Electric Vehicle Infrastructure Coordinating Council (EVICC) Meeting

October 2, 2024

Agenda

Opening

- Roll call, approval of minutes, meeting agenda, objectives, rules for comments review (10 min) – EEA

Updates

- Related legislation (5 min) – EEA
- Electric Sector Modernization Plans (ESMP) Order (20 min) – DPU
  - Presentation plus clarifying questions
- Charging and Fueling Infrastructure (CFI) grants
  - Update on CFI awards (5 min) – DOER
  - Overview of recent CFI application (5 min) – MBTA/MassDOT
- Fall EV Events (5 min) – Recharge

Presentations

- Office of Environmental Justice and Equity Overview and EJ Community Siting Resource (5 min) – EEA
- Resources for the Future's EJ research (10 min) – Fordham University
- Union of Concerned Scientists (UCS; 10 min) – UCS
- Presentation Questions (up to 15 min)

Agenda (cont.)

Discussion

- List of proposed EVICC meeting presentations (5 min) – EEA facilitation
- Public Comment (up to 20 min) – EEA facilitation

Meeting Objectives:

1. Provide key updates about CFI and relevant events in MA this fall
2. Learn about Environmental Justice best practices related to EV charging
3. Ensure that planned EVICC meetings presentations for the next 11 months align with the state's public policies and greatest EVSE needs

Rules for Presentations / Public Comment

Presentations

- Presenters should keep to the assigned time
- The EVICC Chair will allow questions from EVICC members first and then the public if time remains

Public Comments

- Use the “raise hand” function to indicate your desire to speak at the appropriate time
- Identify yourself and affiliation prior to commenting
- Limit comments and questions to 3 minutes
- Please engage in constructive and respectful dialogue
- Be able to substantiate assertions or claims in support of comments

Legislative Update

- **March 2024 Supplemental Budget Bill**
  - Included electric vehicle and charger procurement updates
  - Signed into law as Chapter 206 on September 17, 2024
- **Legislative Climate Bills**
  - Senate Bill 2838 and House Bill 4876
  - Each include several provisions related to electric vehicles and chargers
- **Mass Leads Economic Development Bill**
  - House Bill 4804
  - Includes provisions related to electric vehicle charger registration

Provisions Related to EVICC Recommendations

Bill / Law	Section	Topic	First EVICC Assessment Recommendation	Status	Notes
Chapter 206 (March Supplemental Budget)	4	Updates electric vehicle (EV) procurement statute to allow government entities to procure EVs and electric vehicle supply equipment (EVSE) together	Agency-specific recommendation #8	Signed into law on September 17, 2024	Similar language in Sections 39, 40, and 151 of S.2838 and Section 19A of H.4876
S.2838 (Senate Climate Bill)	34, 35	Updates the energy efficiency standards for EVSE	Recommended legislative actions #3	In conference committee	Related language in Sections 15 and 16 of H.4876
S.2838 (Senate Climate Bill)	104, 105	Authorize condo associations to install energy efficiency devices in individual units and EV chargers in common areas	Recommended legislative actions #2		N/A
	106	Authorize an individual unit owner to install an EV charger in or on the owner's property within a condominium, homeowners association, historic district or neighborhood conservation district			
H.4804 (Mass Leads Bill)	121, 160	Requires all EVSE to register with the Division of Standards (DOS) and provides DOS with inspection and enforcement authority	Recommended legislative actions #1 and 4		Sections 59 and 149 of S.2838 addresses similar topics

Additional EVSE-Related Provisions

Bill / Law	Section	Topic	Status
S.2838 (Senate Climate Bill)	6	Requires the Executive Office of Energy and Environmental Affairs to regulate aspects of EVSE performance	In conference committee
S.2838 (Senate Climate Bill)	116, 117	Adds members to EVICC, which vary by bill, but includes adding the Attorney General and Massachusetts Clean Energy Center	
H.4876 (House Climate Bill)	67, 68		
S.2838 (Senate Climate Bill)	118, 119	Emphasizes existing responsibilities and adds new responsibilities to EVICC, including explicitly requiring EVICC to evaluating charging infrastructure for medium- and heavy-duty trucks	
H.4876 (House Climate Bill)	72	Requires a forecast of EV charging demand for highway charging hubs and enables proactive deployment of electric grid infrastructure to meet demand	
S.2838 (Senate Climate Bill)	142	Requires the Department of Public Utilities to establish regulations to provide pole-mounted EVSE and EVSE in the public right of way	

Electric Sector Modernization Plans

D.P.U. 24-10, NSTAR Electric

D.P.U. 24-11, National Grid

D.P.U. 24-12, Unitil

Department of Public Utilities ("DPU")
Presentation to Electric Vehicle
Infrastructure Coordinating Council

October 2, 2024

Summary

- DPU approved the Electric Sector Modernization Plans (“ESMPs”) with modifications for a term of 7/1/25 – 6/30/30
- ESMPs are strategic planning documents to meet 2022 Clean Energy Act objectives
- DPU approved the distinction between core investments and ESMP investments
- ESMPs comply with 5- and 10-year forecast and demand assessment requirements
- Each electric distribution company (“EDC”) must file biannual reports, including targeted resiliency investments, on 3/31 and 9/30 with first report due 9/30/25
- DPU is amenable to EDC electric vehicle (“EV”) program extensions and provided instructions to the EDCs on next steps
- DPU recognizes potential benefits of flexible interconnection program that includes EV infrastructure
- ESMPs will produce net benefits, and it is appropriate to omit non-ESMP investments from net benefits analysis
- DPU provides Grid Modernization Advisory Council (“GMAC”) and utilities more time to prepare and review the next ESMP filings

Summary of Planned and Proposed Investments Through June 2030 (Capital)

Category	Summary	Recovery	Eversource	National Grid	Unitil
			CAPEX $ Millions for 2025 - 2029		
Core Capital	Programs to support safe and reliable service, including equipment repair, new customer connections, peak load growth, maintaining reliability in line with Service Quality metrics	Base rate recovery	$4,482M, Sec. 6.5 to 6.8	$4,248M, Sec. 6.1	$79.3M, Table 1 Section 6.3.1
CIP	Substation and line upgrades to enable DER interconnections with cost allocation	Individual projects filed with DPU	$340M, Sec. 6.5 to 6.8	$229M, Sec. 6.1	N/A
AMI	Deployment of meters, supporting technology, customer data sharing, outreach	Grid Mod Mechanism	$448M, Sec. 6.3	$295M, Sec. 6.1	$0.4M, Table 15 Section 6.3.1
Solar	Utility-owned solar and energy storage in applications that support community climate resilience	Individual projects filed with DPU	$112M, Sec. 6.1	N/A, Sec. 6.11 [Future proposal]	N/A [Previously installed]
Grid Mod	Technologies to increase grid visibility and control, integrate DER and support peak demand reduction	Grid Mod Mechanism	$47M, Sec. 6.3	$79M, Sec. 6.1	$3.6M, Table 15
EV Program	Deployment of EV make-ready and charging infrastructure	EV Mechanism	$35M, Sec 6.1	$17M, Sec. 6.1	$0.6M, Section 6.1.2
Customer Investments (VPP Enablement)	Platform technologies, customer compensation fund demonstration and studies to advance VVP programs for DER as grid assets, customer portals	**INCREMENTAL ESMP**	$70M, Sec 6.3	$31M, Sec 6.11	$0.2M, Section 6.3.2.1
Platform Investments	ADMS/DERMS, billing capabilities to support time varying rates, cybersecurity, telecommunications, intelligent data capture	**INCREMENTAL ESMP**	N/A [Included in Core Capital, AMI and VPP enablement]	$323M, Sec 6.3	$0.7M, Section 6.3.2.2
Network Investments	New substation and distribution line upgrades to support electrification load growth and DER interconnections, VVO and automation	**INCREMENTAL ESMP**	N/A [Included in Core Capital]	$1,576M, Sec 6.4 - Sec 6.10	$42.5M, Section 6.4
Resiliency	Undergrounding, reconductoring and other storm hardening infrastructure upgrades	**INCREMENTAL ESMP**	$225M, Sec. 10	[Included in upcoming rate case]	$5M, section 10.3
CIP	Substation and line upgrades to enable DER interconnections with cost allocation	**INCREMENTAL ESMP**	$262M, Sec. 6.6 to 6.7	$71M	N/A
EV Infrastructure	Continuation of existing EV make ready and charging infrastructure enablement programs	**INCREMENTAL ESMP**	$52M, Sec. 6.1	$53M, Sec. 6.11	$0.8M, Section 6.1.4

Summary of Planned and Proposed Investments Through June 2030 (O&M)

O&M Category	Summary	Recovery	Eversource	National Grid	Unitil
			$ Millions for 2025 - 2029		
Electric Operations	Programs to support safe and reliable service, including equipment repair, new customer connections, peak load growth, maintaining reliability in line with SQ	Base rate recovery	$814M	$1,158M	$21.5M
Storm	Estimates of storm costs for response during critical events	Base rate recovery	$114M	$169M	$13.4M
Business Support	Costs for support of operations including Finance, Human Resources, Legal, Communications, and IT	Base rate recovery	$1,254M	$1,251M	$22.5M
Customer	Costs to support customer experience including communications, billing, and other programs	Base rate recovery	$298M	$486M	$8.5M
EV Program	Deployment of EV make-ready and charging infrastructure	EV Mechanism	$78M	$109M	$0.3MA
Energy Efficiency, Electrification and Demand Response	Assumes continuation of the Company's most recent three-year EE plan (2022-2024) to administer various EE, DR, and EHP incentives programs as part of Mass Save.	Energy Efficiency docket	$2,625M	$2,529M	$40M
Grid Mod	Technologies to increase grid visibility and control, integrate DER and support peak demand reduction	Grid Mod Mechanism	N/A	$7M	$1.4M
CIP	Substation and line upgrades to enable DER interconnections with cost allocation.	Individual projects filed with DPU	N/A	$6M	N/A
AMI	Deployment of meters, supporting technology, customer data sharing, outreach to customers	Grid Mod Mechanism	$91M	$117M	N/A
Network Investments	Operating costs associated with network investments	**INCREMENTAL ESMP**	N/A	$58M	N/A
Grid Technology	Platform technologies, customer compensation fund demonstration and studies to advance VVP programs for DER as grid assets, customer portals	**INCREMENTAL ESMP**	$44M	$146M	$0.8M
Solar	Continuation of existing Solar/Storage community program	**INCREMENTAL ESMP**	$50M	[not included in ESMP]	N/A
Electric Vehicles	Continuation of existing EV make ready and charging infrastructure enablement programs	**INCREMENTAL ESMP**	$117M	$246M	$0.4M
ESMP Program Administration	Program administration of incremental ESMP projects	**INCREMENTAL ESMP**	N/A	$20M	$0.4M

Variations in Forecasts: EVs

NSTAR Electric:

- Followed the trajectory for EV adoption outlined in the 2050 MA Clean Energy and Climate Plan ("CECP") (akin to the 2050 Roadmap "All Options" pathway).
- In the baseline scenario, 96% of light-duty vehicles and 55% of medium- and heavy-duty vehicle stock within MA is an EV by 2050.
- Used vehicle mobility data and on-board telematics data to model the EV charging load profiles.
- Charging stations for light-duty vehicles are accounted for through the step load tracking process.
- EV charging impact on NSTAR Electric's system peak is expected to increase to:
  - 267 MW by 2029
  - 600 MW by 2033
  - 4,186 MW in 2050

Variations in Forecasts: EVs

National Grid Electric:

- Included plug-in hybrid EVs and battery-only EVs.
- Based the light-duty EV sales base case on California's Advanced Clean Cars II rules, which have been adopted by MA.
- Based the sales for medium- and heavy-duty EV and E-buses on California's Advanced Clean Trucks rules, which have been adopted by MA.
- Load forecast used EVI-Pro Lite tool to estimate EV charging profiles.
- EV charging impact on National Grid's electric system peak is expected to increase to:
  - 215 MW by 2029
  - 760 MW by 2034
  - 3,110 MW in 2050

Variations in Forecasts: EVs

Unitil:

- Included plug-in hybrid EVs and battery-only EVs.
- Used ISO-NE information on the number of EVs currently registered in MA to estimate the current number of EVs in the Unitil service territory.
- Used the ISO-NE EV Adoption Forecasts to project the number of EVs.
- Used the Edison Electric Institute report to forecast the number of chargers and EV charging profile.
- EV charging impact on Unitil's electric system peak is expected to increase to:
  - 4.6 MW by 2029
  - 8.7 MW by 2034
  - 98.5 MW in 2050

Decision:

- Approved EV forecasts because although the EDCs used different information sources to develop EV adoption forecast and charging profiles, they may use their own assumptions provided they meet their allocated share towards MA decarbonization goals.

Variations in Demand Assessment: EVs

NSTAR Electric:

- Considered the number and type of EVs, number of chargers, kW charger size, and charging load profile.
- Developed charging profile using vehicle mobility data assuming that vehicles charge upon trip termination with charging based on previous trip's length.
- Assumed medium- and heavy-duty EVs charge overnight at depots or on routes traveled for long-distance trips.

National Grid Electric:

- Considered the number of EVs, number of chargers, kW charger size, and charging load profile.
- The charging profile was based on the ISO-NE study.

Variations in Demand Assessment: EVs

Unitil:

- Considered the number of EVs, number of chargers, kW charger size, and charging load profile.
- The charging profile was based on the ISO-NE study and Edison Electric Institute data.

Decision:

- All EDCs shared the Statewide Climate Benchmark data set out in the 2050 CECP.
- The EDCs disaggregated the EV fleet into light-, medium-, and heavy-duty ("MDHD") EVs to develop model input assumptions.
- Approved EV demand assessments because although the EDCs used different information sources to develop EV adoption forecast and charging profiles, they may use their own assumptions provided they meet their allocated share towards MA Decarbonization goals.

Electric Vehicle Programs

	Current Program	ESMP Proposal
NSTAR Electric	Preapproved through 2026: $35.4M capital expenses; $78M in operations and maintenance ("O&M") costs; cap = $188M	Extend existing Phase II Make-Ready and Charging Infrastructure Program through 2029; retain similar budget
	Make-ready and EVSE rebates, fleet assessment services, MDHD fleet pilot for EJ pop, DCFC hub pilot for EJ pop	Make-ready and EVSE rebates, fleet assessment services, MDHD fleet pilot for EJ pop, DCFC hub pilot for EJ pop; directed to create flexible interconnection in next ESMP
National Grid	Preapproved through 2026: $17M capital expenses; $109M in O&M costs; cap = $206M	Extend existing Phase III Make-Ready and Charging Infrastructure Program through 2029; retain similar budget
	Make-ready and EVSE rebates, fleet assessment services, off-peak charging rebate program	Make-ready and EVSE rebates, fleet assessment services, off-peak charging rebate program; EV flexible connection
Unitil	Preapproved through 2027: $0.6M for 2025-2027; cap = $998,000	Extend existing Phase I Program through 2029; double budget
	Make-ready rebates for public and residential, EVSE rebates for low-income residential	Make-ready rebates for public and residential, EVSE rebates for low-income residential; directed to create flexible interconnection in next ESMP

Electric Vehicle Programs

Next Steps

- Future company proposals relating to EV programs shall be submitted as separate filings and subject to the precedent and tariffs for those existing mechanisms. Should the EDCs seek approval of an extension of their existing EV programs, they must file a separate petition for the Department's approval of the EV program extension request.

- The Department directed NSTAR Electric and Unitil to develop and include an EV flexible interconnection offering in their next ESMP filings. The Department encouraged NSTAR Electric and Unitil to collaborate with National Grid to build on lessons learned from National Grid's flexible connections for EVs offering to develop similar programs.

EDC Approach to Net Benefit Analysis

- EDCs worked with consultant to establish consistent approach, including (1) investment/benefit definitions; (2) model build and data collection; and (3) feedback and incorporation (e.g., validation, quality control, etc.).
- The analysis is similar to the “business case” analyses used to support preauthorization of grid modernization investments.
- The net benefit analysis only includes proposed ESMP investments; planned and “core” investments, and alternatives to those investments, were excluded.
- EDCs’ net benefits analyses do not consider the distribution of costs and benefits to specific locations or customer groups.

Quantitative and Qualitative Benefits

QUANTITATIVE

The benefits to which monetized value can be determined and attributed.

The EDCs captured the following monetized benefits:

- Reduced GHG emissions & air pollutants
- Minimization or mitigation of impacts on the ratepayers of the Commonwealth
- Grid reliability and resiliency

In addition, the EDCs captured economic benefits for the following categories, using the RIMS model:

- Indirect jobs impact (via RIMS model)
- Economic development and workforce investment (via RIMS model)

Note: These charts derive from each EDC's net benefits exhibits.

QUALITATIVE

Benefits that have a level of complexity that render their quantification challenging. All investment categories have several qualitative benefits.

The EDCs captured the following qualitative benefits:

- Safety
- Grid Reliability and Resiliency
- Facilitation of the electrification of transportation and buildings
- Integration of DERs
- Avoided renewable energy curtailment
- Reduced GHG emissions & air pollutants
- Avoided land use impacts
- Minimization or mitigation of impacts on the ratepayers of the Commonwealth
- Environment Justice Communities Impact
- Economic development and workforce investment

Quantified Costs and Benefits

		Nominal ($M)	Present Value ($M)
Eversource	Benefits	2,912	1,092
	Costs	835	643
	Net Benefits	**$ 2,077**	**$ 449**
National Grid	Benefits	8,588	2,990
	Costs	3,182	2,155
	Net Benefits	**$ 5,406**	**$ 835**
Unitil	Benefits	139.0	42.9
	Costs	53.4	42.1
	Net Benefits	**$ 85.6**	**$ 0.8**

- The EDCs modeled the costs and benefits over the lifetime of the asset or out to 2050, which ever occurs sooner, for all proposed investments in-service by 2029.
- The quantified benefits are largely driven by estimated GHG emissions and air pollutant reductions associated with the enablement of capacity to electrify transportation and buildings and assumes customer adoption of clean energy solutions.

Procedural Equity

- The EDCs proposed to establish a Community Engagement Stakeholder Advisory Group ("CESAG") to develop a framework for community and stakeholder engagement.
- DPU approved the creation of the CESAG, which will be co-chaired by a representative from the EDCs and a community-based organization ("CBO").

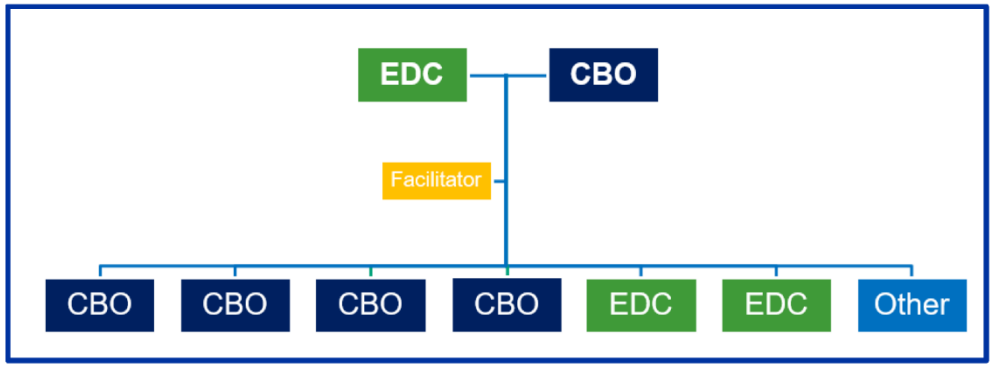


Figure 7 – CESAG Proposed Structure

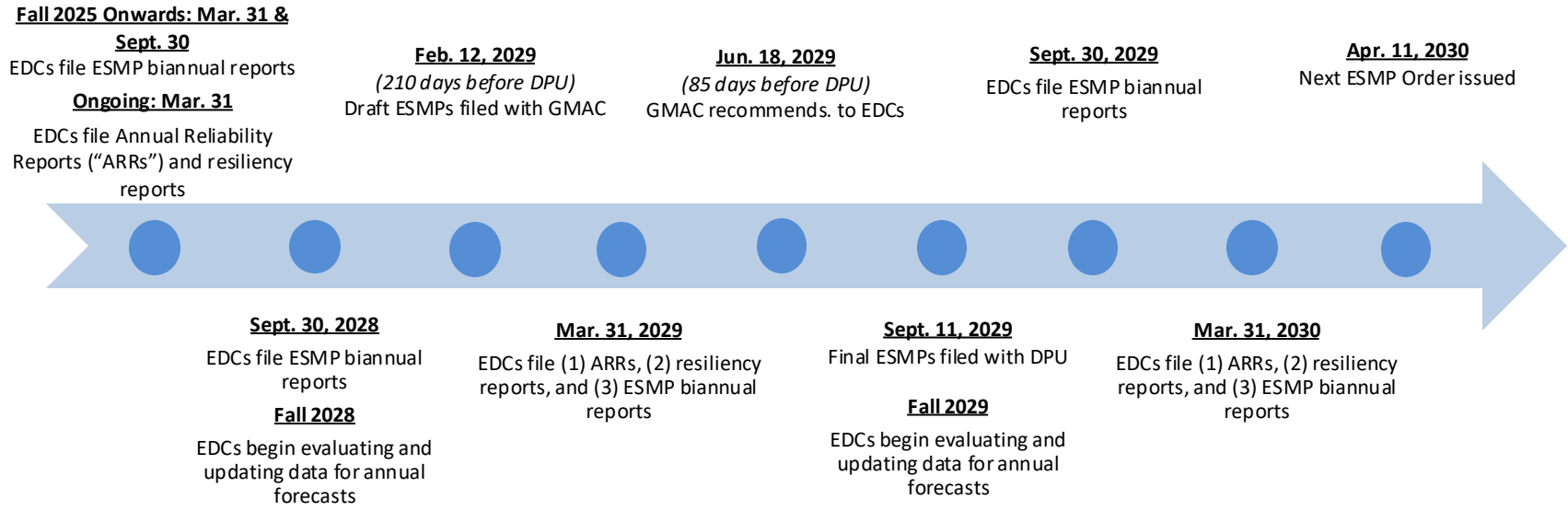
- DPU directed the EDCs to work with CESAG to develop minimum requirements for community engagement and outreach. Pending legislation, if enacted, would require EEA to establish community benefit agreements guidelines and will impact how such agreements are implemented.

Equity Framework

- DPU approved the EDCs' equity framework.
- The EDCs proposed equity-related metrics (for reporting purposes):
  - Number of meetings with municipal leaders, CBOs, and customers;
  - Number and category of requests made as part of stakeholder feedback on specific ESMP infrastructure projects; and
  - Percentage of the increase in DER hosting capacity and load serving capacity from ESMP investments in EJ populations.
- DPU will consider these metrics in a later phase in these proceedings, consistent with the Interlocutory Order on Scope.

Future Filing Dates

Illustrative of March 31/September 30 biannual reporting deadlines and later ESMP filing deadlines in 2028 through 2030:



- DPU encouraged EDCs to work with GMAC and stakeholders throughout ESMP term.
  - DPU noted that the Legislature included the EDCs as non-voting members of the GMAC thereby creating an entity rooted in significant collaboration between the GMAC voting members and the EDCs.
- DPU gave more time to GMAC to review future draft ESMPs and to EDCs in responding to GMAC recommendations.

Massachusetts CFI Funded Community Charging Awards Round 1/1B (2023-2024)

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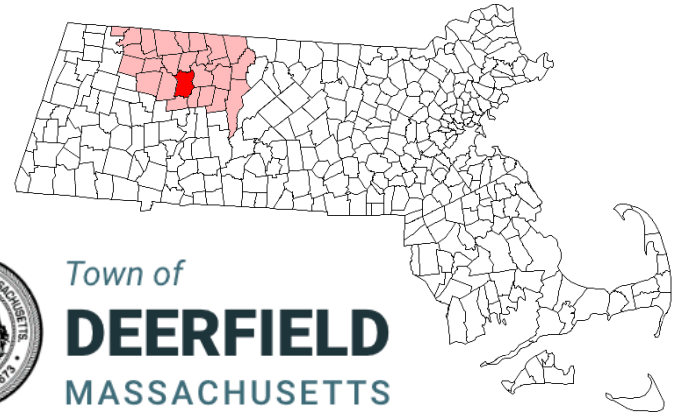
Massachusetts Department of Energy Resources,
Leading by Example Division

DOER
Massachusetts Department of Energy Resources

MA CFI Community Charging Grant Awards & Applications

MA CFI Round 1 Awards (one – municipal; announced 9/20/2023)



- Town of Deerfield – watch video of lead applicant (6 minutes)
  - $2.5M for one downtown location eligible for either ‘Community’ or ‘Corridor’
  - Least densely-populated county; low-income are and proximity to EJ
  - DOT feedback on favorability due in part to being “shovel ready”
  - Construction already started Aug ‘24; est. completion in spring ‘25

Town of DEERFIELD MASSACHUSETTS

MA CFI Round 1B Awards (two – one state agency, one municipal; announced 8/27/24)

- MA DCR Public Access Charging Program
  - $1.2M CFI funding ($1.5M total budget)
  - <25 L2 only sites to be selected from 200
  - Focus on rural and/or EJ serving sites

dcr Massachusetts

- Recharge Boston: Making EV Charging Publicly Available in Every Neighborhood
  - $15M CFI funding ($18.75M total budget)
  - 300+ ports, combination of Level 2 and 3, Lots, curbside and mobility hubs
  - Specific focus in EJ communities and filling in gaps in 10-minute walkshed

Recharge Boston

Thank You

Mark Scribner (he/him)
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Massachusetts Department of Energy Resources,
Leading by Example Division
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https://www.mass.gov/leading-by-example-program

DOER
Massachusetts Department of Energy Resources

MassDOT CFI Grant Application 2024

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Agenda

- CFI Grant Background
- MassDOT/MBTA Partnership
- CFI Grant Approach
- Approximate Timeline
- Grant Funding Use

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Presentation Participants

MassDOT

- Chris Aiello
  - Senior Counsel – Climate Initiative

MBTA

- Kat Eshel
  - Senior Director, Climate Policy and Planning

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CFI Grant Background

- **FHWA put out CFI Grant Round 2**
  - Dispersing funding through IIJA (also known as Bipartisan Infrastructure Law)
  - $800 million in total funding available
  - Projects up to $15 million in funding eligible for 80%-20% Federal-State match
  - Applications were due September 11
- **Two types of grants: Corridor and Community**
  - Corridor grants for projects directly related to vehicle fueling and only along dedicated Alternative Fuel Corridors
  - MassDOT and MBTA pursued the community grant meant for projects reducing emissions and filling gaps in fueling infrastructure

MassDOT/MBTA Partnership

- **Leveraging each agency's mandate and assets**
  - MassDOT has been implementing NEVI Plan that focuses on deployment of DCFC at service plazas
  - MBTA is mandated under 2022 state climate law to deploy EV charging stations at 5 commuter rail lots, 5 subway lots and 1 ferry terminal lot
  - 2 sets of parking facilities
    - MassDOT owned Park and Ride lots
    - MBTA-owned transit station parking lots
  - Variety of use cases: commuters parking for long periods of time, garage orphans with limited access to public charging in dense urban areas, ride-hailing operators…
  - Opportunities present by EV charging
    - Additional amenity that supports multi-modal and decarbonized trips
    - Use cases that can be met with Level 2 charging

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MassDOT's CFI Grant Approach

- **MassDOT has prepared MATRICES joint application with MBTA**
  - Short for "**MA**ssachusetts **T**ransit **R**egional **I**nnovative **C**harging **E**xpansion **S**trategy"
  - Requesting $14.4 Million in Funding over 5 years out of a total of $18 million
  - MassDOT CFI Program Vision: Promote EV adoption, both passenger and fleet
- **Emphasis on Multimodal Hubs**

	Number of Locations	Level 2 Ports	Level 3 Ports
MBTA Rapid Transit Station	8	127	0
MBTA Commuter Ferry Station	2	15	0
MBTA Commuter Rail	14	205	0
MassDOT Park and Ride Facilities	6	111	14
Total	**30**	**458**	**14**

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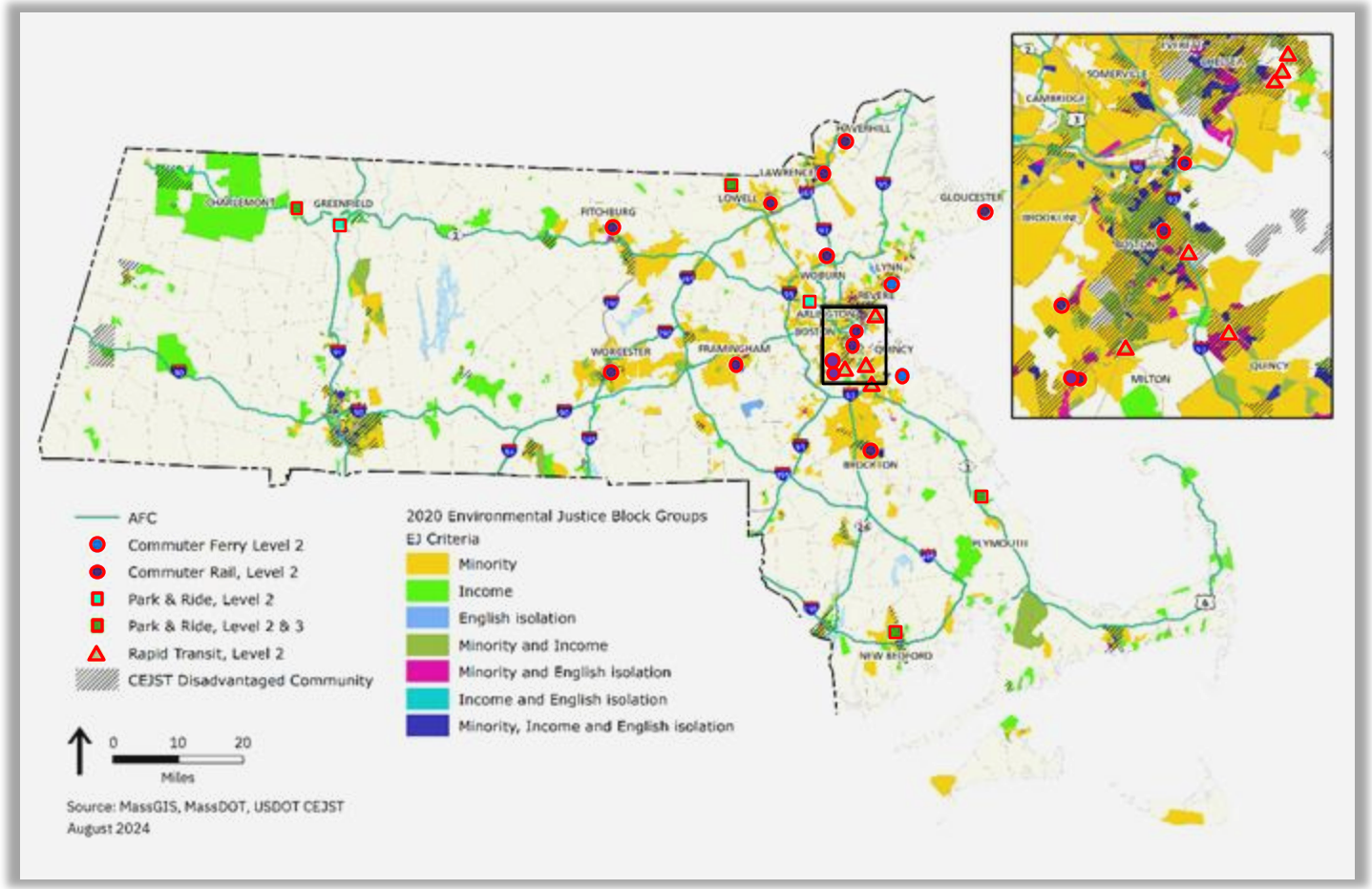
MassDOT's CFI Grant Approach (cont.)

- **Massachusetts Environmental Justice (EJ) and Climate Equity and Justice Screening Tool (CEJST) communities**
  - 77% of new ports to be located within EJ communities
  - Public engagement with EJ communities online and through local community organizations
- **Presence of multi-unit housing near project locations**



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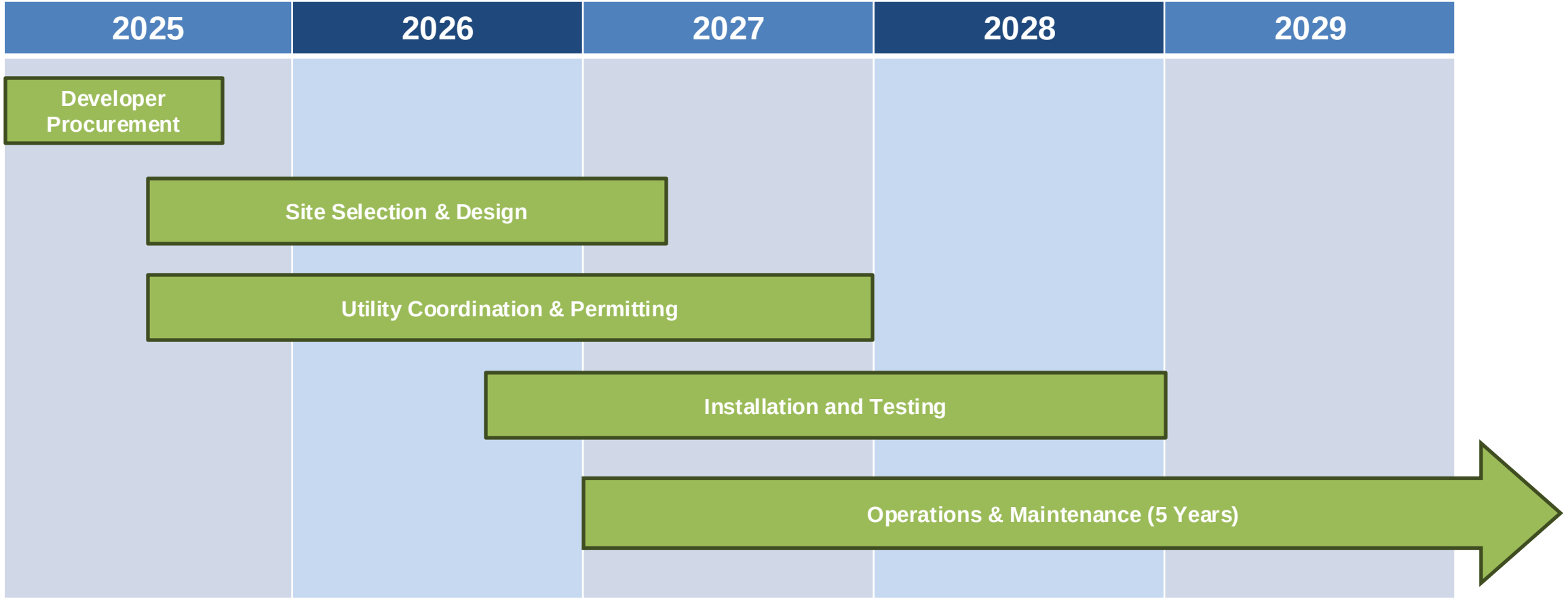
Approximate Timeline



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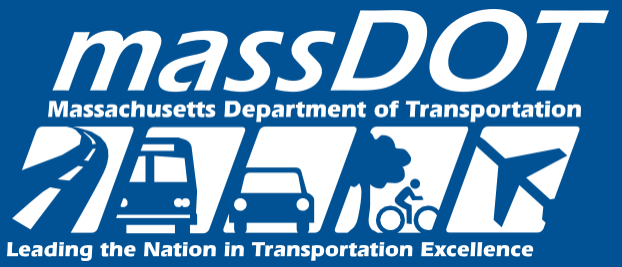
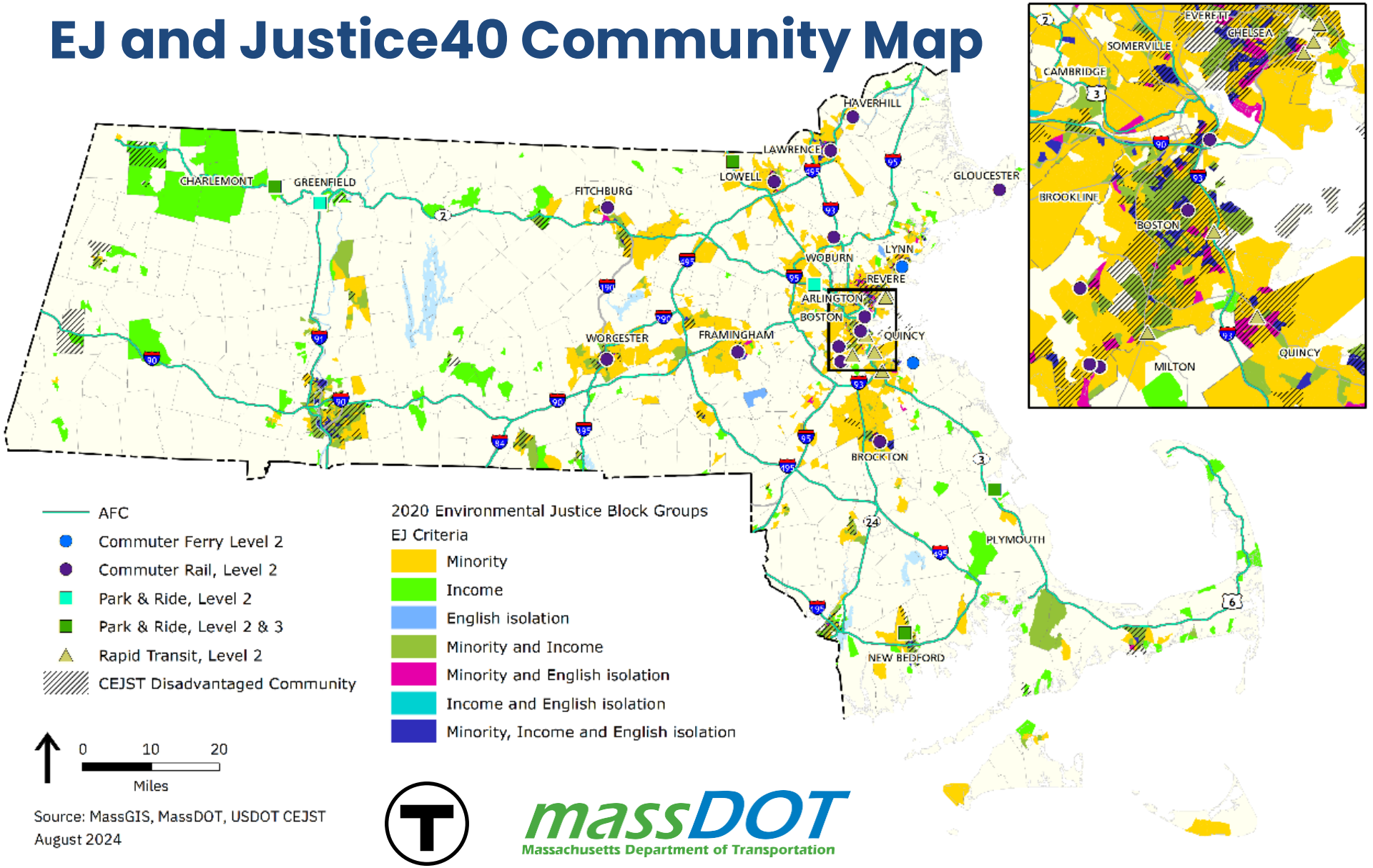
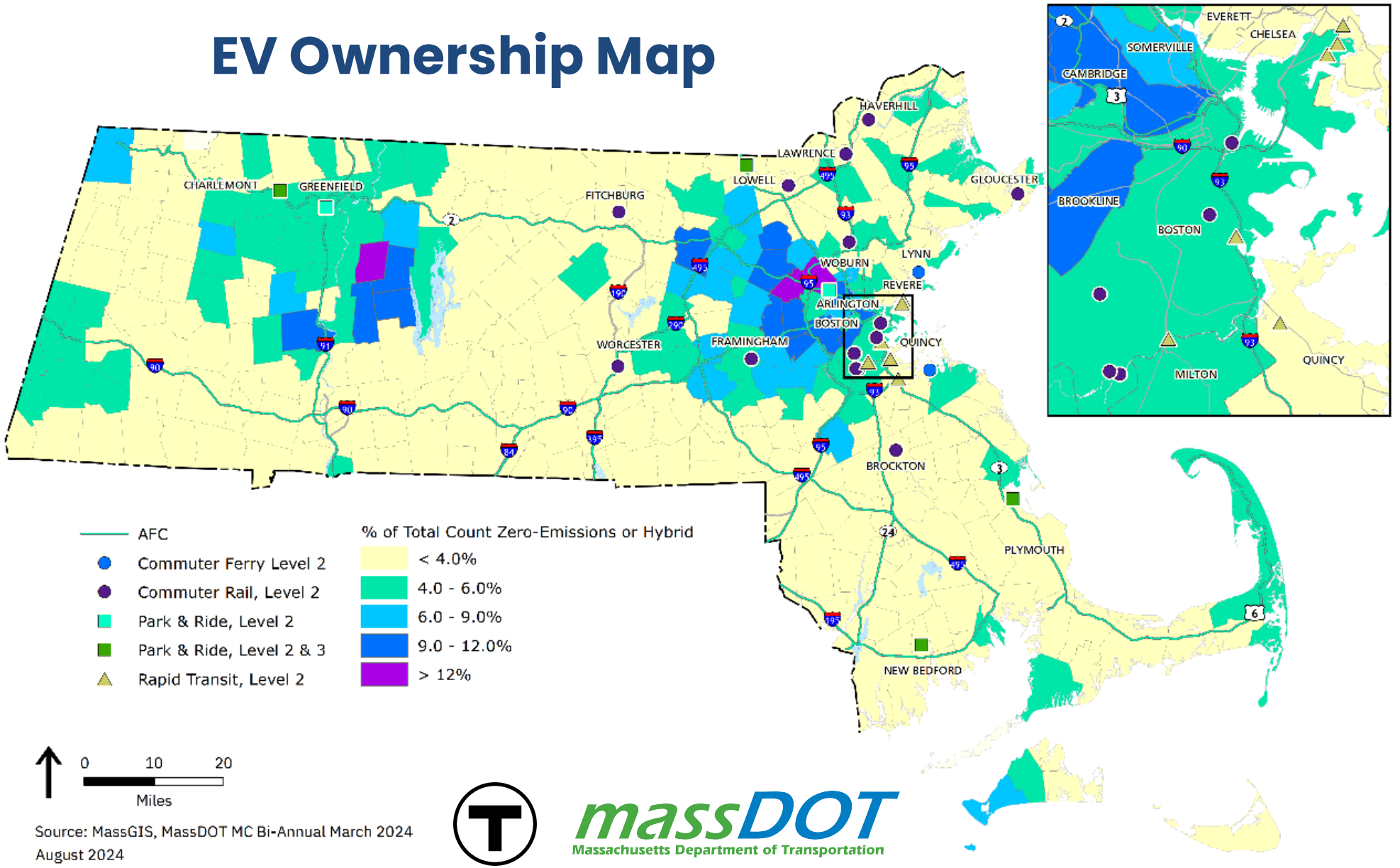
Extra Slides



EJ and Justice40 Community Map



EV Ownership Map



Source: MassGIS, MassDOT MC Bi-Annual March 2024
August 2024

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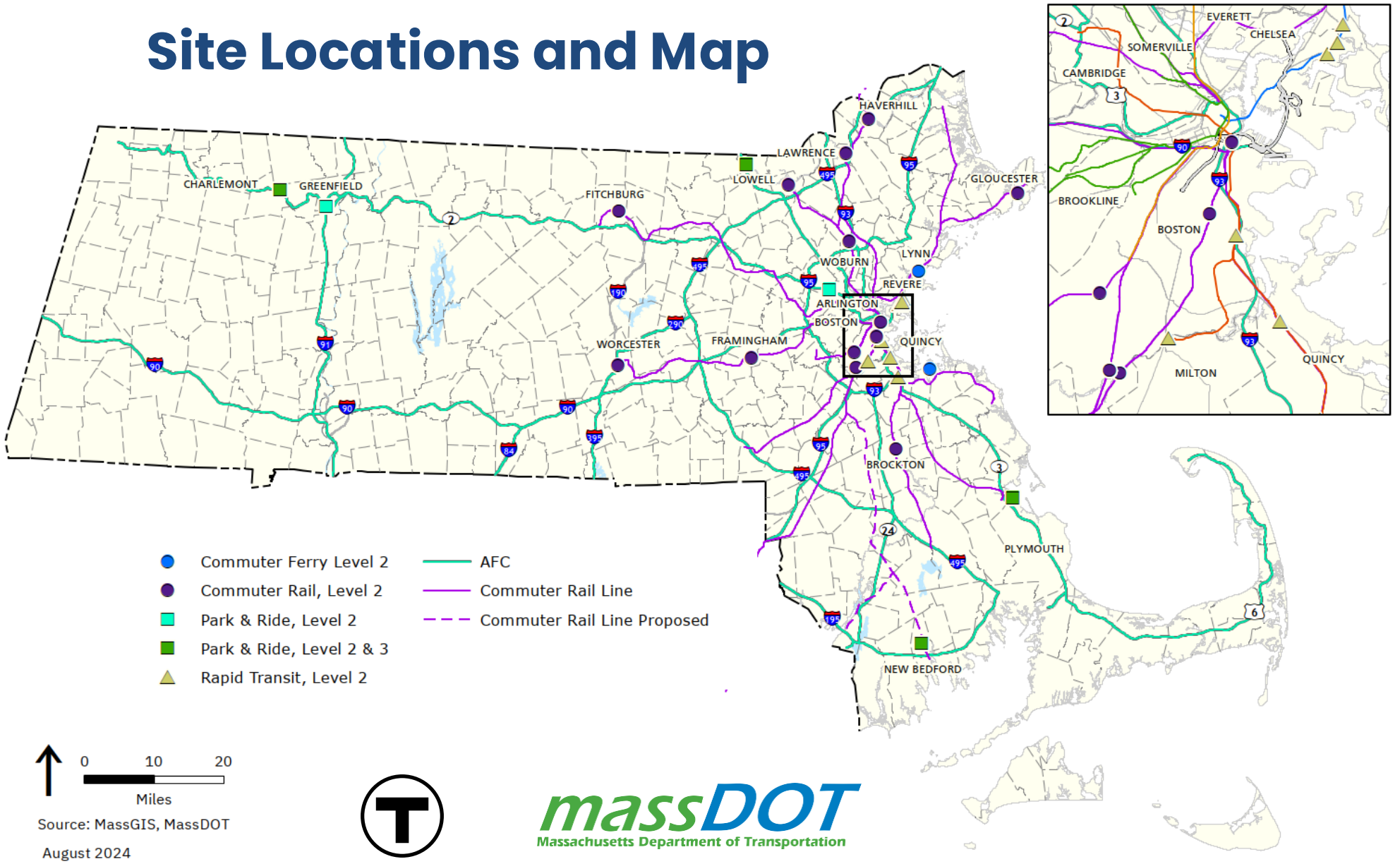
Site Locations and Map



Project Merit Criteria

- **Safety**
  - Site selection finalized through safety analysis, e.g. maneuverability and crash history
  - Safety concerns addressed through site design
- **Climate Sustainability**
  - Incorporation of state and national based resilience frameworks
  - Reduction in lifecycle emissions, avoidance of adverse environmental impacts
  - Furthers goals of recently enacted Massachusetts EV policies
- **Equity**
  - Emphasis on serving EJ and Justice40 areas and directly addressing their needs
  - Funding sent directly to rural communities and increasing EV affordability statewide
- **Workforce Development**
  - Investment in union jobs, underrepresented populations, and high-quality workforce development programs

RECHARGE|MA

2023 Program Updates

MassDEP

Executive Office of Energy and Environmental Affairs

MASSACHUSETTENSIS. SIGILLUM REIPUBLICÆ

RECHARGE AMERICA

New Participants, 2023-2024

ABLE TOOL and EQUIPMENT

AMBER

TOWN OF AMHERST MASSACHUSETTS

BECMA BLACK ECONOMIC COUNCIL of MASSACHUSETTS

CITY OF CAMBRIDGE

ECOAUTO Driving Green Energy Forward

Emerald Cities COLLABORATIVE America empowered.

Gillette STADIUM

GREEN WAY ENERGY

Massachusetts Clean Cities Coalition

MULLEN COMMERCIAL

UBCO | Electric Utility Vehicles

VE VELOCE

WG+E

All Participants

All Participants

All Participants

Town of Lexington Massachusetts

VISIT WINCHESTER MA

Tufts UNIVERSITY

VELOCE

UBCO | Electric Utility Vehicles

UMass Chan MEDICAL SCHOOL

University of Massachusetts Amherst BE REVOLUTIONARY

UMASS LOWELL

UMASS BOSTON

VOLTREK

POWERING YOUR JOURNEY

WAYFOR

WPI

WOODS HOLE OCEANOGRAPHIC INSTITUTION

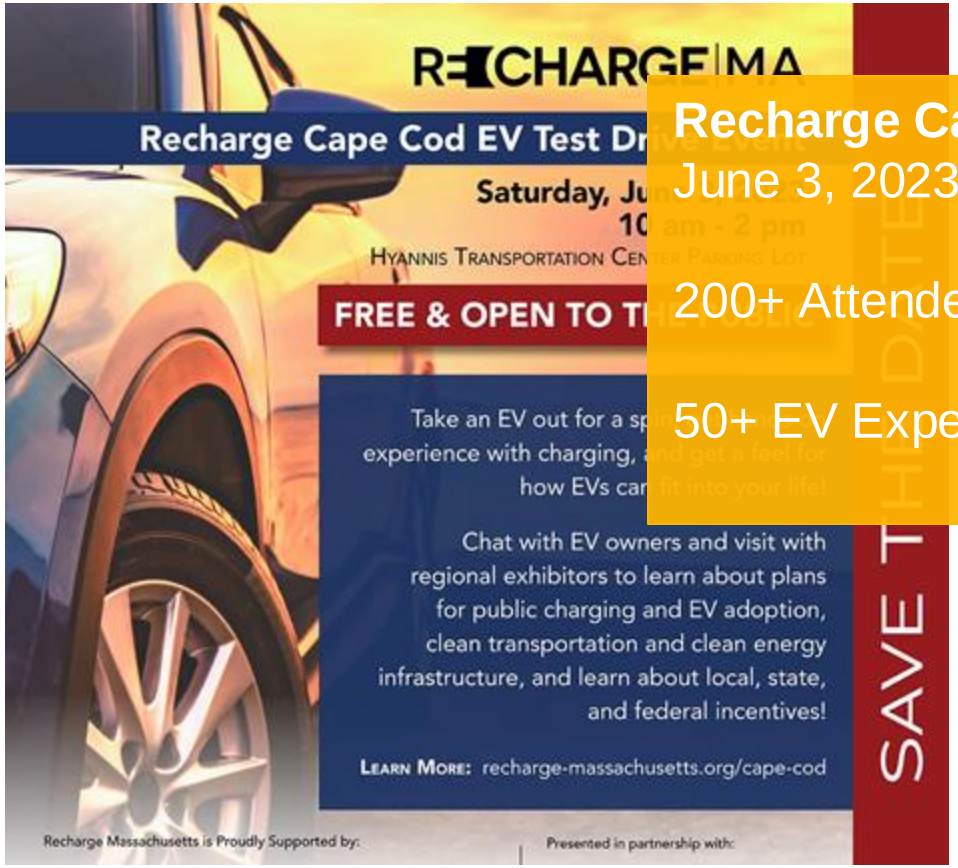
WORCESTER STATE UNIVERSITY

UMass Dartmouth

WG+E

Recharge Massachusetts:
Working to achieve Massachusetts' climate and clean energy goals through equity and leadership.

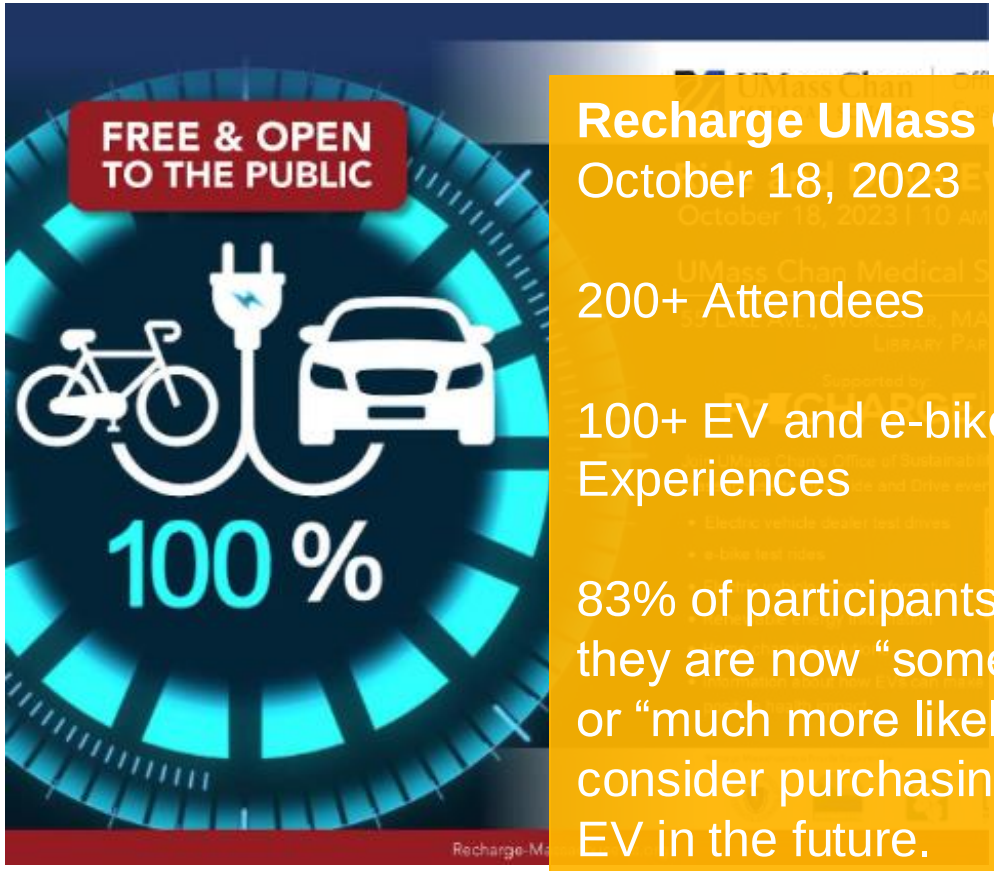
2023 Recharge Massachusetts Events



Recharge Cape Cod
June 3, 2023

200+ Attendees

50+ EV Experiences



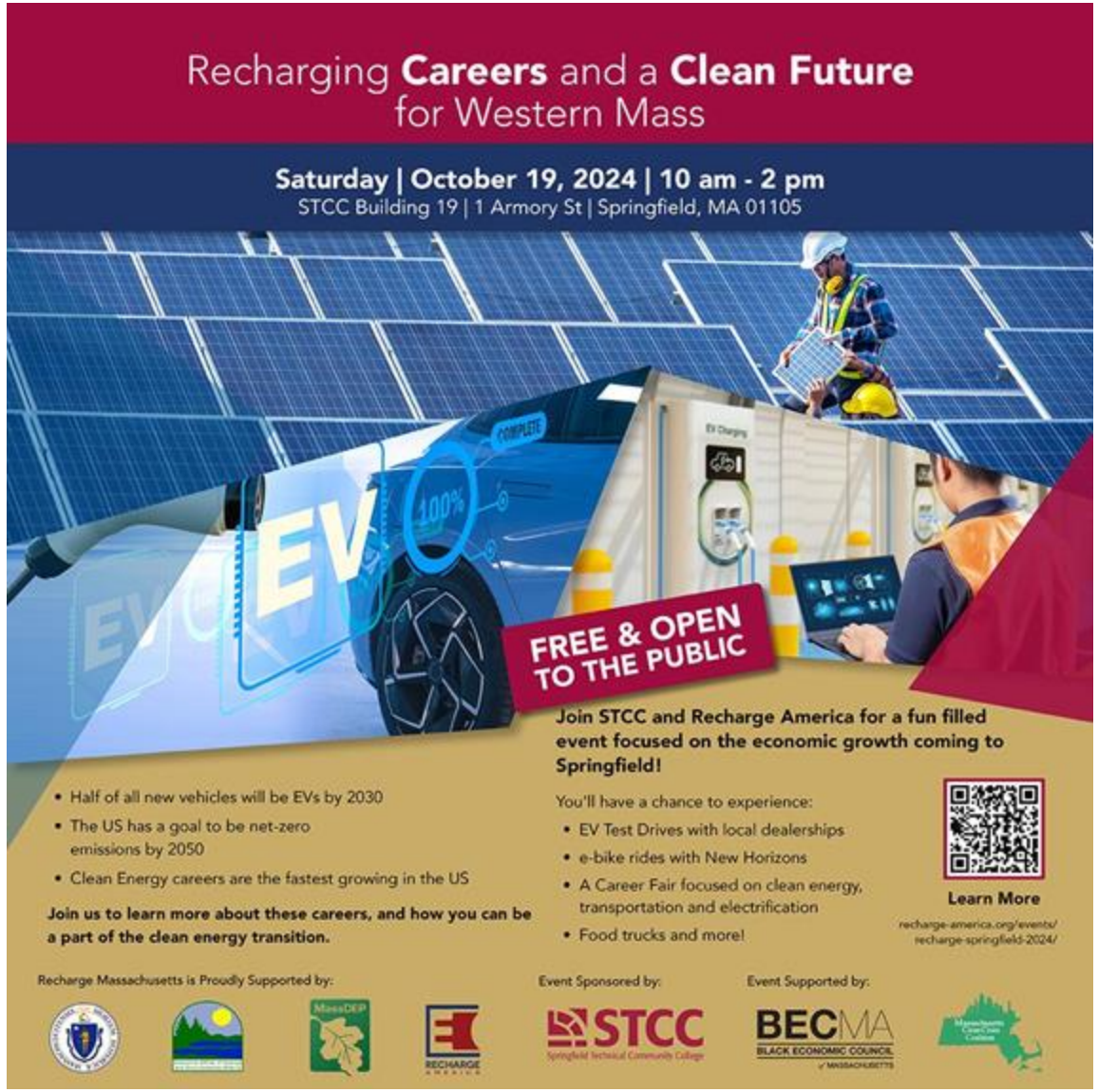
Recharge UMass Chan
October 18, 2023

200+ Attendees

100+ EV and e-bike Experiences

83% of participants said they are now “somewhat” or “much more likely” to consider purchasing an EV in the future.

Upcoming 2024 Recharge Massachusetts Events



RECHARGE|MA Program Goals

Encourage, support and recognize private sector investments in transportation electrification for their operations, employees and communities.

RECHARGE AMERICA

Coming Late 2024!

Recharge America Working Groups

Meet quarterly with your peers across the country and inspire each other with your experiences of shaping the future of your communities!

Interested? Let us know using this QR code!



In 2025, we want you to:

- ***Join our Recharge America Working Groups***
- ***Introduce us to your network***
- ***Share your progress with us***

Office of Environmental Justice & Equity Overview

Equity in Electric Vehicle Charging Infrastructure

Massachusetts EVICC Meeting

October 2, 2024

Suzanne Russo, RFF

Beia Spiller, RFF

Rachel Wilwerding, Fordham University

Background

- Transition to EVs requires large-scale infrastructure investment

- IIJA Justice40:
  - 40% of “benefits” from this funding must be allocated to disadvantaged communities
  - How are benefits defined?

Contributions

- Develop a framework to understand:
  - Existing inequities in urban transportation systems and compounding factors
  - How charging station investments might reduce or exacerbate existing inequities

- Highlight and summarize existing strategic plans to implement CS infrastructure in ways targeted towards the reduction of transportation-related inequities
  - State-level
  - Local community groups
  - Public-private partnerships

Types of Justice to be considered when developing equitable CSI strategies

- **Recognition Justice**
  - What groups are affected by inequity?
- **Distributional Justice**
  - How do inequities vary across location, socioeconomic, and demographic groups?
    - Accessibility
    - Affordability
      - EV Ownership
- **Procedural Justice**
  - Are local communities directly involved in planning and decision-making processes?
- **Restorative Justice**
  - How do strategies create opportunities to improve social and environmental conditions in EJ communities?

Inequity	Compounding Inequity	Resulting Impact	Potential impacts of CSI in exacerbating inequity	Potential impacts of CSI in reducing inequity
Highways cutting through Black/Brown communities	Racist housing policies	Closer proximity to major roadways, segregation	CSI in EJ communities -> more traffic congestion	**Community led strategic placement of CS** -> more potential clients for businesses
Lower quality public transit	Highway investments	Higher cost of travel, lower mobility	CSI in EJ communities -> greater traffic -> increasing travel costs due to congestion.	CSI includes **strategies to improve micromobility** (expanded electric bike and/or scooter stations) and **public transit** (electric buses and/or shuttles) to improve community mobility.
Racial discrimination in car loans	Racial wealth gaps	Less likely to own car; less likely to afford EVs	CSI in neighborhoods with few EV owners -> reduce capacity on local electrical grid -> decrease reliability + increase utility costs for local residents	**Pairing CS with co-located solar** could reduce impacts to the grid and resulting cost-shifts. **Utility programs** can also help mitigate increased electric bills caused by CS demands.
Racist housing policies	Racial wealth gaps	Less likely to own home, have private parking, have private charging	Price per kWh for public CS > Price of charging overnight at home -> BIPOC EV owners likely to pay more for refueling than white and wealthy households. CSI can also increase in local property values -> gentrification	**Alternative ownership models and strategic placement** of CS in community centers could help reduce gentrification outcomes while providing access to lower cost charging opportunities.

- **CSI *alone* is likely to *exacerbate* inequities**

- **CSI developed *strategically* in *partnership* with local communities can reduce inequity**

- Charge Enterprises, Inc.
  - Baltimore, MD: Install CS in church parking lots.
  - No cost installation for church + revenue-sharing agreement with the church such that money flows back into the community
  - Model applicable to libraries, YMCAs, & other community hubs

- Ecology Action (CA) and itselectric (NYC)
  - CS in multi-unit dwellings, revenue sharing where building owner agrees to use revenue to cover building improvements/maintenance
  - Requires coordination between CS organization, public utilities, and public/private building owners

Exploring Equity in Charging and Fueling Infrastructure Grants

- **Mesa, AZ**: "...increase access to electric vehicle charging and support **multimodal electrification**. The project will install 48 electric vehicle charging ports, charging docks for e-bikes and e-scooters, and **solar canopies** to support electricity generation at the stations… increasing the number of stations in **disadvantaged communities** by 167 percent" (Federal Highway Administration, 2023).

- **Boise, ID**: "...implement public electric vehicle charging sites, install an estimated 100 Level-2 charging ports across 20-25 sites and 4-8 DCFC ports across 2-4 sites. The project focuses on **site selection in underserved communities**, increases **community outreach**, and creates an **EV workforce development program…**" (Federal Highway Administration, 2023).

RESOURCES for the FUTURE

Thank you.

- Find out more about RFF online: **www.rff.org**
- Follow us on Twitter: **@rff**
- Subscribe to receive updates: **rff.org/subscribe**

Equity Considerations for Siting EV Charging Infrastructure

Union of Concerned Scientists

Paulina Muratore
October 2, 2024

Electric vehicles

The term “electric vehicle” includes plug-in hybrids, battery electric vehicles, and fuel cell technologies—all of which are at least partially powered by electricity. Electric drive can be used to power passenger cars, transit buses, and even big rig tractor trailers.

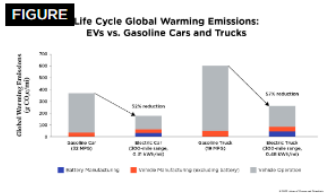
As an energy source, electricity is cleaner and cheaper than oil, even when the power comes from the dirtiest coal-

FEATURE

How Clean is Your Electric Vehicle?

Enter your ZIP code to see EV emissions in your area—or select specific EV models to see how they compare.

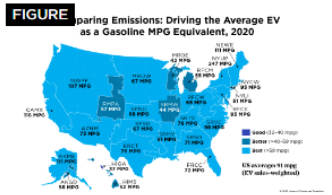
FIGURE



Life Cycle Global Warming Emissions: EVs vs. Gasoline Cars and Trucks

Chart of life cycle global warming emissions comparing EVs, gasoline cars and trucks

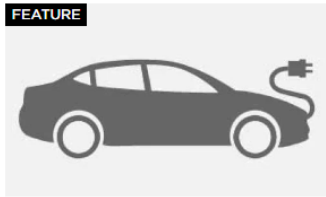
FIGURE



Map Comparing MPGs of EVs vs. regular car

Map of the United States comparing the miles per gallon equivalent of the average EV

FEATURE



EV Emissions Tool

Plug in your ZIP code to see how clean electric cars are in your area.

VIDEO

Electric Vehicles are Cleaner

Electric cars and pickups produce roughly half the climate-changing emissions of a similar gasoline car by the end of their lifetimes.

REPORTS & MULTIMEDIA / REPORT

Cleaner Cars from Cradle to Grave

How Electric Cars Beat Gasoline Cars on Lifetime Global Warming Emissions

Published Oct 29, 2015

DOWNLOADS ↓

REPORTS & MULTIMEDIA / EXPLAINER

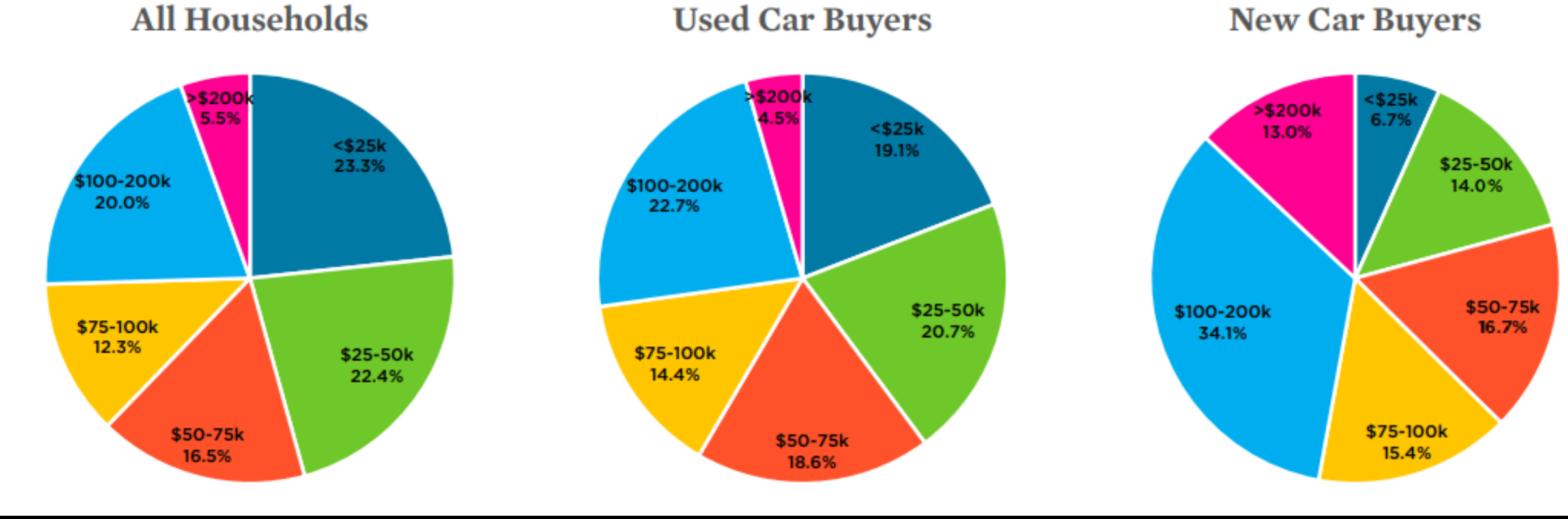
How Do Battery Electric Cars Work?

Published Feb 25, 2015 | Updated Mar 12, 2018

From Clean Vehicles to Clean Transportation

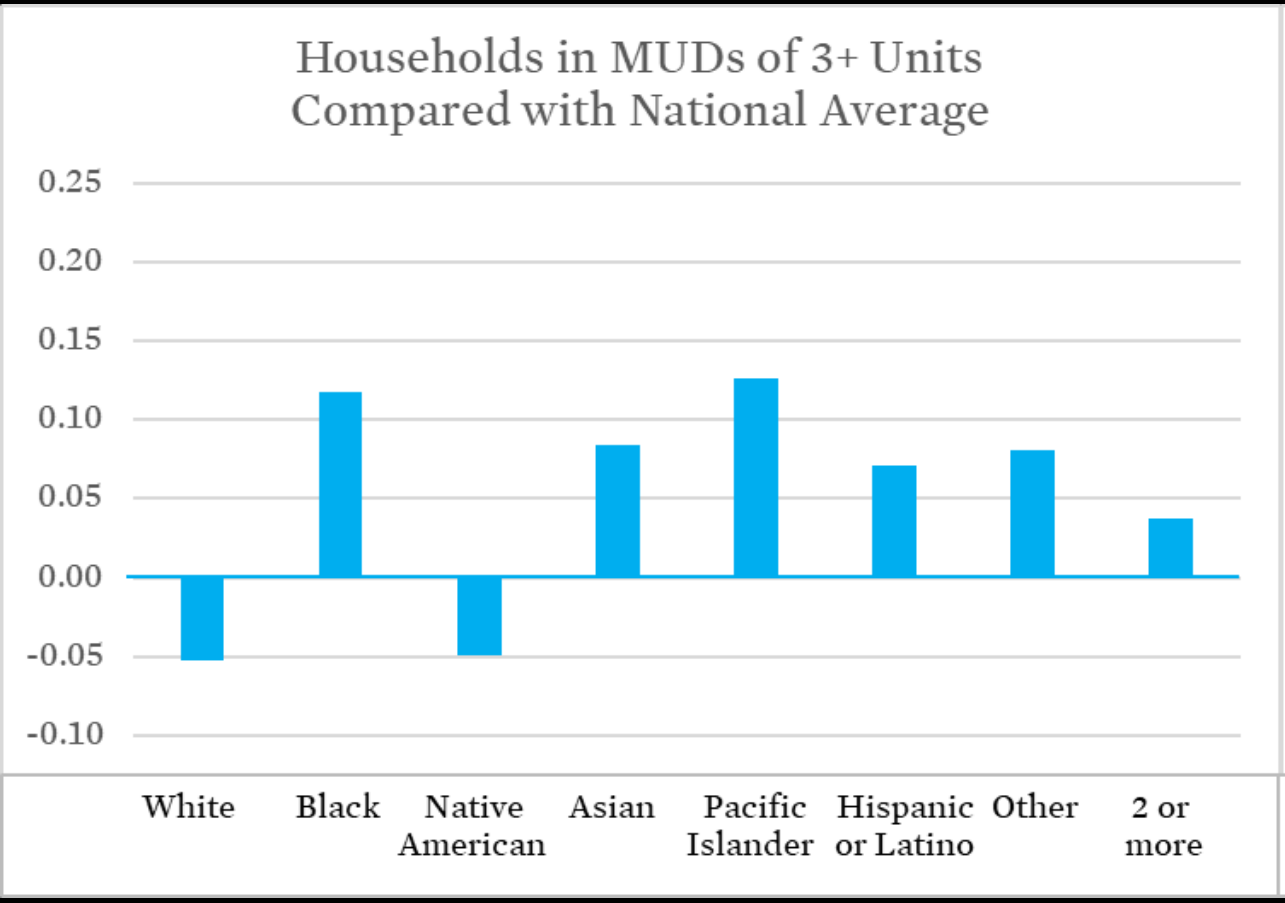
Listening, Incorporating Feedback, Building Meaningful Trust

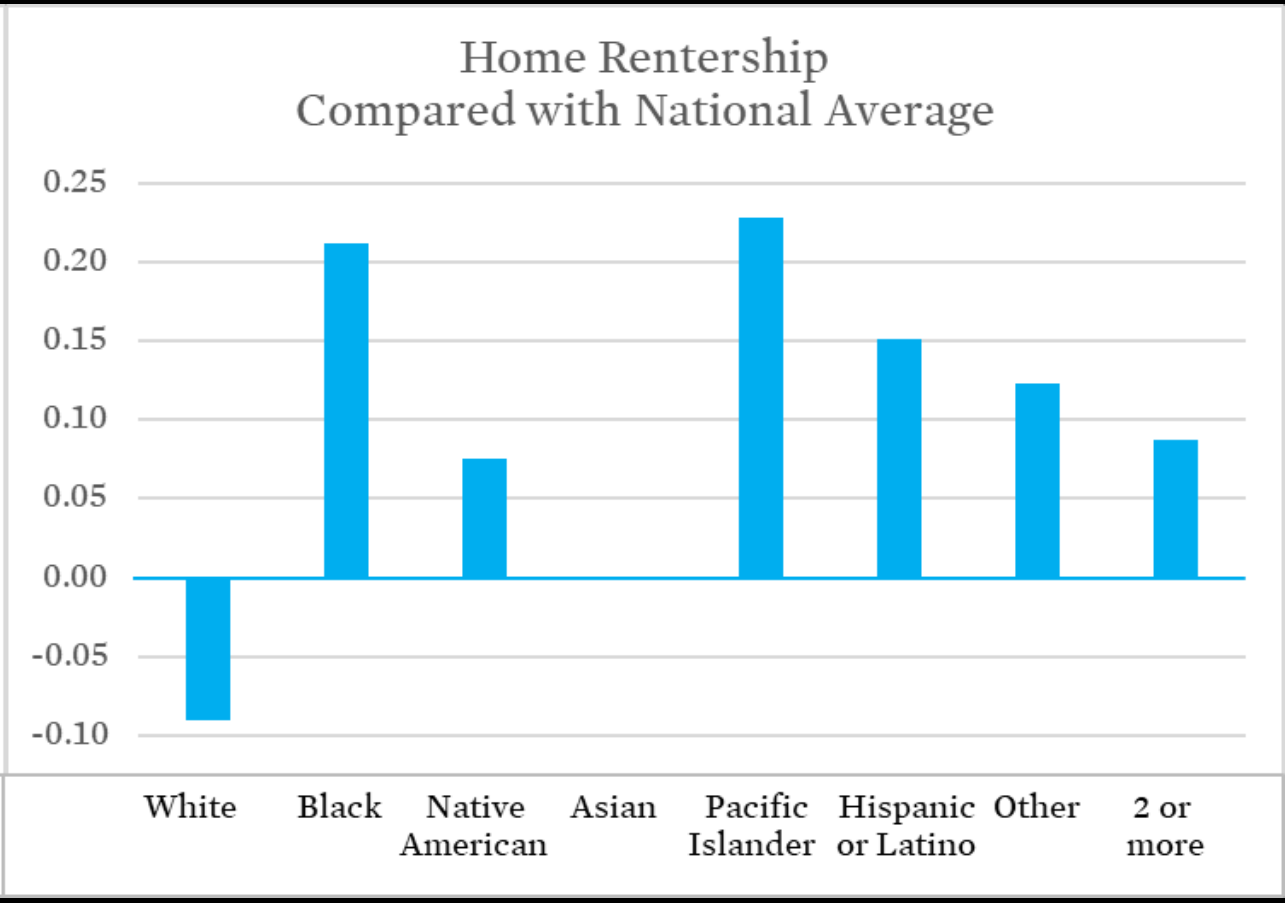
Car Market Income Demographics



UCS analysis of Federal Highway Administration National Household Travel Survey 2017

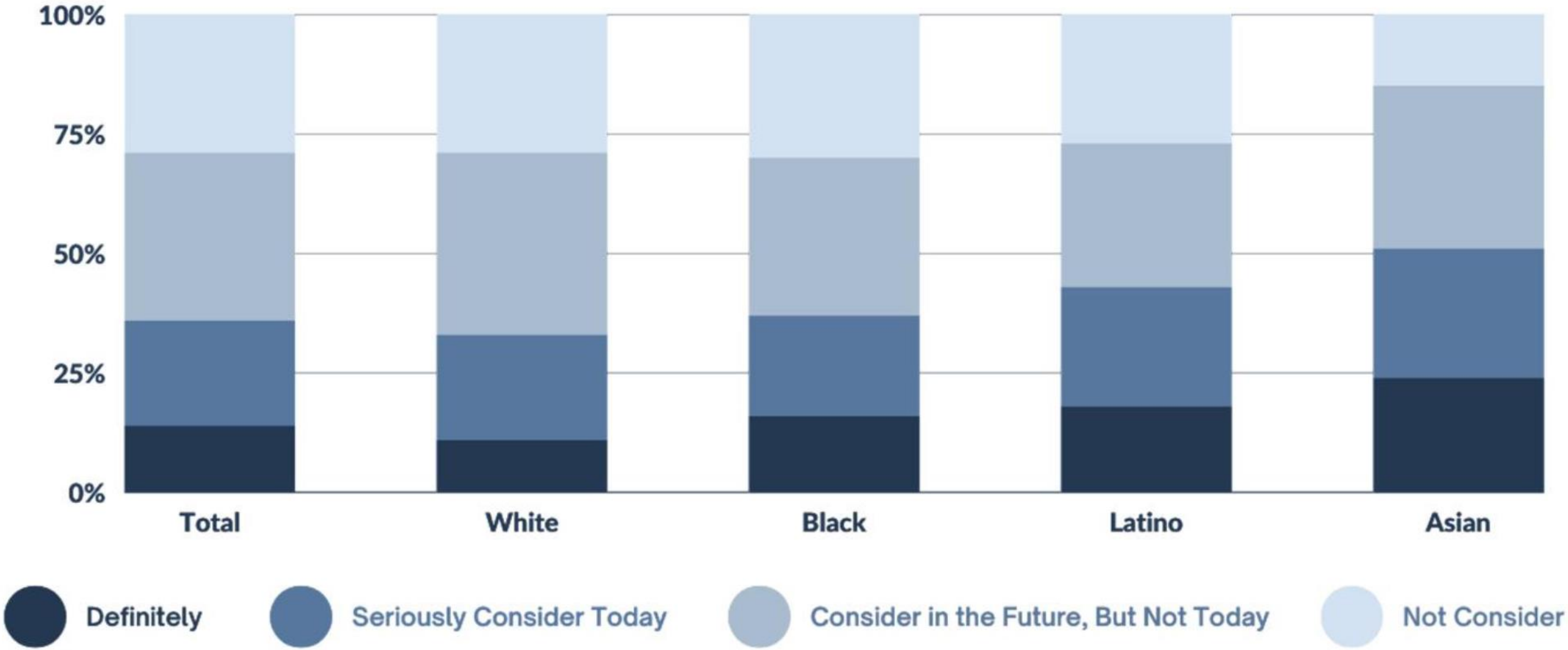
Housing Type and Renter Status by Race and Ethnicity in the United States





UCS analysis of US Census Bureau 2019 American Communities Survey

Nearly 40 percent of respondents would definitely or seriously consider purchasing or leasing an electric vehicle for their next vehicle, a number that transcends racial and ethnic groups.

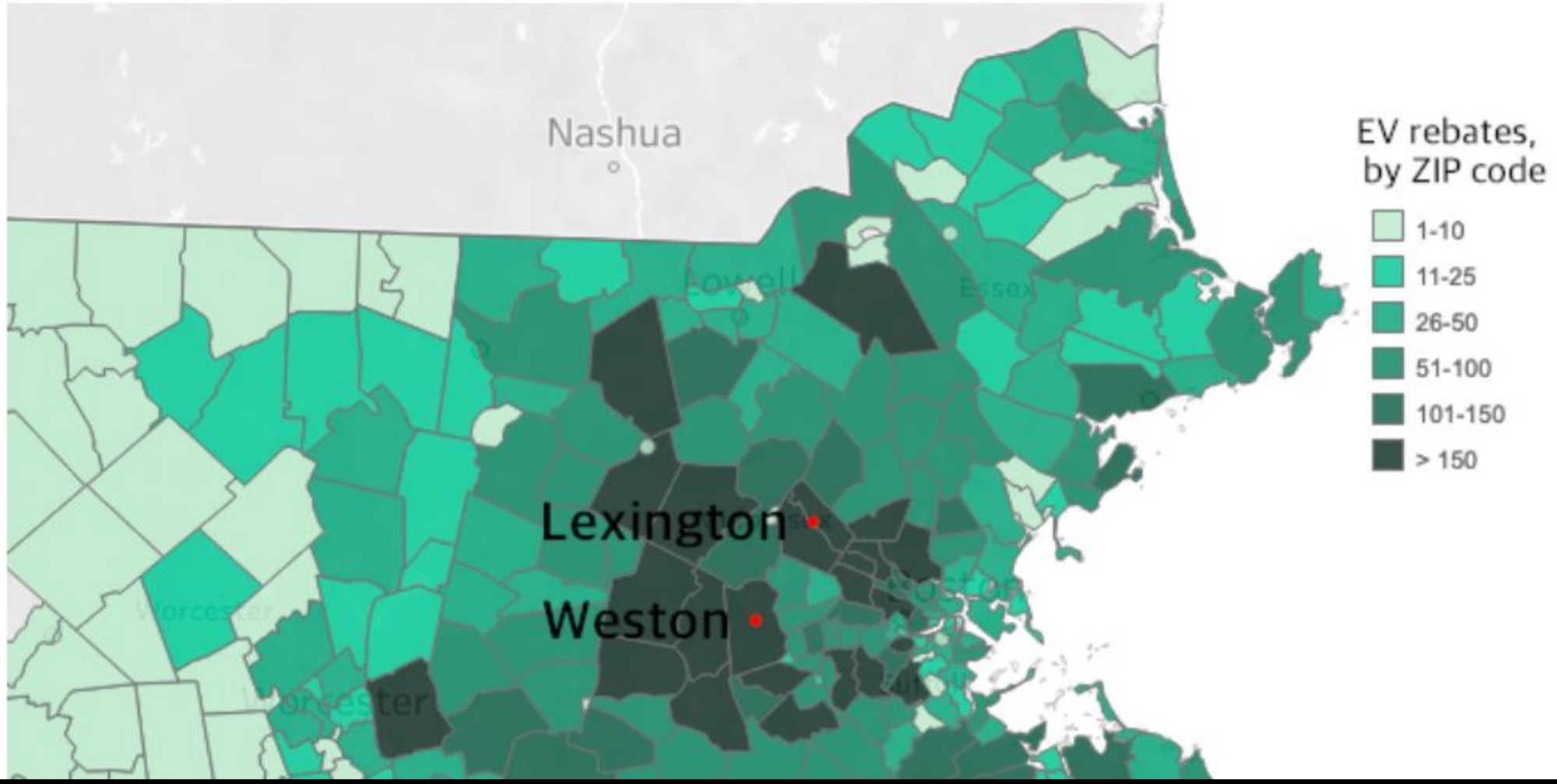


https://www.ucsusa.org/resources/ev-survey-equity

Analysis: Bay State's EV Rebate Program Overwhelmingly Benefits Wealthy Suburbanites

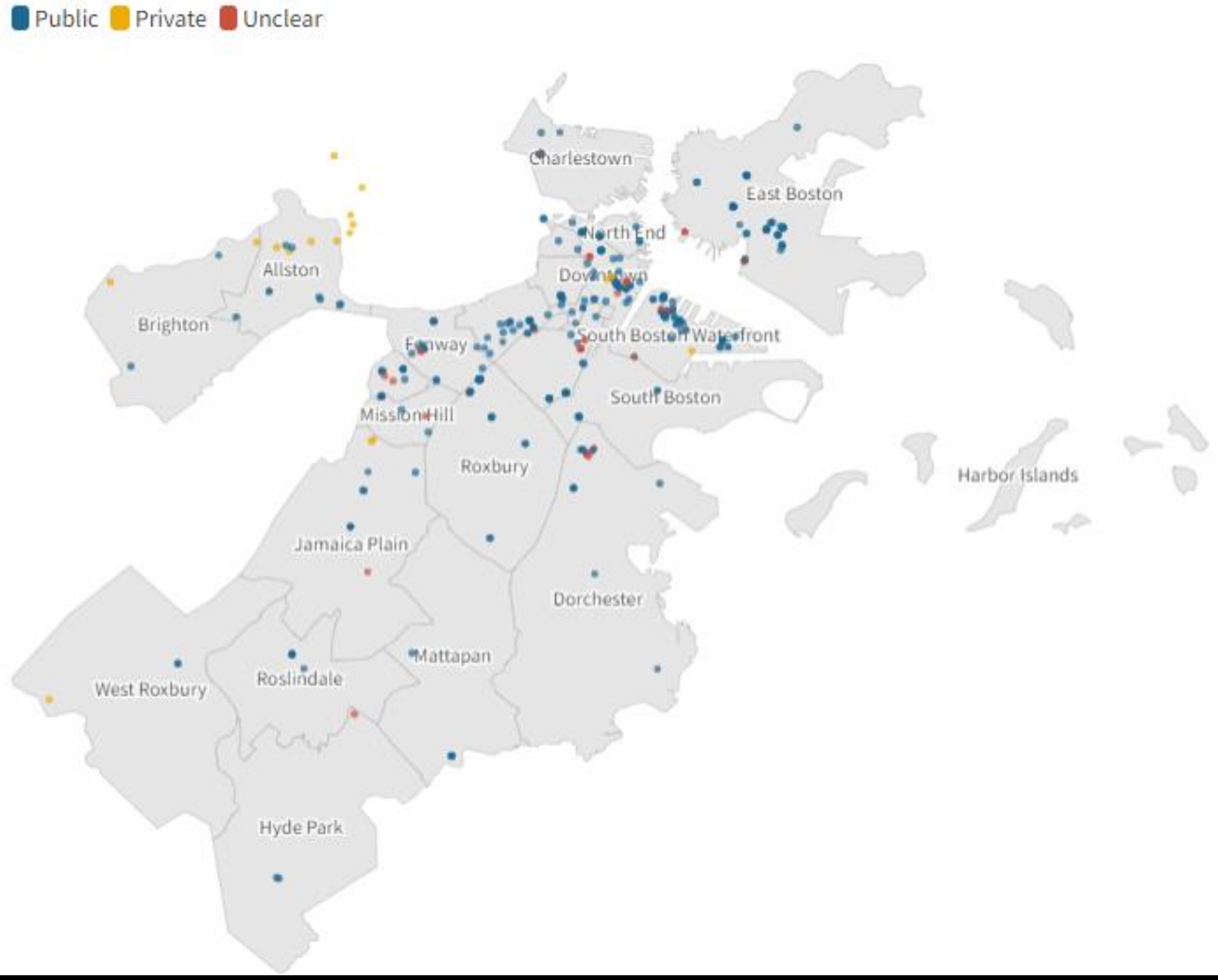
By **Christian MilNeil**

5:03 PM EST on February 18, 2021



EV chargers and equity

A map of the current public and private electric vehicle charging stations in Boston show clusters of chargers in denser and more commercial areas, leaving wide swaths of the city without a charger in walking distance.



Source: WBUR VIA US DOE https://www.wbur.org/news/2023/02/02/electric-vehicle-chargers-boston

05:44

For EVs to take off, Boston needs more equitable placement of chargers

February 02, 2023 | By Paula Moura

Some important considerations:

- History of infrastructure decisions in communities – process and procedural justice; lack of trust and fears of gentrification.
- Different communities have different needs, different levels of trust, different visions for the future.
- There will be no one-size-fits-all approach, communities need to speak for themselves.

ELECTRIC VEHICLE CHARGING IN COMMUNITIES

Equity Workgroup Report

November 2022

Proposed Educational Presentations – EVICC Meetings Sept. ’24 – Aug. ‘25

- **The following list of planned educational presentations, subject to change and listed in the sequence in which EEA anticipates holding them, was included in the Final EVICC ‘24-’25 Workplan memo:**

  - Curbside and pole attachment charging companies and pilot programs
  - Environmental justice siting considerations
  - Approaches to mitigating the impact of increased EV load, in other jurisdictions with a particular interest in public charging load
  - Approaches to EV charging deployment planning in other jurisdictions, including EV load forecasting by other electric utilities
  - Uptime / charger reliability standards in other jurisdictions
  - Data disclosure/availability requirements and interoperability standards in other jurisdictions
  - Charging business models, including innovative approaches (e.g., gas stations adding EV chargers)
  - Rideshare EV policies in other jurisdictions
  - Education on consumer experience with EVs and EV chargers
  - EV and EV charging data portals in other jurisdictions
  - Fleet charging management best practices

Public Comment

Thank You