if your Optical Network Terminal (ONT) and router, if it's a separate unit, has power, your connection will remain up and service available.

An Uninterruptable Power Supply (UPS) can be purchased from vendors like Staples or Amazon, and this device remains plugged into your line power at all times. Your Concord Broadband equipment would then be plugged into it, and if the power goes out, the UPS immediately takes over and provides power.

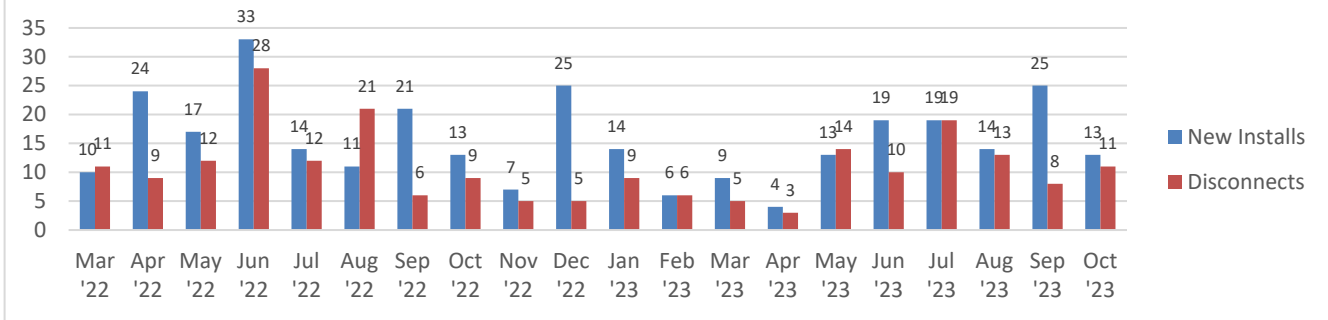
Obviously if a tree has fallen and fiber cables are broken, then even a UPS will not help your ONT stay online. But for customers who rely on internet for a Voice-Over-IP telephone or wish to continue to use the internet during a power outage, a UPS could be a great addition to your home or business.

Monthly Metrics and Business Data



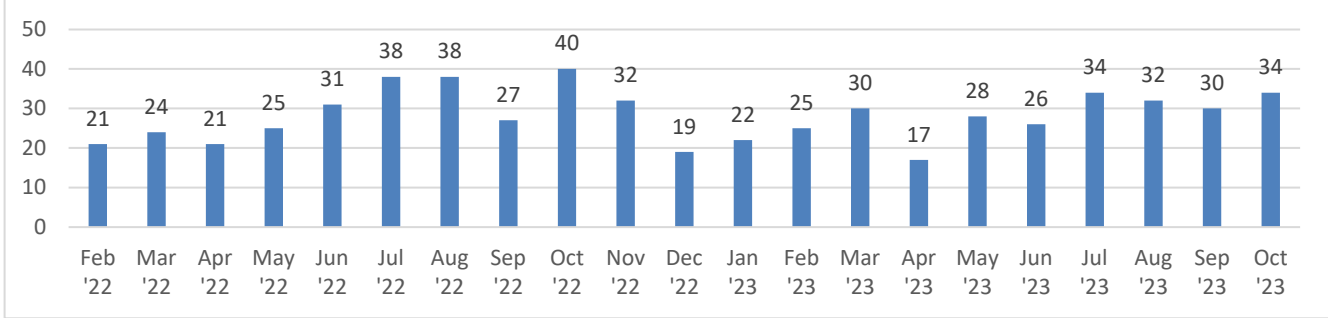
(Customer count: March 2020 – October 2023)

Monthly New Customer Installs and Disconnects



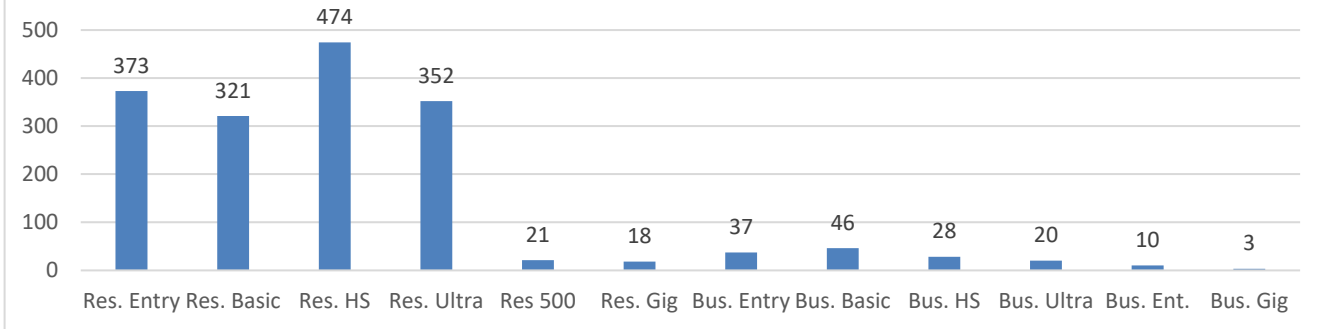
(The number of new installations and disconnects completed each month.)

Interested Customers by Month



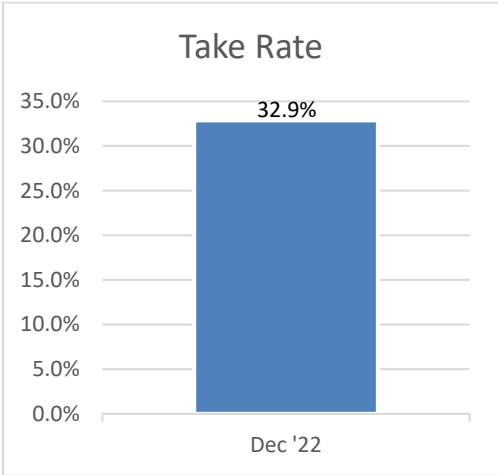
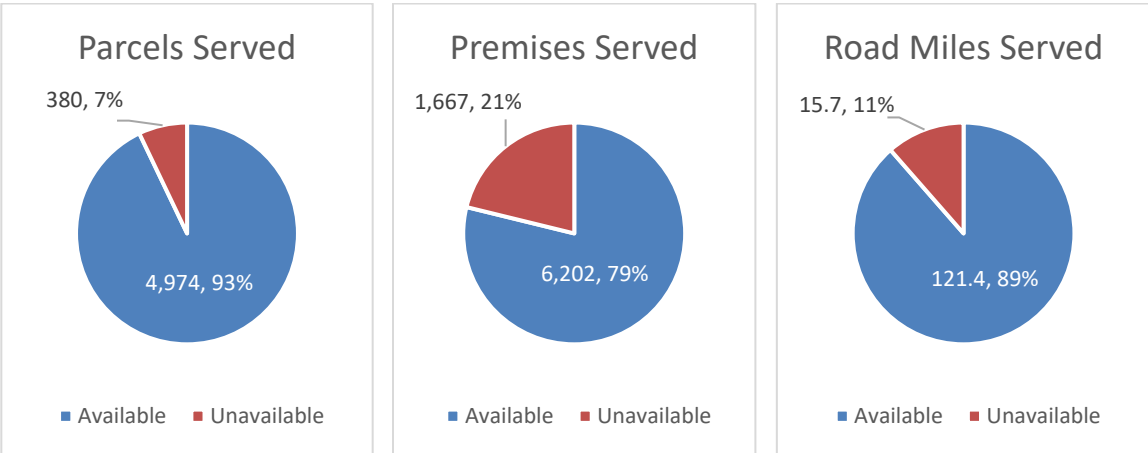
(This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.)

Breakdown of Customers per Service Plan



(This is the number of each customer on our different service plans as of 10/31/2023.)

Quarterly Metrics



(As of 9/30/2022; updated numbers will come in a future update)

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

