

Newton EV Taskforce Members

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Newton City Council

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Honorable City Councilors,

We have prepared the following information in preparation for the discussion of the docket item

#83-22 Review and Amendment of Zoning Ordinance concerning requirements for electric vehicle charging station infrastructure

COUNCILORS LAREDO, OLIVER, KALIS, DOWNS, MALAKIE, NORTON, LUCAS, MARKIEWICZ, BOWMAN, LEARY, WRIGHT, LIPOF AND GROSSMAN requesting a review and, if appropriate, amendment to our zoning code to increase the requirements for electric vehicle charging station infrastructure in new construction projects.

Background. Our world climate is changing at an unprecedented rate as a result of human-caused greenhouse gas emissions. Personal vehicle emissions comprise 24% of the MA total emissions. <https://www.mass.gov/doc/transportation-sector-technical-report/download> Transitioning from gas-powered vehicles to electric vehicles is a key climate strategy for Massachusetts and is one of Newton's four key climate goals. **As presented to the City Council at the 9-19 Climate Update, 5% of vehicles registered in Newton are already EVs and are estimated to be 10% by 2025.**

Increased need for EV chargers. The pace of transformation of the automotive industry to electric vehicles has quickened, with most manufacturers planning to phase out new internal combustion vehicles within the next ten years. By the end of 2022 Massachusetts will adopt The Advanced Clean Cars II (ACCII) standards. These standards require automakers to steadily increase the percentage of vehicles they sell that are electric from 35% in 2026 to 100% in 2035. **That's worth restating: it will not be possible to buy a new car in the Commonwealth as of 2035 that is not electric.**

Newton must prepare for these changes by increasing the availability of EV charging stations in new developments and major renovations. A higher priority should be placed on residential charging as this allows for implementing gradual, overnight Level 2 charging to best match lifestyle and grid power availability.

Current Newton charging station regulations. Enacted in 2017, the City of Newton Sustainable Development Requirements mandate at least 10% of available parking spaces in new green developments greater than 20,000 square feet be equipped with charging stations plus another 10% must be charging station ready. The ordinance also sets the maximum number of required chargers per project as 40. This level of charging infrastructure will be insufficient to handle the near future estimated charging needs and would be expensive to retrofit.

Regulations from Nearby Communities.

- [Boston](#) 25% EV charger equipped and 75% EV-Ready for its larger new developments
- [Brookline](#) at least 2% of parking spaces (or 1 space, whichever is larger) EV charger equipped and another 15% of all parking spaces are EV-Ready for major impact projects
- Cambridge 25% EV charger equipped for larger projects.

It is important to consider that Cambridge and Somerville have a large number of residents that do not have off street parking. Thus both cities have also launched efforts to provide a sizeable network of EV chargers on city property to support these residents. Other communities that have not yet adopted EV charger regulations are likely handling requirements as part of the special permit process and may be waiting for new Massachusetts Electrical Stretch Code to determine criteria.

Recommendation.

The new Massachusetts Electrical Stretch Code that will be in place January 2023 has several important changes related to EV charging. First, it requires all new construction to prepare for EV charging with electrical conduit and wiring. This includes single family homes and small residential. More detail on these changes are noted in the table below.

Second, it would no longer require each EV charging station to have a dedicated circuit capable of supplying continuous power to each station, helping to resolve the issue of providing sufficient power for the number of charging stations mandated. The new code will now allow available power to be utilized at maximum efficiency by means of an Automated Load Management System (ALMS). This would allocate power and supply to as many stations and vehicles as possible without exceeding the load on the facility or circuit.

We recommend that Newton significantly increase requirements for EV chargers and EV charger ready parking spaces, looking to the City of Boston standards for our larger residential buildings. We also recommend increasing the requirements for commercial buildings and eliminating the maximum number of chargers. **Lastly, Newton should consider developing an EV standards policy similar to that developed by [Boston](#).**

Review of EV Charging Requirements			
Charging Stations	Current Newton Ordinance	MA Electrical Stretch Code (as of Jan 2023)	Proposed Changes to Newton Ordinance
Coverage	New Green Developments >20,000 square feet	All new construction including small residential	All new parking lots
Mandated % of Parking Spaces with Access to EV Charging Stations	10% of parking spots	No requirement	<p>Single family + 2-5 unit multi-family: no requirement</p> <p>Residential (6+ units but less than 20,000 sq ft) no requirement</p> <p>Larger residential (>20,000 sq ft): 25 % of parking spots</p> <p>Commercial: 25% of parking spots</p>
Mandated % of Parking Spaces that are Charger Ready with Conduit and Cable (in addition to those mandated spaces charging equipped)	10% of parking spots	<p>Single family + 2-5 unit multi-family: 1 charger ready per unit</p> <p>Larger residential and all commercial: 20% charger ready</p>	<p>Single family + 2-5 unit multi-family: 1 charger ready per unit</p> <p>Residential (6+ units but less than 20,000 sq ft) 20% charger ready with a minimum of 3 spaces</p> <p>Larger residential (>20,000 sq ft) 75% charger ready</p> <p>40% commercial charger ready</p>
Maximum # of EV Chargers	40	No maximum	No maximum

CURRENT ORDINANCE

5.13.4 B. Electric Vehicle Charging Stations.

A green building project must provide that a minimum of 10% of parking spaces have access to electric vehicle charging stations up to a maximum of 40 spaces. An additional 10% of parking spaces must be electric vehicle charging station ready, meaning that electrical systems and conduit are prepared to expand the number of charging stations as demand increases. This Section 5.13.4.B only applies to new or rebuilt parking facilities; those projects using existing parking lots are exempt.

Items for Discussion

1. Our recommendation establishes higher standards for residential buildings vs. commercial buildings given vehicle owners are more likely to charge at home.
 - a. 25% EV charger + 75% charger ready for residential buildings
 - b. 25% EV charger + 40% EV charger ready for commercial buildings.

It is important that the combination EV chargers + EV charger ready meets or exceeds 61%. The new Massachusetts Electrical Stretch Code noted that the number of spaces that can be supplied with electricity and controlled by an ALMS is greatly maximized when at least 61% of spaces are EV charger equipped or EV charger ready. Refer to table at end of document for further detail.
2. Should we require any EV charging requirements (beyond the Massachusetts Electrical Stretch Code) in any buildings of less than 20,000 square feet?

C405.13.1 Minimum Charging Performance Requirements. Automatic Load Management System (ALMS) may be used to control electric vehicle loads for EV-Ready or EVSE-Installed Spaces, subject to the performance requirements in Table C405.13.1. The maximum number of parking spaces that may share a single branch circuit varies based on the percentage of all parking spaces to be provided with EVSE.

TABLE C405.13.1 EV-READY PERFORMANCE REQUIREMENTS

<u>Circuit Breaker Amperage</u>	<u>Maximum Parking Spaces that May Share a Branch Circuit with 10%-60% EV Ready spaces</u>	<u>Maximum Parking Spaces that May Share a Branch Circuit with 61-100% EV Ready spaces</u>
<u>40A</u>	<u>1</u>	<u>2</u>
<u>50A</u>	<u>1</u>	<u>2</u>
<u>60A</u>	<u>2</u>	<u>4</u>
<u>70A</u>	<u>3</u>	<u>6</u>
<u>80A</u>	<u>4</u>	<u>8</u>
<u>90A</u>	<u>5</u>	<u>9</u>
<u>100A</u>	<u>6</u>	<u>10</u>