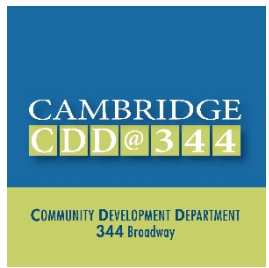
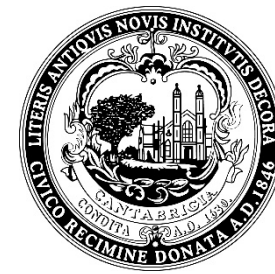


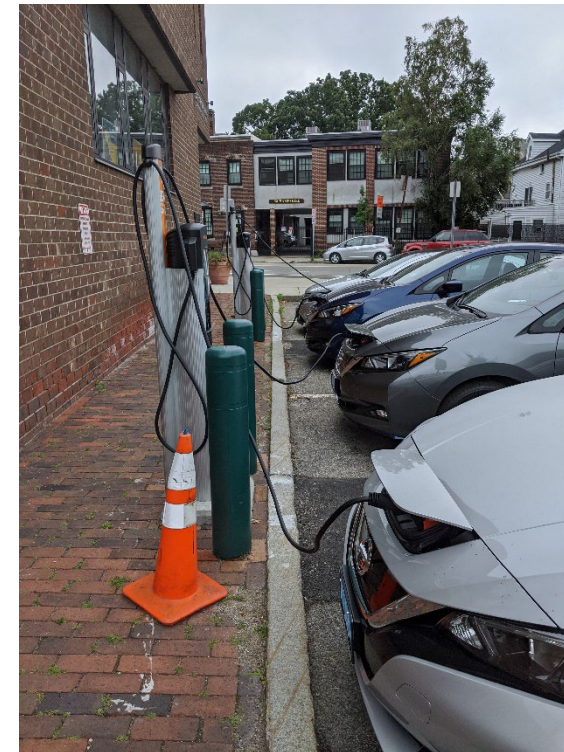


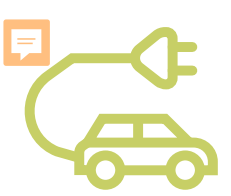
MAY 24, 2023



CITY OF CAMBRIDGE

Planning for Electric Vehicle Charging in Cambridge





VIRTUAL MEETING INSTRUCTIONS

Public Input

- Use the “Q&A” button at bottom center of the Zoom window to submit written questions and comments during the presentation
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 - We will unmute you
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- **Technical support** – Bill Deignan / wdeignan@cambridgema.gov

“Q&A” to submit typed questions & comments



“Raise Hand” to speak questions & comments



Welcome!

1. Background

- Context
- Goals
- Schedule
- Funding

2. Existing and upcoming EV charger locations

3. Next steps

4. Q and A

Purpose

The purpose of this meeting is to inform you on the City process to install EV charging on public streets and in municipal parking lots.

Process

We will share information in this presentation with time for questions and answers. During the presentation we'll talk about the background of the program, existing EV charging locations, and planned future EV charging locations.



BACKGROUND AND CONTEXT



CHARGER TYPES

Types of Electric Vehicle Chargers

Charger Type	Volts	Charge Time	Public EV Charging Context
LEVEL 1	120V	12+ hours	Primarily used at home.
LEVEL 2	240V	3+ hours	Primary focus of City curb-side EV charging program.
LEVEL 3 DCFC (Direct Current Fast Charging)	400 - 900V	30+ minutes	High demand, high turnover locations.



EV CHARGERS

Electric Vehicle Chargers

The two main types of curb-side chargers are ground-mounted and pole-mounted:

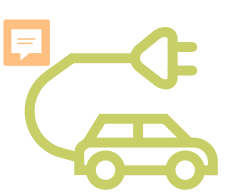


Ground-mounted, level-two chargers are the focus of the EV charging program in Cambridge



Pole-mounted, level-two chargers are a future possibility (not currently permitted by Eversource)

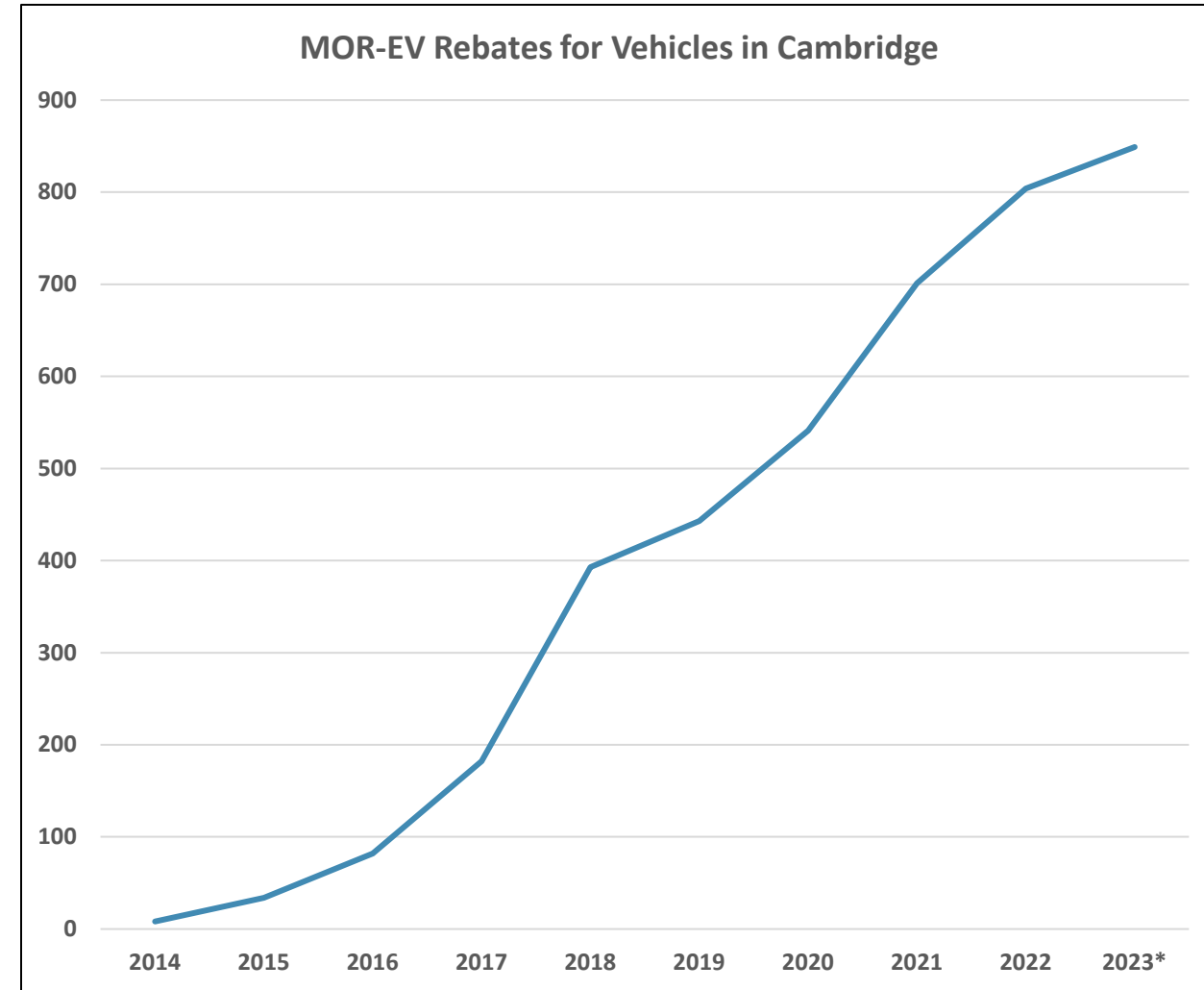
Photo: Pole-mounted charging in Melrose, MA (boston.com)



BACKGROUND

Transportation Fuel Transition

- Transition underway from fossil fuel powered motor vehicles to electric vehicles
- State mandate to move to all EV car sales by 2035
- Transition driven by
 - Climate change / Environmental concerns / Local air quality
 - Lower cost to own and operate
 - State and federal incentives
 - Visit Cambridgema.gov/ElectricVehicles for more information on incentives



City Role

- City of Cambridge goal to eliminate greenhouse gas emissions by 2050
- City has installed EV chargers on public property to support the adoption of EVs
- Help break down barriers to EV adoption
 - Many households do not have access to a driveway or other off-street parking



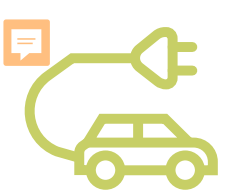


Increasing Use

- There are 39 existing City-owned, publicly accessible stations
- The number of EV charging heads increased from 27 in 2022 to 39 in 2023
- The number of transactions has doubled in a year

*Data compares the period January 1st to April 9th in 2022 and 2023

	2022*	2023*
# of Transactions	2,758	4,752
# of Hours (Duration)	9,947	17,079
# of Hours (Charging)	6,945	12,491
% of time at station spent charging	71%	76%
Average time spent charging	2 hours, 31 minutes	2 hours, 38 minutes
Station availability (open)	67% of the time	59% of the time
# of Unique Drivers	767	1,214



CURB-SIDE CHARGERS

New EV Charging Stations

- New curb-side EV charging installations at parks and municipal buildings
- Six locations total, with five locations that have two charging heads (12 charging heads total)
- Installed in 2022 and 2023
- Not pictured:
 - 57 Inman St (City Hall Annex)
 - Gilmore St (Moore Youth Center at Hoyt Field)

Tudor St



Upland Rd

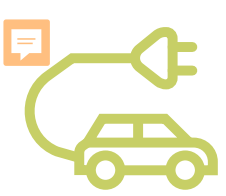


Norfolk St



Pemberton St





SIGNAGE AND REGULATIONS

EV Parking Rules

- Vehicles parked at an EV designated parking space must be plugged in
- Vehicles that are not plugged in may receive a parking violation
- Time limits, parking meters, parking permits, and other regulations apply



Public Input

- Cambridge EV Charging Request Tool
- Identify high demand areas
- 1,693 votes as of April 2023
- Helpful as we investigate additional sites for possible EV installations
- [Link to the map](#)



Public Input

- Opportunity to include a comment in the area EV charging was requested
- 274 comments

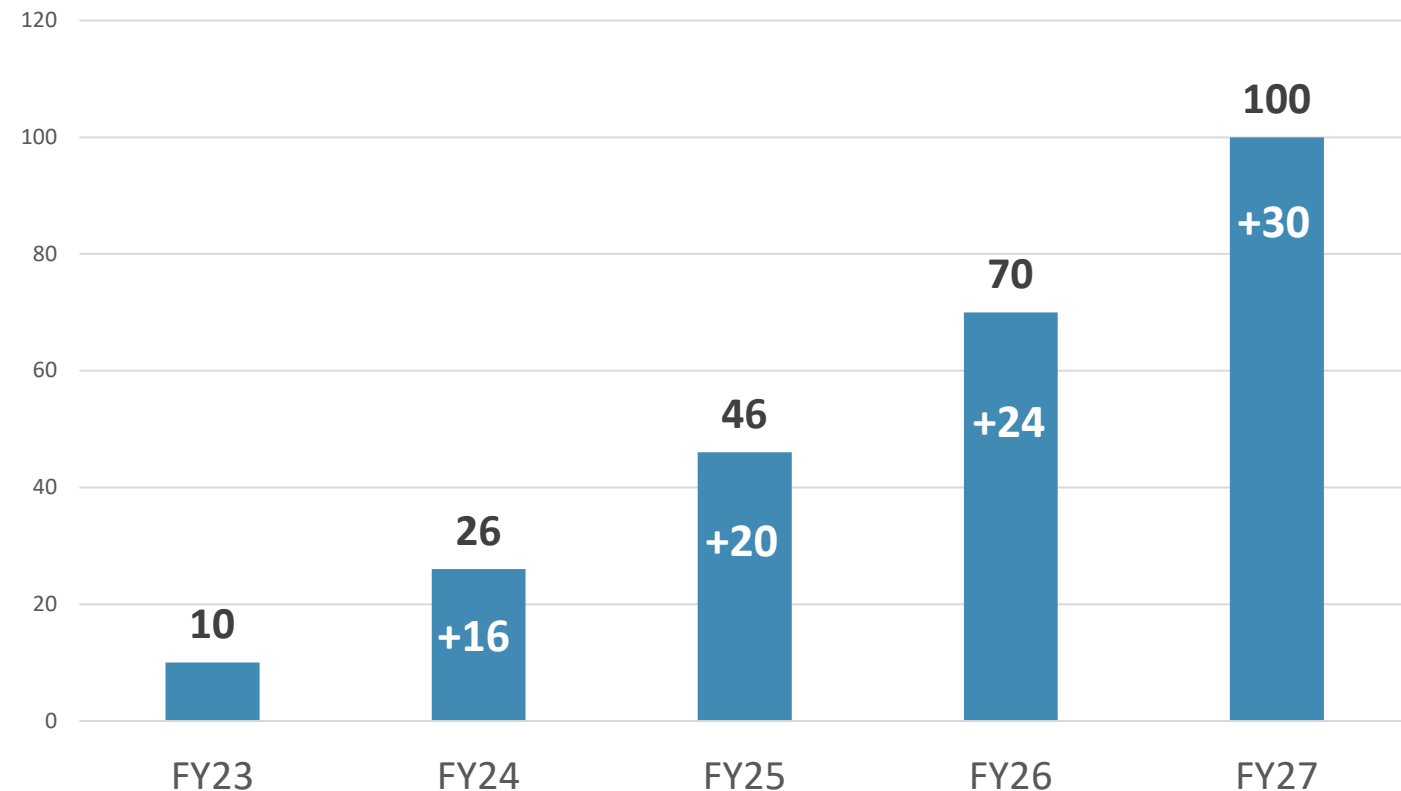


- “An area of the City that has many residential buildings without driveways”
- “I’m in the market for a new car...but I don’t have a driveway or garage for electric charging. [A] 20-minute walk away is not an option with kids.”
- “The charging stations in the Danehy Park lot on Sherman Street tend to be full much of time.”
- “...at all school locations. It’ll be good for staff to use during the day and let residents use them at night.”

Goals & Schedule

- The City has established a goal of 100 new EV charging heads by end of June 2027
- “Ramp-up” over the next 4 years

EV Chargers: 5-Year Installation Schedule



Publicly available and within the City of Cambridge



FUNDING SOURCES

Funding

- City funding 
- Grant Funding: \$1 million set aside by Rep. Ayanna Pressley

Additional Funding Opportunities

- Charging and Fueling Infrastructure Grant (Bipartisan Infrastructure Law)
- Eversource Make Ready Program

Dedicated City Funding

	FY20	FY21	FY23	FY24
Capital Budget	\$100,000	\$100,000	\$50,000	
Participatory Budget			\$250,000	\$250,000

total: \$750,000



Right-to-Charge Law

- For owners of units in condo and multi-family buildings
- Gives owners the right to install EV charging in their building at the owner's expense
- Issue arises with capacity, deeded spots
- Possible use of common parking space to alleviate this problem
- Link to the right to charge law

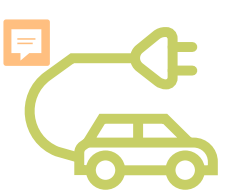
<https://malegislature.gov/Bills/192/H3858>

51% of housing units in Cambridge are in multi-family buildings with 5 or more units

<http://www.housing.ma/cambridge/report>



EXISTING AND UPCOMING EV CHARGERS



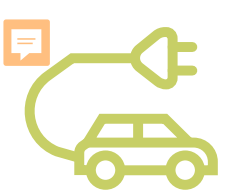
EXISTING EV CHARGERS

EV Charging Locations in Cambridge

- The City has installed 20 charging stations (39 charging heads)
- As part of the curb-side program, 12 charger heads were activated in Fiscal Year 2023
- Most are dual-head chargers
- Located at a variety of municipal parking lots and other facilities
- Separately, there are many publicly accessible EV chargers in private parking lots



Lot 8 EV Charger

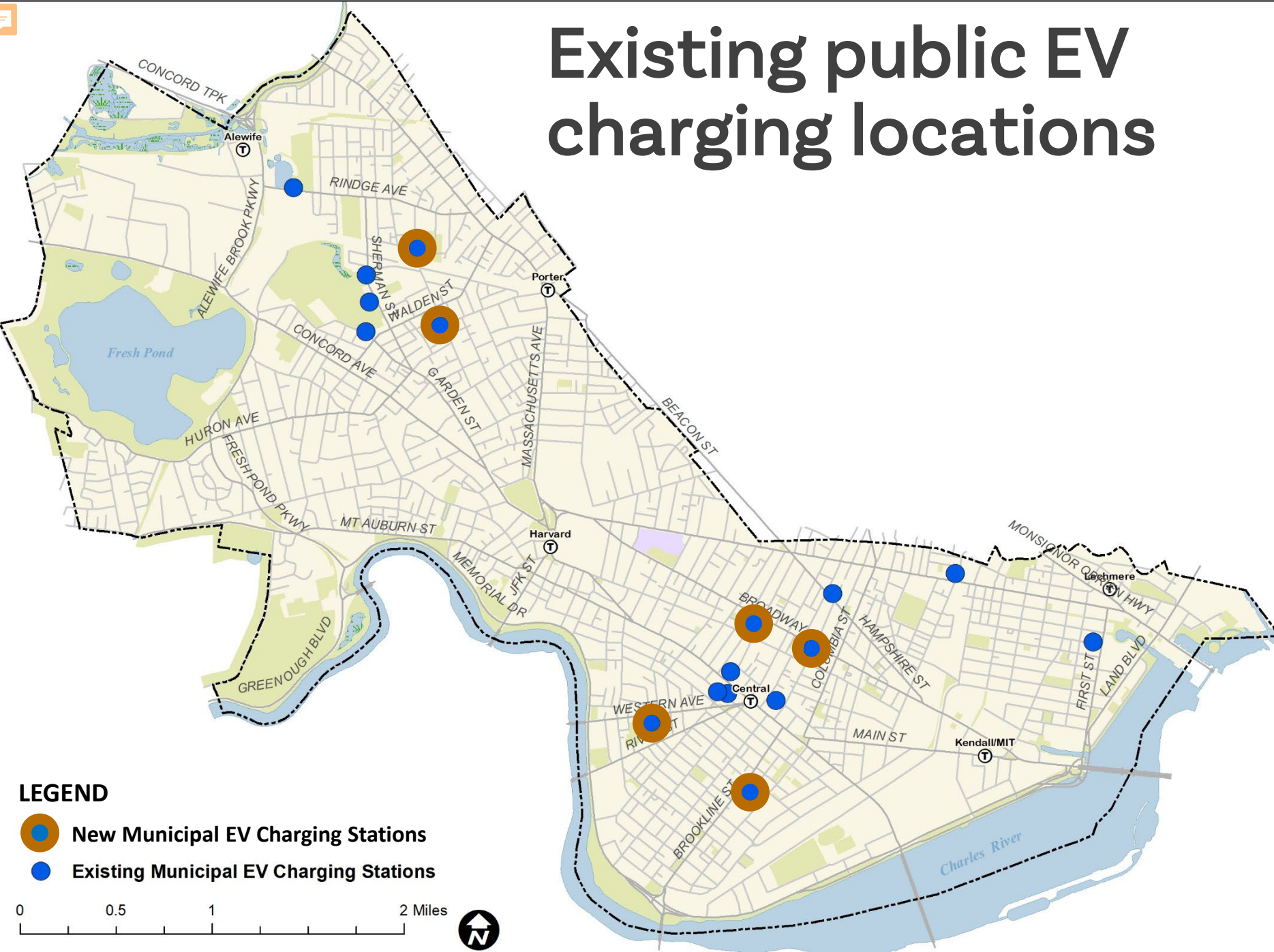


LOCATING NEW ELECTRIC VEHICLE CHARGERS

Locating EV Charging Stations in Cambridge

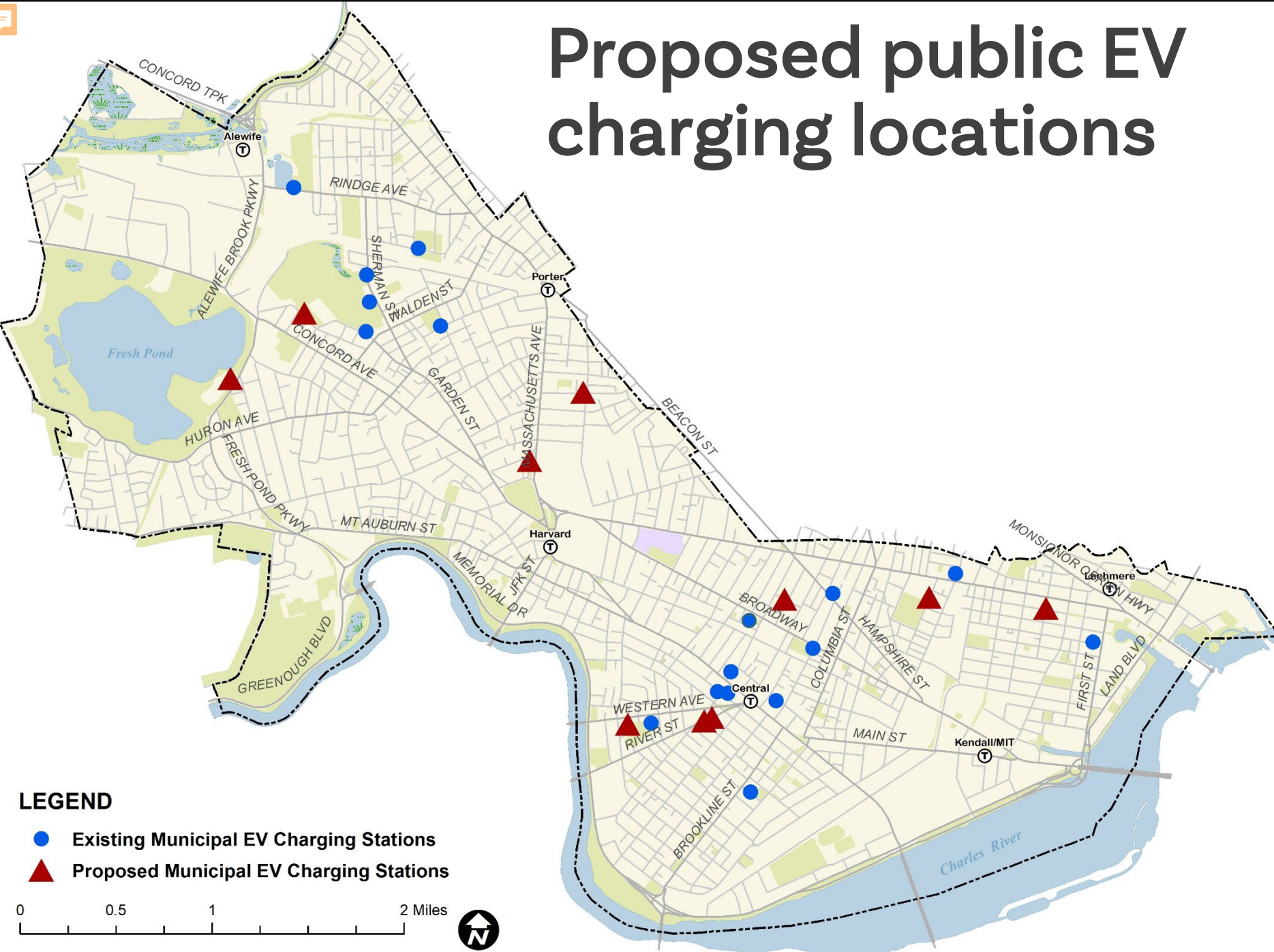
1. Review public input map for high-demand areas
2. If part of upcoming construction, add to project
3. Locate nearby electrical infrastructure or cabinet
4. Confirm presence of 6-foot wide, or wider, sidewalk
5. Coordinate with DPW, Electrical Department and Eversource to determine cost and other needs
6. Notify public of proposed location and solicit feedback

Existing public EV charging locations



Location	Heads
Hampshire St	8
First St Garage	2
Lot 8/Bishop Allen Dr	2
City Hall	1
Lot 12/Macarelli Way	2
Lot 8/Green St	2
Lot 5/Green St	2
Garden St	2
99 Sherman St	2
73 Sherman St	2
Rindge Ave	2
Gilmore St	1
City Hall Annex	3
Raymond Park	2
Pemberton St	2
Tudor St Dog Park	2
Norfolk St	2

Proposed public EV charging locations



Location	Heads
Water Treatment Plant	6
Berkshire St at Marney St	4
Sacramento St at Oxford St	2
Montague St at Hoyt Field	4
Little Mass Ave near Waterhouse St	4
Sciarappa St at Silva Park	4
Saint Mary Rd at Robert Paine Playground	4
Field St at Universal Design Playground	3
River St near Williams St	4

Total: 35



NEXT STEPS



NEXT STEPS

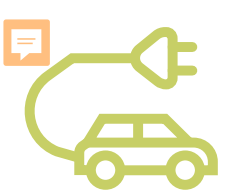
Future Planning Work

- Work to understand EV drivers needs, future demand
- Identify additional EV charging locations
- The right mix of Level 2 and Level 3
- Secure additional funding
- Support EV charging on private property
- Over-the-sidewalk charging pilot





QUESTIONS AND ANSWERS

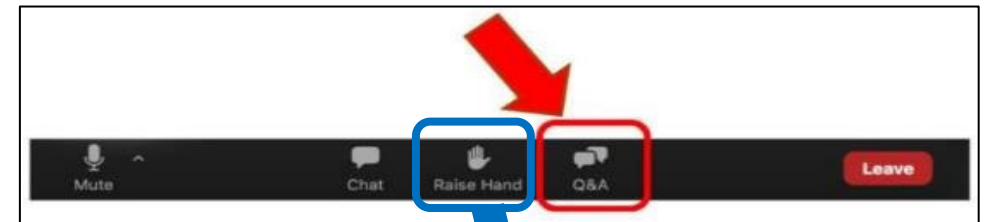


VIRTUAL MEETING INSTRUCTIONS

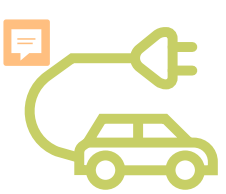
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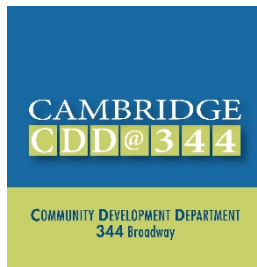
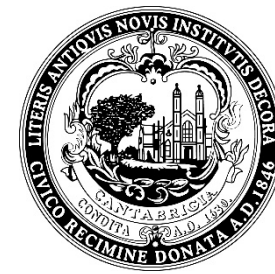
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THANK YOU



www.CambridgeMA.gov/ElectricVehicles

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City Engineer

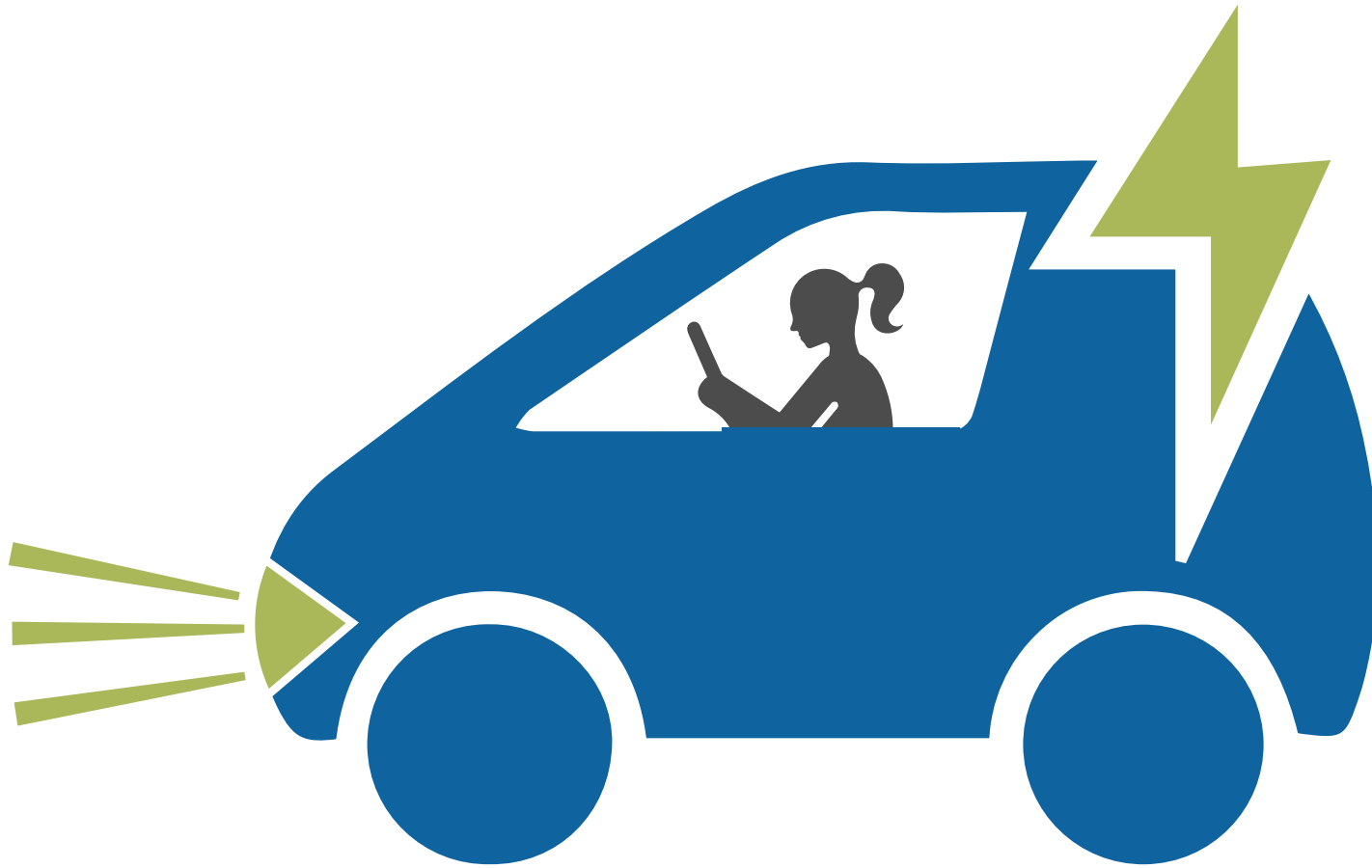
Ted Bulger

Senior Engineer

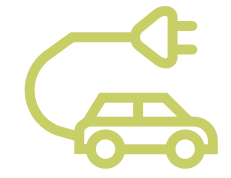
TRAFFIC, PARKING AND TRANSPORTATION

Brooke McKenna

Transportation Commissioner



APPENDIX



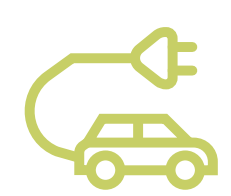
PROPOSED EV CHARGER LOCATIONS

250 Fresh Pond Parkway (location TBD)



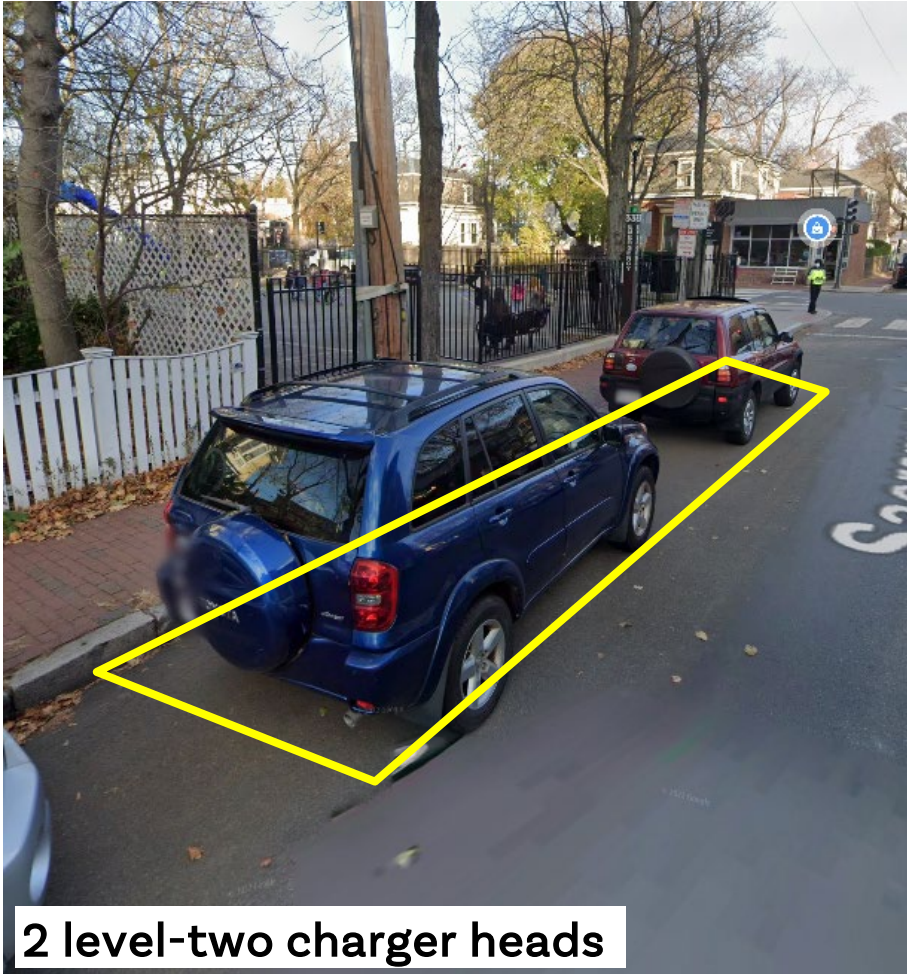
Berkshire St near Marney St, Donnelly Field



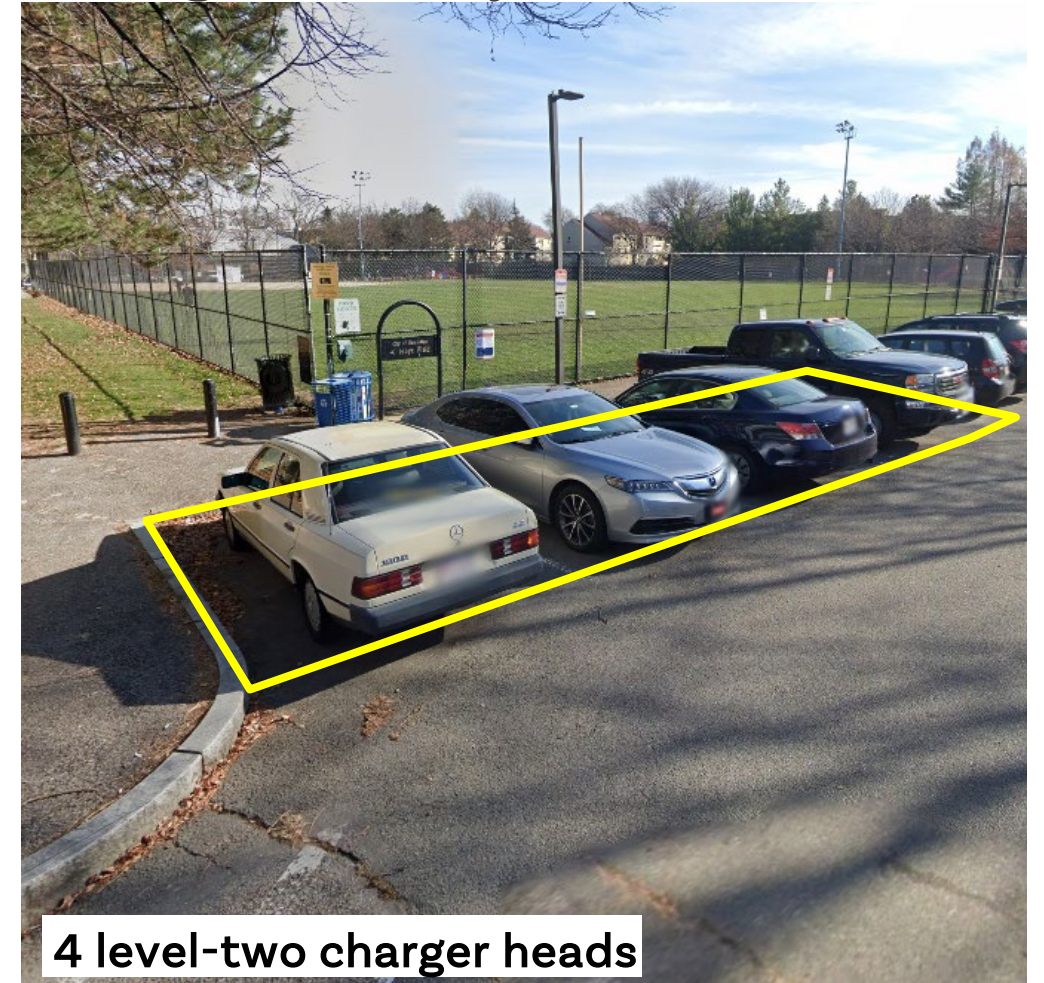


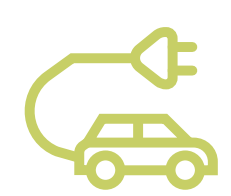
PROPOSED EV CHARGER LOCATIONS

Sacramento St at Oxford St



Montague St at Hoyt Field





PROPOSED EV CHARGER LOCATIONS

Little Mass Ave near Waterhouse St

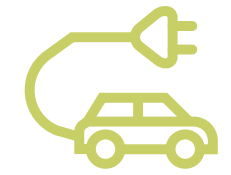


4 level-two charger heads

Sciarappa St at Silva Park

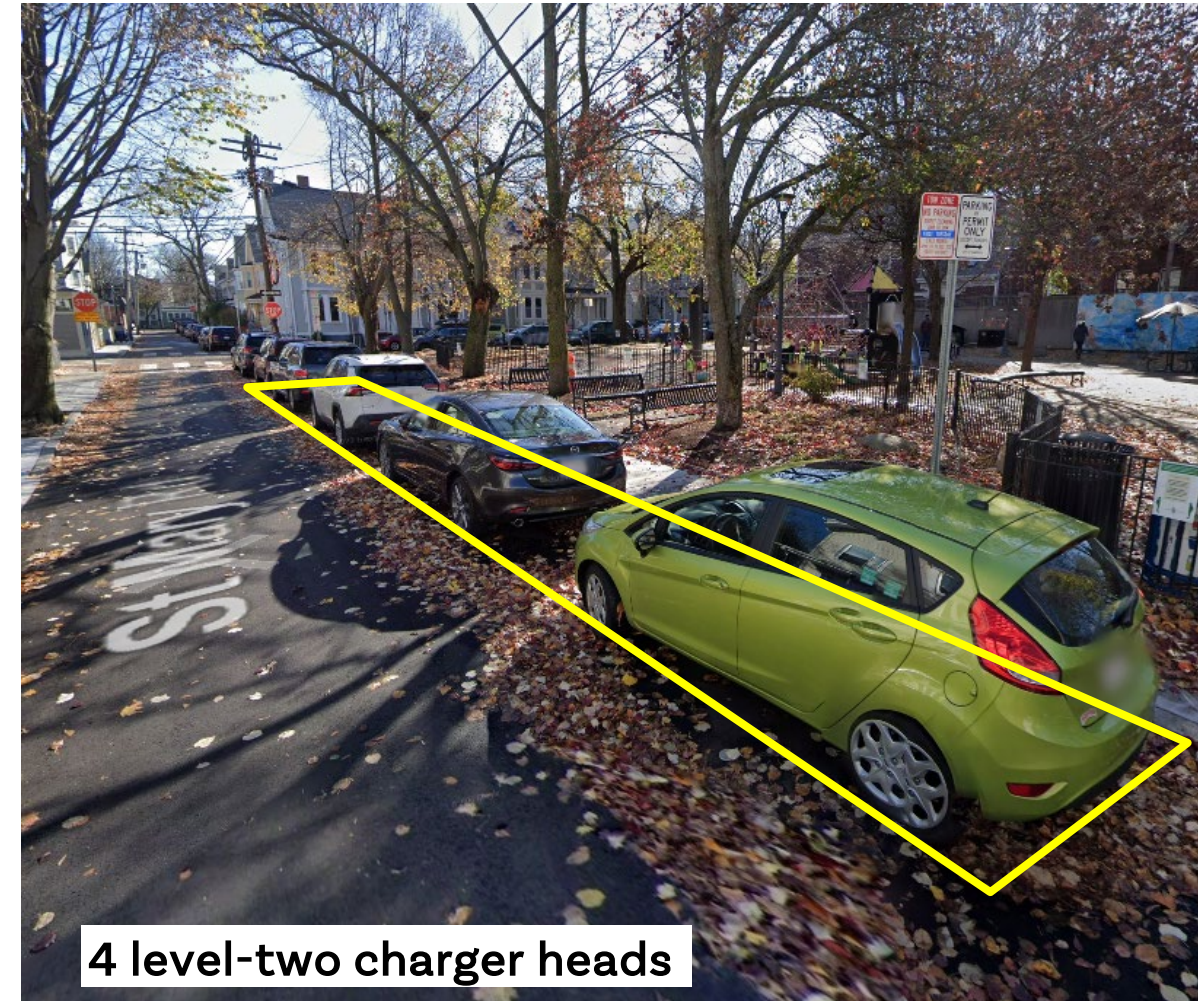


4 level-two charger heads



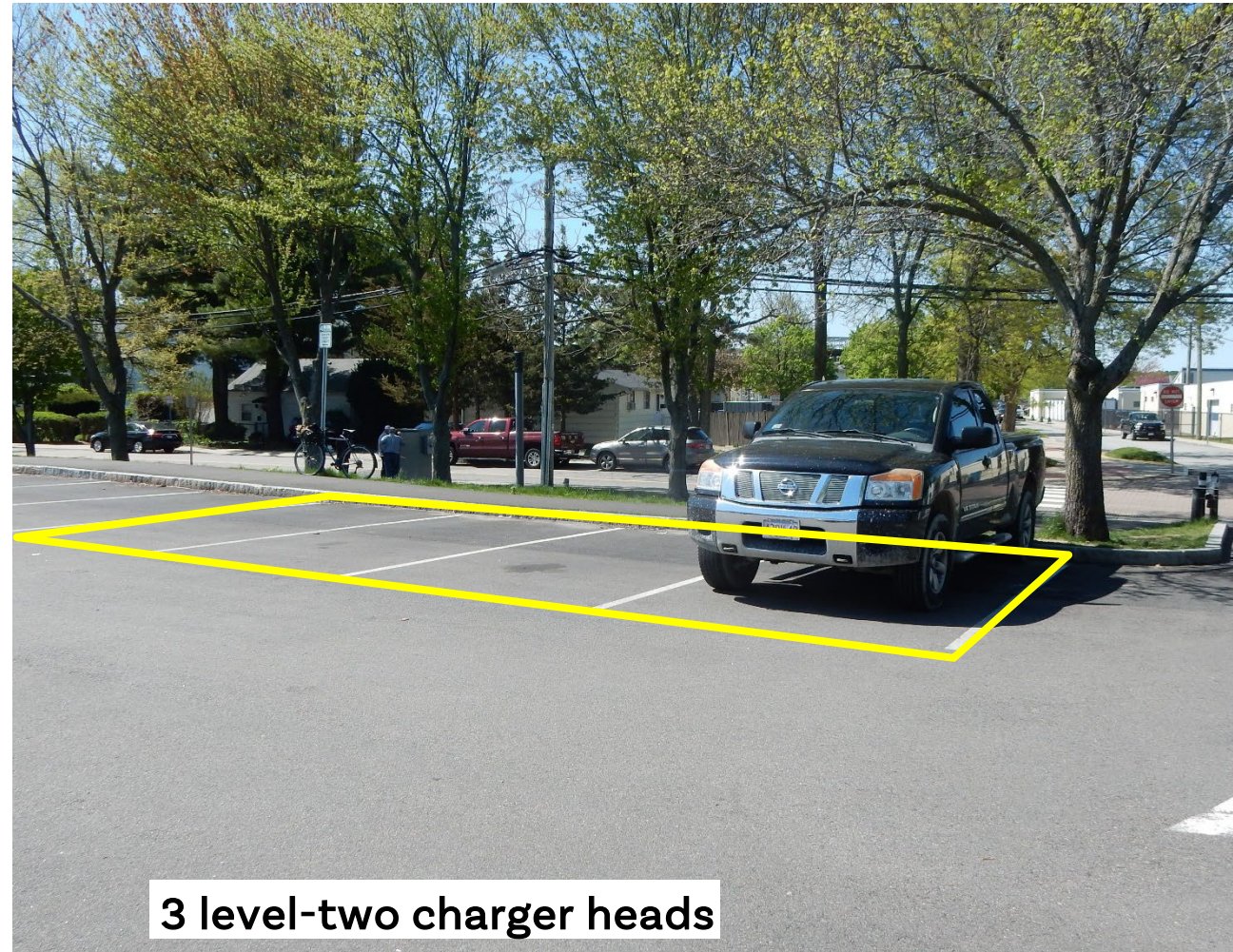
PROPOSED EV CHARGER LOCATIONS

Saint Mary Rd at Robert Paine Playground



4 level-two charger heads

Field St, Universal Design Playground



3 level-two charger heads



Cost

- Cost will be \$0.189 per kWh drawn, plus \$0.15 per hour
- ~\$10 for a full charge depending on the car

Types of Electric Vehicles

- **Hybrid (HEV):** Utilize both gasoline and rechargeable batteries
- **Plug-In Hybrid (PHEV):** Utilize both gasoline and plug-in rechargeable batteries
- **All Electric (BEV):** Utilize plug-in rechargeable batteries only



Toyota Prius, Honda Insight
Late 1990s - early 2000s



35 Make & Models available
today from Ford to Ferrari



Many makes / models available,
from Hyundai to Tesla