



TOWN OF CONCORD MUNICIPAL UTILITIES

ELECTRIC | WATER | SEWER | TELECOMMUNICATIONS

February 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

We are pleased to announce that the recruitment of the Telecom Technician is coming to a close soon with an offer expected in the coming days. We have had a great response to this posting and are glad to be at this phase. The only remaining vacancy is a Network Engineer position.

In networking news, our Network Engineer is just wrapping up a network expansion at Keyes Road to provide connectivity for security cameras and a Town-wide wireless access point replacement project. At the end of 2021, the Town was awarded an \$89,000 grant for the purpose of replacing wireless access points in Town buildings.

February Network Interruption

In early February, we identified a customer that was not able to get advertised speeds on their network. We worked with Calix, our hardware vendor, to troubleshoot this, going through several steps and making changes to the equipment. They asked that we move that customer to a different port on our network equipment, but that did not remedy the situation. They asked us to move that customer (and those sharing the same fiber) to another piece of equipment entirely, and that work was performed on the morning of February 14th.

Initially those customers came back and seemed to be unaffected, but soon after we received reports that many people were experiencing erratic connections, slow speeds, or no service at all.

We contacted Calix, and they worked with us on troubleshooting. In the end, certain devices needed to be fully rebooted to bring everything back to normal. Concord Broadband's network design is a ring topology with multiple connections to/from each data center, but this ring relies on software to ensure the proper flow of data. Glitches like this can result from a bug in the software running on each device or from a hardware failure. Since the first such event in October of 2022, Calix has tried unsuccessfully to determine the root cause. After several discussions, they are sending a senior engineer on site to conduct a forensic analysis on the devices to attempt to discover the root cause.

Maintenance

On February 14, 2023 at 6am, Concord Broadband staff worked with Calix, our hardware vendor, to perform maintenance at our primary data center. The purpose of the maintenance was to troubleshoot unexpected speed caps seen by a single customer.

The maintenance seemed to work, and the impacted customers all came back online. Unfortunately, the change led to unexpected results.

You can read more about the work and what we have done to address it on page 1 of this update.

We apologize to our customers for any impact on service they may have experienced that day, and we assure you that we are doing everything in our power to ensure the highest level of availability with these devices.

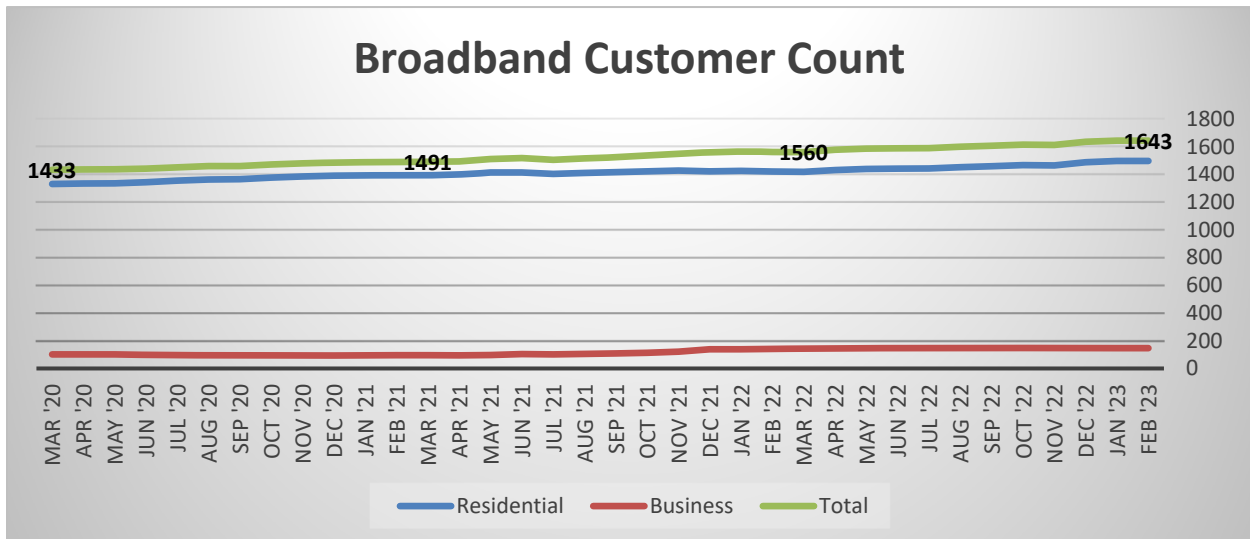
In 2023 we will be transitioning to the next generation of switching equipment capable of 10Gb/s symmetrical speeds on each fiber (up from 2.5Gb/s down and 1.25Gb/s up today). We will update the Board and the public when we begin to utilize this equipment.

Upcoming Rate Subsidies

Concord Broadband is pleased to announce that we have received a waiver from the FCC to be eligible to apply for the Affordable Connectivity Program (ACP). We then submitted a formal application to participate in the program, and that application is pending with the USAC, the agency that oversees the implementation. We hope to have word soon on our acceptance to the program.

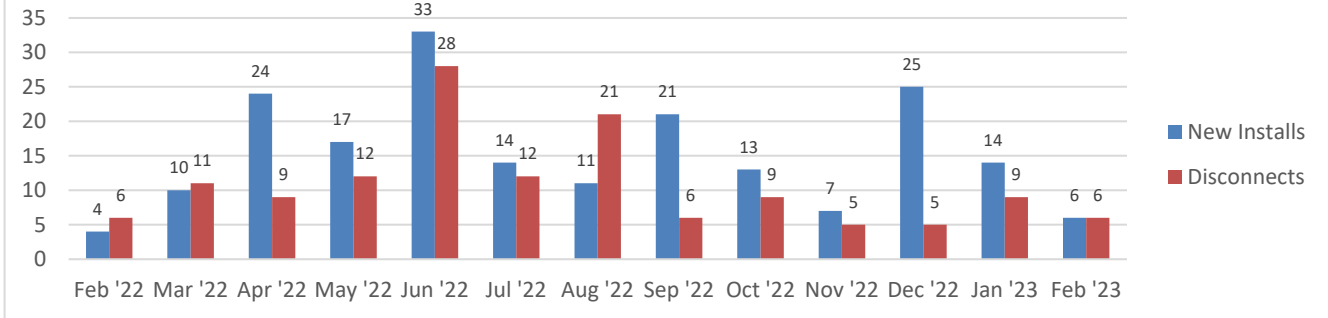
Those curious about the program and its eligibility requirements can review the website at <https://www.fcc.gov/acp>.

Monthly Metrics and Business Data



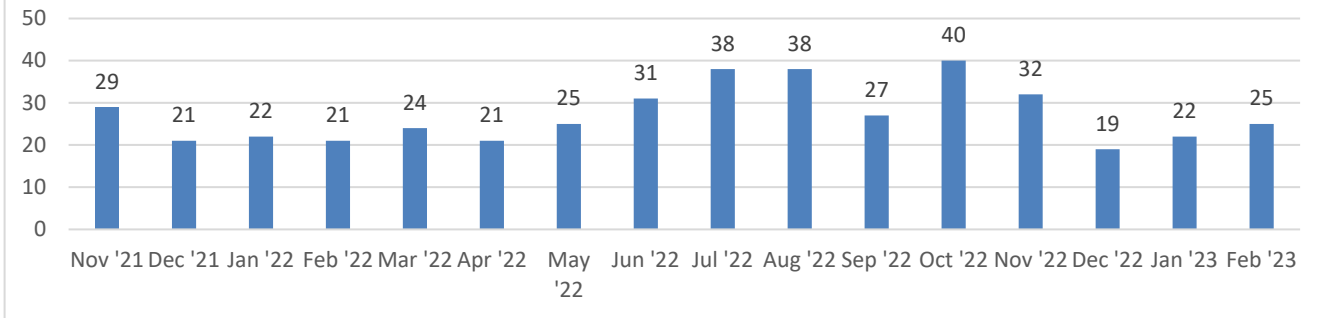
(Customer count: March 2020 – February 2023)

Monthly New Customer Installs and Disconnects



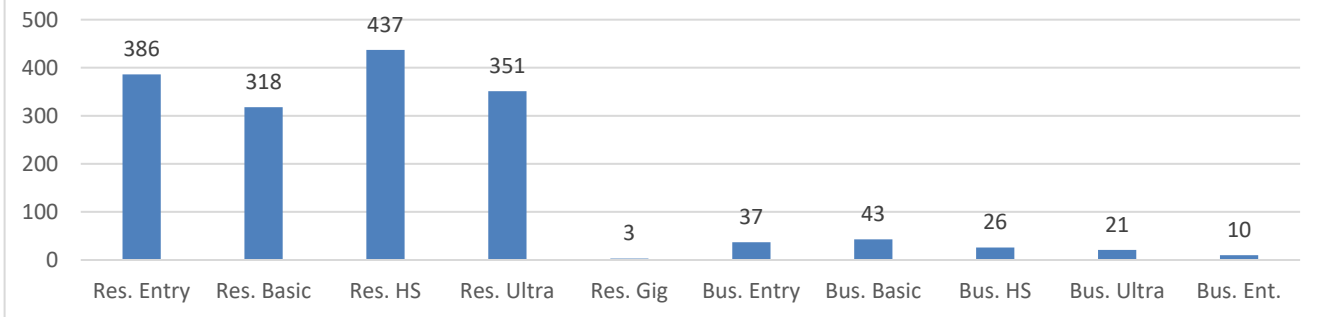
(The number of new installations and disconnects completed each month.)

Interested Customers by Month



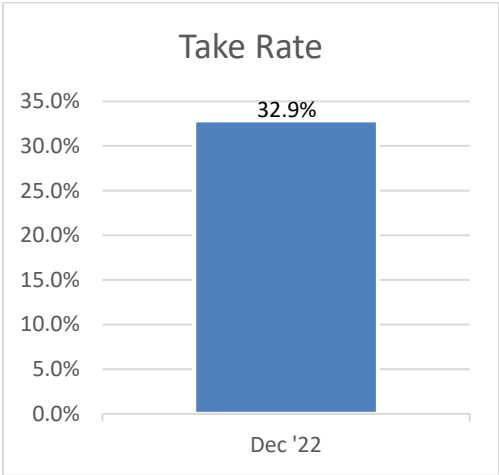
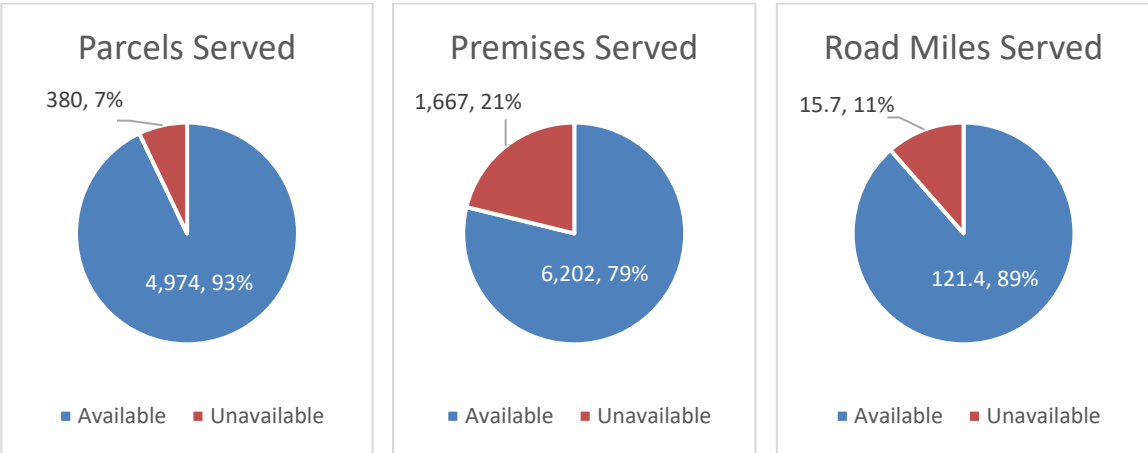
(This is the number of individuals who complete the Concord Broadband interest form on the Concord website, whether they are in the current service area or not.)

Breakdown of Customers per Service Plan



(This is the number of each customer on our different service plans as of 2/28/2023.)

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 subsidies in progress; update expected soon
• Affordable Housing	Policy	Medium	Select Board/Housing Groups	Rate subsidies in progress; update expected soon
• 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	Working on this; update expected soon
• 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; update expected soon
• 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	Working on this
• 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; update expected soon
• 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