# Zero Emission Vehicle Adoption: Massachusetts Policy and Program Approaches

Zachary Jenkins
Massachusetts Clean Cities Program Director
November 22, 2024

# Statewide Targets for Electrification

- Massachusetts has committed to achieving a Net Zero Emissions economy by 2050, and adopted a statewide GHG emissions limit and sector-specific sub-limits
- The 2050 Clean Energy & Climate Plan (CECP) highlights a broad suite of specific goals, strategies, policies, and actions by sector
- Two of the CECP's key benchmarks:

**TRANSPORTATION**

**97%**
of light-duty vehicles (5 million) electrified

**93%**
of medium- and heavy-duty vehicles (over 350,000) electrified or non-emitting

- MA is orienting applicable policy and programmatic decisions around the CECP sub-limit for transportation

# Electric Vehicles

1

## Battery Electric Vehicle (BEV)

- Draws propulsion energy solely from on-board electrical energy storage, charged from an external source of electricity

## Fuel Cell Electric Vehicle (FCEV)

- Energy stored as hydrogen is converted to electricity by a fuel cell

2

## Plug-in Hybrid EV (PHEV)

- Internal combustion engine

+ On-board electrical energy storage that can be recharged from an external source of electricity

3

## Hybrid Electric Vehicle (HEV)

- Internal combustion engine

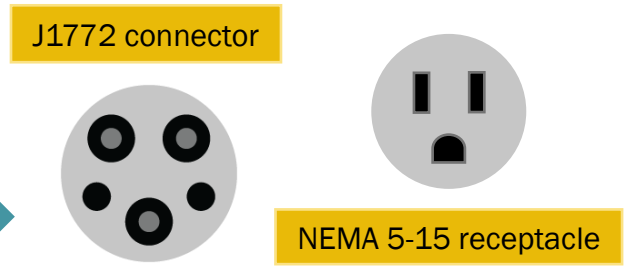
+ Small electric motor that uses energy stored in a battery to support a small portion of vehicle operations

*Some of the BEVs available on VEH110*

# EV Charging

## Level 1 Charging

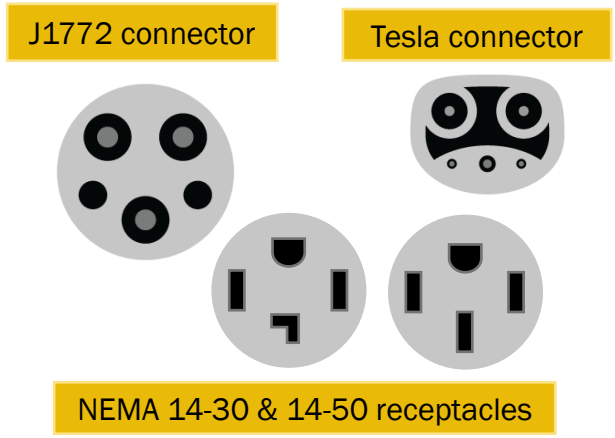
- 110-volt outlet (household plug)
- Approximately 3-5 miles of range per hour of charging




**Most new EVs come with a mobile NEMA charging cord you can keep in the vehicle**

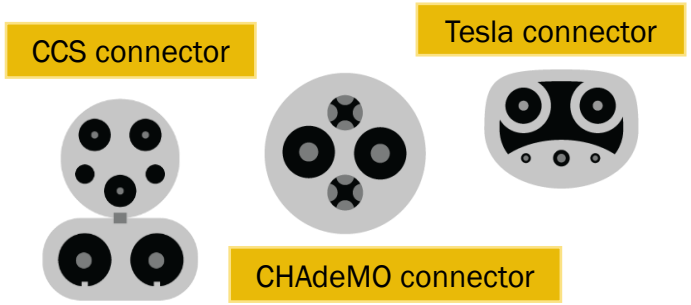
## Level 2 Charging

- 240-volt outlet or charging station
- Approximately 20-25 miles of range per hour of charging




## DC Fast Charging (DCFC)

- 208/480 three-phase input at station
- Approximately 100-200+ miles of range per 30 minutes of charging*




**Charging power varies by vehicle and battery state of charge; batteries should not be charged predominantly by DCFC*

# Clean Cities Coalition


- The Massachusetts Clean Cities Coalition (MACCC) is part of a nationwide partnership with the U.S Department of Energy Clean Cities Program and is housed in the MA Department of Energy Resources.

- The coalitions mission is to advance the Commonwealth's environment, energy security, and economic prosperity through collaboration with communities by building partnerships with public and private stakeholders.

- The coalition assists public and private stakeholders in their efforts to adopt alternative fuel vehicles through incentive/rebate assistance, disseminating educational information, and event facilitation/participation.

# State EV Programs

# Pickup Truck and Class 2b-8 MOR-EV Rebates

## MOR-EV Trucks (link) and Medium/Heavy-Duty Rebates (link)

- Post-purchase rebate for BEVs and FCEVs for individuals, corporations, and public entities
- Rebate amounts vary by vehicle weight:
  - Pickup trucks and Class 2b = $7,500
  - Class 3 = $15,000
  - Class 4-6 = $30,000-$60,000
  - Class 7-8 = $75,000-$90,000
- 10% rebate adder for vehicles operating in Environmental Justice Communities
- Can reserve a rebate for up to 12 months for heavier-duty vehicles upon placing a purchase order and apply for funding upon taking delivery

# Light-Duty MassEVIP Fleets Rebates

## MassEVIP Fleets (link)

- Rolling grant for municipalities, state agencies, and public higher education campuses; up to 25 vehicles per entity
- PHEVs and BEVs with a purchase price $60,000 or less and gross vehicle weight of 10,000 pounds or less
- Maximum incentives for public fleet vehicle purchases and leases:
  - BEVs = $5,000-$7,500 PHEVs = $3,000-$5,000
- Funding approval letter must be received prior to vehicle order
- If the applicant uses VEH110, MassDEP will pay the vendor on statewide contract directly after receiving the documentation
- MassEVIP Fleets grants cannot be combined with funds obtained through the MOR-EV or Green Communities programs for a single vehicle
- Applicant must commit to providing internal or external funds to cover remaining vehicle costs and upkeep for 3 years, and agree to help promote EVs

# Green Communities Grants

Webpage

- Grant amounts vary by technology and whether a vehicle is purchased or leased
- Higher maximum grant funding for communities that meet special eligibility requirements

| Prescriptive Measure* | Maximum Grant Amount | Maximum Grant Amount for Specially Eligible Communities |
|---|---|---|
| Light-duty fleet HEVs and PHEVs | $3,000 - $5,000 | $6,000 - $10,000 |
| Light-duty fleet BEVs | $5,000 - $7,5000 | $10,000 - $15,000 |
| Medium-/Heavy-duty fleet BEVs** | $10,000 - $15,000 | $20,000 - $30,000 |

**Prescriptive grants are subject to change; sign up for the Green Communities newsletter for the latest updates*

***MD/HD rebates are only available for communities in certain Environmental Justice Communities*

# State EVSE Infrastructure Programs

# MassEVIP Charging Incentives

## Public Access (link)

- Up to 100% of eligible costs at government-owned locations
- Site must allow practical public access at least 12 hours a day, 7 days per week
- Hardwired Level 1 or Level 2 charging
- ADA accessible design requirements

## Workplace / Fleet (link)

- Up to 60% of eligible costs
- At least 15 employees on site (workplace) or where fleet vehicles are garaged
- Hardwired Level 1 or Level 2 charging
- ADA accessible design requirements for workplace charging
- Must get a fleet vehicle within 6 months (extensions may be requested)

## Multi-Unit Dwellings (link)

- Up to 60% of eligible costs
- MUDs with 5+ units or campuses with at least 15 students onsite; site must have equal access
- Hardwired Level 1 or Level 2 charging
- ADA accessible design requirements

# Green Communities Grants

Webpage

| Prescriptive Measure* | Maximum Grant Amount |
|---|---|
| Public access or fleet EV charging | $7,500 per charging station |

# IRS Federal EV/EVSE Tax Credits

# Commercial MD/HD Vehicles

- Instituted by the Inflation Reduction Act.
- Capped at $7,500 for vehicles weighing less than 14k lbs.
- Capped at $40,000 for vehicles weighing more than 14k lbs.
- Available to tax exempt entities via Direct Pay (municipalities and nonprofits).
- Full information on the commercial credit can be found here.

# Federal Tax Credit for EV Charging

- For Individual consumers: 30% of cost, not to exceed $1,000

- For Commercial Entities (including Municipalities and tax-exempt organizations):
  - 30% of the cost or 6% in the case of property subject to depreciation.
  - Cannot exceed $100,000
  - Projects that meet the prevailing wage and apprenticeship requirements may be eligible to receive the full 30% tax credit, regardless of depreciation status.

- In all cases, the charger location must be in **rural** or **low-income** areas to qualify.
  - Link to check: Refueling Infrastructure Tax Credit

# Program Websites & Contact Information

- Massachusetts Clean Cities
- Green Communities
- MOR-EV
- MOR-EV Pickup Trucks/Class 2b
- MOR-EV Class 3-8
- MassEVIP Fleets
- MassEVIP Charging: Public Access
- MassEVIP Charging: Workplace and Fleet
- MassEVIP Charging: MUDs and Educational Campuses
- MassCEC ACT School Bus Programs
- IRS Federal Tax Credits

**DOER Staff Contacts**

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# Electrifying Municipal Fleets in Municipal Light Plant (MLP) Communities

Prepared for:

Green Communities Summit

Devens, MA

22 November 2024

# Who We Are

Energy New England is a light plant cooperative & the largest energy trading organization serving municipal utilities in the Northeast.

# Our Ownership

- Braintree Electric Light Department
- Concord Municipal Light Plant
- Hingham Municipal Lighting Plant
- Reading Municipal Light Department
- Taunton Municipal Light Plant
- Wellesley Municipal Light Plant

# Our Services

Sustainability Programs & Rebates

Energy Market Services

Regulatory & Market Affairs

Legislative Advocacy

Generation Project Management

# ENE Supports EV Programs

## Utility Services

- Utility Program Management
- Incentive Design
- Event Management
- Education & Support
- EV Help Desk
- EV Ambassadors
- Marketing

## Advisory Services

- Dealer Engagement
- Workplace EV Education
- Fleet Electrification
- Charging Infrastructure

ENE Drives Electric

ELECTRIC VEHICLE ADOPTION LEADERSHIP EVAL SILVER 2024

# Background: Electric Utilities in MA

**Investor-Owned Utilities (IOUs)**

- Eversource Energy
- National Grid
- Unitil

- Collectively serve ~300 communities

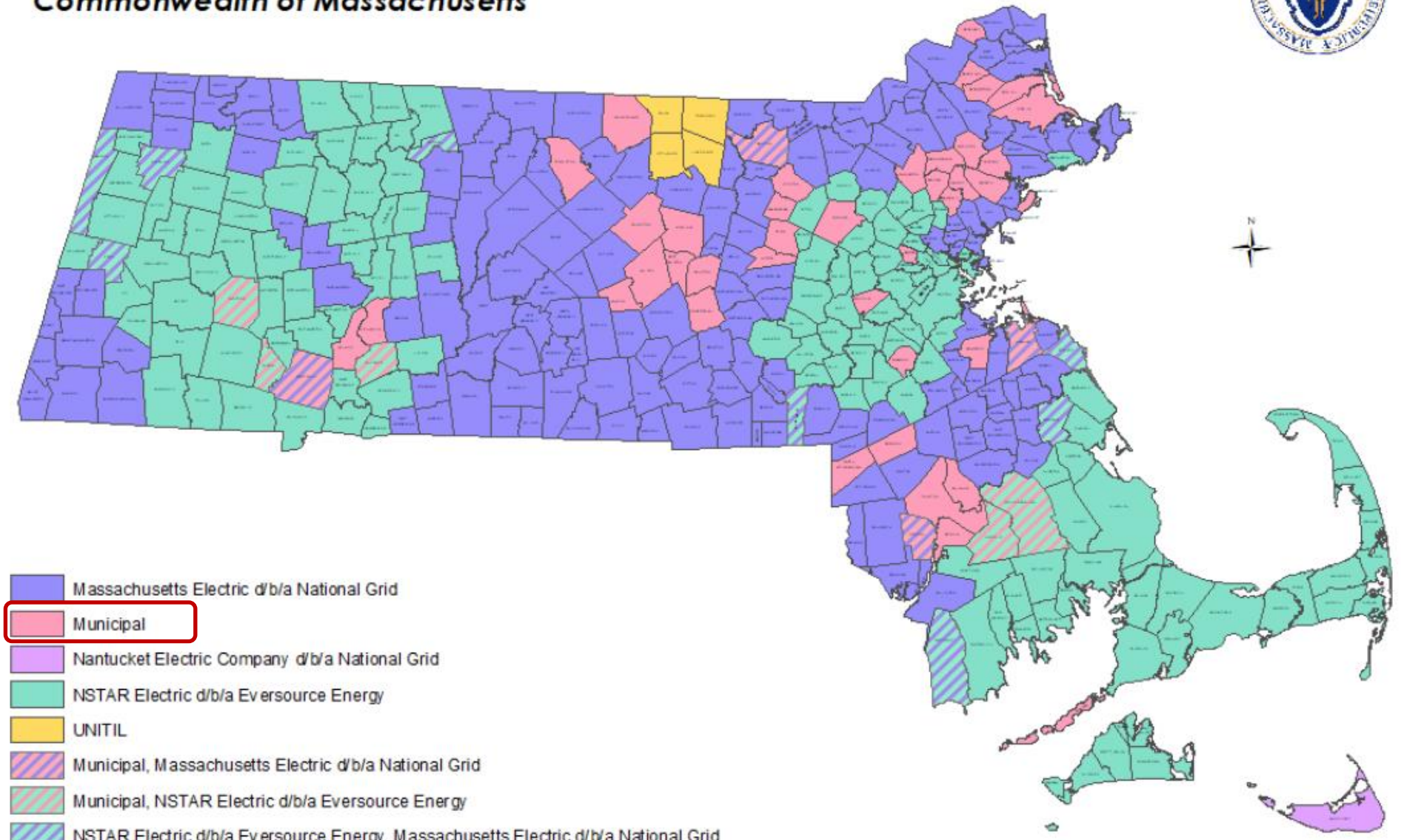
**Municipal Light Plants (MLPs)**

- 41 Municipal Light Plants
- Serves all or part of 53 communities

- Benefits:
  - Local Control
    - Elected Board
  - Reliable Service
  - Low Rates
    - ~$0.14/kWh to ~$0.28/kWh

# Electricity Providers by Municipality

***Commonwealth of Massachusetts***




*Source: Massachusetts Department of Public Utilities, September 2021*

EOTSS
Executive Office of Technology Services & Security

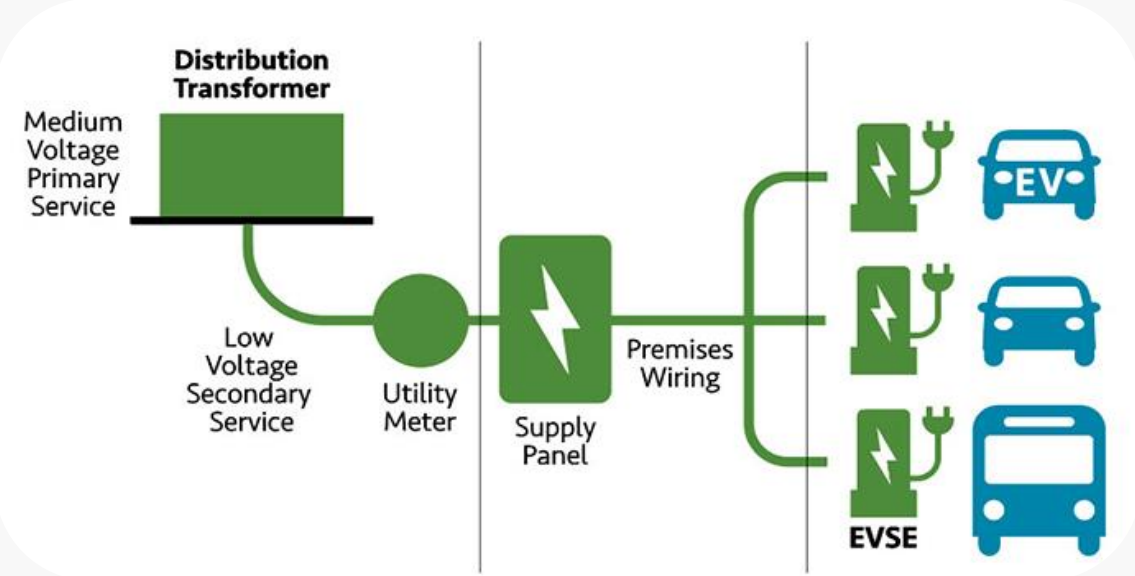
Map by MassGIS, 11/30/2021

# Similarities in Fleet Strategies

- Some components are similar for communities in IOU or MLP territories
  - Selecting vehicles
  - Selecting charging equipment and providers
  - Partnerships with contractors
  - Applying for MassEVIP funding
  - Applying for MOR-EV funding

# MLP Infrastructure Funding

- In keeping with their goals for Low Costs, many MLPs do not collect funds for EE and EV programs
- There may be less funding or none available for EV infrastructure



# Cost Considerations

## Infrastructure Design

- To help minimize the potential cost burden, collaboration should be sought after early in project stages
- MLPs can help advise on charging solutions that minimize infrastructure costs

## Long Term Cost Savings

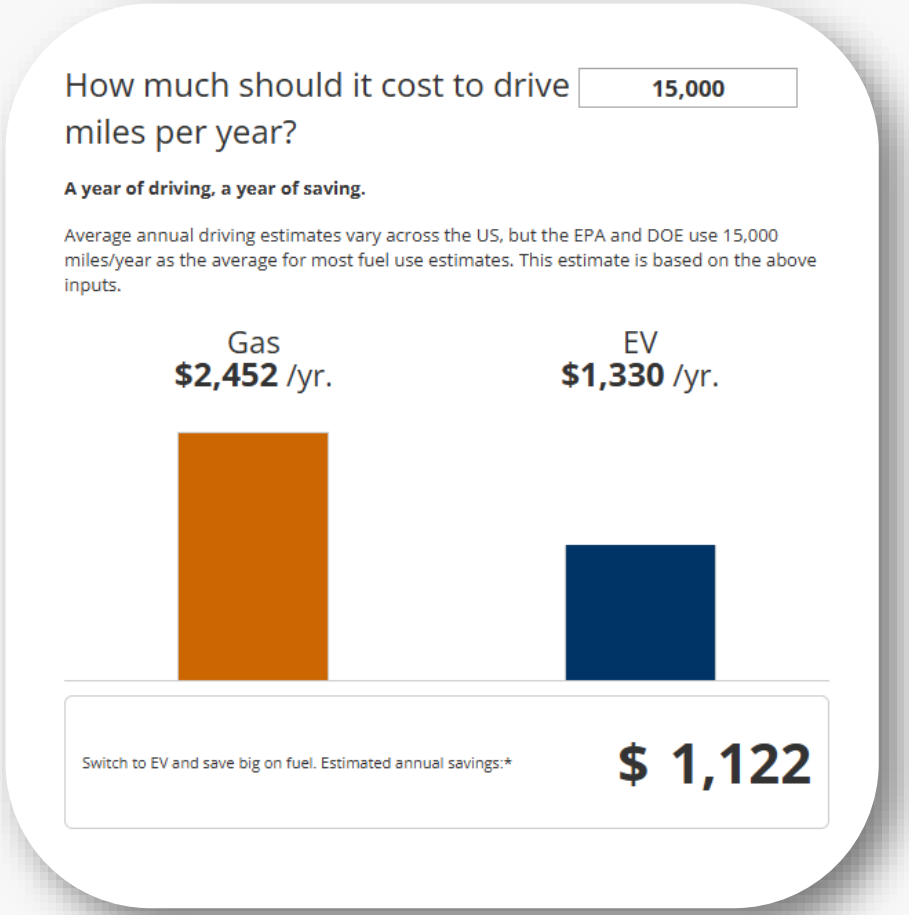
- EV Charging in MLP territories benefit from long term operational and maintenance savings
  - Use DOE ‘eGallon” calculation methodology to estimate savings
  - Use Choose EV Tool

# Long Term Savings

## Assumptions

| Local fuel price/gallon | Utility kWh rate* |
|---|---|
| $ 3.27 | $ .18 |
| Est. MPG of gas vehicle | Est. mile/kWh for EV |
| 20.00 | 2.030 |
| 2024 | 2024 |
| Ford | Ford |
| F150 Pickup 4WD - Automatic (S10) (20.00 | F-150 Lightning 4WD (2.03 mi/kWh) |

Massachusetts Average Fuel Cost: $3.27/gallon
January 2020- October 2024



# Challenges & Areas of Opportunity

- Medium- and Heavy-Duty Vehicles provide challenges for both today and the future
  - The load profiles for these vehicles can greatly impact smaller utilities
  - MLPs want to grow load, but this type of load has low utilization and high peaks which needs to be managed more carefully

- **Off Peak Charging** helps reduce strain on the grid and helps reduce need for greater infrastructure costs

- Battery Storage with Electric School Buses can be used collaboratively between municipality and MLP in **V2G and resiliency applications**

# Where MLPs Shine

## Smaller Teams and Local

- MLPs are substantially smaller entities
- Offices are in town & you can talk in-person to staff…they might be people you know!
- Understand the community

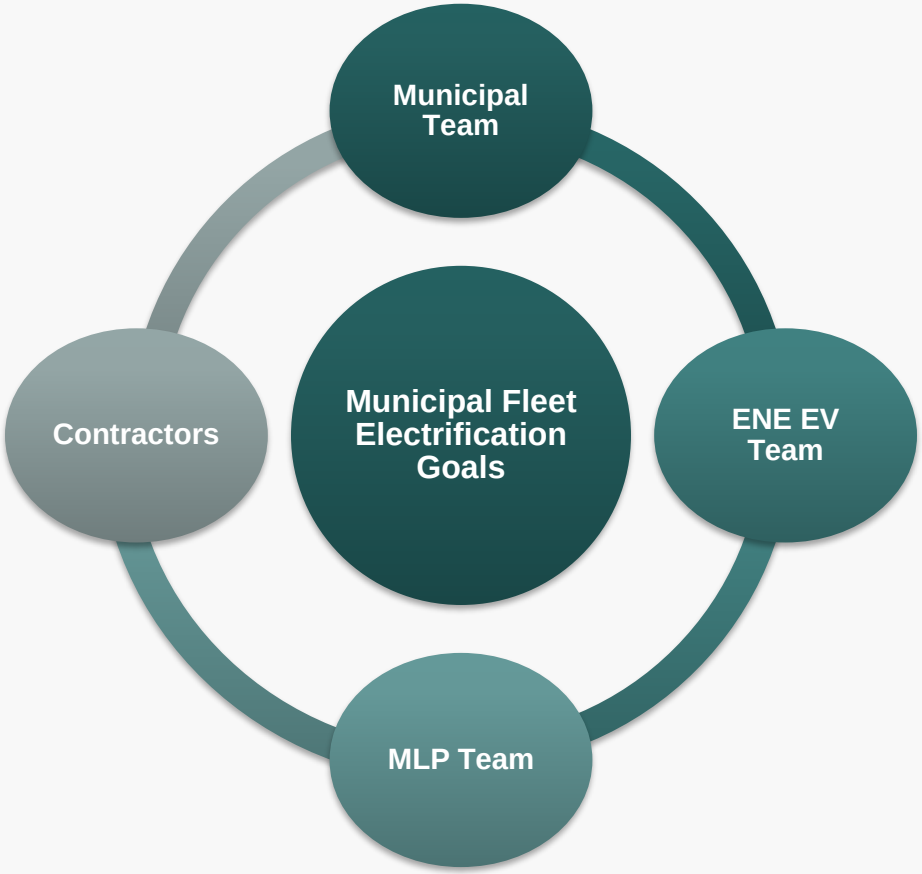
## Faster Queues

- MLPs have a much smaller queue of projects
- Can get to new opportunities sooner

## Coordination & Collaboration

- Access to support from Joint Action Agencies, like ENE
- Helps close gaps in technical expertise

# Early & Often Communication




# Collaboration & Success

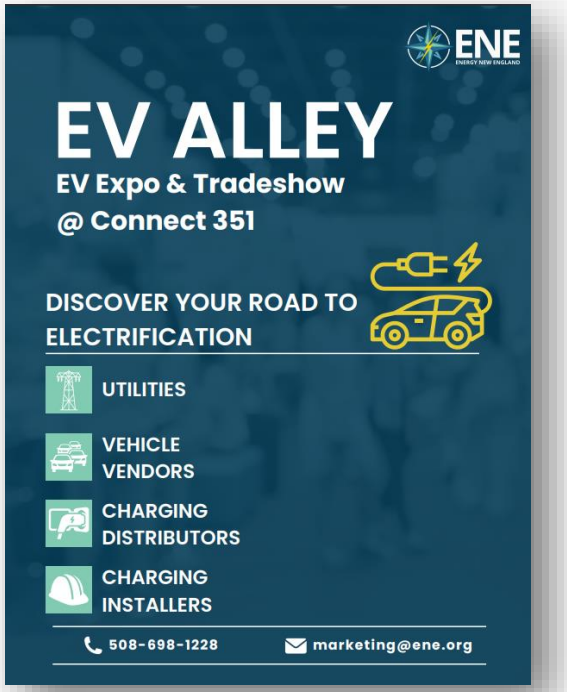
# Key Takeaways

- Collaboration Early & Often
- Look to long term savings over short term costs
- MLPs have the flexibility to implement creative solutions and pilot opportunities
- Talk to ENE, we can get the right people on board to get projects done

Continue learning at **EV Alley**

Massachusetts Municipal Association (MMA)

Connect 351 Conference in Jan 2025



# Contact

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Energy New England

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Website: www.ene.org

# National Grid
# Clean Transportation
# MA Phase III Fleet Programs

nationalgrid

# Vision for Clean Transportation Programs

A future in MA where clean transportation is universal and the environmental and public health benefits are shared by all our customers and communities.

## Our Guiding Principles

- Our programs support a cleaner environment and reduce GHG emissions
- Our customers and communities have equitable and affordable access to clean transportation choices
- Smart integration allows for grid optimization, customer savings, and enables a clean energy future

## Alignment

- Align our work with state policies and commitments, ensuring we provide the necessary support to reach the state's ZEV goals, CECP targets, and a net-zero future by 2050.
- Expand our stakeholder partnerships to leverage existing and future efforts


Transportation is the single biggest source of GHG emissions in MA and a leading cause of air pollution.

# Fleet Offerings

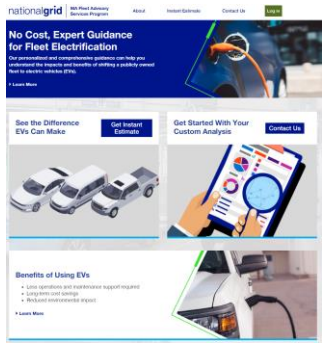
## Fleet EV Charging Program:

**~$30M** *for fleets*

- Supports fleet electrification by providing utility and customer-side EV infrastructure rebates for private and publicly owned fleets
- Tiered charger rebates for eligible public fleets

## Fleet Advisory Services:

**275** *studies*




- No-cost, expert analysis to help 275 publicly-owned fleet customers in electrifying their fleet vehicles

## EV Off-Peak Charging Program:

**$0.03-$0.05** *per kWh rebate*


- Allows up to 1,000 fleet vehicles to earn rebates when they charge EV during off-peak times
- $0.03/kWh in the winter / $0.05/kWh in the summer

## Demand Charge Alternative:

**$0** *demand charge in 1st year*

| Load Factor Threshold | Enrollment Years | Demand Charge Discount |
|---|---|---|
| None | 1 | 100% |
| LF <= 5% | 2 to 9 | 100% |
| 5% < LF <= 10% | 2 to 9 | 75% |
| 10% < LF <= 15% | 2 to 9 | 50% |
| LF > 15% | 2 to 9 | 0% |

$$Load\ Factor = \frac{Billed\ Energy\ in\ kWh}{Billed\ Demand\ in\ kW\ *\ Hours\ in\ Billing\ Period}$$

- 100% discount on demand charges in 1st year of operation
- Up to 100% discount for years 2-9, for load factors (i.e. EVSE utilization) below 15%

# Working With Your Utility – Best Practices

## Utility Best Practices - Engage with utility partners early and often

- **Utility Programs and Incentives – understand what programs you can leverage and the corresponding timelines, eligibility criteria, and application processes**

- **Project Planning – review site capacity via the System Data Portal and use the "Step 0" capacity assessment**

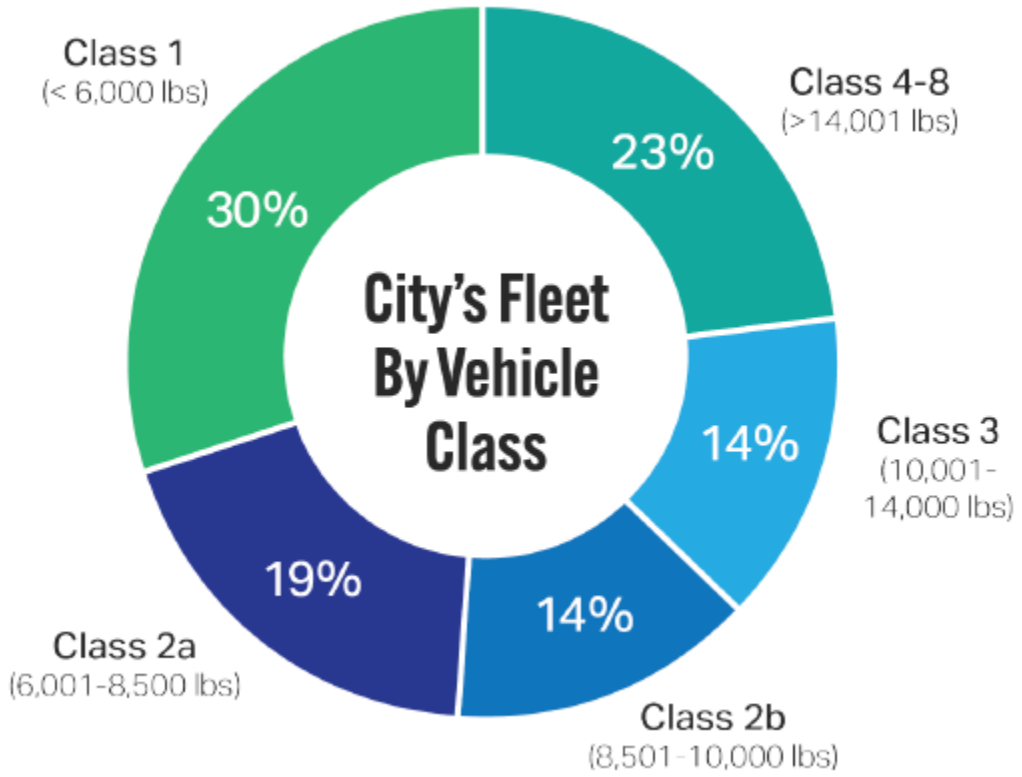
- **New Service Request – become familiar with the utility service request process**

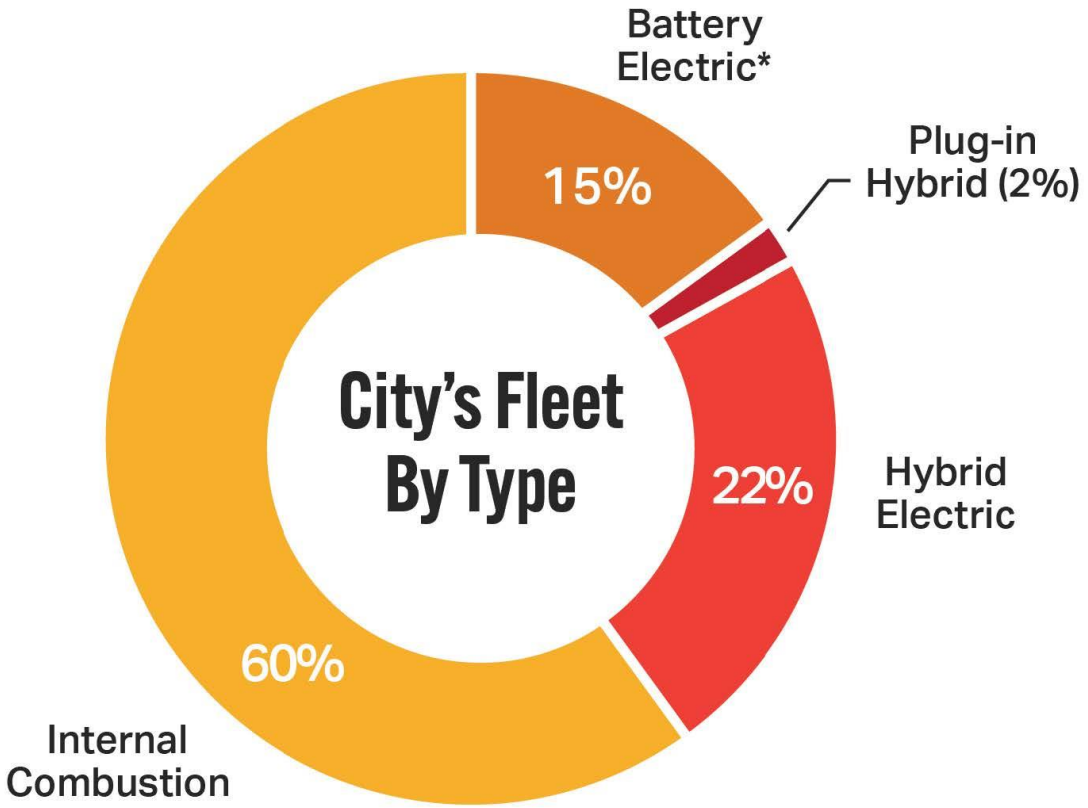
# CAMBRIDGE CLEAN FLEET




**Irina Sidorenko, Project Manager for Energy & Sustainability**
**Cambridge DPW**

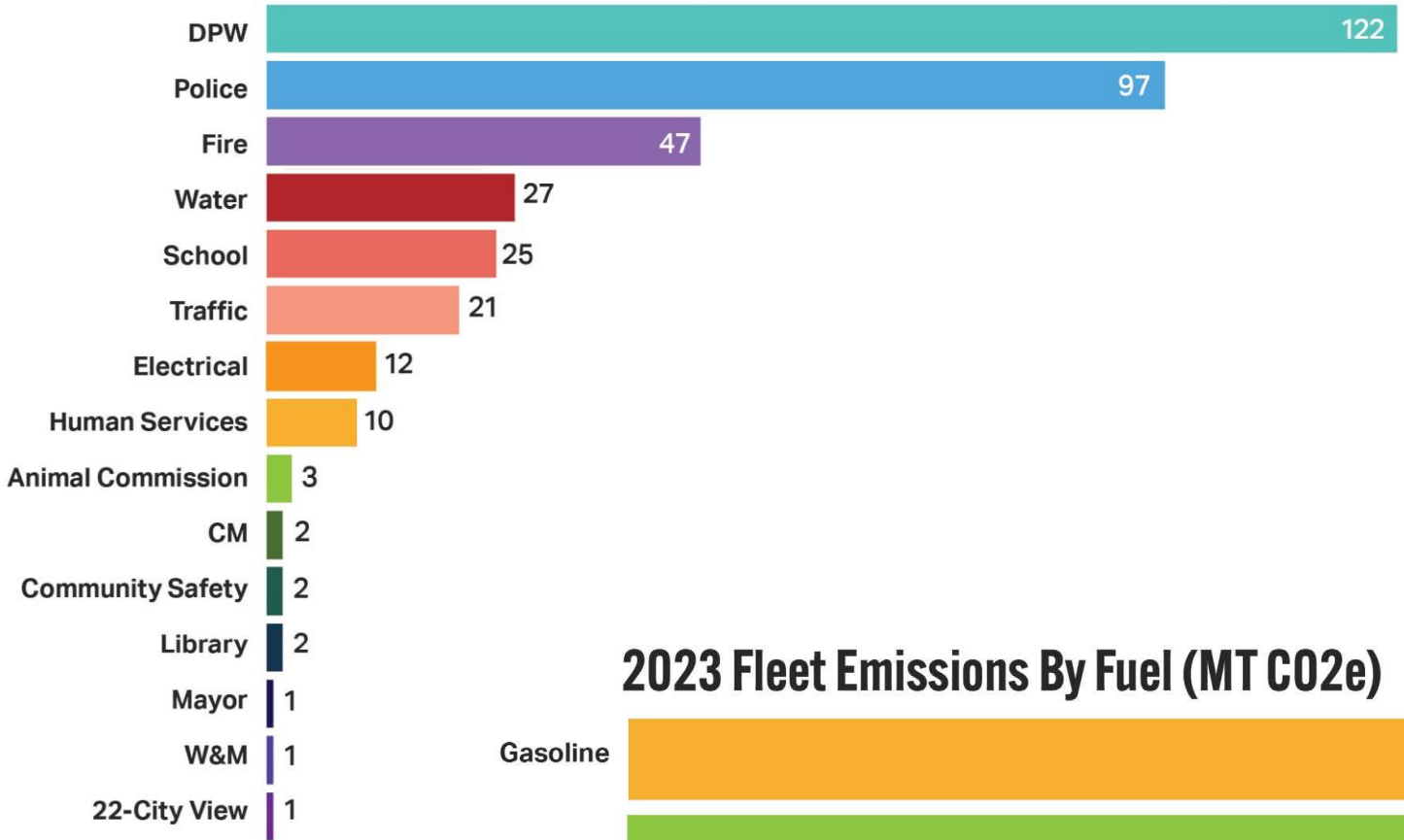
# City's Fleet Composition: 373 Vehicles




*Includes Awaiting Delivery

# City's Fleet By Departments




# 2023 Fleet Emissions By Fuel (MT CO2e)

# CITY OF CAMBRIDGE — HISTORY OF GREEN FLEET POLICY

- **2006** – City Manager convenes Green Fleet Committee to increase fuel efficiency of municipal vehicles; starts Green Fleet acquisition procedure

- **2010** – Green Fleet Policy adopted as part of an application for Green Community designation by DOER

- **2023** – Issued a New Clean Fleet Policy on February 21, 2023

# GREEN FLEET (2010) → CLEAN FLEET (2023)

## Guiding Principles of Clean Fleet Policy

Support transition to fossil-fuel-free and net zero emissions in municipal operations:

- Contribute to reducing climate change
- Reduce air pollutants that contribute to asthma, respiratory disease and other negative health impacts, particularly in children, the elderly and other vulnerable populations.
- Pathway with specific targets to get to Net Zero emissions from City Fleet

# KEY CLEAN FLEET POLICY ELEMENTS

## I. POLICY

ACQUISITION GUIDELINES

TARGETS

CLEAN FLEET COMMITTEE

MANAGEMENT & BEHAVIORAL STRATEGIES

## II. IMPLEMENTATION PLAN

INFRASTRUCTURE PLANS

DEPARTMENTAL IMPLEMENTATION PLANS

# TARGETS

## GHG Reduction Targets

2008: Baseline
2025: 25% reduction
2030: 55%
2040: 75%
2050: 100%

## Vehicle Category Ownership Targets

- 75% zero emission Light Duty vehicles by June 30, 2030, with a Stretch target of 100%
- 100% zero emission Marked Police Cruisers by June 30, 2035
- 100% zero emission Solid Waste Collection vehicles by June 30, 2035

## Electric Vehicle Charging Infrastructure Targets:

30 in 2025
90 in 2030
150 in 2040
180 in 2050


GVWR 66,000 lbs


GVWR 33,000 lbs

GVWR 19,500 lbs


GVWR 19,500 lbs

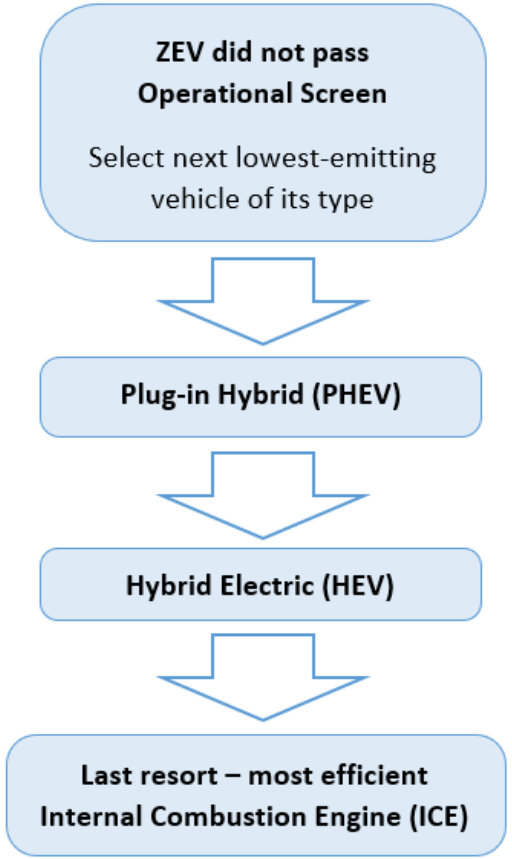
# EV FIRST FOR ALL VEHICLE CLASSES

- Clean Fleet Policy accounts for technological advances in all vehicle classes,
- And explicitly lays out operational requirements

# ACQUISITION GUIDELINES:
## ZERO EMISSIONS VEHICLE FIRST

### OPERATIONAL SCREEN (ALL VEHICLES)

- Does it meet operational and functional needs?
- Commercially available?
- Regional maintenance and repair?
- Charging/fueling requirement allow to function effectively?
- Charging infrastructure?




### DECISION FRAMEWORK

- If the costs are more than **50% higher**** than the next lowest emitting model, the department shall not be required to select the ZEV model (EVSE not part of the cost).

**Adapted from NYC policy

**The City may choose to acquire ZEV regardless of incremental price**

View
Clean Fleet
Policy here

View
Clean Fleet
Annual Report
here

# FLEET CHARGING

- Current: 56 fleet ports

- 15 additional ports are in construction or planned during FY25 to support fleet EV expansion at various City Departments




# Types of EVSE

**Level 2**
**240V**

**Autel, EnelX, Chargepoint**

**Level 3**
**480V**
*DC Fast Charger*

**ABB, Chargepoint, Freewire**

# EVSE Maintenance

## Maintenance Contract

Since 2016 using VEH102

FY25 contract value - $85K

- Network fees
- Quarterly PMs
- Labor $ allowance ($4,000)
- Material $ allowance ($40,000)

| Est annual cost per dual port | | |
|---|---|---|
| | | |
| $ | 730 | Network fees ($365/port) |
| $ | 115 | 10% processing fee |
| $ | 900 | PM contract per station |
| **$** | **1,745** | **Total** |

Electricity costs are within operating energy budget. Existing EVSE fee/pricing structure partially covers utility costs

# GRANTS AND FUNDING SOURCES

**Over $2.7 M in funding since 2017**

| | 2017 | 2018 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| Green Communities Grant | $ 71,560 | $ 218,950 | | | | | |
| Diesel Emissions Reduction Act (DERA) | | | | | **$ 305,625** | | |
| VW Open Solicitation | | | $ 500,000 | | | | **$ 416,991** |
| MassEVIP | | | $ 25,000 | | $ 10,000 | $ 5,000 | $ 22,500 |
| MorEV Trucks | | | | | | **$ 222,500** | $ 49,500 |
| Earmark Hazmat Grant | | | | | $ 205,000 | | $ 725,678 |

# ENTERPRISE LEASE

In 2023, the City entered into a 5-year agreement with Enterprise Fleet Management (Sourcewell contract)

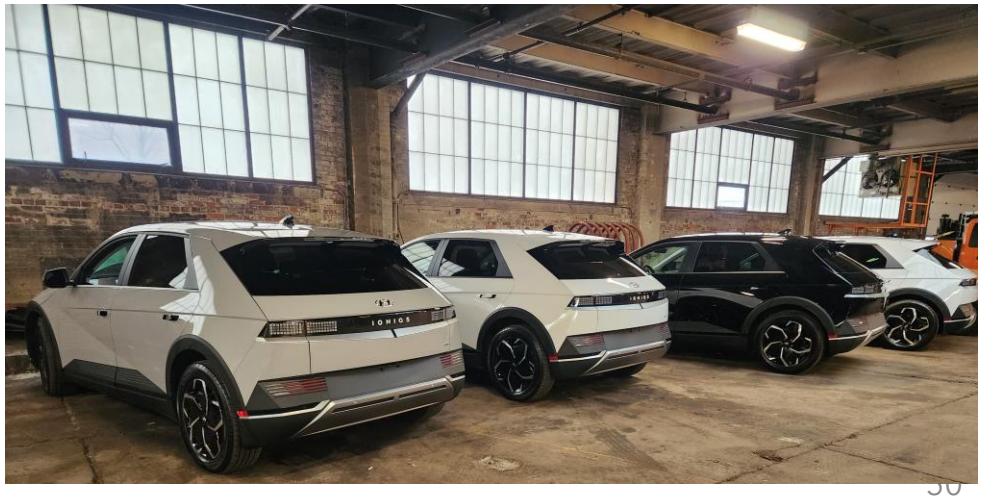
Since then, the City leased 43 vehicles:

- 32 BEVs (Hyundai IONIQ 5 & Kona, Ford Mach E, E-Transit & F-150 Lightning, Nissan Leaf, Chevy Blazer)

- 2 PHEVs (Rav 4 Prime, Mazda CX-90)

- 9 HEVs (Ford Maverick)

Leasing allows the City to replace more vehicles in a year and, by shortening the replacement cycle to a 5-year schedule, helps to reduce maintenance and repair costs.



# THANK YOU!

**Irina Sidorenko, Project Manager for Energy & Sustainability**
**isidorenko@cambridgema.gov**

# Town of Acton:
# Towards a More Efficient Fleet

November 22, 2024

Andrea Becerra, Sustainability Director

# From leasing → buying


# Hybrid vs. Internal Combustion Vehicle

## 1 Hybrid

**Gallons saved:**
**1,252**

**Fuel cost saved:***
**$4,318**

**CO2 emissions saved:**
**11.1 MTCO2e**

## 13 Hybrids

**Total gallons saved:**
**16,272**

**Total fuel cost saved:**
**$56,139**

**Total CO2 emissions saved:**
**145 MTCO2e**


***assumes average gas cost of gasoline from past year in MA (Nov. 2023-Oct. 2024)***

# 16,272 gallons saved is…

**Equivalent to greenhouse gas emissions from:**

**34.4** gasoline-powered passenger vehicles driven for one year

**Or, carbon sequestered by:**

**2,392** tree seedlings grown for 10 years

*Source: EPA GHG equivalency calculator*

# EV Cruisers


EMS FIRE POLICE
ACTON POLICE
POLICE
17


EMS FIRE POLICE
SUPERVISOR
18

## Annual Operating Cost

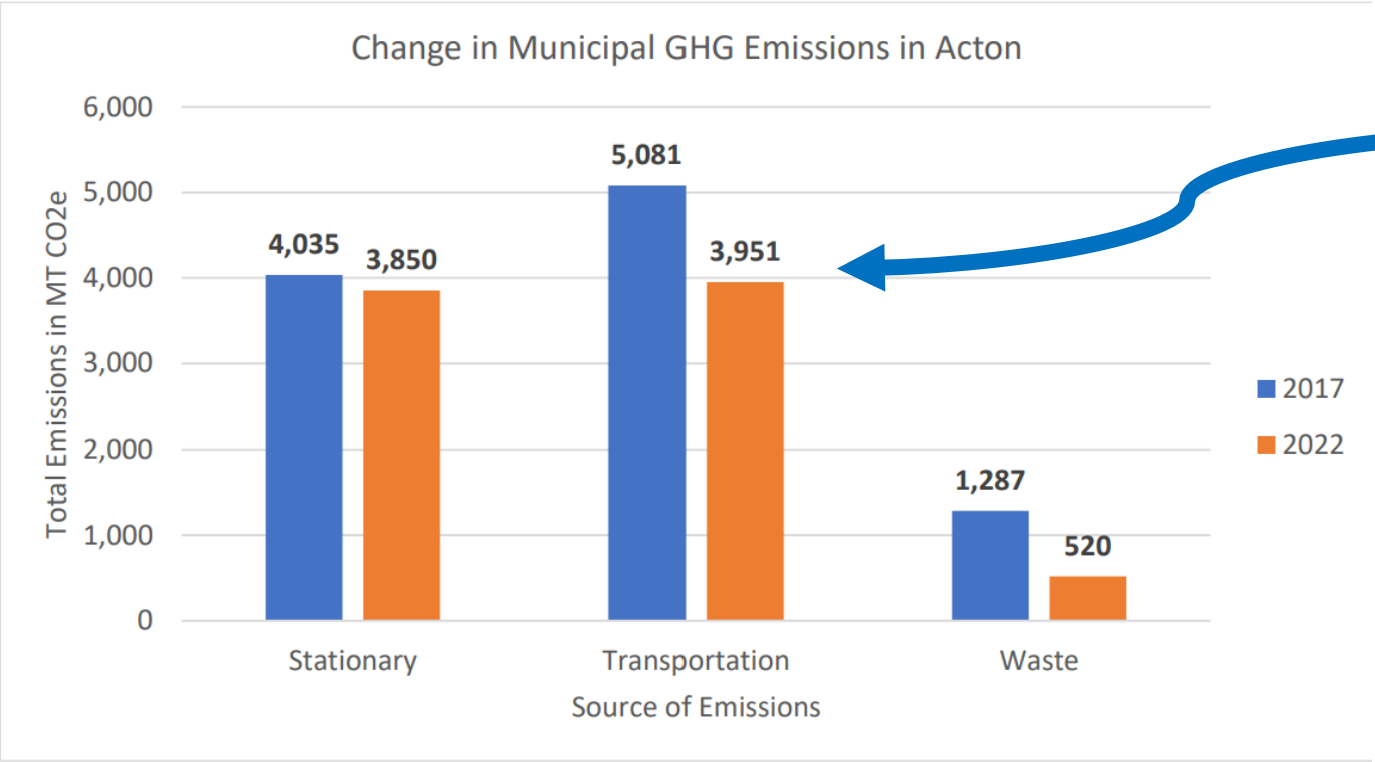
| Mustang Mache-E | Internal Combustion |
| --- | --- |
| Efficiency<br>• 0.401 kWh/mile<br>• Electricity cost at PSF: $0.1019/kWh<br>• "Fuel" cost of 8,000 miles driven annually: $327<br>(0.401 kWh/mi x 8,000mi x $0.1019) | Fuel Economy<br>• 17 mpg<br>• Gasoline cost: $2.78/gal (3yr average)<br>• Fuel cost of 8,000 miles driven annually: $1,308<br>(8,000mi / 17mpg x $2.78/gal) |
| Annual Maintenance<br>• $420 | Annual Maintenance<br>• $641 |
| **Total cost per mile driven:**<br>• $0.09 / mile | **Total cost per mile drive:**<br>• $0.24 / mile |
| **Total annual operating cost:**<br>$720.00 | **Total annual operating cost:**<br>$1,920.00 |
| **Total emissions:**<br>3,208 kWh used for 8,000 miles: 1.1 MTCO2e<br>(assumes current MA Electricity Grid) | **Total emissions:**<br>471 gallons used for 8,000 miles: 4.1 MTCO2e |

**Jim Farley** 
@jimfarley98

The #MustangMachE just became the first all-electric vehicle to pass the rigorous vehicle evaluation tests by the Michigan State Police. Another real-world application for EVs to help law enforcement agencies reduce their fuel usage and CO2 emissions, plus it's freaking FAST.


7:58 AM · Sep 24, 2021 · Twitter Web App

# Impact in 5 years




**22% DROP IN EMISSIONS IN TRANSPORTATION**

*Figure 8: Comparison of Municipal GHG Emissions from 2017 to 2022*

# EV Infrastructure

## ELECTRIC VEHICLE PUBLIC CHARGING STATIONS
### IN ACTON, MA

The Town of Acton currently hosts ten public Level 2 (L2) EV chargers [20 ports] and two public Level 3 (L3) EV chargers [2 ports].

### TOWN-OWNED CHARGERS

**South Acton Commuter Rail Lot - 2 L2 Chargers [4 ports]**
4 Central Street, Acton - $0.35/kWh + parking

**Acton Town Hall - 3 L2 Chargers [6 ports]**
472 Main Street, Acton - $0.35/kWh

**Acton Fire Department - 1 L2 Charger [2 ports]**
68 Harris Street, Acton - $0.35/kWh

**NARA Park - 4 L2 Chargers [8 ports]**
25 Ledge Rock Way, Acton - $0.35/kWh

**NEW Level 3 Fast Chargers!**

**Veterans Field - 2 L3 Chargers [2 ports]**
655 Main Street, Acton - $0.45/kWh

Map Key
- L2 Chargers
- L3 Chargers

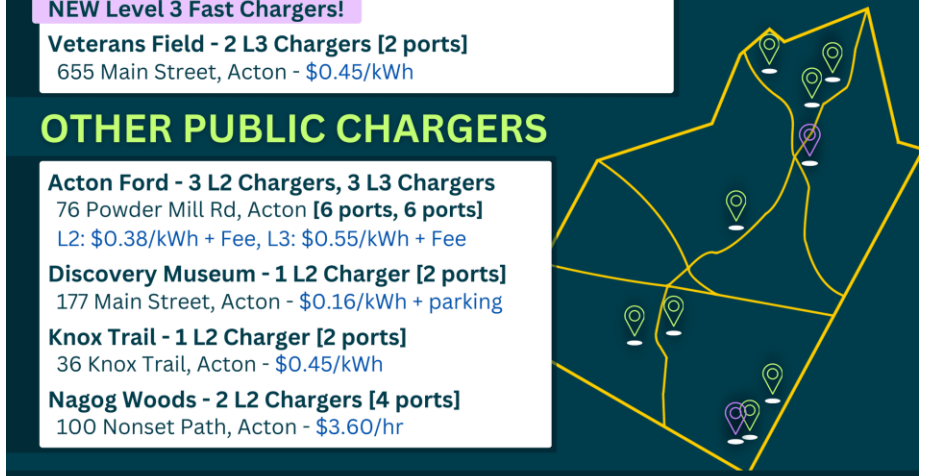
### OTHER PUBLIC CHARGERS

**Acton Ford - 3 L2 Chargers, 3 L3 Chargers**
76 Powder Mill Rd, Acton **[6 ports, 6 ports]**
L2: $0.38/kWh + Fee, L3: $0.55/kWh + Fee

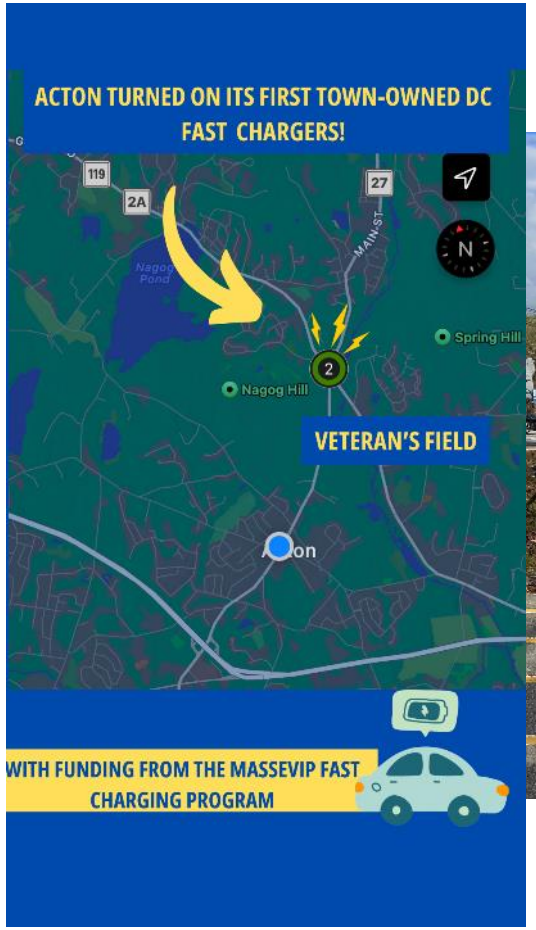
**Discovery Museum - 1 L2 Charger [2 ports]**
177 Main Street, Acton - $0.16/kWh + parking

**Knox Trail - 1 L2 Charger [2 ports]**
36 Knox Trail, Acton - $0.45/kWh

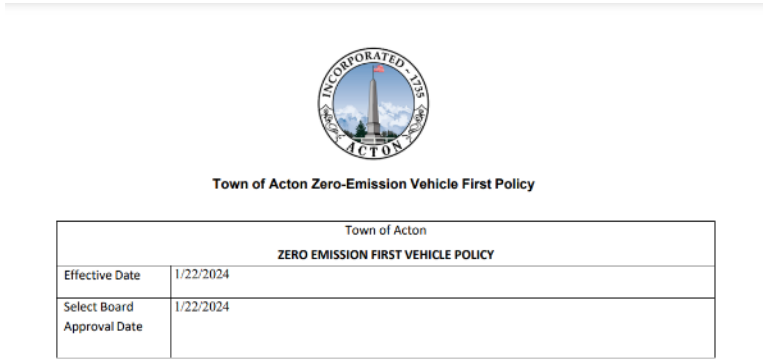
**Nagog Woods - 2 L2 Chargers [4 ports]**
100 Nonset Path, Acton - $3.60/hr



Questions? Contact the Sustainability Office, sustainability@actonma.gov | 978-929-6515




# Zero-Emission Vehicle First Policy



Town of Acton Zero-Emission Vehicle First Policy

| Town of Acton<br>ZERO EMISSION FIRST VEHICLE POLICY | |
|---|---|
| Effective Date | 1/22/2024 |
| Select Board Approval Date | 1/22/2024 |

1) **DEFINITIONS**

a) **Acquisition** - In the context of this
vehicles (whether used or new) by a
or to expand a fleet.

b) **Alternative fuel vehicles (AFVs)** - D
at least one alternative fuel (such a
emissions.

c) **Battery electric vehicle (BEV)** – An
board electrical energy storage de
electricity.

d) **Electric vehicle supply equipme**
component assembly or cluster of
within electric vehicles by permitti
device in an electric vehicle.

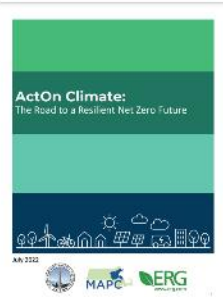
e) **Exempt vehicles** - Vehicles that are
include off-road vehicles, motorcy
weight rating (GVWR) of more tha
some public works vehicles.

f) **Fleet vehicles** - In the context of th
operated by the Town of Acton.

STRATEGY M2: Lead by example: electrify school buses and town vehicles

ACTIONS

*1. Adopt electric-first vehicle policy for the Town's municipal fleet, meaning that electric vehicles, including school buses and micro-transit services like the Minuteman Van and the CAT shall be prioritized when the Town purchases or leases motor vehicles for its municipal operations.*




**Climate Emergency Declaration passed at Town Meeting**

## Grants & Incentives

- Green Communities: $15,000 for purchase; $10,000 for lease
- MassEVIP: $7,500 for purchase; $5,000 for lease
- Inflation Reduction Act: $7,500 for the purchase of certain EVs

**Annual Operating Cost**

| Mustang Mache-E | Internal Combustion |
|---|---|
| Efficiency<br>• 0.401 kWh/mile<br>• Electricity cost at PSF: $0.1019/kWh<br>• "Fuel" cost of 8,000 miles driven annually: $327<br>(0.401 kWh/mi x 8,000mi x $0.1019) | Fuel Economy<br>• 17 mpg<br>• Gasoline cost: $2.78/gal (3yr average)<br>• Fuel cost of 8,000 miles driven annually: $1,308<br>(8,000mi / 17mpg x $2.78/gal) |
| Annual Maintenance<br>• $420 | Annual Maintenance<br>• $641 |
| **Total cost per mile driven:**<br>• $0.09 / mile | **Total cost per mile drive:**<br>• $0.24 / mile |
| **Total annual operating cost:**<br>$720.00 | **Total annual operating cost:**<br>$1,920.00 |
| **Total emissions:**<br>3,208 kWh used for 8,000 miles: 1.1 MTCO2e<br>(assumes current MA Electricity Grid) | **Total emissions:**<br>471 gallons used for 8,000 miles: 4.1 MTCO2e |

$1,200 saved in annual operating costs

## Climate Leader Community Certification

Municipalities seeking Climate Leader Community certification must meet the following criteria:

- Be a Green Community in good standing
- Have a local body that advises the municipality on clean energy/climate initiatives, such as a sustainability committee, energy committee, or similar
- Commit to eliminate on-site fossil fuel use in municipal buildings and operations by 2050 through a resolution, climate action plan, or CMO affirmation
- Create a municipal decarbonization roadmap
- Adopt a zero-emission-vehicle-first policy
- Adopt the specialized opt-in building code