



Date: September 5, 2024
To: Municipal Light Board: Warren Leon (Chair), John Dalton, Brian Foulds, Alice Kaufman, and Bianca Taylor
From: Jason Bulger, Interim CMLP Director, CTO
Subject: Agenda for Virtual Light Board Meeting on **Sept. 11, 2024 at 7:30 A.M.** (Zoom link below)

7:30 AM 1. **Call to Order**

7:30 AM 2. **Meetings and Minutes** 5 Minutes Chair
 • Vote to accept the minutes of August 14, 2024.

Upcoming Meetings:

Oct 9, 2024; Nov 13, 2024; Dec 11, 2024*; Jan 8, 2025; Feb 12, 2025; Mar 12, 2025

*Note: We are seeking to schedule a second December meeting, but as of this writing, the dates have not been nailed down yet.

7:35 AM 3. **Chair’s Update** 5 Minutes Chair Information

7:40 AM 4. **Directors Update** 10 Minutes Director Information

7:50 AM 5. **Broadband Update** 5 Minutes Director Information

7:55 AM 6. **Energy New England Presentation/Discussion** 30 Minutes Director Discussion
Background: Transmission costs are expected to rise sharply in the next year, resulting in a need to adjust rates and consider longer-term impacts. Separately, CMLP has several planned projects that need ISO review before completion.
Purpose: To hear a short presentation by Dave Cavanaugh from Energy New England and allow the Board to ask questions on forward markets and regulatory matters.

8:25 AM 7. **Time-of-Use Rate Timeline** 30 Minutes Director Discussion
Background: CMLP plans to shift to an opt-out time-of-use (TOU) rate in the future.
Purpose: This presentation and discussion will share with the Board some rough timelines and prerequisites as well as gather Board members’ thoughts on how we get to TOU.

8:55 AM 8. **AEGIS Assessment & Recommendations** 15 Minutes Director Information
Background: Earlier this year, CMLP volunteered for an assessment by AEGIS, our excess insurance provider.
Purpose: Hear a summary of the assessment and its recommendations; learn how CMLP plans to act based on these recommendations.

9:10 AM 9. **Liaison & Public Comments** 5 Minutes Chair Information

9:15 AM 10. **Adjourn**



CONCORD MUNICIPAL LIGHT PLANT

ELECTRIC | BROADBAND | ENERGY MANAGEMENT

Distribution: Select Board (1 copy)

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Join Zoom Meeting

<https://us02web.zoom.us/j/83853970051?pwd=akVzemJRQk8vNTJRUnNlOS9NNDFuQT09>

Meeting ID: 838 5397 0051

Passcode: 661712

One tap mobile

+16469313860,,83853970051#,,,,*661712# US

+13017158592,,83853970051#,,,,*661712# US (Washington DC)

Find your local number: <https://us02web.zoom.us/j/83853970051?pwd=akVzemJRQk8vNTJRUnNlOS9NNDFuQT09>

Link to view recordings of previous Light Board Meetings:

<https://www.youtube.com/@MinutemanMediaNetwork/search?query=Concord%20Light%20Board>

Link to view the Director's Updates:

<https://concordma.gov/1106/Municipal-Light-Board>

Link to view the Broadband Monthly Updates:

<https://www.concordma.gov/3148/Monthly-Updates>

Concord Municipal Light Plant Updates

September 11, 2024

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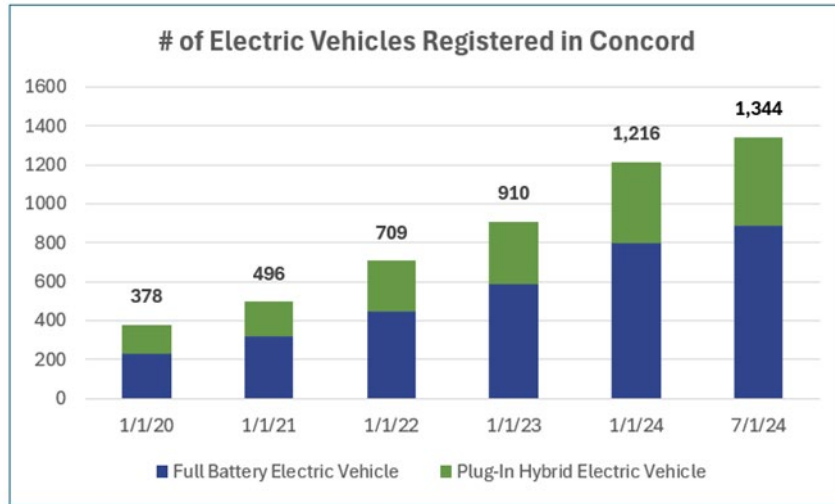
Organization, Transition, and Industry

- First-round interviews for permanent Light Plant Director took place on Monday, August 26, 2024. Second-round interviews took place on Friday, September 6, 2024. The process continues to move forward.
- While our auditors have been behind schedule, we hope to have the financial audit wrapped up shortly. It will be presented to the Financial Audit Advisory Committee on September 18.
- We said our goodbyes to Matt Cummings (pictured right), our Finance Director/Accountant on Friday, September 6th. Matt will be joining the MassCEC in Boston, and we wish him the best of luck!
- CMLP has communicated to the Town Manager’s Office that we are interested in pursuing ARPA funds for the refurbishment of conduit and underground infrastructure in Concord Center and West Concord Center. That area will need to be retrofitted to allow for more reliable power and to add broadband, which could service businesses and homes as well as provide small cell or public Wi-Fi.
- We are expecting the fallout from Order 2023 to come down to the ISO from FERC any day. This order is telling ISOs that their rates have been determined to be unfair, and it seeks to create reforms “intended to ensure that the generator interconnection process is just, reasonable, and not unduly discriminatory or preferential.”
- The market adjustments mentioned last month were approved and are being processed for the next payroll.

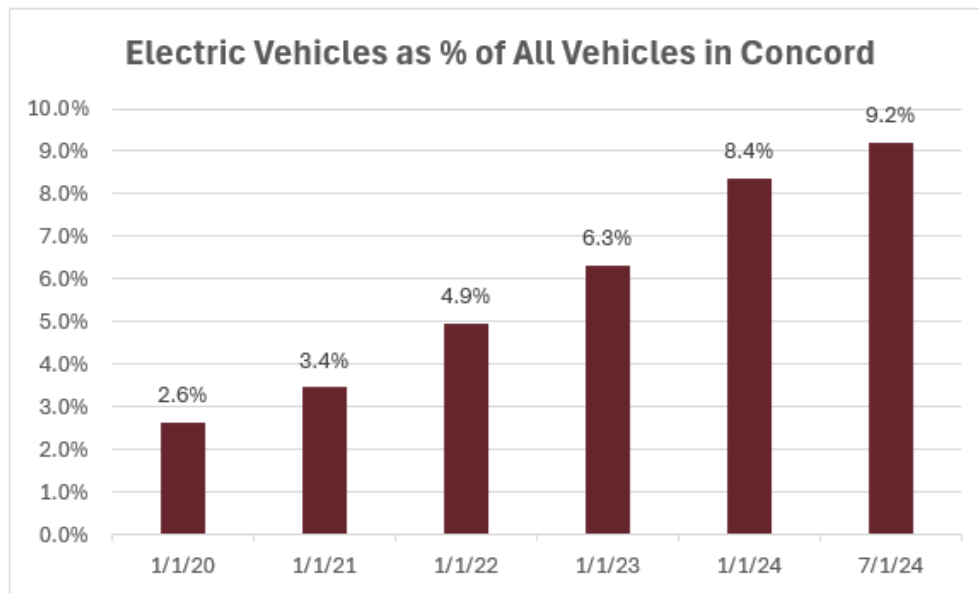


Energy Management

- The Massachusetts Vehicle Census has been updated to include data for July 1, 2024. The number of EVs registered in Concord increased from 1,216 at the beginning of the year to 1,344 at midyear. EV ownership has increased 3.5 times in Concord since the beginning of 2020, growing from 378 to 1,344 EVs.

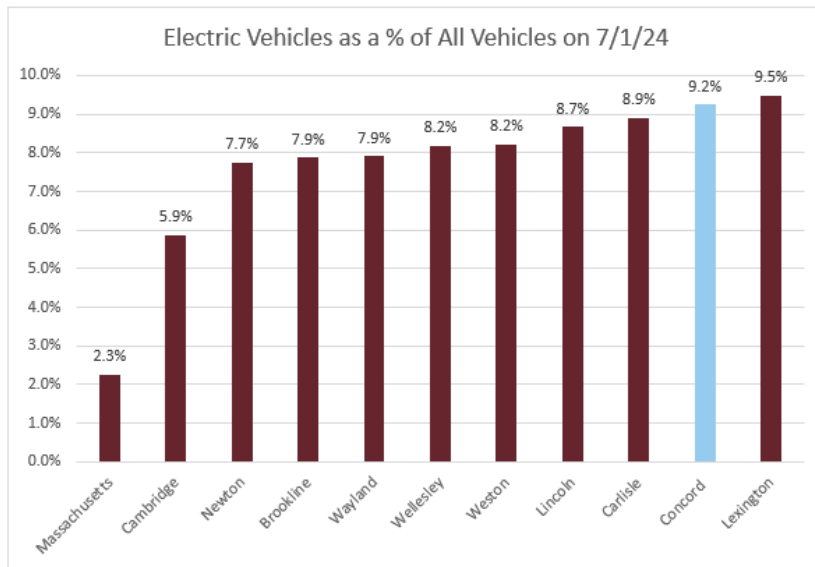


- The number of all vehicles registered in Concord has remained fairly constant since 2020 - between 14,300 and 14,600. So, the percentage of vehicles registered in Concord that are electric (i.e. full battery electric + plug-in hybrid electric) has increased as the number of EVs has grown.



Source: Massachusetts Vehicle Census

- Among Massachusetts municipalities with high rates of EV adoption, Concord is edged out only by Lexington in the percentage of all vehicles that are electric (i.e. full battery electric + plug-in hybrid electric). Concord’s EV adoption is 4x the statewide rate.



Source: Massachusetts Vehicle Census

- Energy Management and ENE staff are making final preparations for our EV Showcase, to be held on September 14th at Bradford Mill.
- Energy Saver Loans are now available to qualifying Concord households. Earlier this year, Massachusetts launched the Energy Saver Home Loan Program for financing energy efficiency improvements. Interest rates are less than 2%. If a homeowner’s income is less than \$191,700, and the changes reduce their home's energy use more than 20%, they may be eligible. Usually, whole home heat pumps show significant energy savings, as well as some weatherization efforts.

Curious about Electric Vehicles?

Join us at the...
CONCORD EV SHOWCASE!

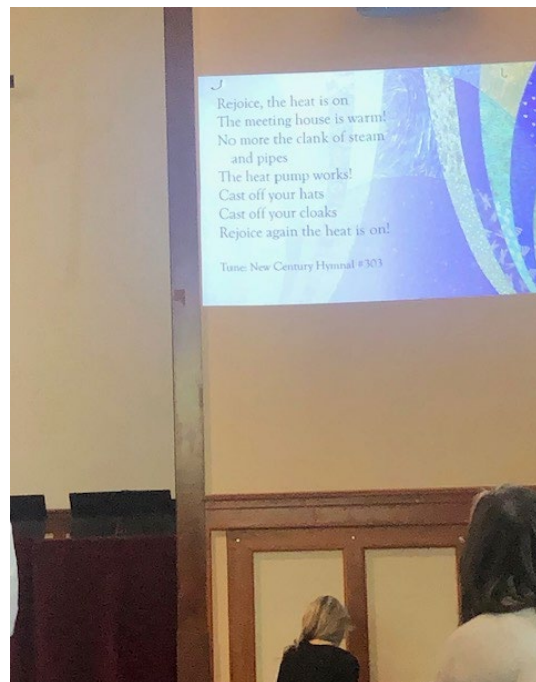
Saturday, Sept 14th 1 - 4pm
 Rain date: Sunday Sept 15

23 Bradford St, West Concord
Parking at 43 Bradford St

Curious about owning an electric vehicle? Join us for an exciting EV showcase! Explore various models, chargers & e-bikes. Chat with owners and experts to answer all of your questions.

Concord Drives Electric | ConcordDrivesElectric.org | CONCORD MUNICIPAL LIGHT PLANT

- CMLP is publicizing this financing opportunity via its e-newsletter and in conversations with heating/cooling coaching clients. Further, CMLP customers applying for heat pump rebates may now substitute a completed Energy Saver Home Loan Program decarbonization plan for a completed home energy assessment, in order to avoid redundant assessment requirements.
- Energy Efficiency & Electrification Specialist Pamela Cady has implemented a number of measures to streamline the solar interconnection review process, with the goals of reducing the CMLP staff time needed for each review and reducing the elapsed time that customers wait for reviews to be completed. These include:
 - Sample wiring and site plans posted on our website to provide guidance to installers regarding acceptable submissions
 - Pre-installation site visits for solar + battery projects with the Fire Department, Building Department, CMLP engineering staff and installer in attendance, to identify and resolve any issues likely to derail projects later.
 - For the benefit of our commercial customers, heating/cooling coach Ethan Herberman prepared a case study describing a facility-wide conversion from gas boilers and conventional AC to variable refrigerant flow (VRF) cold climate air source heat pumps at Concord Park, a senior living community on Commonwealth Ave. A link to the case study can be found on CMLP's heat pump webpage for commercial customers.
- In August, 2024, CMLP provided a \$50,000 rebate to help the West Concord Union Church (WCUC) offset the cost of their \$1.3 million conversion from oil to heat pump heating. Powered in part by the WCUC's solar array, and partly by CMLP's carbon-free power supply, the WCUC has been celebrating the completion of this major project, and their carbon-neutral status since February 2024! (While the project was technically completed in late 2023/early 2024, one electrical inspection approval was delayed until August 2024, delaying the rebate payment as well.) CMLP has also provided commercial lighting upgrade rebates to WCUC in the past. (con't on next page)





Battery Storage and Solar Project Updates

- The Engineering team has worked with our consultant PLM to create a scope of work to update a study done at the landfill to determine how much power we can push back safely with those conductors and power protection devices as well as perform a load analysis to determine how much power could be absorbed during peak reduction.
- We have a meeting scheduled to discuss required studies by ISO-NE for these projects.

Middle School Solar/Energy Storage

- After discussions with the legal team and Elective Pay experts, the project planning team is pursuing a turnkey installation of the solar and battery. The cost savings for procuring the hardware separately has too many risks and dependencies for the slight reduction in cost we might see.
- As for elective pay, the current expectation is that we will achieve a project start year of 2024. This will reduce any potential penalty for not achieving domestic content (and a lower threshold we need to meet).
- For domestic content, we will request both domestic content that meets the 40% threshold and then separately without that requirement. This will enable CMLP to run the numbers to determine if the credit we receive is worth the increased cost.
- We have finalized the technical designs and should be close to board/public review. Our tentative goal was to go live in October with the RFP.

Advanced Metering Project Updates

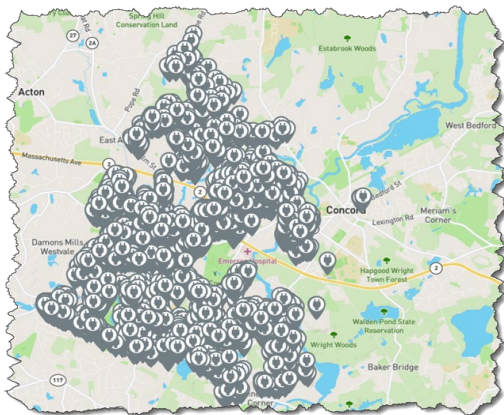


Figure 1: Advanced meters installed - June 2024

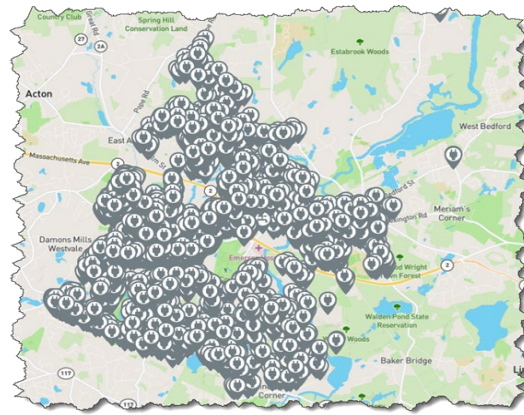


Figure 2: Advanced meters installed - July 2024

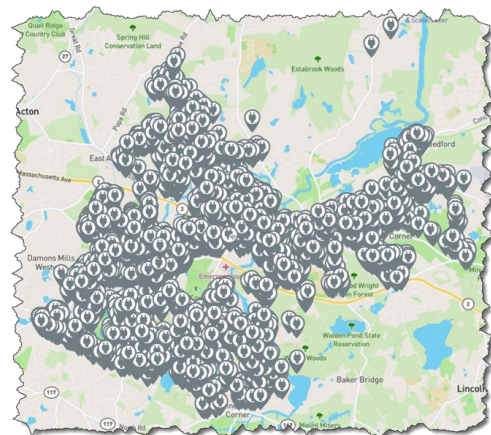


Figure 3: Advanced meters installed - August 2024

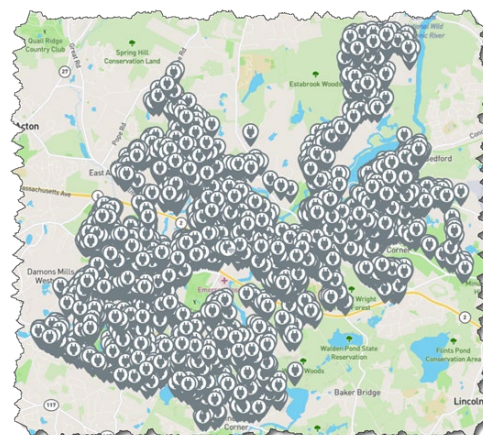
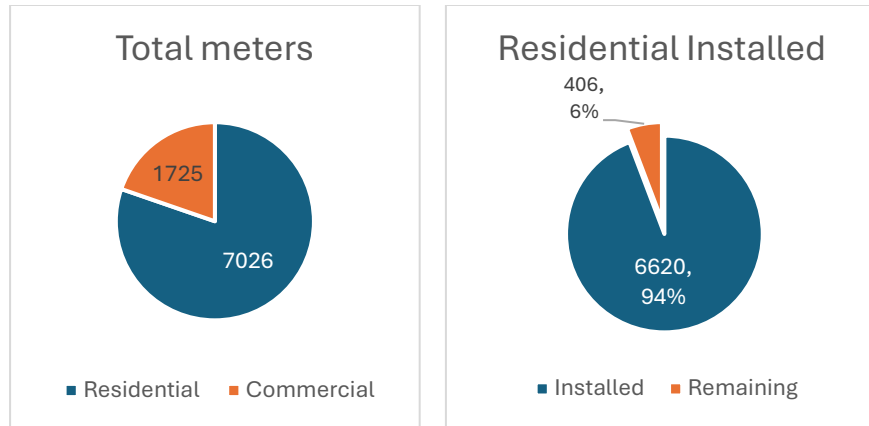


Figure 4: Advanced meters installed - September 2024

- We have between one and two external crews of two electricians installing advanced meters.
- CMLP's electrician has installed approximately 298 load control relays or 71% for customers who participate in our load control programs (roughly 420 customers) including water heaters and electric thermal storage heaters.
- To date, 34 customers have opted out of receiving a new AMI meter.
- We have installed about 560 meters since the August 14, 2024 Light Board meeting.
- The IP Link meter infrastructure is up and running! These meters can act as additional gateways, speeding up meter reads and covering if a traditional gateway goes down.



Engineering and Operations

- The SCADA project is moving forward with contract discussions happening between legal teams. Once complete, we will move to purchase following Chapter 164 procurement rules.
- We have engaged several transformer manufacturers to get quotes to place orders to replenish stock.
- The team is wrapping up accessibility work on the Level 3 chargers at Rideout Park. Paving should take place the week of September 16th.

Customer Service / Metering

- Our new Customer Services Specialist, Cuyler DeArruda, started on August 26 and will be in process training for the next 4-6 months. The rest of his CMLP orientation – consisting of substation tours, field visits, power supply and rates training, etc. – will be done in the next 6-12 months.



TOWN OF CONCORD MUNICIPAL UTILITIES

ELECTRIC | WATER | SEWER | TELECOMMUNICATIONS

August 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

After a personal medical situation, our candidate for Sr. Network Engineer backed out a few days before starting with Concord Broadband. We are fortunate to have such a strong Sr. Network Engineer working for us, but we will regroup and get the job posted soon.

Teams did a great job with new installs this month. We were able to get 16 new customers active with Concord Broadband!

IP Link Meters

Dale Hartling, our Broadband Manager, has gone through extraordinary lengths to get the IP Link meters up and running. We now have the virtual gateway server up and running and tested. We are making sure that the ONTs that provide connectivity to the virtual gateways are communicating using the same protocols as the meters are.

Network Migration

We are excited to announce the successful completion of our major network migration project. This significant undertaking involved the migration of our Town data network infrastructure across six primary sites, resulting in a more efficient, resilient, and high-performance network.

Our previous network infrastructure had limitations that hindered our ability to support the growing demands of our organization. We sought to address these challenges by implementing a new network design that would deliver significantly faster network speeds, ranging from 5 to 20 times faster than our previous system as well as enhance network reliability and redundancy to minimize downtime and disruptions.

The migration project was a complex endeavor that required careful planning and execution. Our dedicated team of six IT and Broadband staff members, led by our Senior Network Engineer, worked tirelessly to ensure a smooth transition. The process involved moving cables, modifying firewall rules, and extensive testing and response at the 17 network locations throughout town. With so many 24x7 operations, minimizing downtime was a high priority.

Upcoming Maintenance

We have identified some fibers that pulled out of a splice case at Conant and Laws Brook. We are working with a vendor to make plans to replace the whole case, which could result in a multi-shift operation to complete.

We will post more information about this and other maintenance windows here:

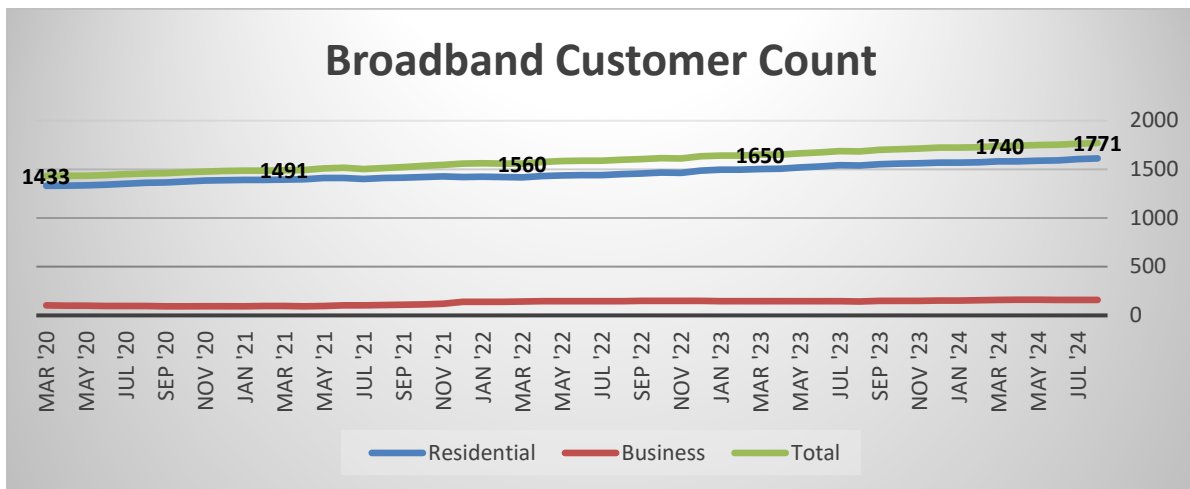
<https://concordma.gov/3144/Broadband-Maintenance>

The successful completion of the network migration has yielded remarkable results. Our employees and users are now experiencing significantly faster network speeds, enabling more efficient workflows and improved productivity. The new network design incorporates redundant components and advanced fault tolerance mechanisms, ensuring minimal downtime and business continuity. And the scalable architecture of the new network will accommodate our organization’s growth and evolving needs for years to come.

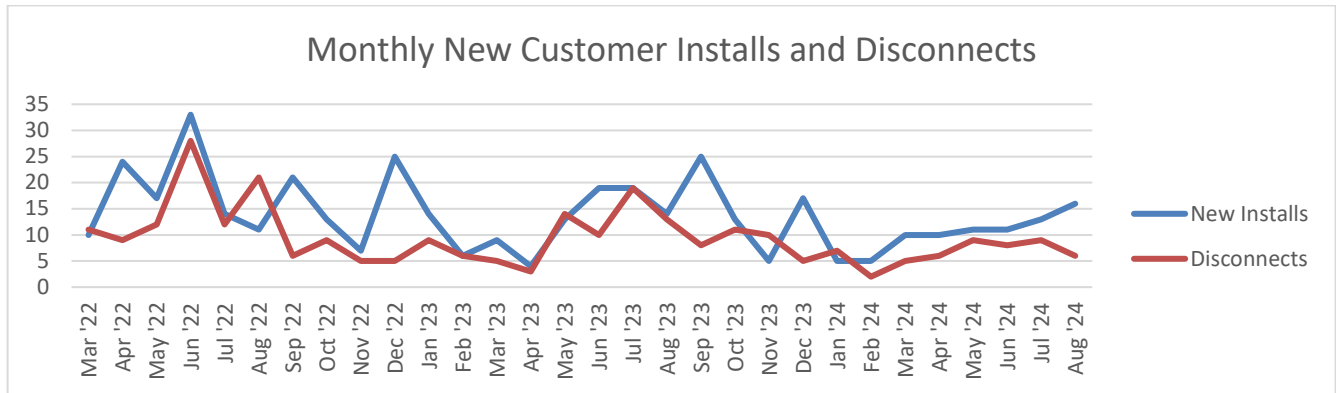
We would like to extend our sincere gratitude to the team of six staff members who played a pivotal role in the success of this project. Their expertise, dedication, and hard work were instrumental in delivering a network that will serve our organization well for many years to come.

The successful network migration marks a significant milestone for our organization. We are excited to embrace the opportunities and benefits that this new infrastructure will bring. As we continue to grow and evolve, our network will remain a cornerstone of our success.

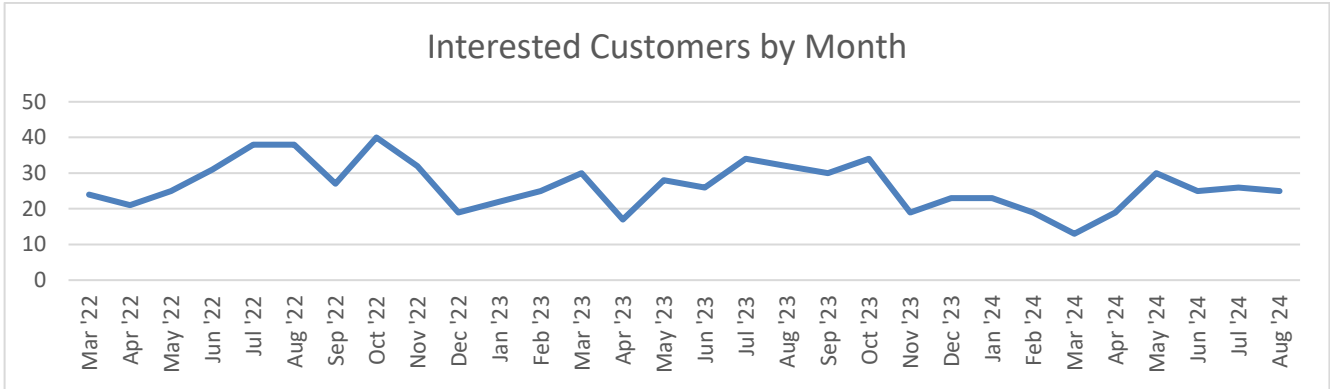
Monthly Metrics and Business Data



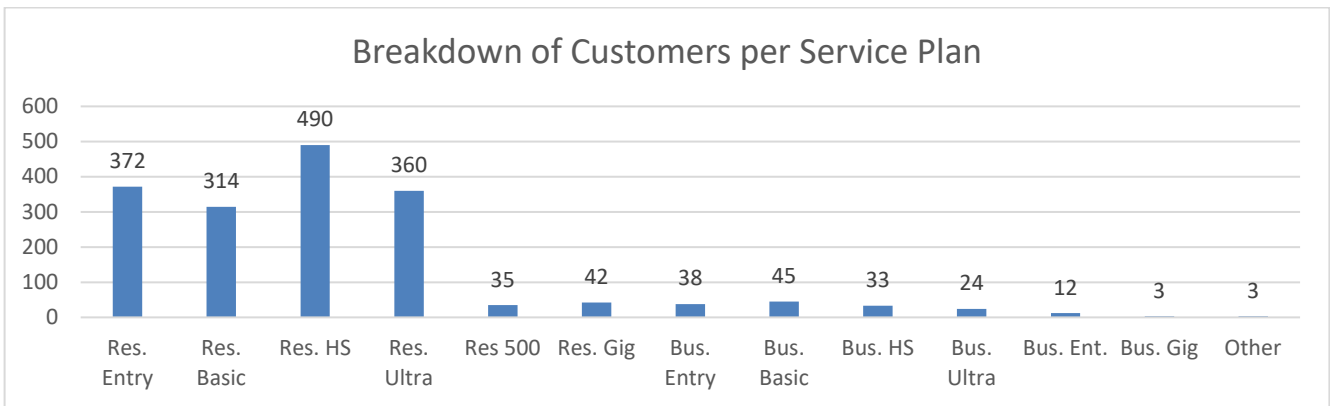
(Customer count: March 2020 – August 2024)



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

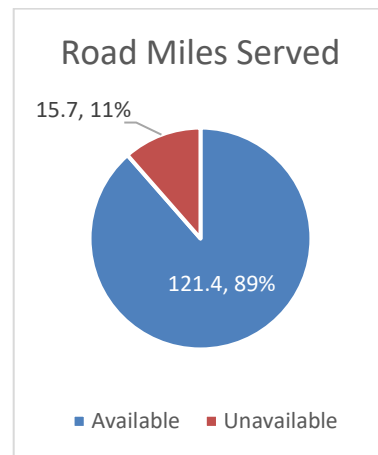
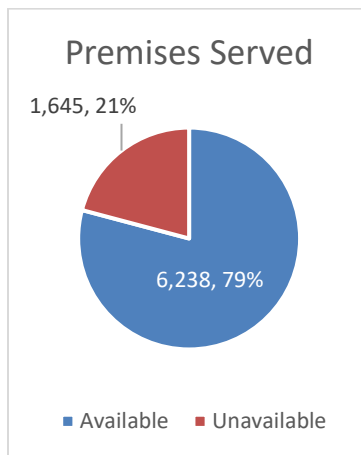
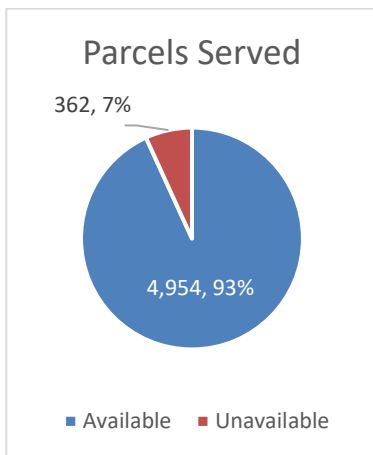


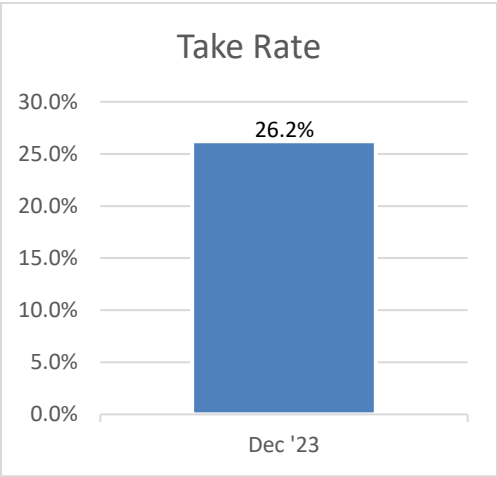
(This is the number of individuals who submit the Broadband interest form, whether they are in the current service area or not.)



(This is the number of each customer on our different service plans as of 8/31/2024.)

Other 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	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

Concord Municipal Light Board ENE Regulatory & Markets Update

David Cavanaugh
SVP Regulatory & Market Affairs
September 11, 2024



Navigating the energy economy.™

Current Major Initiatives

- Regional Network Service Cost – Transmission
- Order 2023 and 2023-A Interconnection Process
- Phase II Equity Funding Agreement Cost
 - 2nd 20 Year Interconnection Rights Holder (IRH) agreement
 - EFA cash calls and dividends
 - Transmission Rights Sale
- Capacity Auction Reforms

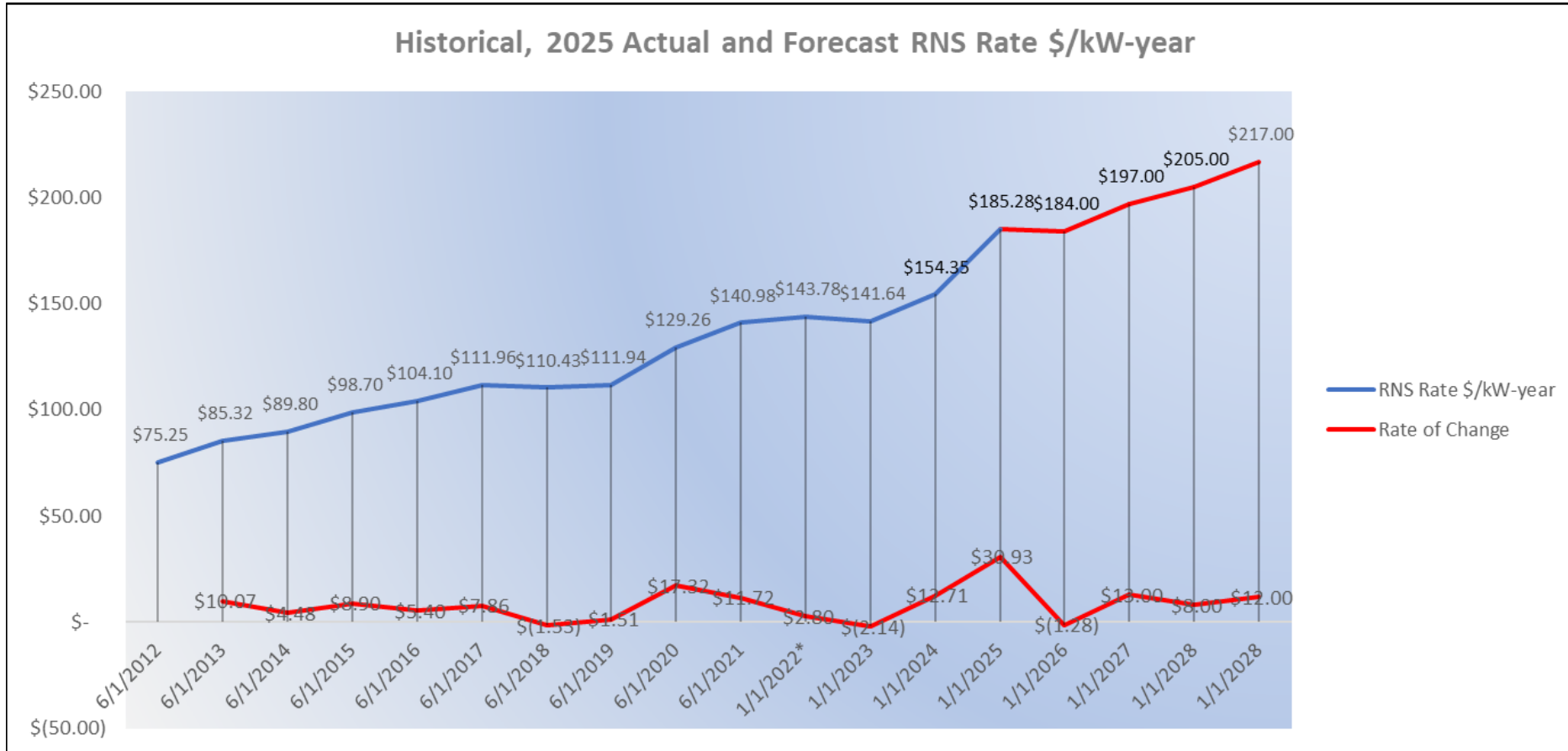
Transmission - Regional Network Service

- Regional Network Service (RNS) cost continue to increase
- RNS Rate effective January 1, 2025 - \$185.28/kW-yr.
- 2025 rate represents a \$30.92/kW-yr. increase over the 2024 rate and a \$22.28 increase over the forecasted value of \$163.00/kW-yr.
- \$16.21/kW-yr. (52%) of increase was related to True-Up driven by lower actual RNS loads in 2023 versus the test year used in setting the 2023 rate
- Forecasted RNS through 2029 in kW-yr.
 - 2026 (\$185), 2027 (\$184), 2028 (\$197), and 2029 (\$217)

Transmission - Regional Network Service

- RNS rates currently reflect transmission cost for reliability builds and asset conditions upgrade projects
- Asset Condition upgrades are the primary driver in forecasted years averaging slightly over \$860Milion/year through 2029
- FERC approval in July 2024 of Longer-Term Transmission Planning tariff revisions will allow for RNS rates to include cost of New England State requested transmission projects for non-emitting resource integration
- ISO's 2050 Transmission Study provides forecast of transmission cost associated with economy wide electrification and integration of clean/non-emitting resources.

Regional Network Service



2050 Study Projected Costs

Year/Max Load/Cost Range

- 2035/35GW/ \$6-9 Billion
- 2040//43GW/ \$11-\$13 Billion
- 2050/51GW/\$16-\$17 Billion
- 2050/57GW/\$23-\$26 Billion
- Cost spread out over 26 years. Avg Cost/yr.. (\$B)
 - 51GW: \$.62-\$0.65
 - 57GW: \$0.88-\$1.00
- Avg Cost/yr.. 2002 – 2023
- Reliability & Asset Condition
 - \$0.77 Billion/yr..

Tactics to Reduce MLP RNS Costs

- Behind The Meter (BTM) generation resources
 - Solar PV, Battery Electric Storage System (BESS), Internal Combustion Engine (ICE)
- Demand Response
 - Controllable devices and processes
- Physical Hedge
 - Ownership share in Pool Transmission Facilities (PTF) that compose RNS rate
 - Federal rate of Return On Equity (ROE) substantially higher than MLP cost of capital
 - ENE Transmission LLC is design to provide access to physical transmission hedge

Order 2023- Interconnection Reforms

- Order required ISO compliance filing that materially changes how interconnection processes work
- Change from serial study of resources in the ISO interconnection queue to Cluster Study (CS) approach where all resources in CS have one queue position
- Order 2023 also further refines and implements how distribution system level interconnection are interact with the CS process
- Distribution level studies follow the Affected System Operator (ASO) study process and must coordinate with a CS

Order 2023- Interconnection Reforms

- FERC Order was expected on August 12th
- No FERC order as of September 10th
- ISO has ceased Order 2023 implementation work
- Interconnection and related processes following active tariff and governing documents
- ASO studies will be affected by suspension of Order 2023 implementation

Capacity Auction Reforms (CAR)

- CAR is a redesign of the Forward Capacity Market (FCM) from a 3-year and 4-month forward market to a prompt and seasonal capacity market
- CAR core scope of work currently being defined
- CAR will also incorporate Resource Capacity Accreditation (RCA)
- RCA is design to assign the appropriate amount of capacity value a resource can actual delivery to the system during hours of need

Capacity Auction Reforms (CAR)

- CAR is set for implementation for FCA19 (2028)
- Scale of work for ISO and stakeholder is large and impacts many of the ISO systems and processes

Questions

START

1st 500 residential meters installed

5,000 residential meters installed

Collecting hourly data

Mar
2024

July
2024

1 yr hourly data on 70% of meters

25 customer TOU pilot?

Customer education. side by side bill comparison?

Cost of Service Study

Jul
2025

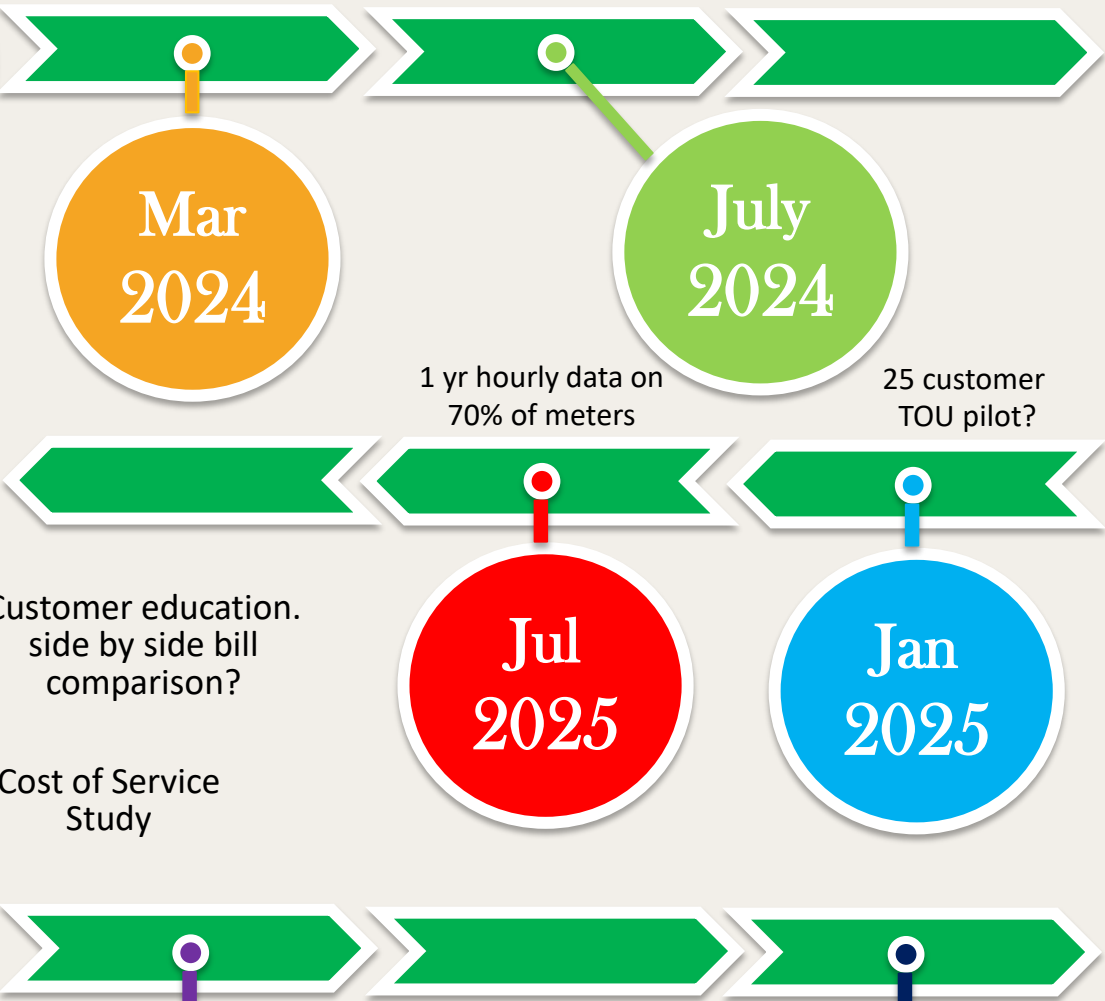
Jan
2025

Oct
2025

Jan
2026

FINISH

Default Opt-out TOU



Issues/Tasks

Technical

- Confirm AMI system is up to task of billing hourly
- MDM system stress testing
- Meter program set up
- Side by side bill comparison design & programming
- Determine rate cutover process

Policy

- TOU price differentials
- Bill print detail – continue split out among Energy, Distribution, Transmission, etc.?
- Opt-out rate remains tiered; 4 % premium



AEGIS Assessment: 2024

Background

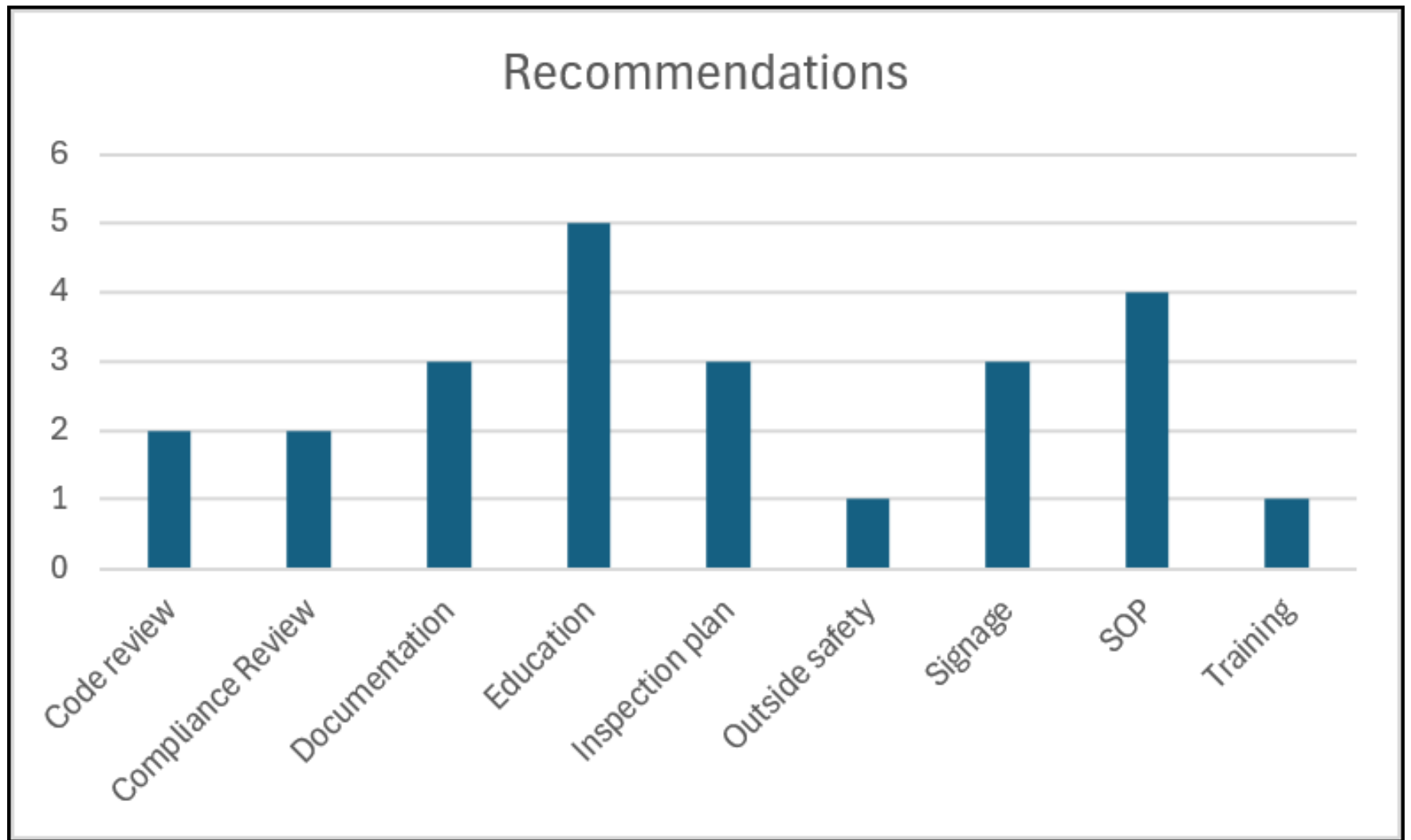
- AEGIS (Associated Electric & Gas Insurance Services) provides about 40% of the Light Plant's excess liability coverage.
- They offered 2 municipal utilities a free comprehensive assessment, and CMLP volunteered.
- The assessments were conducted between April 30 and May 2, 2024

Areas of Study

- Substation Design, Construction and Inspections
- Distribution Design, Construction and Inspections
- Vegetation Management
- Pole Inspection
- Joint Pole Use/Ownership Operations
- Call Handling Practices and Procedures
- Downed Wire Dispatch Procedures
- Public Safety and Awareness
- Contractor Safety Review and Evaluation

Preparation & Execution

- The CMLP Senior Leadership Team discussed this assessment several times and gathered documentation and policies to send to AEGIS prior to the assessment.
- At least three staff members escorted the Assessor around for 2.5 days.



Recommendation Categories

- Add signage on substation perimeter fencing
- Add signage with CMLP contact information

Signage examples



Inspection plan examples

- Consider adding inspection plans for:
 - Overhead distribution system
 - Pad-mounted equipment
 - Wooden pole



- Consider providing education to:
 - School-aged children
 - First responders
 - Construction and maintenance businesses



Education examples

Documentation examples

- Use a regular substation inspection form
- Store substation inspection forms
- Utilize work order management system for all issues



- Consider developing SOPs regarding:
 - Reconnection of customer power
 - Tagging rejected wooden poles
 - Trouble call dispatching



SOP examples

Final takeaways and action items

- AEGIS provided a form to track all recommendations.
- Staff have already begun taking into consideration all recommendations.
- We have a tracker that includes attributes about each recommendation.
- Staff spent a tremendous amount of time on this, and it has only increased the safety and professionalism of our operations. Thank you!