REGIONAL EV STRATEGY

On-Street Charging Models

February 15, 2024

MAPC
METROPOLITAN AREA PLANNING COUNCIL

Today's Agenda

1:00-1:05 p.m.	Welcome	Alison Felix, MAPC
1:05-1:25 p.m.	NYC DOT On-Street Charging and Evaluation Program	Luis Gonzalez, New York City Department of Transportation (NYC DOT) Mark Simon, NYC DOT Benjamin Smith, NYC DOT Nicholas Miller, NYC DOT
1:25-1:45 p.m.	City of Boston Programs for Curbside Charging	Matt Warfield, City of Boston Shonte Davidson, Better Together Brain Trust Nicole Voudren, Better Together Brain Trust
1:45-1:55 p.m.	Q&A	All
1:55-2:05 p.m.	MassCEC Update	Rhys Webb, Massachusetts Clean Energy Center (MassCEC)
2:05-2:10 p.m.	Q&A	All
2:10-2:20 p.m.	Municipal Updates	Emma Zehner, MAPC
2:20-2:25 p.m.	News and Resources	Alison Felix, MAPC
2:25-2:30 p.m.	Next Steps	Alison Felix, MAPC

NYC DOT On-Street Charging and Evaluation Program

NYC Curbside Level 2 Charging Experience

MAPC Regional EV Working Group

February 2024

Transportation and Achieving Net Zero

- *PlaNYC: Getting Sustainability Done* commits NYC to achieving net-zero GHG emissions by 2050.
- Transportation constitutes 28% of citywide GHG emissions, the largest source after buildings.
- Passenger vehicles constitute 83% of on-road transportation GHG emissions, single biggest transportation source.

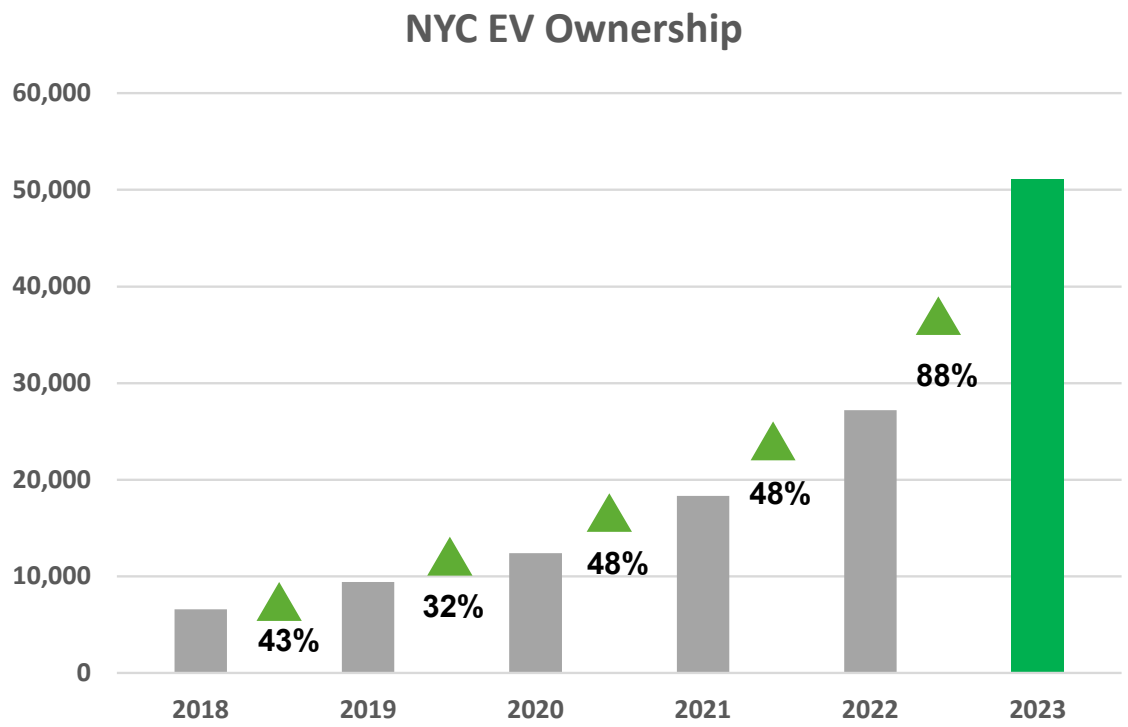
State of EVs in NYC

EV Ownership

- Nearly 50,000 EVs in the city; 23% of EVs in NYS.
- Majority of EVs in NYC (60%+) registered in Brooklyn and Queens.

EV Chargers

- Over 2,100 chargers in NYC, about 10% are fast chargers.
- Nearly 50% of chargers in NYC are concentrated in Manhattan core.



DOT's EV Charging Strategy

Large-scale adoption of EVs and meeting climate goals requires a comprehensive charging network:

- **Targeted curbside L2 charging:** flexible and scalable, support TLC goals.
- **Fast Charging:** All New Yorkers will be within 2.5 miles of a fast charger by 2035.
- **Truck Charging:** Create charging depots to support the transition to electric trucks.
- **Taxis/FHVs:** transition entire taxi and HVFHV to EV by 2030.

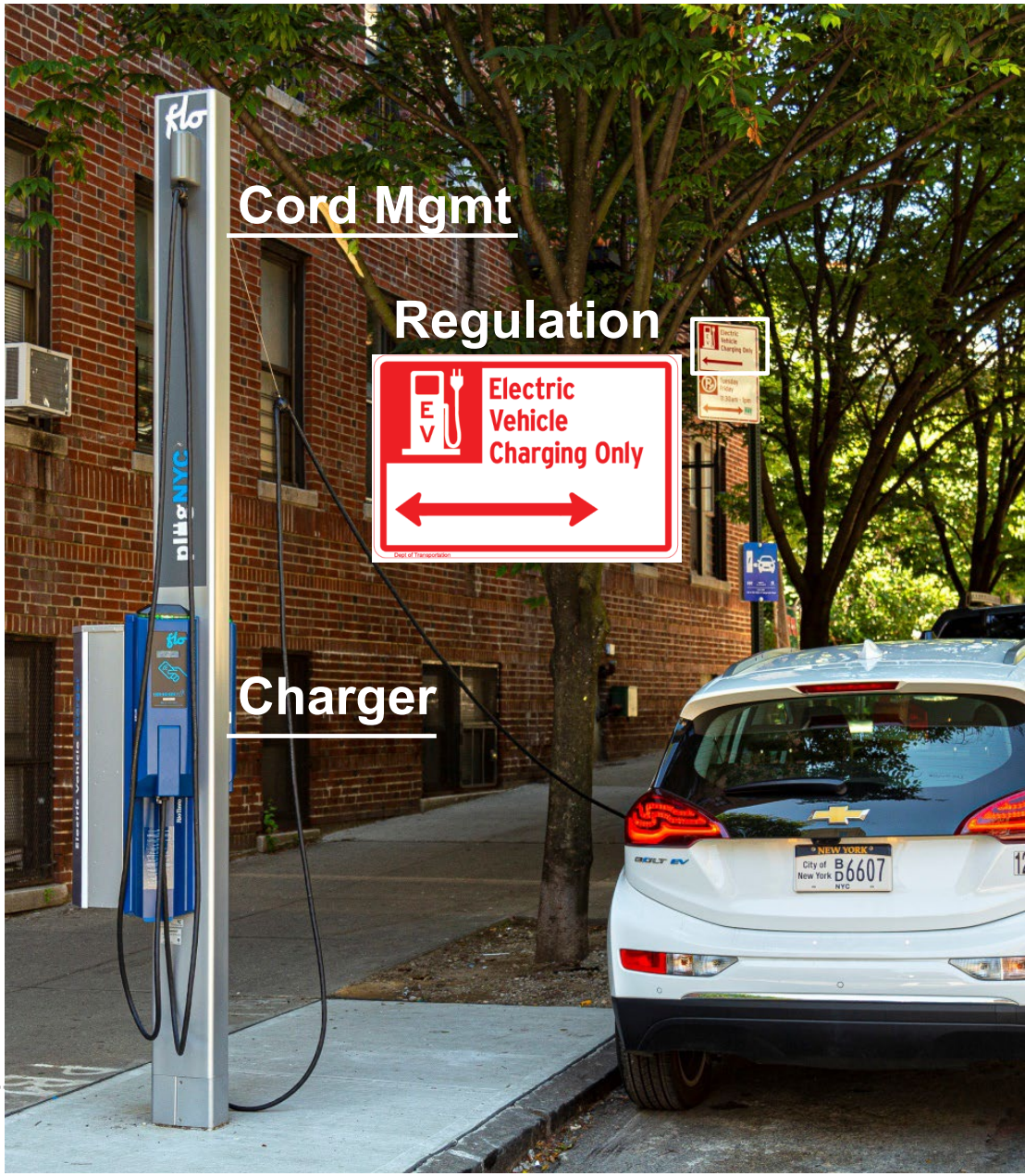
Curbside L2 Charging

Background

- **Partnership:** Con Ed and DOT installed 100 public Level 2 EV charging plugs on city streets.
- **Schedule:** 4-year demo, began in July 2021; all chargers in service as of summer 2022.
- **Regulation:** EV Charging Only; vehicle must be charging to be in compliance.
- Pilot funded by Con Ed.

Goals

- Understand usage patterns of curbside chargers in a range of neighborhood contexts.
- Test the operational feasibility of curbside charging on the streets of New York City.
- Inform larger deployment.



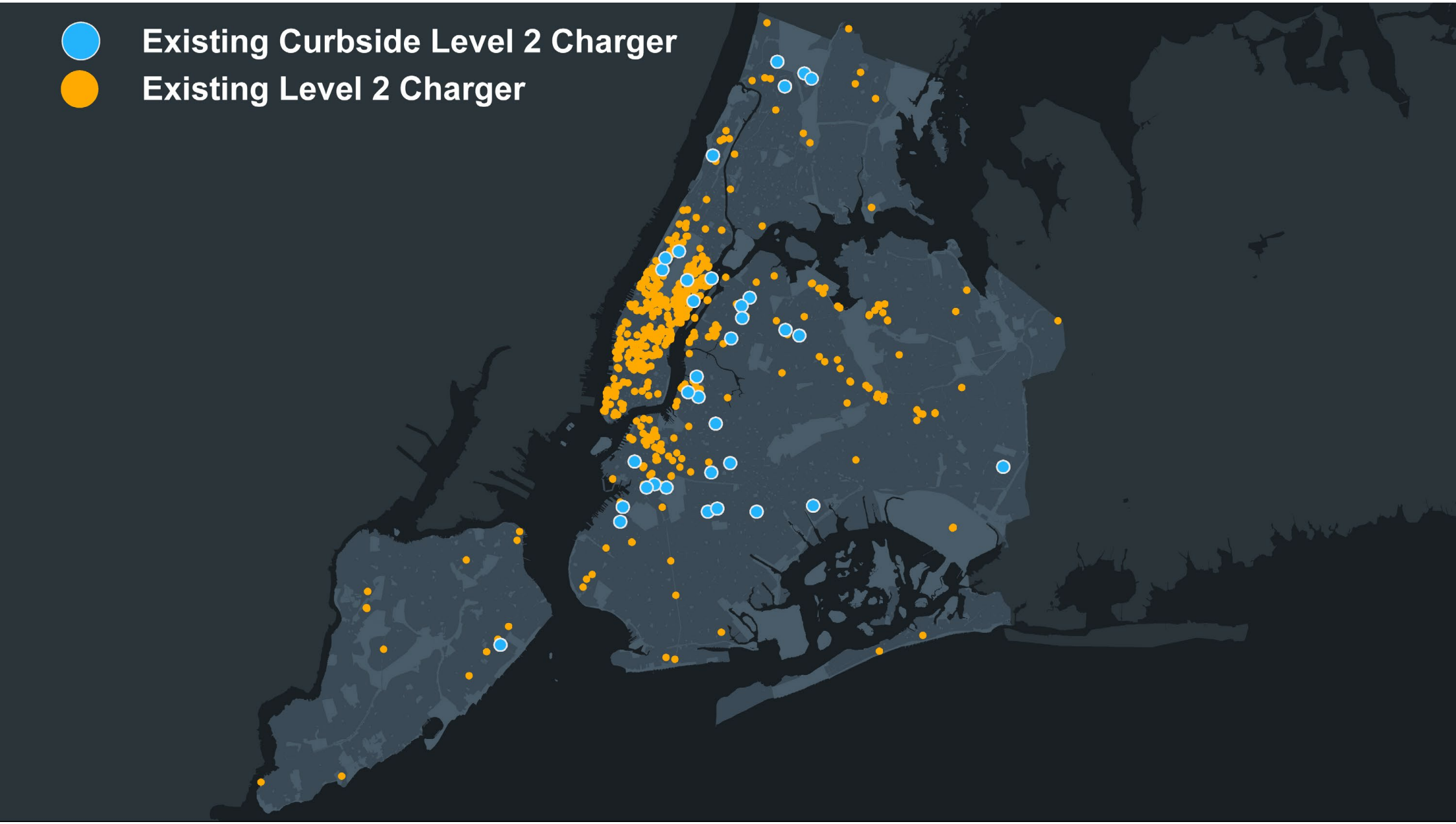
Public Chargers: Site Selection Criteria

Key considerations

- Elected and community input, market factors, and equity.
- Preference given to four typologies:
  1) Spur streets off commercial corridors;
  2) Neighborhood main streets;
  3) Eds and meds facilities;
  4) Under elevated structures.

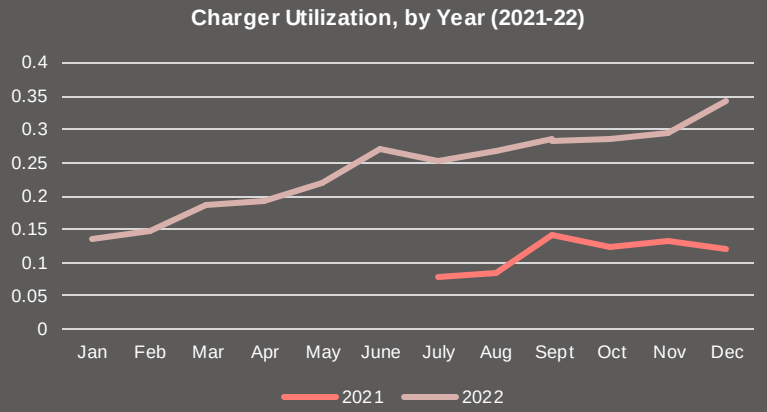
Outreach

- Briefed elected officials between November 2018 and 2020; responses were generally favorable.
- Letters sent to relevant electeds and Community Boards regarding sites under consideration in pilot zones in 2019, as well as second half of 2020.
- Project team consulted Community Boards to identify potentially problematic, as well as favorable, locations.


Existing Curbside Level 2 Charger
Existing Level 2 Charger

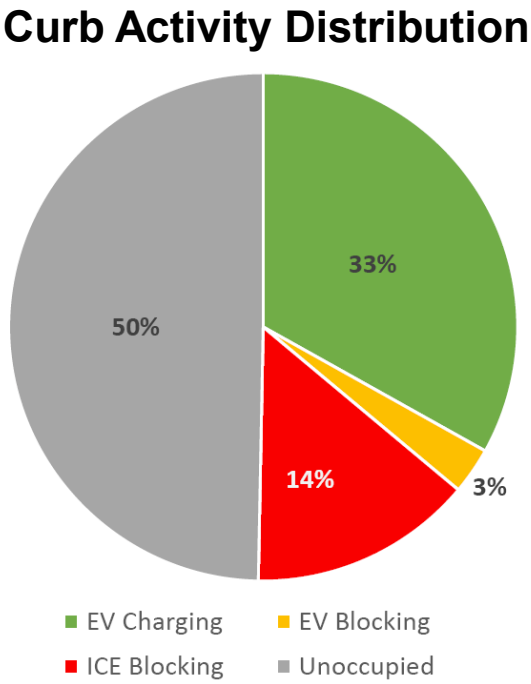
Curbside Level 2 Charger Performance

- Utilization continued to improve significantly in 2023
- Number of unique monthly users up to 3,100
- Efficiency rate ~80%
- Average uptime 99.8%
- Median session time between 3.5 – 4.5 hours



Curbside Timelapse Study

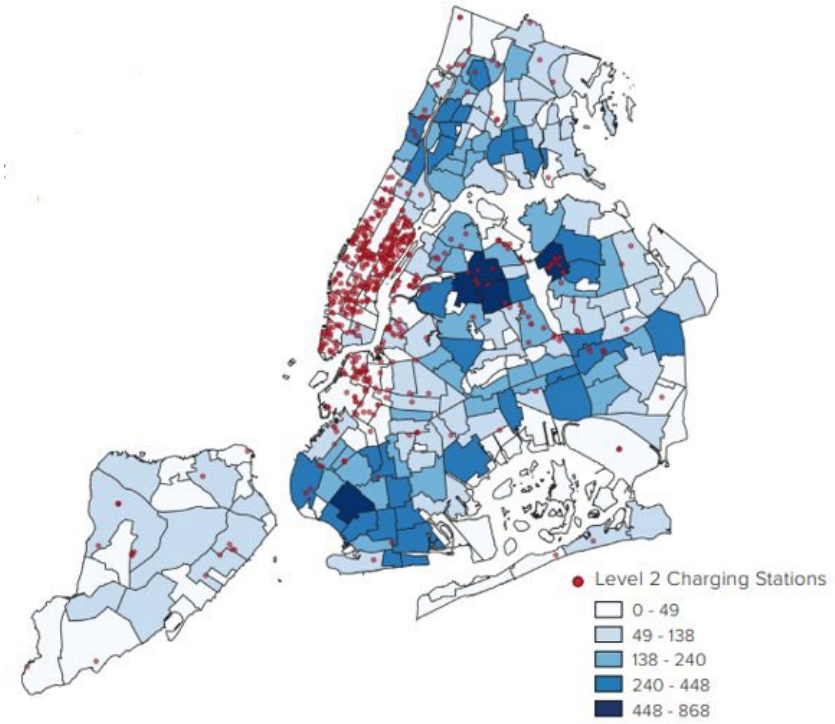
- During initial phases of project, there were concerns about curbside chargers being ICEd.
- DOT worked with a consultant to monitor curb activity at all public charger sites in early January 2023.
- Charger blocking by ICE vehicles was predominantly for brief periods (75% under an hour), and mainly interfered with daytime charging as opposed to overnight.
- Blocking was more likely to occur in under-utilized sites.
- Violation activity and blocking both peak during the middle of the day.



Looking Ahead

- Charging activity is clear indicator of increased demand and need for curbside charging.
- Targeting release of competitive RFP in Q1/Q2 2024.
- Next phase of curbside charging program with focus on:
  - Neighborhoods where TLC drivers live
  - Disadvantaged communities
  - High-density areas with little off-street parking
- Micromobility tie-in: micromobility charging at select locations; follows “dig once” philosophy.

TLC Owner-operators and Existing L2 Charging



Thank You!

Curbside Level 2 Evaluation Report (May 2023):
http://tinyurl.com/NYCL2Eval

NYCDOT nyc_dot nyc_dot NYCDOT

Expanding EV Charging Access in the City of Boston - Curbside Demonstration Projects

Matt Warfield
New Mobility, Boston Transportation Department

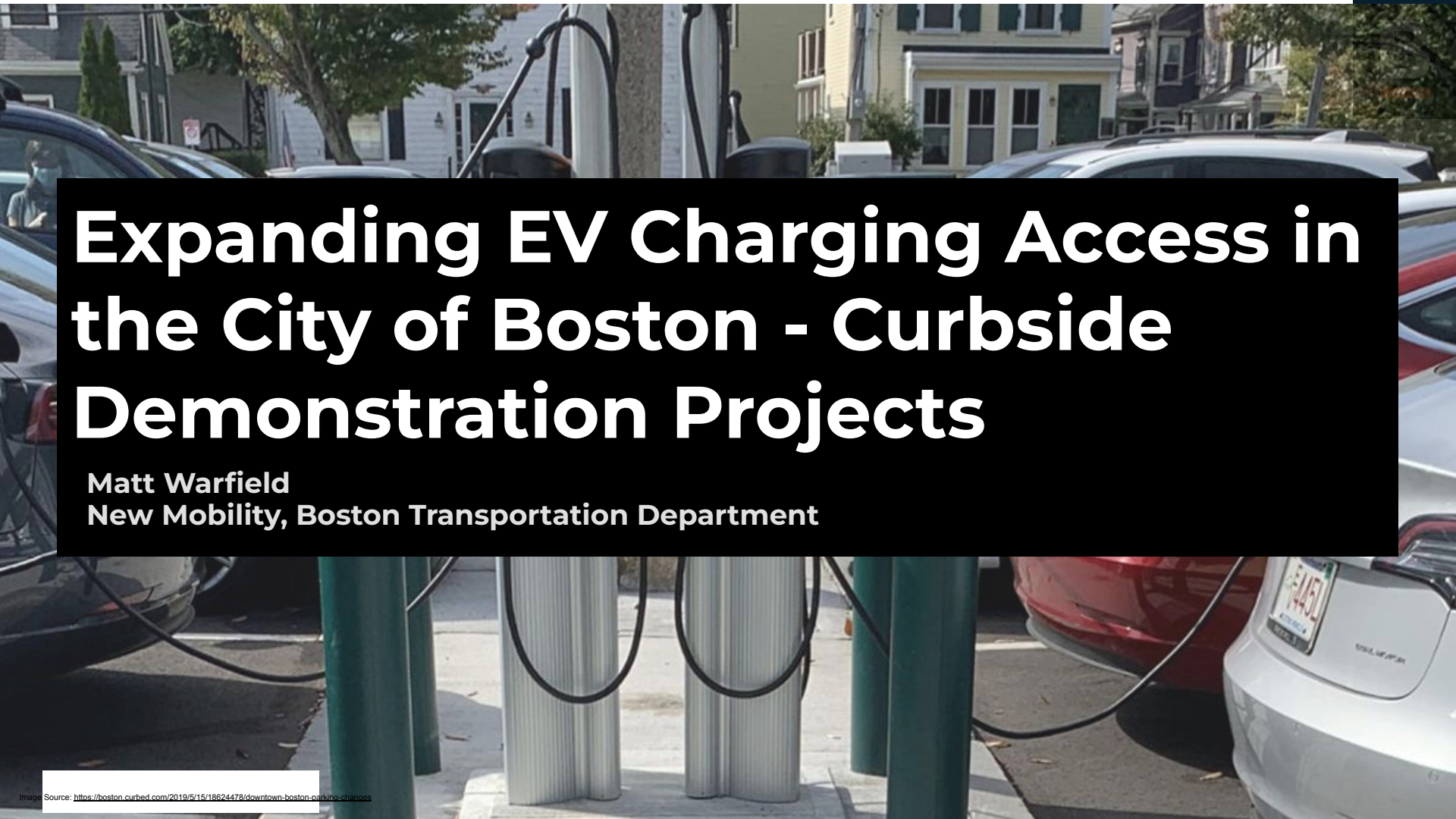


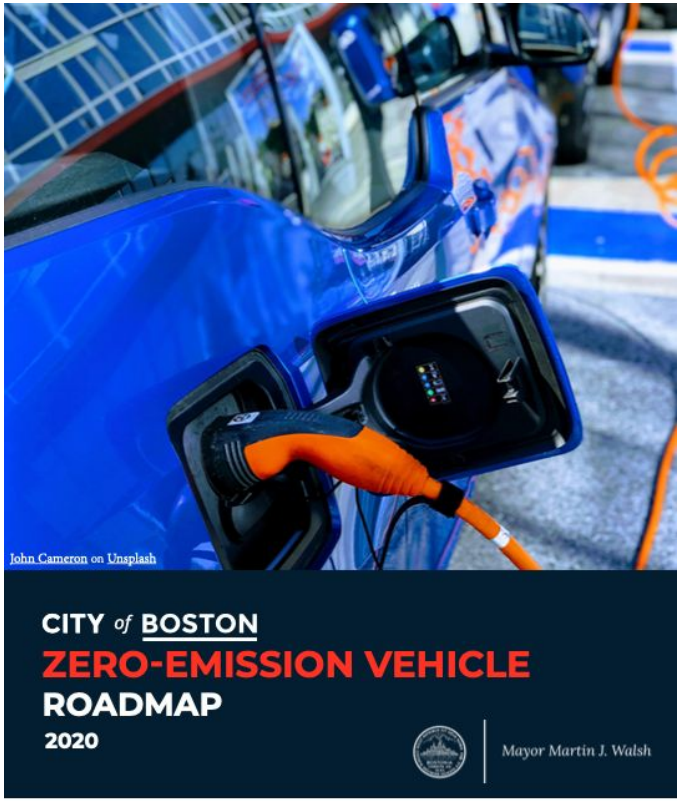
Image Source: https://boston.curbed.com/2019/5/15/18624478/downtown-boston-parking-changes

Why This Matters

Adoption of EVs in Boston has lagged behind targets due to lack of access to affordable charging infrastructure, but adoption is projected to reach up to 71% by 2050.

To meet its carbon neutrality and mobility targets, Boston must rapidly increase access to EV chargers.

[Zero-Emission Vehicle Roadmap]

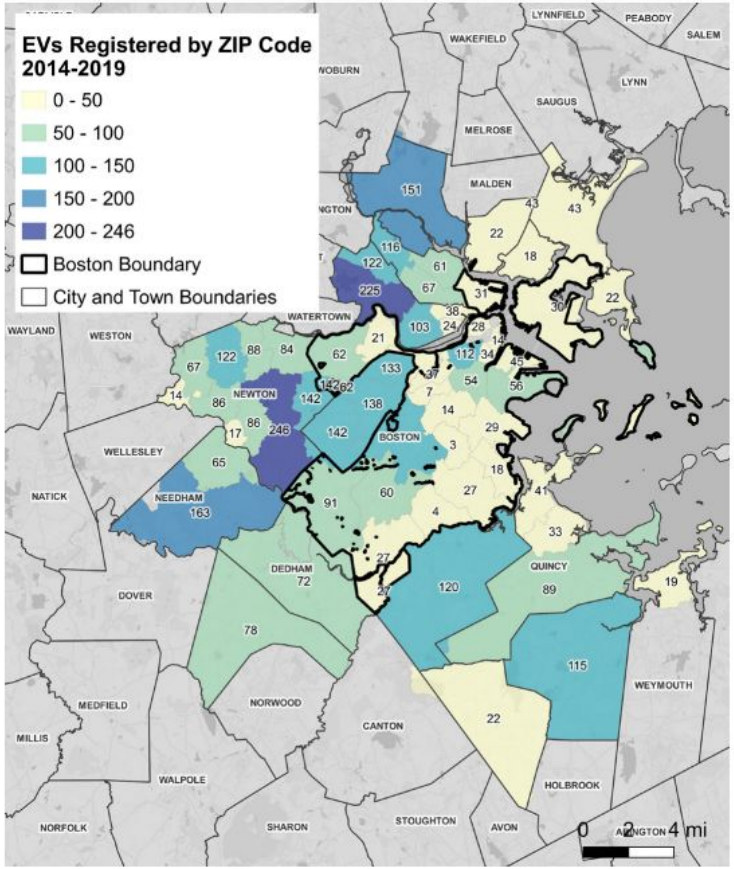


Why This Matters

Transitioning away from internal combustion engines creates community benefits (cleaner air, lower long-term costs.)

Inequitable access to EV charging risks replicating existing environmental injustices.

Many City of Boston Residents live in multi-unit dwellings, do not have access to a private parking space, and rely upon public parking.



Current City Operated EV Charging Landscape

The City of Boston currently **operates 66 Level II ports** in our municipal parking lots

- In 2023 these stations served 4,537 Unique Drivers
- Had 28,282 sessions
- And generated $121,175 with a $0.25/kW charge

We are working with Eversource through their make ready program **will soon start construction on 8 Level III and 32 Level II ports** installed in municipal parking lots

Starting in 2021, the **City has a goal of installing 198 Level II ports** by the end of 2025; we will reach 98 from our municipal parking lots, meaning **we won't meet this goal with off-street charging** alone

Starting at the end of 2022 we began a process of implementing a **demonstration program to test out different concepts of curbside ev charging**

Option 1: License the Right-of-Way

The City will license curbside areas to a third-party vendor to install LVII and/or LVIII charging stations.

The goal of this approach is to increase access to EV charging in neighborhoods, through a cost-offsetting or other model that is of no cost to the City.

Target Audiences

- Residents of multi-unit dwellings that do not have off-street, private parking
- EJ communities that may be overlooked by private operators of EV charging

We want to know: Will the private market expand EV charging access to 'garage orphans' and EJ communities in existing charging deserts? Can this be done at no cost to the City?

Key Considerations/ Challenges:

- Likely ad-supported
- Contract duration, terms, and number of locations must ensure ROI for vendor

Option 2: Public Ownership at City Assets

The City will deploy charging stations adjacent to City-owned assets (eg. libraries, community centers, parks and municipal buildings.)

The goal of this approach is to vet a City-owned EV charging option that provides charging as a City service.

Target Audiences

- "Garage orphans" and visitors to municipal buildings and parks

We want to know: Does City ownership of EV charging stations a offer faster, cheaper, or more simply scalable alternative to privately-owned models? Do residents favor charging as a City service?

Key Considerations/ Challenges:

- Public perceptions of charging as a City service
- Opportunities for WMBE maintenance partners
- Cost of scaling City ownership

Option 3: Partner with Businesses Off-Street

The City will seek to act as a liaison between available funding programs and private property owners to facilitate the installation of chargers on privately-owned commercial lots.

The goal of this approach is to take advantage of the distributed network of privately-owned lots to provide charging access.

Target Audiences

- Customers or commercial patrons who require LV II and LV III fast-charging (30 mins)

We want to know: How might private lots supplement charging access? What is the future of EV charging infrastructure for small businesses and what is the City's role in guiding this?

Key Considerations/ Challenges:

- Outreach and selection
- Revenue share + business incentive for participation
- Cost of mechanical upgrades
- Maintenance costs

What We're Doing

In 2023, in addition to continuing to install EV charging stations in our municipal parking lots, the City is launching two curbside public access EV charging demonstration projects.

The goal is to catalyze momentum towards further public and private investment, gauge public input, and build a process for scaled deployment:

- **Model 1: License the Right-of-Way (public/private partnership)**
- **Model 2: Public Ownership at City Assets**

We will also address outstanding EV policy needs and create a standard permitting process for **privately-owned EV charging options.**

Better Together Brain Trust

BECMA BLACK ECONOMIC COUNCIL of MASSACHUSETTS

EH ELECTRIC HVAC

IMPACT ENERGY

NPV ENERGY

flo

INTERNATIONAL BROTHERHOOD OF ELECTRICAL WORKERS LOCAL 103 IBEW

The Better Together Brain Trust (BT2) is ***a woman-led, minority and locally owned business enterprise based in Nubian Square****.*

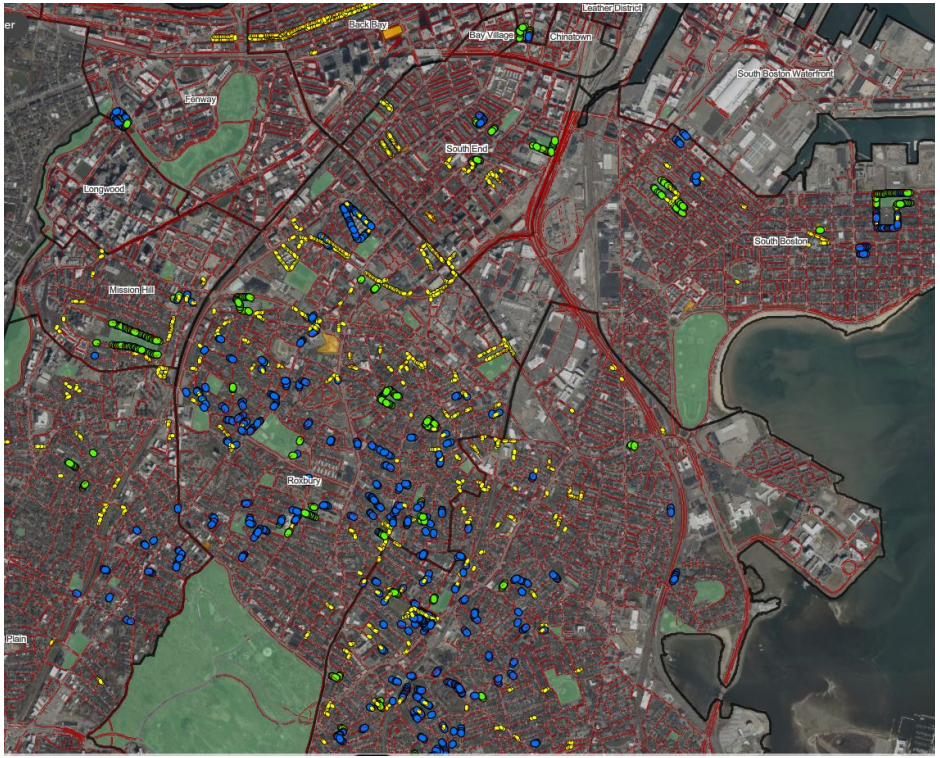
The partnership includes: Impact Energy, NPV Energy, EH Electric a local 103 affiliate, and is supported by the Black Economic Council of Massachusetts.

The EV charging partner is Flo, which will provide ongoing maintenance and operations support of the charging stations once installed.

What Type of EV Charging Station Will Be Installed

- Flo CoRe+ MAX dual or single port station with cable management
- Capable up providing up to 19.2kW of charge per hour (highest Level II)
- The station pedestal is 10” wide and seven feet tall; for comparison the City’s multi-space parking meters are roughly 19” wide and five and a half feet tall
- We have a local maintenance partner who will ensure stations are maintained and in good operating condition

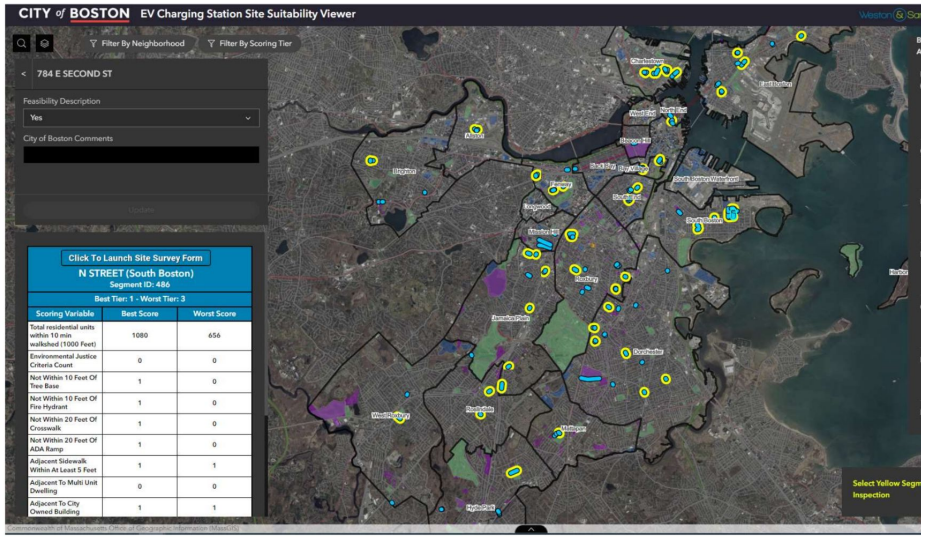
Consultant Supported Site Identification



Mapping Analysis

Using a set of criteria including, meet 5 minute-walkshed goal, prioritizing Justice 40 & EJ communities, meet ADA compliance, located near dense multi-unit dwellings, near city-owned buildings, accessible 24 hours a day, power capacity, space to locate electric infrastructure, community requested

Site Review and Final Selection



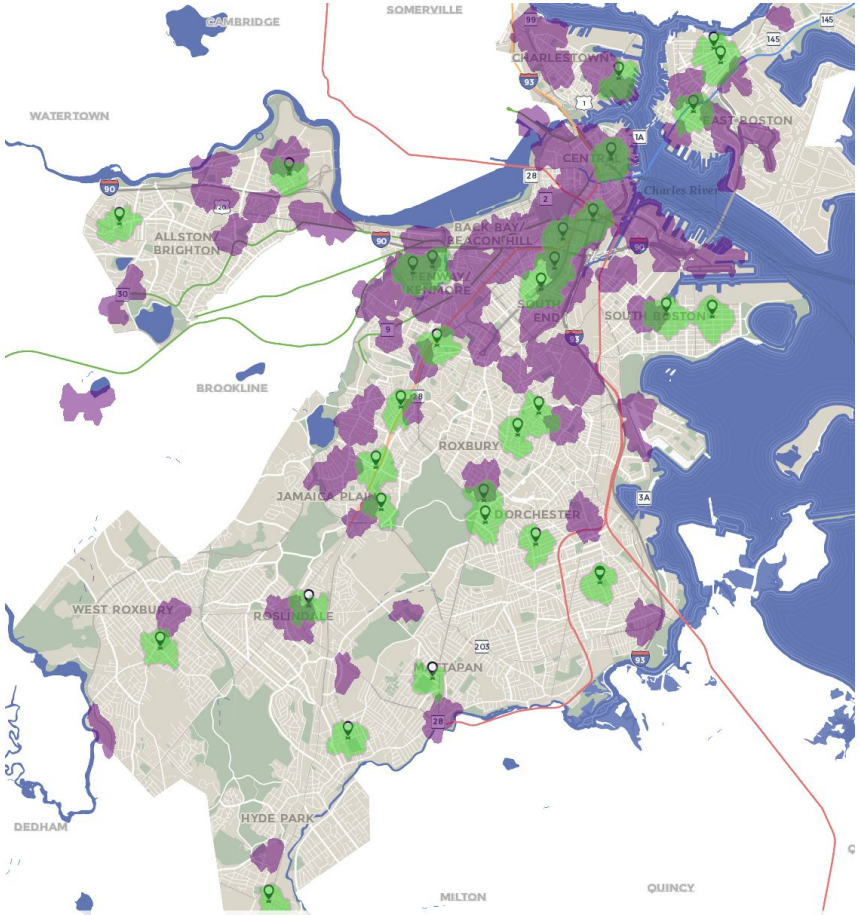
South Boston Maritime Park, South Boston, Seaport District

Address	600 D Street, South Boston
Number of Parking Spaces	6 Metered spaces
Hours	8 AM - 8 PM, then free unrestricted overnight parking
Ownership	MassPort?
Landmarks	Restaurant- BBQ in center of park, across the street on one side from pier/harbor
Site Description	- 5 feet of sidewalk - 9 feet of sidewalk at entrance - No ADA ramp from street to sidewalk - very central location in Seaport
Notes	- Check for LED street lighting - Would need to add ADA ramp, and would lose a parking space

Site Feasibility: 613 potential sites, narrowed it down to 65 for on-site feasibility analysis, final list of 33 sites

Internal input: Addressed potential conflicts with planned projects (BPDA); from from several departments; vetted by ONS, Mayor's Office, OEOI - reduced to 30 sites

Where Are the 30 Curbside Locations



- This map shows the current 5 minute walkshed in purple. The green is the added walkshed from stations being installed as part of this program
- Most sites are located to public amenities such as parks, libraries, and playgrounds
- Other sites are located near both multi-unit dwellings and small business commercial corridors

How Will Spaces Be Regulated

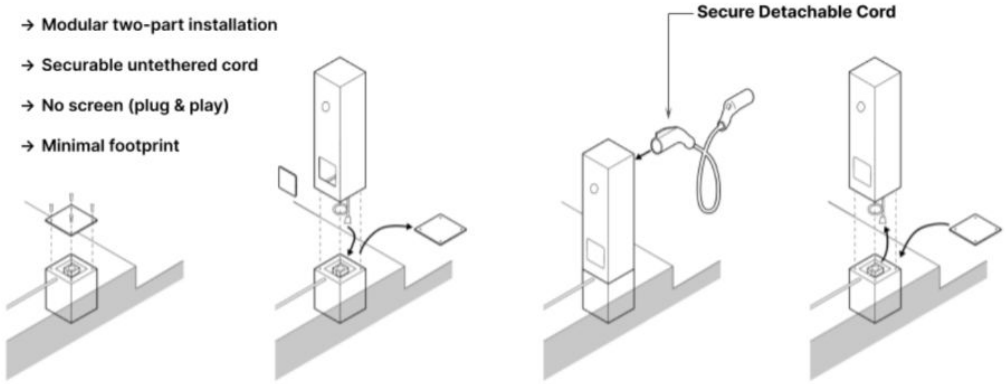
- The charging stations will be **accessible 24 hours a day 7 days a week**, and parking access will be regulated and enforced as **'*No Parking Except for Electric Vehicles While Charging, 4 Hour Limit*'**

- **Non-Electric vehicles**, electric vehicles parked and **not actively charging**, and electric vehicles parked **beyond the 4 hour time limit can all be ticketed** for occupying the spaces

- There will be a to be determined **cost of electricity consumed** between $0.25 and $0.35 per kWh, and there will be a small **overtime fee** to encourage vehicles to relocate once their charging session has ended

it's electric

- → Modular two-part installation
- → Securable untethered cord
- → No screen (plug & play)
- → Minimal footprint



Day 1: Install

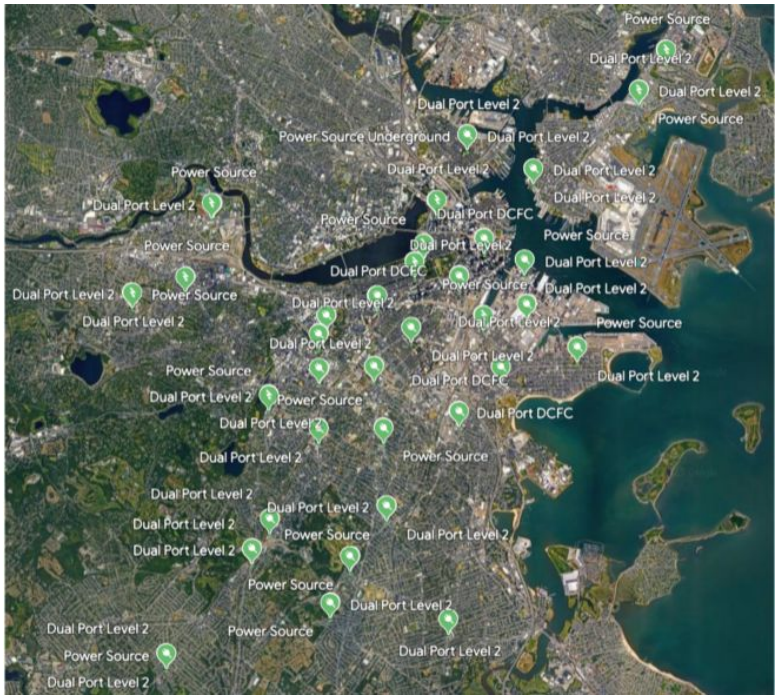
Day 2: Install

User Supplied Charging Cord

Post Repair / Replacement

greenspot

Proposed Locations



Level III Station in Brookline

Level II Station

Other Challenges

Internal Approval Process: Need to establish review requirements, standardized design, and a set of requirements for station operations

Budget: We had no budget for curbside charging going into this, available budget was for maintain what we already had

- **Cost**: around $1.2 million for 120 ports - expected costs to us is $400,000 for hardware and 3 years of operations

Staffing, Ownership, Coordination: There was no unified city-wide approach to EV charging - many departments with different interests; which department will manage and own the program, or will it be dispersed? There were no dedicated staff working on expanding public access EV charging

What we hope to learn

By implementing these demonstration projects we will improve our understanding of:

- Benefits & trade offs for no-cost options
- Private market's ability to address charging inequities
- Public preference for charging as a public vs private service
- Permitting and construction pain points
- Speed and scalability of differing implementation models
- Impacts of charging stations on grid planning and urban design
- Opportunities for workforce and small business development

BETTER TOGETHER BRAIN TRUST

BT2

IF YOU WANT TO GO FAST, GO ALONE; IF YOU WANT TO GO FAR, GO TOGETHER.

AFRICAN PROVERB

Our Founders

Shonté Davidson

Chief Executive Officer

Impact Energy

Nicole Price Voudren

Chief Operations Officer

NPV Energy

Edson Hilaire

Chief of Workforce Development

EH Electric & HVAC

Who We Are

- Headquartered in Boston, serving New England
- Over 50 years of collective experience in clean energy industries
- End to End consulting and turnkey energy installation services with a specific focus on transportation electrification
- Minority- and woman-owned business enterprise
- Pursuing PRF74 bid for Energy and Climate Action Project Advisory and Consulting Services
- Strategic Partnerships with VEH102 contract holders

What We Do

Energy Consulting, EVSE Site Assessments, & Turnkey Installations

Workforce Development, Community Outreach, & Clean Energy Training

EV Charging Grant and Utility Program Support

Why BT2?

BETTER TOGETHER BRAIN TRUST

We have been on both sides of these programs and can help you

We are deeply committed to building and supporting community as part of our service

We are wayfinders. We partner with our customers to navigate available resources.

CONTACT US

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Q&A

MassCEC Update

2/15/2024

On-Street Charging Solutions

MASSCEC - EVICC FUNDING PROPOSAL

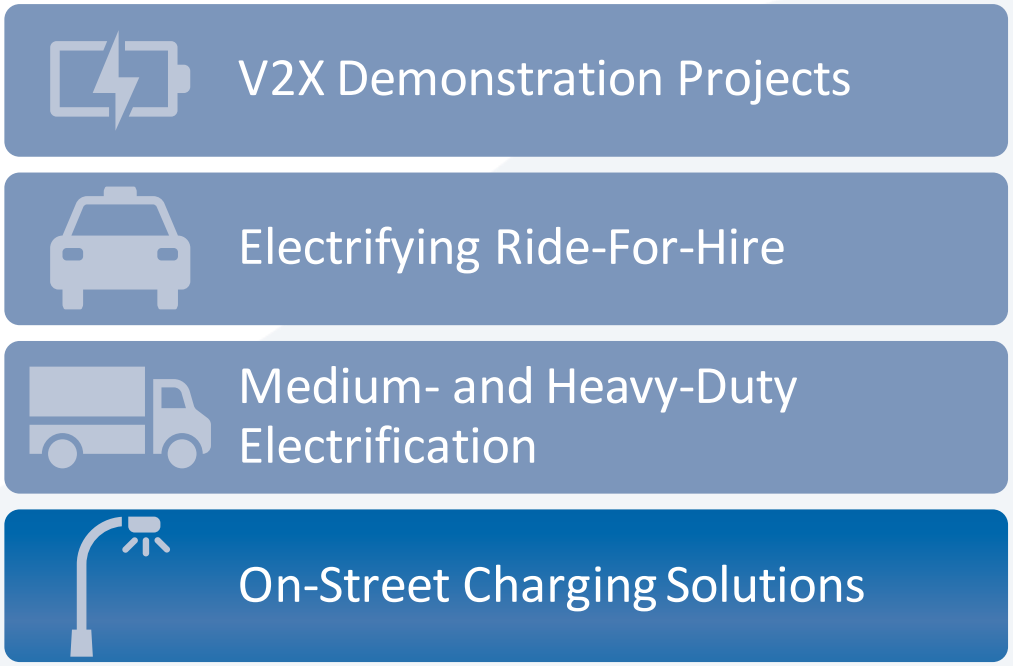
MASSACHUSETTS CLEAN ENERGY CENTER®

On-Street Charging

ELECTRIC VEHICLE INFRASTRUCTURE COORDINATING COUNCIL (EVICC) BACKGROUND

- Authorized by "An Act Driving Clean Energy and Offshore Wind" in 2022
  - Requires that EVICC assess and report on strategies and plans necessary to deploy electric vehicle charging infrastructure
    - In August of 2023, EVICC provided its Initial Assessment and recommendations to the legislature
  - Allocates $50 Million in funding towards charging station deployment projects
- MassCEC received $38 Million to run several programs under EVICC – press release

MASSCEC PROGRAMS



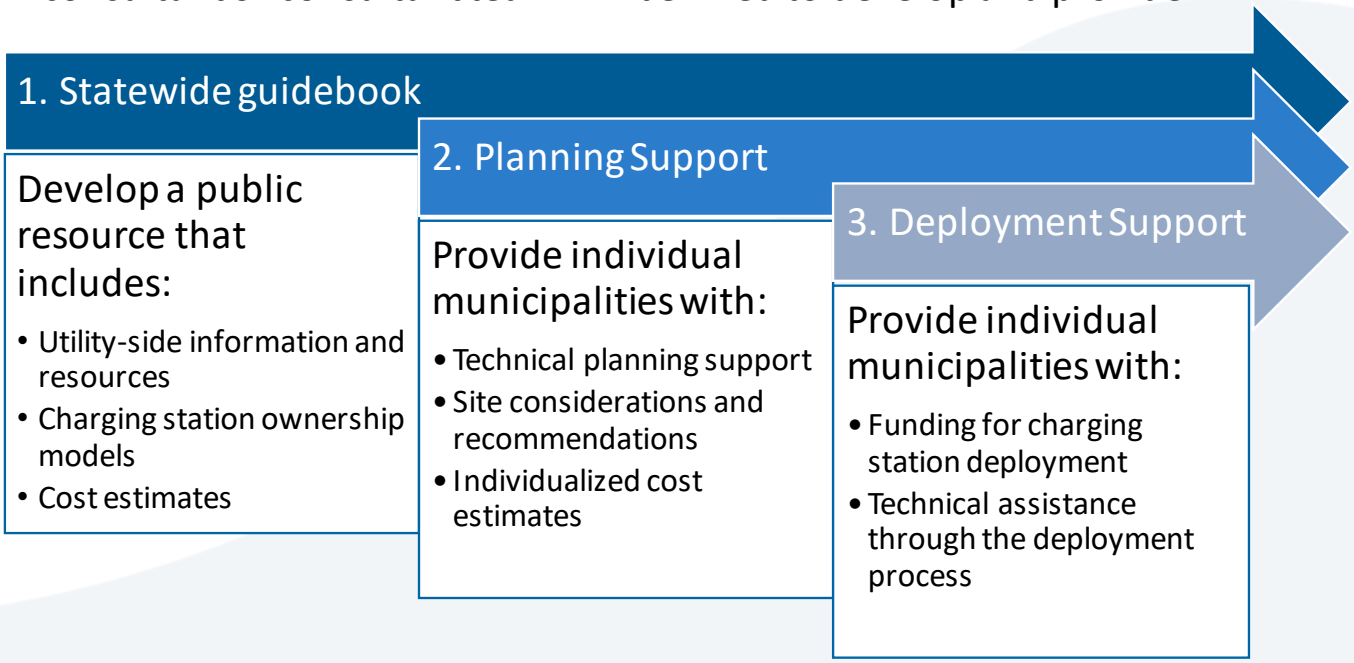
On-Street Charging

PROJECT DETAILS

- On-Street Charging Solutions Project
  - $12.5M in funding available
- Goals:
  - Deploy pole-mounted and streetlight charging
  - Create access to charging for residents who don't have access to off-street parking
- Geographic focus on:
  - Environmental Justice Communities
  - Communities with a high percentage of residents in multifamily housing

PROPOSED PROGRAM STRUCTURE

A consultant or consultant team will be hired to develop and provide:



Questions or Feedback?

Email us at CleanTransportation@MassCEC.com

Municipal Updates

Boston Public Schools

- Boston Public Schools launched an RFP to procure new "medium" electric school buses (hold 30 students)
- **Contact: Please feel free to reach out with any questions or comments to electric-school-bus@bostonpublicschools.org or cfields2@bostonpublicschools.org.**

Town of Concord

- Concord installed its first public Level 3 EV chargers in December after supply-chain and electrical service upgrade delays. The chargers, Flo stations with CHAdeMO and SAE Combo fast charger compatibility and a maximum charging rate of 100 kW, are at Rideout Park. The Town will consider adding Tesla charging capability in the future.
- In light of the news that the MA Correctional Facility on Route 2 (designated as a "high need" corridor for charging) will be closing, Eric has raised the possibility to the Town of adding a rapid EV charger to the property.
- The Town will have a summer intern focused on researching and outlining a strategy for public and municipal EV charging investments. Concord is interested in learning more about similar completed by other towns and cities.
- **Contact: Please feel free to reach out to esimms@concordma.gov with any related questions or comments.**

Updates

$50 Million Investment in EV Charging Infrastructure

- The Electric Vehicle Infrastructure Coordinating Council (EVICC) identified the need for funding to support EV charging infrastructure.
- Breakdown:
  - $12.5 Million: Electric Vehicle Curbside Parking for Residents in Multi-Unit Dwellings
  - $9.5 Million: Medium- and Heavy-Duty Electrification Mobile Charging Solutions
  - $8 Million: Ride-For-Hire Vehicle Electrification Charging Solutions
  - $8 Million: Vehicle-To-Everything (V2X) Analysis and Demonstration Projects
  - $9.5 Million: EV Charging at Priority State Facilities
  - $1.5 Million: EV Charging for Other State Vehicles
  - $604,000: EV Charging Testing Equipment
  - $396,000: EV Charging Needs Analysis
- Learn More: https://www.mass.gov/news/healey-driscoll-administration-announces-50-million-investment-in-electric-vehicle-charging-infrastructure

US EPA Clean School Bus Program

To date, the US EPA has awarded almost $79 million in federal funding for approximately 210 electric school buses in Massachusetts.

Awarded Grants in 2023	**Number of Buses**	**Amount Awarded**
Worcester Public Schools	85	$33.3 million
Boston Public Schools	50	$20 million
Awarded Rebates in 2022	**Number of Buses**	**Amount Awarded**
Lawrence	25	$9.875 million
New Bedford	14	$5.53 million
Fall River	10	$3.86 million
Lower Pioneer Valley Educational Collaborative	25	$9.875 million
Upper Cape Cod Vocational Technical	1	$395,000

Source: https://www.epa.gov/cleanschoolbus/events-related-clean-school-bus-program

The EPA anticipates awarding at least $500 million in funding under the 2023 rebate program in April 2024.

Updated Guidance on Federal EV Tax Credit

- Starting this year, car owners must purchase EVs from IRS qualifying dealers to receive the tax credit (either upfront or as a rebate).
- There is no list of registered dealerships so customers must check directly with dealerships.
- Learn more: https://blog.greenenergyconsumers.org/blog/new-rules-for-federal-electric-vehicle-tax-credit

How To Claim the Credit

So, if you would like to take advantage of the new or used EV tax credit, here are the steps you need to follow.

1. Confirm that your expected income for this tax year is under the required limit.
2. Make sure the dealership or store you're working with has registered with the IRS' Energy Credits Online portal (by asking a salesperson or General Manager).
3. Ask the salesperson you're working with to confirm via the Energy Credit Online portal that the particular vehicle you're considering qualifies for the federal tax credit.
4. When you purchase, make sure to receive a copy of (a) the time-of-sale report the dealer submitted *and* (b) a copy of the confirmation from the IRS of successful submission.
5. When it comes to tax season, file Form 8936, even if you don't normally file your taxes and even if you received the incentive at point-of-sale.

New England Parking Council Municipal Forum

A to Z on EVSE – What Municipalities Need to Know

- Who's Charging?
  Panel Discussion facilitated by MAPC to highlight Boston, Cambridge, Melrose's innovative and creative approaches to address public charging
    - Featuring EV working group members Charlie Creagh, Matt Warfield, and Alison Felix

- Focus on EV charging
- March 7, 2024 in Medford
- Full agenda: https://web.cvent.com/event/e5f70beb-d321-4587-871b-b57a09f0ce27/websitePage:645d57e4-75eb-4769-b2c0-f201a0bfc6ce
- Municipal Registration: $55 for members, $95 for non-members
- Register: https://web.cvent.com/event/e5f70beb-d321-4587-871b-b57a09f0ce27/regProcessStep1

Wrap Up and Next Steps

Wrap Up & Next Steps

Next Meeting April – date and agenda TBD

If you aren't already on our invite list, please email **ezehner@mapc.org** to be added for future meetings.

MAPC
METROPOLITAN AREA PLANNING COUNCIL