



TOWN OF CONCORD MUNICIPAL UTILITIES

ELECTRIC | WATER | SEWER | TELECOMMUNICATIONS

October 2024 – 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

We have an accepted offer for the position of our second Senior Network Engineer! We have had two Network Engineer positions on the books for years, but we have not had the positions filled simultaneously for quite some time. We are very encouraged by this candidate who also lives in Concord and is a current Concord Broadband customer!

We have signed a contract with an ISP for new service with guaranteed speeds of 10GB/s burstable up to 100GB/s. We are very excited for the possibility of this type of product that can scale up or down as needed. Above the 10GB/s speed, we only pay for what we use. We expect the service should be available within 90 days. We will likely transition away from one of our existing ISPs so we would keep 3 in total. The goal would be to have 10GB/s from 3 separate providers.

We are working on procurement of new 100GB/s switches to accommodate the new burstable internet connection as well as the next generation XGS-PON equipment. The team has done a lot of research and investigation into the best possible design to be as resilient and secure as possible.

Large Fiber Repair Scheduled (11/20/2024)

To proactively address potential fiber issues and improve network reliability, a planned maintenance window is scheduled for November 20, 2024, around midnight. This maintenance will involve the removal, inspection, and re-splicing of a 288-strand fiber.

Nearly a decade ago, during the initial installation, this specific fiber was not correctly installed and secured within the splice case. This condition has led to issues such as water intrusion and UV exposure, which can significantly weaken the fiber strands. Over time, these compromised fibers become increasingly brittle and prone to breakage.

To minimize service disruption during the maintenance, we will prioritize the splicing of high-priority fibers, such as feeder fibers and ISP traffic. Individual customer fiber splicing will follow. The majority of the impact will be felt by 222 customers with ONTs downstream of the failing fiber. Those customers will receive emails or text messages at least a few days

Upcoming Maintenance

We will be doing a major resplice of a 288-strand fiber at Conant and Laws Brook. We are anticipating a maintenance window of 8 hours from around 11:59pm on Wednesday, 11/20 through 7am on Thursday, 11/21. Feeder and ISP fiber will be repaired first, followed by individual customers.

Learn more in the adjacent article and on our maintenance page here:

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

prior to the work being done, and once the audit has taken place, we will do our best to limit the duration of impact to all customers.

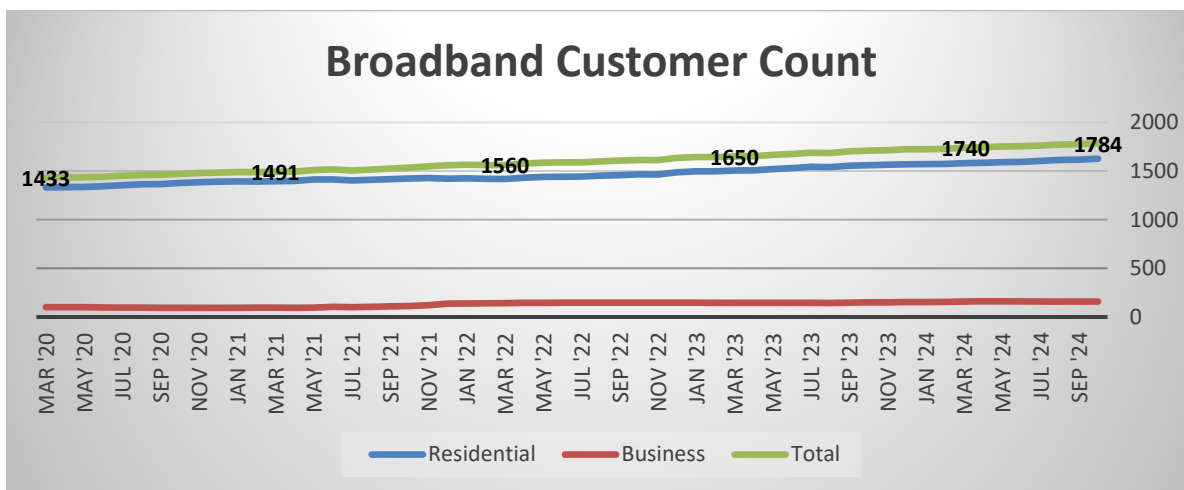
By addressing this issue proactively, we aim to mitigate the risk of fiber failure during adverse weather conditions like high winds or storms. Additionally, this preventative measure will reduce potential repair time in the event of a fiber failure, avoiding extended service disruptions. By replacing compromised fibers, we strengthen the overall network infrastructure, enhancing network reliability. The case, when rebuilt, will be weather tight and should last 25-30 years (the typical warranted life of fiber).

We apologize for any inconvenience this maintenance may cause and appreciate your understanding. If you have any questions or concerns, please contact us at broadband@concordma.gov. Find our Maintenance Page here: <https://concordma.gov/3144/Broadband-Maintenance>

Town Network Issues

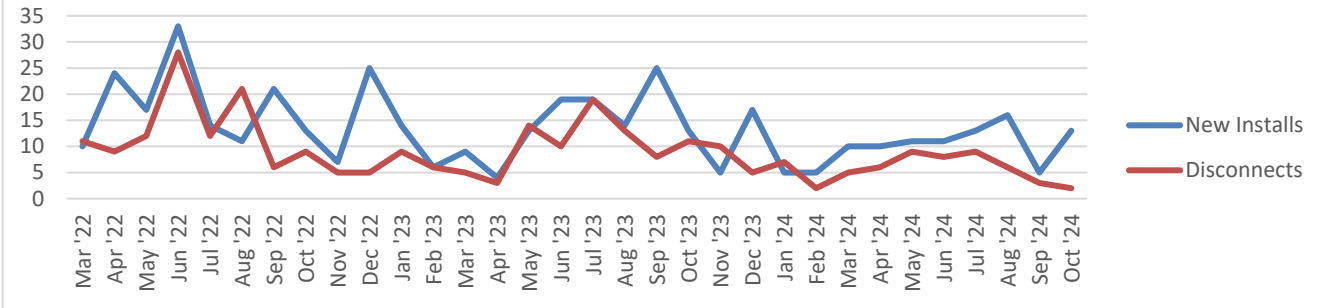
In early November, the Town’s network experienced some issues due to hardware issues and VLAN incompatibilities. So why is this newsworthy? In the last few years, the Broadband team has been working to disentangle the Town’s network from the Broadband network so that a failure on one does not cascade to the other. For the first time with a failure of this type, we experienced absolutely no impact on the Broadband network! It’s a small victory, but we are grateful for the time and effort staff expend to make small changes like this to limit the scope of impact and the overall risk to a critical system.

Monthly Metrics and Business Data



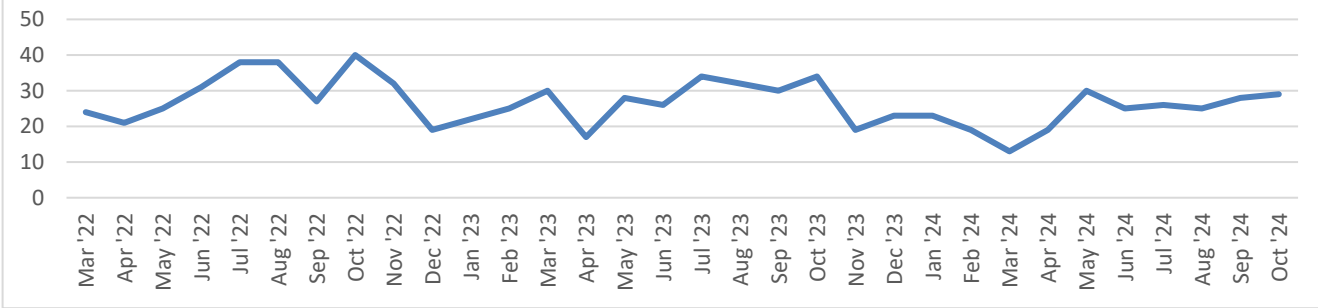
(Customer count: March 2020 – October 2024)

Monthly New Customer Installs and Disconnects



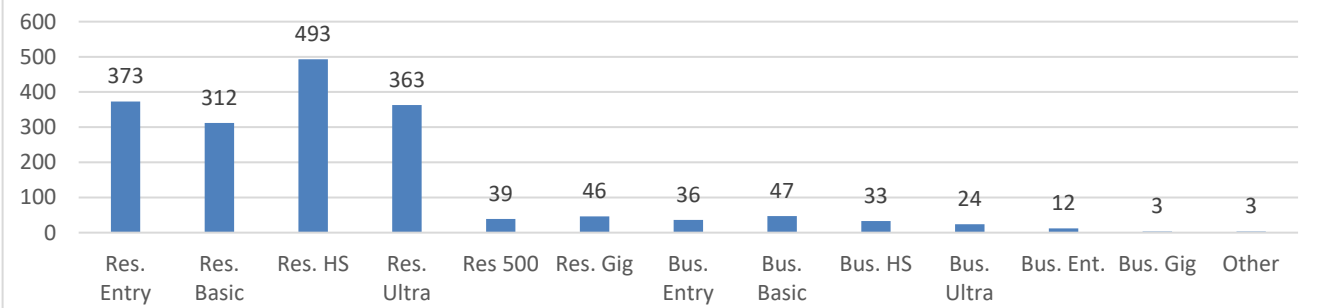
(The number of new installations and disconnects completed each month.)

Interested Customers by Month



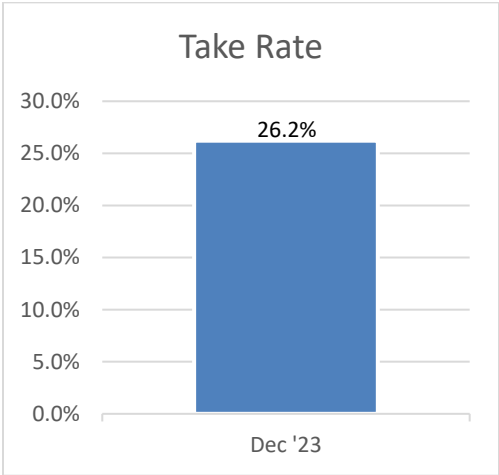
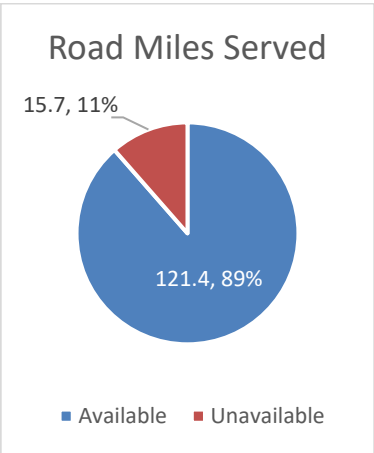
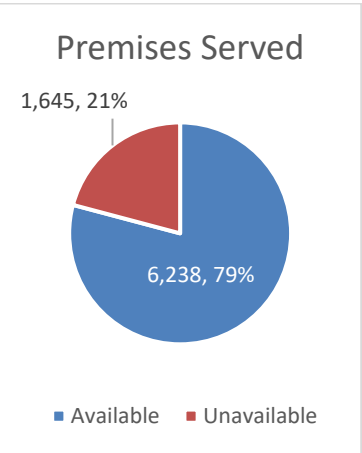
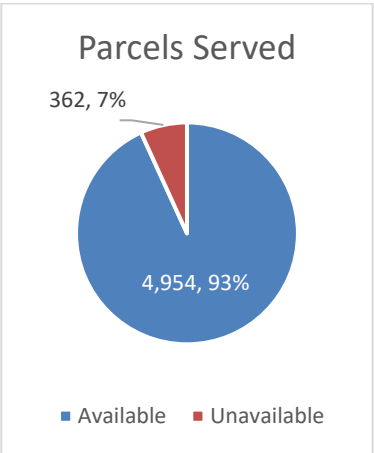
(This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.)

Breakdown of Customers per Service Plan



(This is the number of each customer on our different service plans as of 10/31/2024.)

Other Metrics



(As of 12/1/2023)

Appendix

Fiber Broadband Completion Task Force's 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	Conversations happening
• Support Economic Vitality, Sustainability, Equity & Inclusion	Policy	High	Select Board/Light Board/TM Economic Development	Rate subsidy planned
• Affordable Housing	Policy	Medium	Select Board/Housing Groups	Rate subsidy planned; working on Concord Housing Authority properties
• 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	Working on this
• Rate of return policy	Policy	High	Light Board/Town Staff	Working on this
• Financial goals with regular reporting	Policy	High	Light Board/FinCom	Working on this
• Retained earnings and reserve policy	Policy	High	Light Board/FinCom	Working on this

Goal	Type	Priority	Responsible Party	Additional Info.
Strategic Planning Goals (p.43)				
• Marketing and growth	Metric	High	Light Board/Town Staff	Working on this
• Business return	Policy	High	Light Board/Town Staff	Working on this
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	Complete
• 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	In progress; due to positive financial situation, anticipating being able to repay faster.
• Quantifying cost of expansion	Planning	Medium	Town Staff	Working on this
• How to fund expansion	Planning	Medium	Light Board/Town Staff	Working on this
• Revise/refine methods for computing ROI	Planning	Medium	Light Board/Town Staff	Working on this
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	Working on this
• Integrate Fiber construction with the Roads Program – focus on Streets without fiber that already have underground electric	Planning	High	Town Staff	Working on this