Municipal Green Vehicle Technology

November 1, 2016

MAPC

METROPOLITAN AREA PLANNING COUNCIL

SMART GROWTH AND REGIONAL COLLABORATION

OSD

OPERATIONAL SERVICES DIVISION

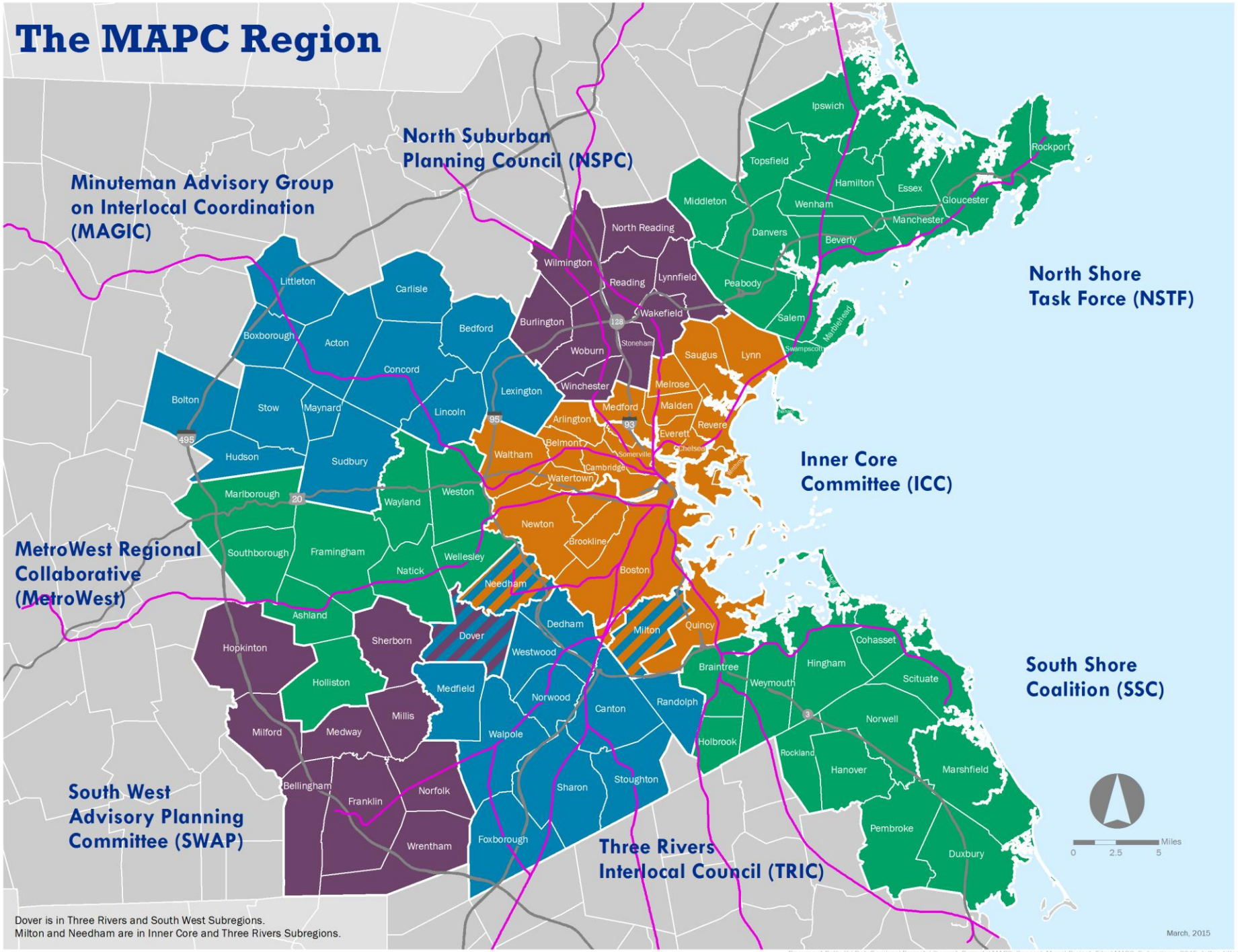
DOER

Massachusetts Department of Energy Resources

New Bedford, MA – EVIP vehicles and charging stations

AGENDA

9:00 – 9:15 AM	**Mark Fine, MAPC** Welcome & Introductions
9:15 – 9:25 AM	**Philip Kreycik, Meister Consulting Group** Alternative Fuels and Electric Vehicle Trends
9:25 – 9:32 AM	**Megan Aki, MAPC** Overview of VEH102, the New Statewide Contract for Green Vehicle Technology
9:32 –9:48 AM	**Steve Russell (DOER), Lana Gunaratne (OSD), & Sejal Shah (DEP)** Massachusetts' Alternative Fuel Vehicle Efforts, Available Contracts, and Financing Opportunities
9:48 – 9:55 AM	**Jeremy Marsette & Jillian Wilson Martin, Town of Natick** Natick's Electric Vehicle Projects
9:55 – 10:05 AM	**Alison Felix, MAPC** Q&A with All Presenters
10:05 – 11:00 AM	*VEH102 Vendor Coffee Hour*



MAPC
METROPOLITAN AREA PLANNING COUNCIL

- 101 municipalities
- 1,440 square miles
- Nearly 3.2 million residents
- 1.8 million jobs (2010 Census)

"POPCORN" QUESTIONS

1. **INTEREST** - Why are you interested in green vehicle technology?

2. **BARRIERS** - What do you see as the biggest barrier for your city/town in greening your fleet?

3. **QUESTIONS** - What are some questions you already have about green vehicle technology?

Fleets for the Future:
Alternative fuels and electric vehicle trends

Philip Kreycik
Meister Consultants Group
MAPC Municipal Green Vehicle Technology Workshop
November 1, 2016

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Outline

1. About Fleets for the Future

2. Importance of Clean Transportation in Massachusetts

3. EVs in Massachusetts

Accelerating alt fuel vehicle deployment

fleets for the future

Goal: Accelerate the deployment of alt fuel vehicles (AFVs) by **reducing their incremental costs** and **building fleet capacity** to plan procurements.

Scope: Propane, electric, and natural gas vehicles

Motivation:

- Minimize emissions
- Improve air quality
- Reduce fuel costs
- Tap into domestic fuels that have less price volatility

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Approach

fleets for the future

- Convene regional councils, Clean Cities coalitions, and industry leaders.

- Teach fleets about best practices on AFV deployment, as well as vehicle procurement strategies.

- Consolidate bulk orders of AFVs and associated technologies.

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A national partnership

fleets for the future

- **Mid-America Regional Council (MARC)**
  - Greater Kansas City: 1.8 million
  - Mo. and Kan. bi-state: 8.842 million
- **Metropolitan Washington COG (MWCOG)**
  - District of Columbia: 4.7 million
  - Suburban Md., northern Va.: 14.376 million
- **Metropolitan Area Planning Council (MAPC)**
  - Greater Boston: 4.732 million
  - Mass. 6.547 million
- **North Central Texas Council of Governments (NCTCOG)**
  - Dallas-Fort Worth: 6.603 million
  - Texas: 25.145 million
- **Pima Association of Governments (PAG)**
  - Tucson: 980,263
  - Ariz.: 6.392 million
- **Clean Cities Coalition outreach areas:**
  New York, Ohio, Utah, Washington

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NARC Building Regional Communities

MARC MID-AMERICA REGIONAL COUNCIL

Y&A

PROPANE education & research COUNCIL

PAG Pima Association of Governments

Metropolitan Washington Council of Governments

Kansas City Regional Clean Cities

Electrification Coalition

F4F

LPG

MAPC METROPOLITAN AREA PLANNING COUNCIL

North Central Texas Council of Governments

ICM the energy of innovation™

Utah Clean Cities Alternative Fuels

Clean Communities www.cc-cny.com

Dallas-Fort Worth CLEAN CITIES

CleanFuels Ohio

Clean Cities Tucson Regional Coalition Pima Association of Governments

Western WA CLEAN CITIES

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Sample vehicle types

fleets for the future

CNG

- Class 4-6 trucks with utility body (e.g. Ford F450 and up)
- ½ to 1-ton pickups (e.g. Ram 2500)
- Refuse haulers (e.g. Mack, Crane)

Propane

- Bluebird school buses
- Delivery vehicles
- Law enforcement (Ford Explorer SUV, Ford Taurus, Chevy Tahoe, Dodge Charger)
- Ford Transit

Electric Vehicles

- Sedans
  - PHEV: Chevy Volt, Ford Fusion, Ford C-MAX
  - BEV: Nissan Leaf, Smart ForTwo
  - Anticipated: Chevy Bolt and Spark, Ford Focus, BMW i3
- Port vehicles
- Retrofit hybridization

Selection factors: High mileage/multiple shifts, low MPG, long idle times, high maintenance expenses, predictable routes

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AFV Survey

fleets for the future

- Will guide MAPC's procurement
- Very short (13 questions)
  - Vehicle replacement needs
  - Infrastructure availability
  - Maintenance practices
  - Financing practices

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Importance of Clean Transportation

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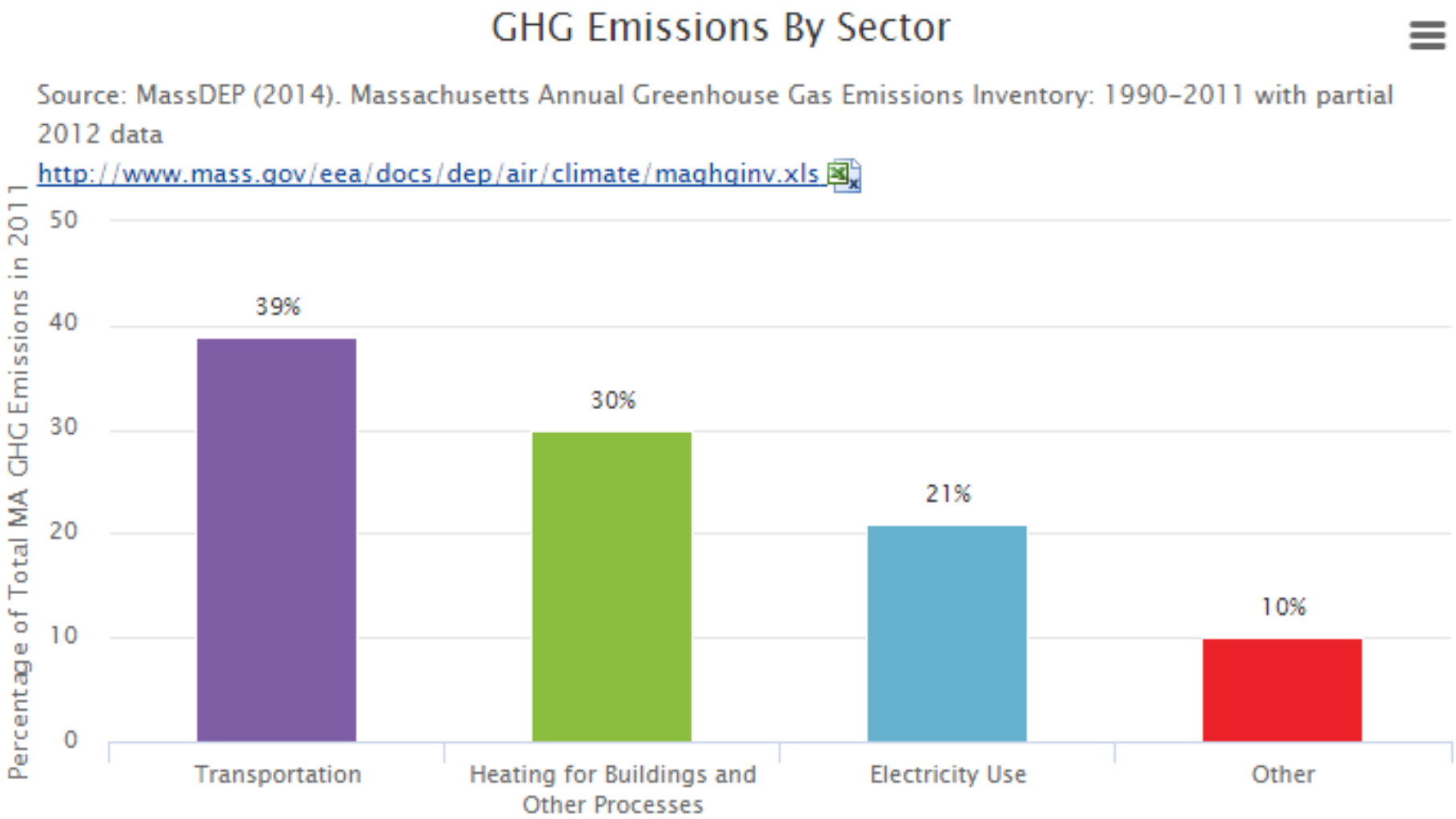
Greenhouse gas

Transportation is the sector that produces the most GHG in Massachusetts



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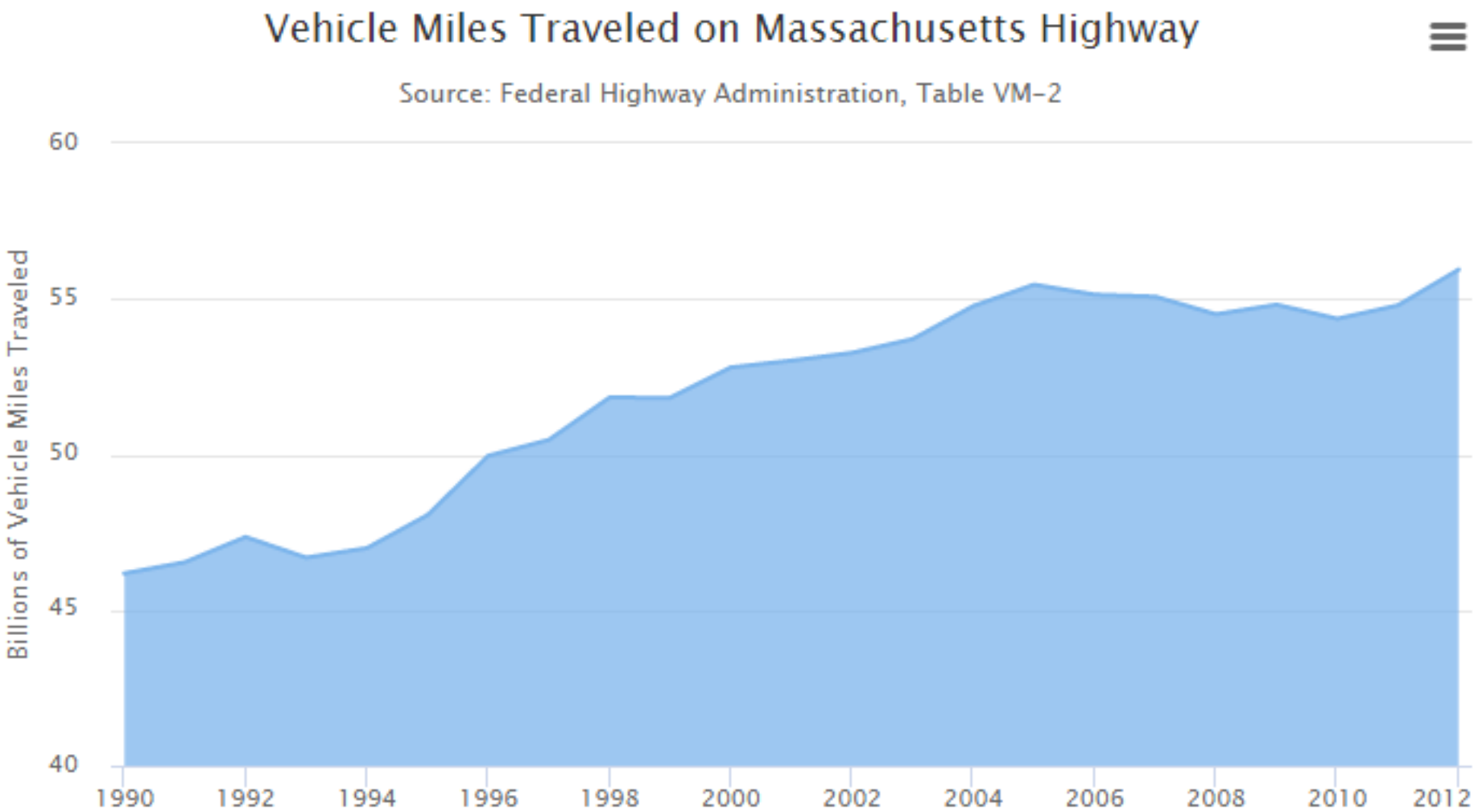
Greenhouse gas

Growing population and rising travel demand makes clean vehicles especially important.



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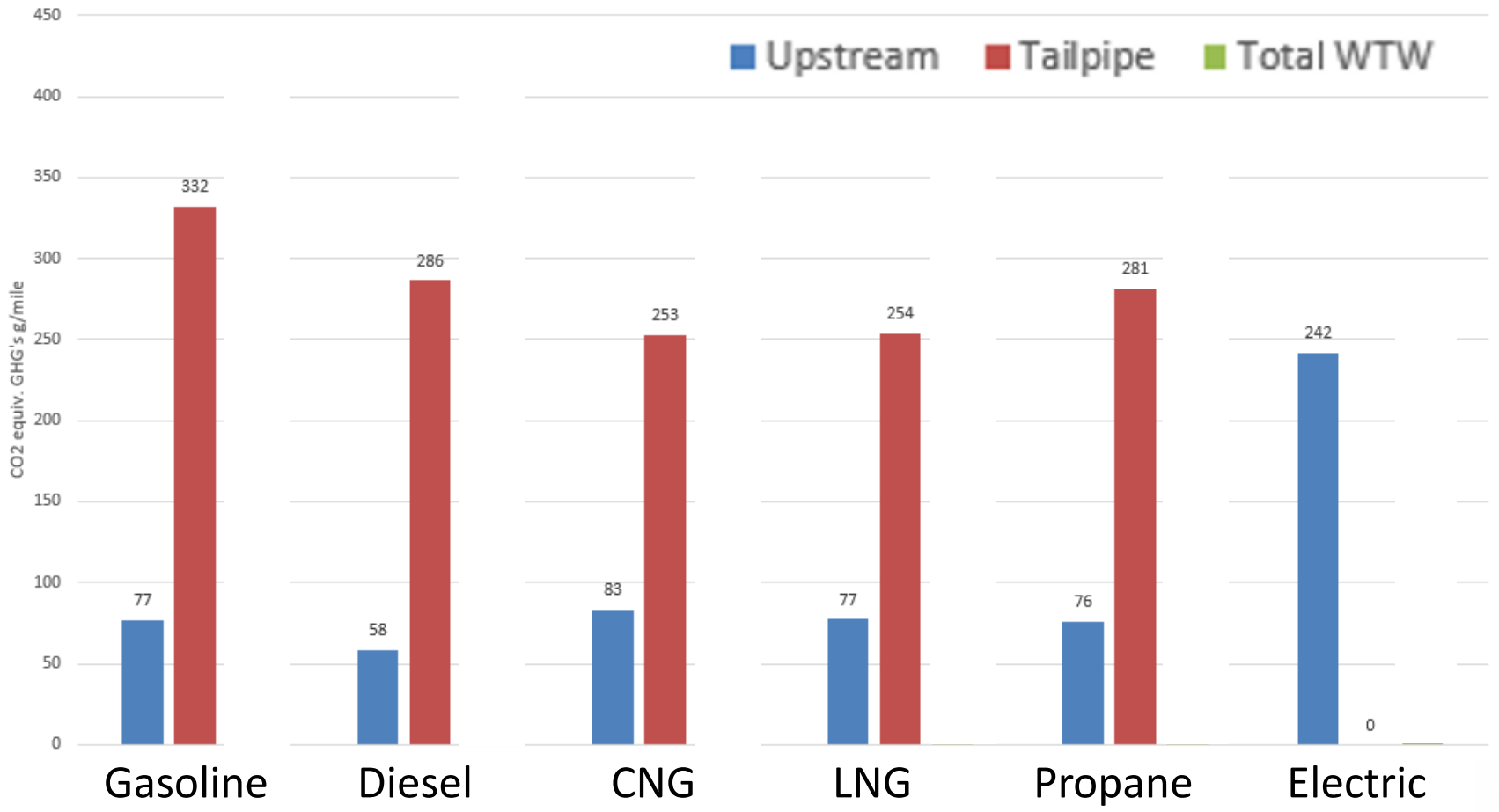
Greenhouse gas emissions by fuel type



Source: GREET AFLEET model, 2015

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Co-benefits of electric and alternate fuel vehicles

All alt fuels

- Cleaner combustion -> Better air quality
- Diversity of feedstocks -> Price stability
- Primarily domestic feedstocks
- Higher efficiency -> Lower TCO

Electricity

- Power sector is getting greener and is already cleaner than gasoline and diesel

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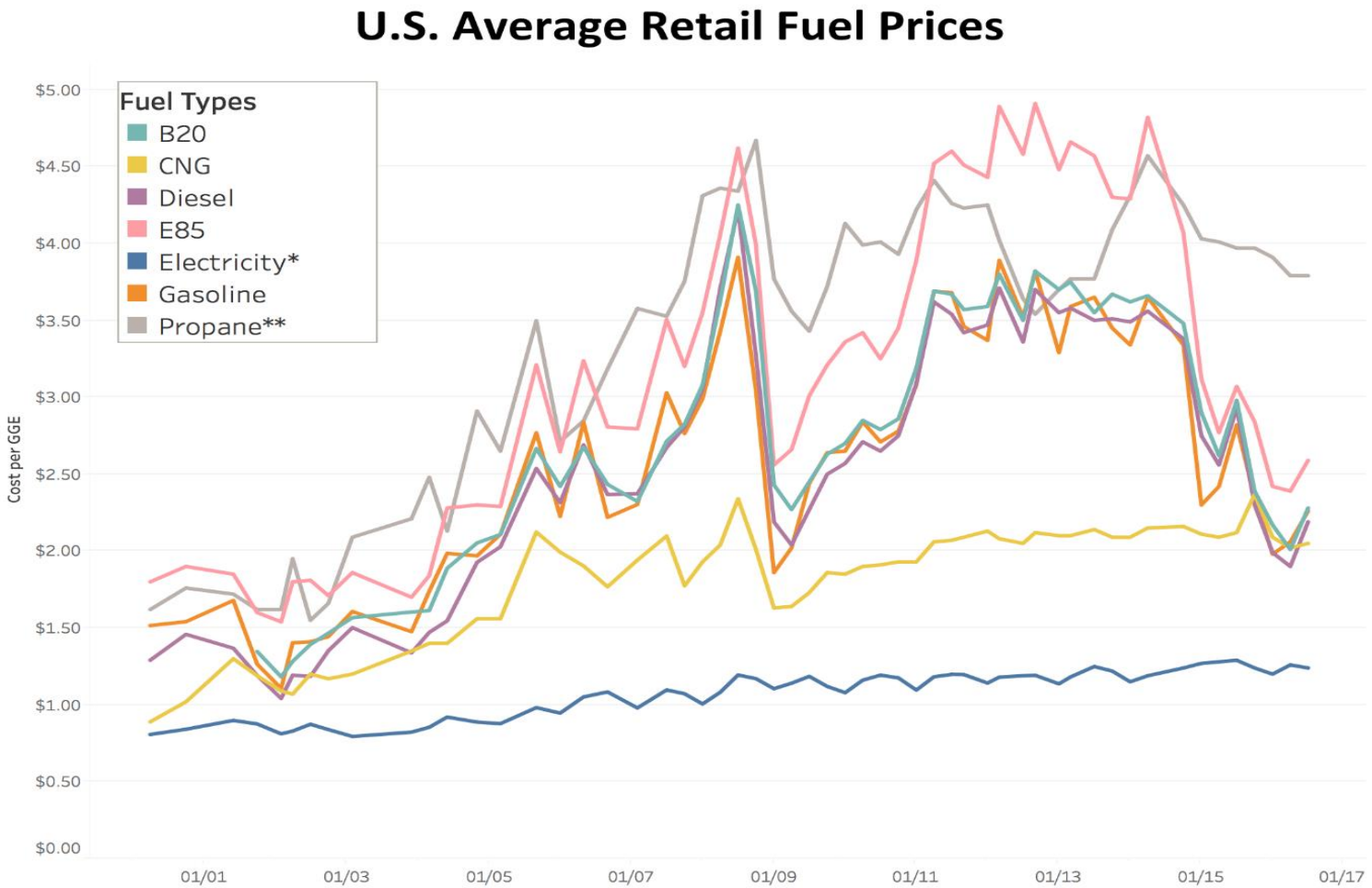
Fuel price volatility: a major concern for fleets



EV ~ $0.035 /mi

ICE ~ $0.12 / mi

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Source: DOE AFDC

*Electricity prices are reduced by a factor of 3.4 because electric motors are approximately 3.4 times as efficient as internal combustion engines

Electric Vehicles

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Existing and upcoming MA programs

MOR-EV
Massachusetts Offers Rebates for Electric Vehicles

VEH102: Advanced Vehicle Technology Equipment, Supplies and Services

STAY TUNED FOR
Drive Green
WITH MASS ENERGY

VEH98: Selection of Environmentally Preferred Vehicles

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Electric vehicles in 2016

Affordable

- Upfront cost can be mitigated by fleet discounts, tax credits
- Fuel Costs: EV ~ $0.035/mi, versus ICE ~ $0.12/mi

Sufficient range

- Rapid improvement in battery technology and cost
- Vehicles with >200 miles range are now common
- >90% of daily driving needs can be served by an EV

Reasonable charge times

- Don't always need a full charge
- L2: 10 – 20 miles per hour of charging
- DCFC: 50 – 70 miles per 20 minutes of charging

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Electric vehicles in 2016

Wider selection

- MY 2016: 11 BEV models and 15 PHEV models
- Highly anticipated new options in MY 2017

Improved cold weather range

- Cold weather reduces efficiency of all vehicles
- A Nissan Leaf could still get > 80 MPGe at 20° F

Fun to drive

- Some of the fastest vehicles available, exceptional torque
- Tesla model S goes 0-60 in 3.9 seconds

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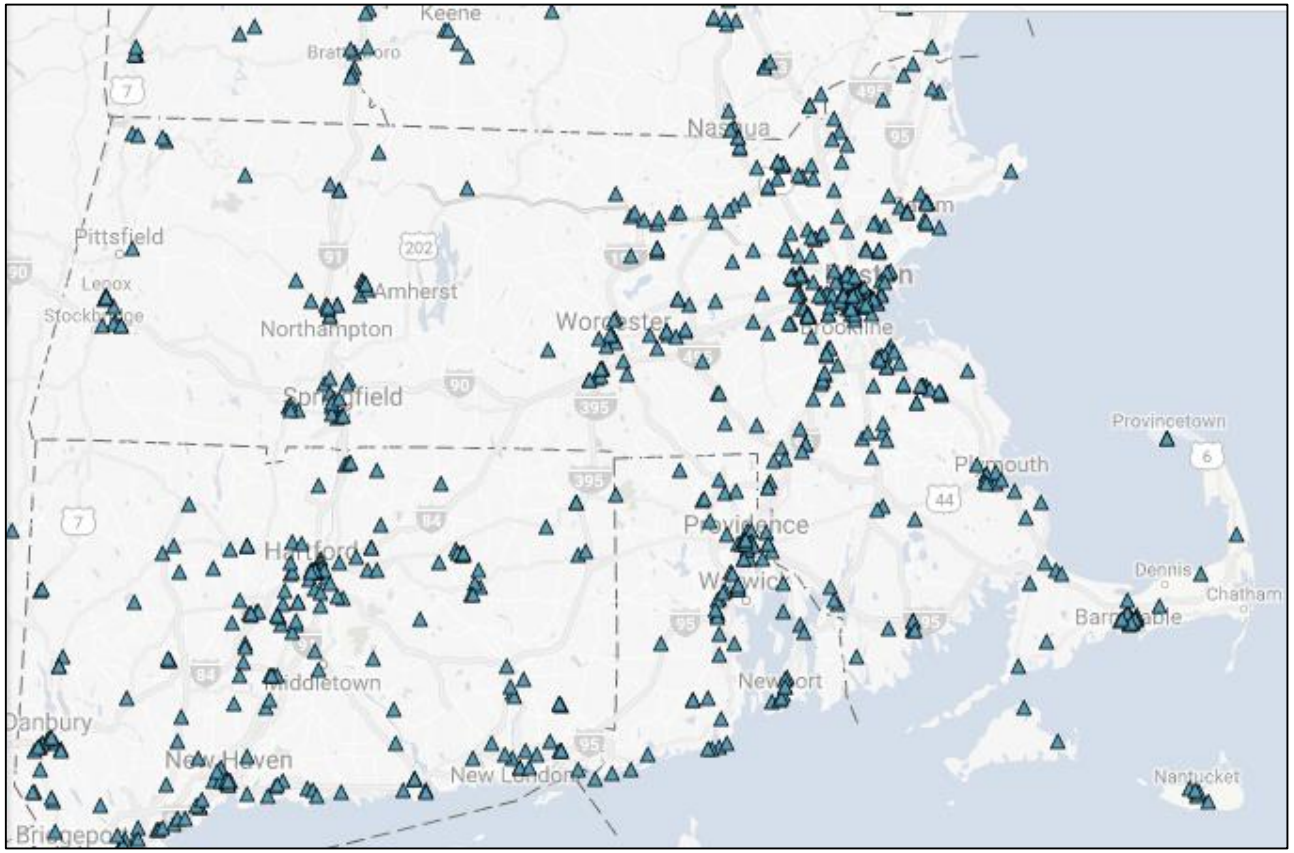
Hundreds of EVs being deployed by gov't fleets in 2016

Boston metro area is poised for more EV deployment.



More than 440 charging stations in MA.

Source: [DOE's Alternative Fuel Data Center Station Locator]

Recent fleet procurements:

- NYC: 323 PHEVs
- Los Angeles: 199 BMW i3 BEVs
- Indianapolis: 250+ PHEVs & BEVs
- Atlanta: 50+ PHEVs & BEVs

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Total cost of ownership for most popular municipal fleet EVs

Make/Model	 Nissan Leaf	 Ford Focus	 Chevy Volt	 Ford Focus
Category	BEV	BEV	PHEV	ICE
Battery Size	30 kWh	23 kWh	18.4 kWh	2.0 L - V4
MSRP	$34,200	$29,170	$33,170	$23,225
Incremental Cost	$10,975	$5,945	$9,945	$0
All-Electric Range	107 miles	76 miles	53 miles	n/a
EPA MPG Rating	112 MPGe	105 MPGe	106 MPGe	31 MPG
Charge Time (240v)	8 hours	4 hours	4 hours	n/a
Est. Annual Fuel Cost	$550	$600	$800	$1,000
TCO/mi	$0.46	$0.42	$0.46	$0.41

Estimates are based on a local example in Colorado, where there is a state tax credit in addition to the $7.5k federal credit. Fuel costs are estimated at $0.12/kWh and $2.24 / gallon. Use assumes 12k miles per year over 10 years. Estimates will vary significantly when adjusted for specific local circumstances. TC = Tax Credit. Source: Electrification Coalition

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EV group buys: Drive Electric Northern Colorado

- Pre-negotiated **group pricing** thru area dealerships
- Time-limited
- Implemented by a trusted 3rd party

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How do I get involved?

fleets for the future

- Provide input
  - MAPC Advisory Committee
  - Survey
- Review F4F guidance documents
  - AFV transition planning
  - Financing AFV procurement
  - Deploying electric vehicles
  - Deploying natural gas and propane vehicles

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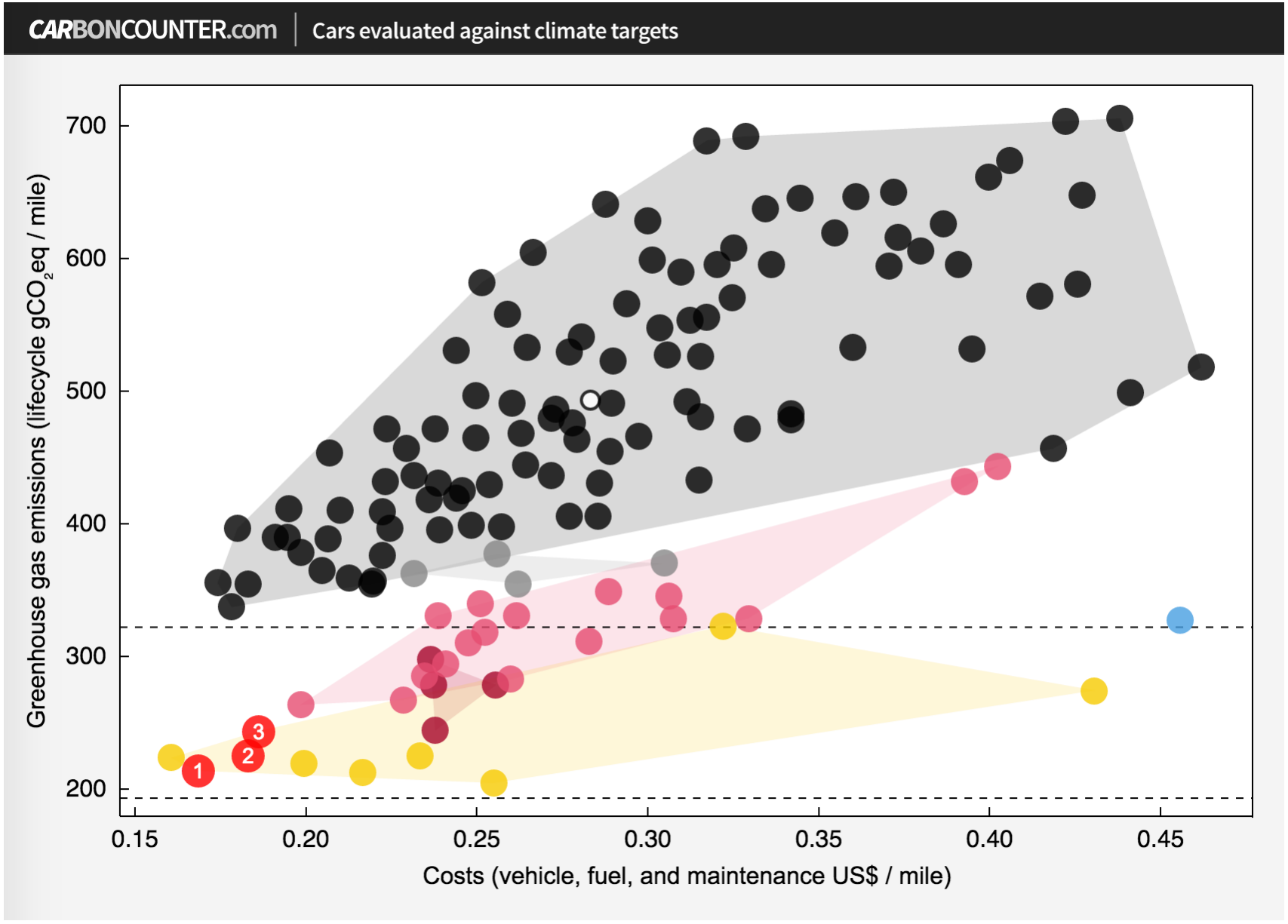
CLIPPERCREEK, INC.

VEH102: Advanced Vehicle Technology

www.CARBONCOUNTER.com



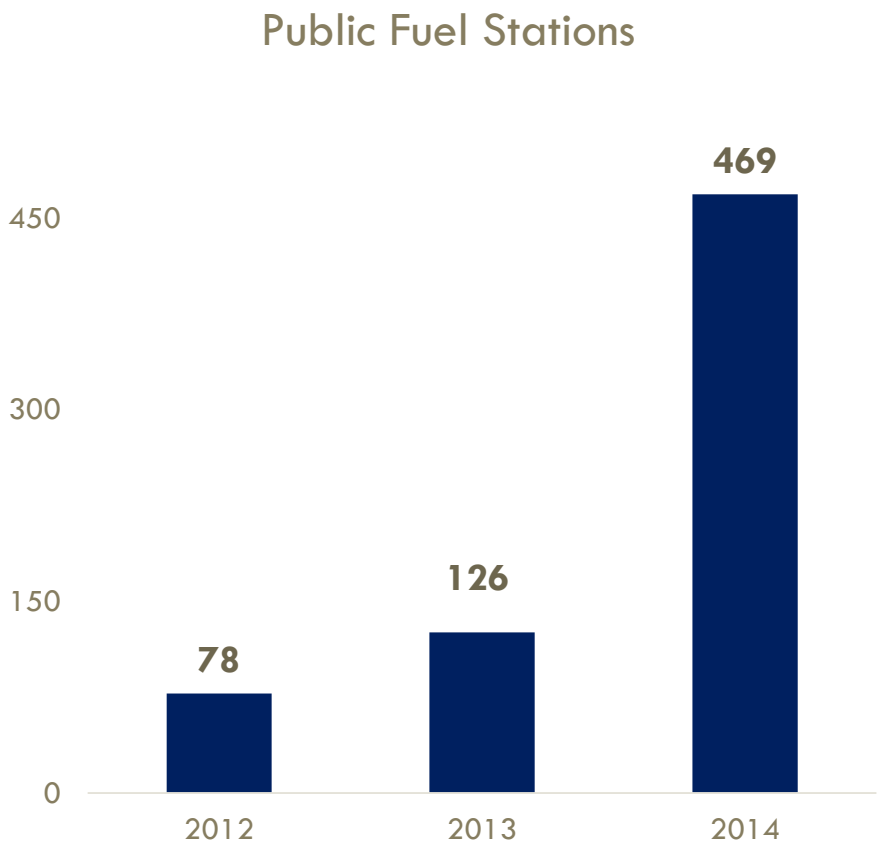
HIGHLIGHTED CARS

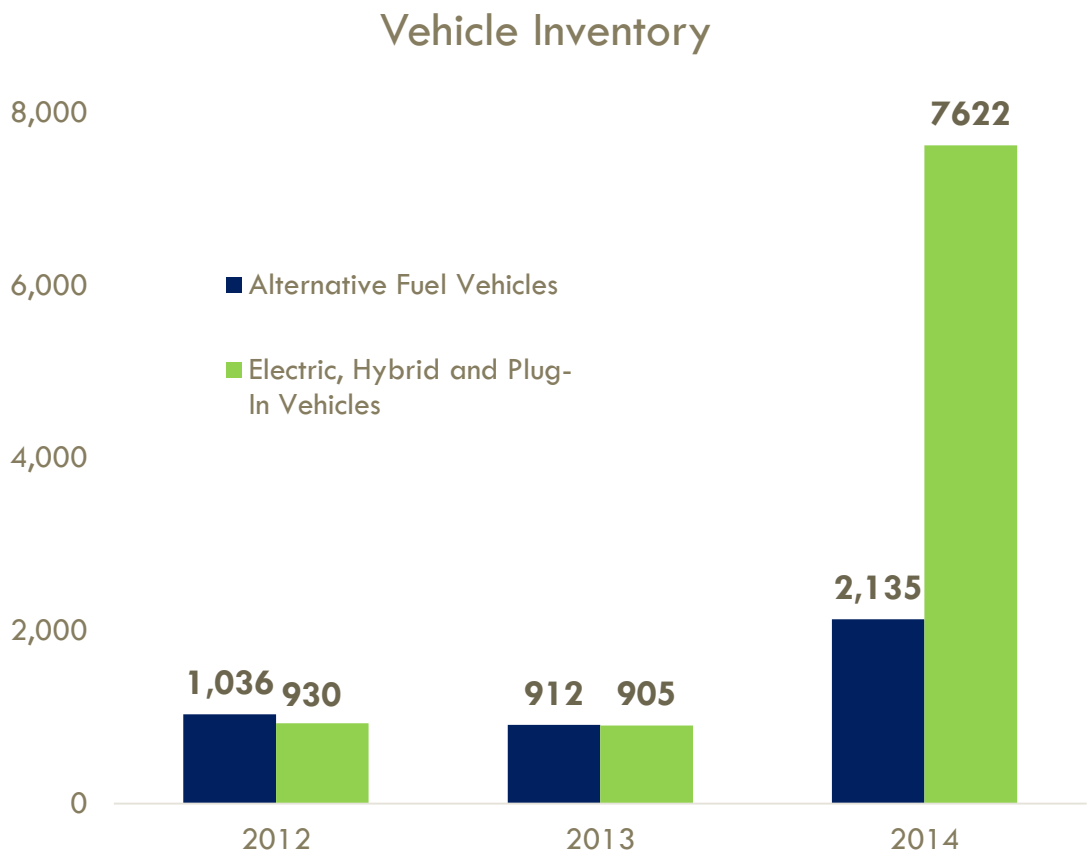
1. Chevrolet Spark EV | 1LT
2. Nissan Leaf | S
3. Ford Focus Electric | Base

LEGEND

- Internal Combustion Engine (Gasoline)
- Internal Combustion Engine (Diesel)
- Hybrid
- Plug-In Hybrid
- Battery Electric Vehicle
- Fuel Cell Vehicle
- Sales-Weighted Average

ALTERNATIVE FUEL ADOPTION IN MASSACHUSETTS





VEH102 CONTRACT SERVICE CATEGORIES

Scituate, MA – EVIP vehicles and charging stations

Service Category 1: Electric Vehicle Supply Equipment (EVSE), Hardware, Software, and Ancillary Services

Service Category 2: Idle Reduction Technologies for Heavy, Medium, and Light Duty Vehicles; and Heavy Duty Equipment

Service Category 3: After-market conversion technologies– all vehicle classes

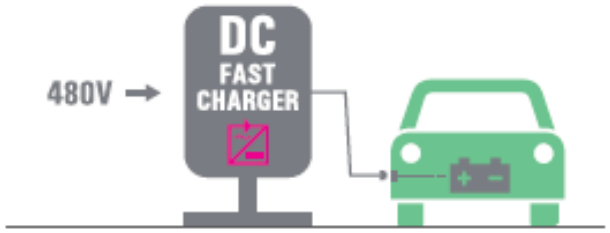
ELECTRIC VEHICLE SUPPLY EQUIPMENT

8-20+ hours

Overnight charging for vehicles that will travel under 40 miles during the day

4-8 hours

Most practical municipal applications, can add 10-25 miles of range in one hour of charging



30 mins

Applications make most sense along highways at rest areas for a short duration charge that provides range for long distance travel

Image source: "Accommodating Garage Orphans" WXY, 2015

ANTI-IDLING TECHNOLOGY

Use of lights, radios, computers, radar and video cameras while monitoring traffic, assisting at accident scenes, writing reports, etc.		Power Management System Heat Recovery System Battery APU
Use of lights and other accessories while idled on call, water pumping requires additional power.		Battery APU
Use of lighting, communications, refrigeration, life support, heating and cooling while waiting for an Emergency Call		Battery APU or Power Pack Electrified Parking Space
Frequent stops for deliveries and pickups, use of heating and cooling while idling		Battery APU Heat Recovery System

HYBRID RETROFIT TECHNOLOGY

Keep your favorite ride, while saving money and reducing your carbon footprint.

Light & medium duty vehicles for retrofit or up-fit

Vehicle downtime for installation minimal – typically one day on or offsite

20-35% reduction in fuel consumption – depending on vehicle type and usage.

SELECTED VENDORS – VEH102 CONTRACT

	Category 1	Category 2	Category 3
VENDOR	ELECTRIC VEHICLE SUPPLY EQUIPMENT	ANTI-IDLING TECHNOLOGY	HYBRID RETROFIT TECHNOLOGY
ClipperCreek, Inc.	√		
EVSE, LLC	√		
Graybar Electric Company, Inc.	√		
LiquidSky Technologies	√		
Verdek	√		√
Voltrek, LLC	√		
eNow, Inc.		√	
Magmotor Technologies, Inc.			√
National Fleet Hybrids			√
XL Hybrids			√

WHAT'S NEXT?

Assess your fleet and/or community charging infrastructure needs

Identify suitable applications within your fleet for green vehicle technology

Purchase easily off the statewide contract and work with the selected vendors to arrange install.

Massachusetts' Alternative Fuel Vehicle Efforts, Available Contracts, and Financing Opportunities

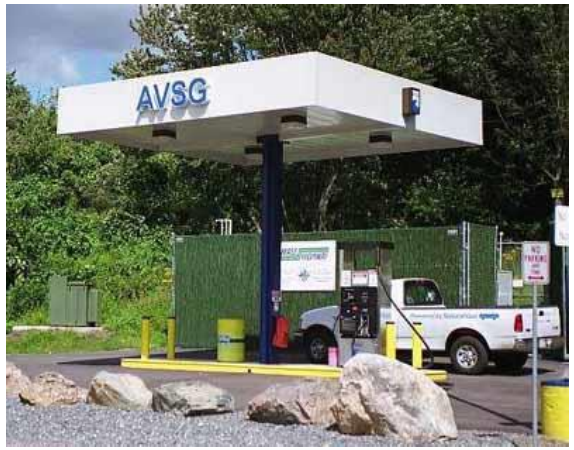
DOER
Massachusetts Department of Energy Resources

Clean Cities

The Department of Energy Resources - Alternative Transportation/Clean Cities

Biodiesel

EVs

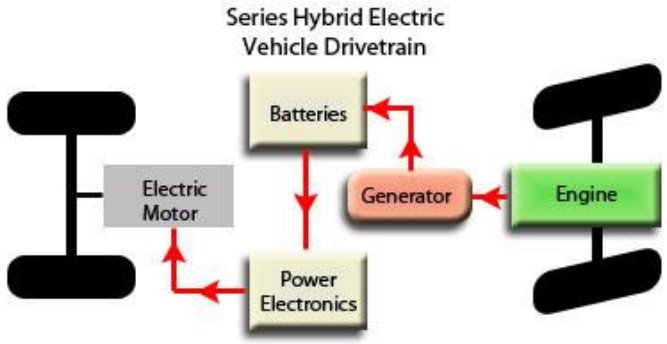


Natural gas

Clean Cities' Mission

To advance the energy, economic, and environmental security of the U.S. by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption in the transportation sector.

- Clean Cities are a resource to both public and private fleets.
- They are a catalyst to match fleets with resources needed.
- They are the go-to folks for technical resources for alternative fuels and technologies.
- It is a DOE funded program



MCCC Vision

- Clean Cities are a resource to both public and private fleets.
- We are a catalyst to match fleets with resources needed.
- Massachusetts Clean cities coalition has meetings every 2 months featuring new technologies to reduce fuel consumption.
- They are the the go-to folks for technical resources for alternative fuels and technologies.

Clean Cities portfolio of alternative fuels

Alternative Fuels

Biodiesel (B100)
Electricity
Ethanol (E85)
Hydrogen
Natural gas
Propane

Fuel Blends – commonly used

Biodiesel/diesel blends (B2, B5, B20)
Ethanol/gasoline blends (E10)
Hydrogen/natural gas blends (HCNG)
Diesel/CNG

Clean Cities portfolio technologies

- **Fuel Economy**
- Fuel efficiency
- Behavioral changes
- Vehicle maintenance initiative
- Vehicle miles traveled (VMT)

- **Hybrids**
- Light- and Heavy-duty HEVs
- PHEVs

- **Idle Reduction**
- Heavy-duty trucks
- School buses
- Truck stop electrification

Alternative fuels - CNG – Trash trucks Electric - School bus
Hybrid electric conversion - Light duty and MD

What is DOER up to?

- Electric school bus V2G pilot in 4 communities
- Funded CNG/Propane hybrid electric conversions and hydraulic hybrid conversions and Infrastructure projects
- Stay tuned for more funding for the differential cost of Alternative fuels
- Funded two biodiesel plants to increase local production of Biodiesel
- Manage the MOR-EV rebate program
- Assisted in the development of VEH102
- Continue to be a resource to fleets to assist in alternative fuel decision making

Important Web Sites and Resources

Clean Cities Web site
www.eere.energy.gov/ccities

Alternative Fuels & Advanced Vehicles Data Center Web site
www.eere.energy.gov/afdc

Clean Cities Coordinator Contact Information and Coalition Web sites
http://www.afdc.energy.gov/cleancities/progs/coordinators.php

Massachusetts Electric Vehicle Incentive Program web site:
www.mass.gov/eea/agencies/massdep/air/grants/massevip.html

Contact Information

For information on alternative fuel vehicles and the Clean Vehicle grant program contact:

Stephen Russell

Massachusetts Clean Cities Coalition

www.mass.gov/energy/cleancities\

Michelle Broussard

Michelle.brousard@state.ma.us

For information on the MASSEVIP program at DEP contact:

Sejal Shah

Sejal.shah@state.ma.us

OPERATIONAL SERVICES DIVISION

Green Vehicle Technology workshop

November 1st , 2016

Serving Public Buyers and Vendors of the Commonwealth of Massachusetts

@Mass_OSD

mass.gov/osd

Operational Services Division

Oversight agency of the Commonwealth within the Executive Office for Administration and Finance

- Commonwealth's Central Procurement Agency
  - Statewide Contracts
- COMMBUYS
- Programs and Services – Supplier Diversity office
- Office of Vehicle Management

Statewide Contracts

Overview

- Contracts procured for specific commodities and services which may be used by any executive department or eligible entity.
- Established by OSD or an OSD-Designated Department.
- Follow “Best Value Procurement.”
- Every contract has a Contract Manager.

MGL Chapter 30B

- Cities and towns and others must follow M.G.L. c. 30B, although they may purchase from OSD statewide contracts.
- per M.G.L. c. 7, §22A and M.G.L. c. 30B, §1(c).

Contract Categories and Naming Convention

Link: [Statewide Contract User Guides]

CLT - Clothing and Footwear
ENE - Energy, Utilities and Fuel
FAC - Facilities Maintenance and Repair
FIR - Fire/EMS
GRO - Food and Groceries
HLS - Homeland Security
HSP - Healthcare, Lab & Dental Products
ITC - Information Technology - Hardware
ITS - Information Technology - Software & Services
ITT - Information Technology - Telecommunications
LAW - Public Safety, Law Enforcement & Protection
MED - Medical
OFF - Office, Recreation & Educational Supplies
OVM - Vehicles, Transportation & Road Maintenance
~~PRF - Professional Services~~
VEH - Vehicles, Transportation & Road Maintenance

VEH98 Light Duty Vehicles

Sedans – Vans – Trucks – SUVs – SSVs – PPVs

VEH98 – Light Duty Vehicles

General Tips

- 9 vehicle brands, 11 dealers
- VEH98 Base Vehicle Sheet 500+ vehicles
- VEH98 Quote Form
- Upfit existing vehicles
- Mini-bid process for vehicles not on contract
- Purchase vehicles "Off-the-Lot"

Selecting and Purchasing methods (RFR 3.6)

- Select vehicle (Base Vehicle Sheet or Mini-Bid)
- Place Order on VEH98 Form –
  - Dealer should place order and respond within 1 week, with unique vehicle identifier for vehicle.
- Delivery Requirements (Section 3.6.3):
  - Vendors have 45 day grace period.
  - Penalty – after the 45 days, $5 a day for each late day, up to 25% of the Purchase Order Total.

We want your input, feedback and let me be your resource!

Use one quote form per speced out vehicle. Only multiples of the same speced out vehicle can be included in each form. For options/upfits/transferred equip., each line item must be fully populated.

VEH98 Quotation Form V.1.1

OPERATIONAL SERVICES DIVISION

Quote Date:	
Quote Number:	

AGENCY INFORMATION	
Agency:	
Secretariat:	
Department Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Unit Code (Billing):	

VENDOR INFORMATION	
Vendor Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Vehicle Coming From (check one box):	Dealer Inventory/Stock Factory Order Already on order for dealer inventory

VEHICLE INFORMATION			
VEH98 Vehicle #:		Exterior Color:	
Year:		Interior Color:	
Make:		Engine (as quoted):	
Model:		Cylinders:	
Trim Level:		Primary Fuel Type:	
Body Code:		Secondary Fuel Type:	
Vehicle Quantity:		Contract Base Vehicle Price:	

ADDED FACTORY OPTIONS AND PACKAGES (PER VEHICLE)

Quantity per Vehicle:	Factory Code:	Description:	MSRP:	Discount %:	Contract Unit Price:	Total Per Vehicle:
					Factory Options Total (per vehicle):	$0.00

QUOTE FORM SUMMARY			
Vehicle Leadtime to Dealer:		Factory Options (per vehicle):	$0.00
Upfit/Equip. Transfer Leadtime at Dealer:		Accessories/Upfit (per vehicle) from back:	$0.00
TOTAL Order to Delivery Leadtime (to Westborough):		Transferred Equipment (per vehicle) from back:	$0.00
		Contract Base Vehicle Price:	$0.00
TOTAL COST PER VEHICLE (including all add-ons):			$0.00
VEHICLE QUANTITY:			0
TOTAL PURCHASE PRICE:			$0.00

VEH102 Advanced Transportation Technology

General Tips:

Base prices for products established

Solicit Multiple Quotes through the awarded vendors

- Labor services
- Lower volume discount

Municipal Modernization Action - $50,000 threshold increase

Service Category 1: Electric Vehicle Supply Equipment (EVSE), Hardware, Software, and Ancillary Services

Provide Electric Vehicle Supply Equipment, hardware, software and ancillary services to eligible public entities.

Service Category 2: Idle Reduction Technologies for Heavy, Medium, and Light Duty Vehicles; and Heavy Duty Equipment

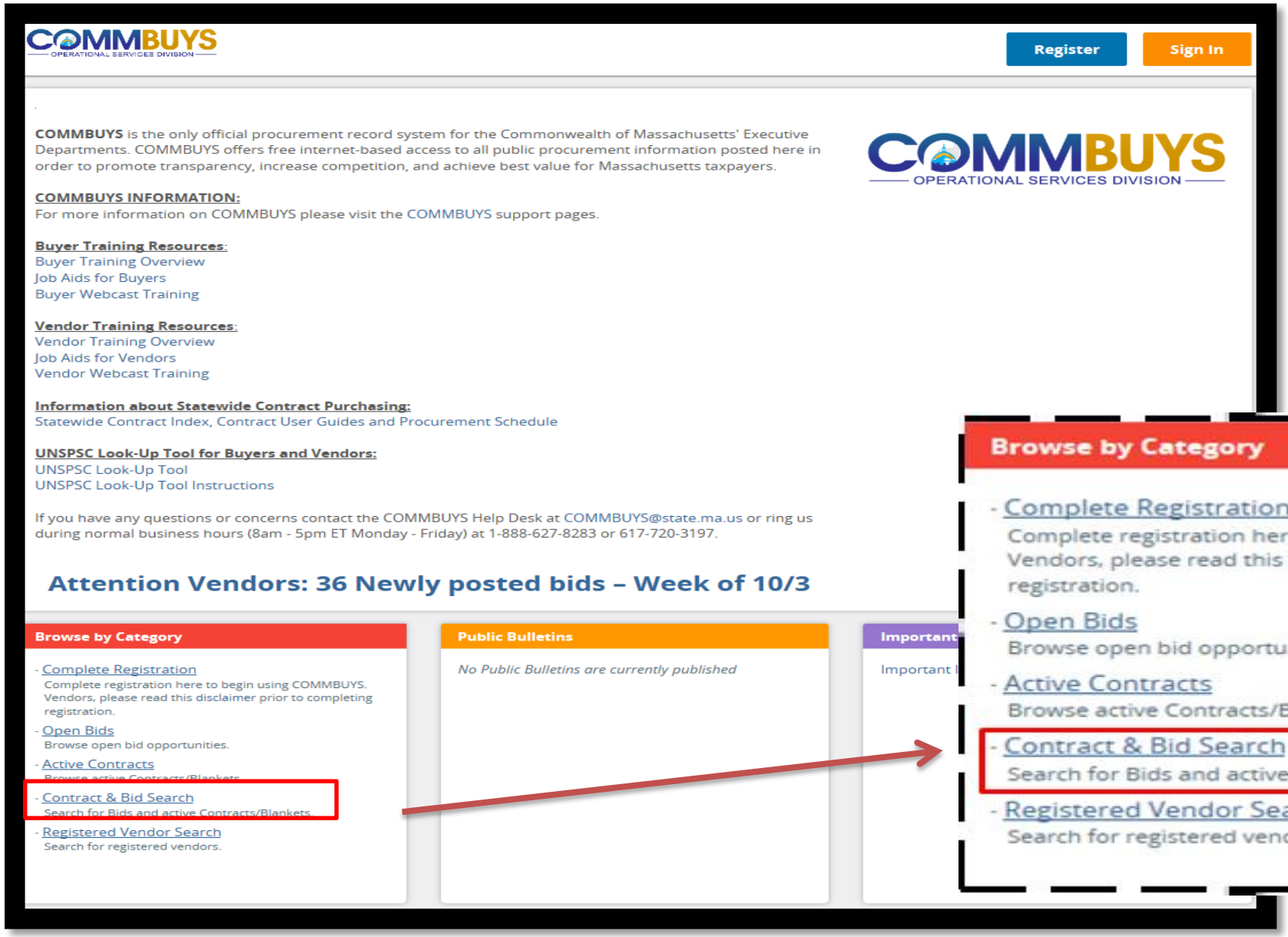
Provide Idle Reduction Technologies for – Heavy Duty Vehicles and Equipment, Medium Duty Vehicle, Light Duty Vehicle Categories.

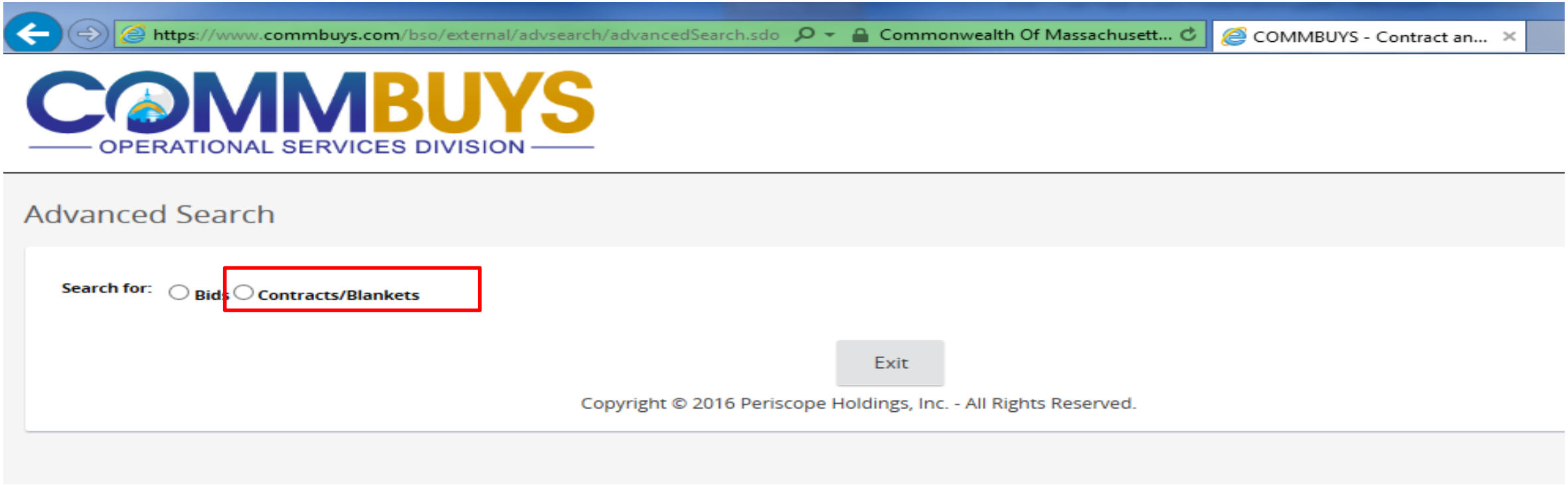
Service Category 3: After-market conversion technologies– all vehicle classes

Provide after-market conversion systems modify vehicles and engines so that they can run on – or be supplemented by – fuels or technologies other than the ones for which they were originally designed.

COMMBUYS

www.COMMBUYS.com


COMMBUYS
OPERATIONAL SERVICES DIVISION
Register
Sign In
COMMBUYS is the only official procurement record system for the Commonwealth of Massachusetts' Executive Departments. COMMBUYS offers free internet-based access to all public procurement information posted here in order to promote transparency, increase competition, and achieve best value for Massachusetts taxpayers.
COMMBUYS INFORMATION:
For more information on COMMBUYS please visit the COMMBUYS support pages.
Buyer Training Resources:
Buyer Training Overview
Job Aids for Buyers
Buyer Webcast Training
Vendor Training Resources:
Vendor Training Overview
Job Aids for Vendors
Vendor Webcast Training
Information about Statewide Contract Purchasing:
Statewide Contract Index, Contract User Guides and Procurement Schedule
UNSPSC Look-Up Tool for Buyers and Vendors:
UNSPSC Look-Up Tool
UNSPSC Look-Up Tool Instructions
If you have any questions or concerns contact the COMMBUYS Help Desk at COMMBUYS@state.ma.us or ring us during normal business hours (8am - 5pm ET Monday - Friday) at 1-888-627-8283 or 617-720-3197.
Attention Vendors: 36 Newly posted bids – Week of 10/3
Browse by Category
- Complete Registration
Complete registration here to begin using COMMBUYS. Vendors, please read this disclaimer prior to completing registration.
- Open Bids
Browse open bid opportunities.
- Active Contracts
- Contract & Bid Search
Search for Bids and active Contracts/Blankets.
- Registered Vendor Search
Search for registered vendors.
Public Bulletins
No Public Bulletins are currently published
Important
Important
Browse by Category
- Complete Registration
Complete registration here to begin using COMMBUYS. Vendors, please read this disclaimer prior to completing registration.
- Open Bids
Browse open bid opportunities.
- Active Contracts
Browse active Contracts/Blankets.
- Contract & Bid Search
Search for Bids and active Contracts/Blankets.
- Registered Vendor Search
Search for registered vendors.


https://www.commbuys.com/bso/external/advsearch/advancedSearch.sdo
Commonwealth Of Massachusett...
COMMBUYS - Contract an...
COMMBUYS
OPERATIONAL SERVICES DIVISION
Advanced Search
Search for:
Bids
Contracts/Blankets
Exit
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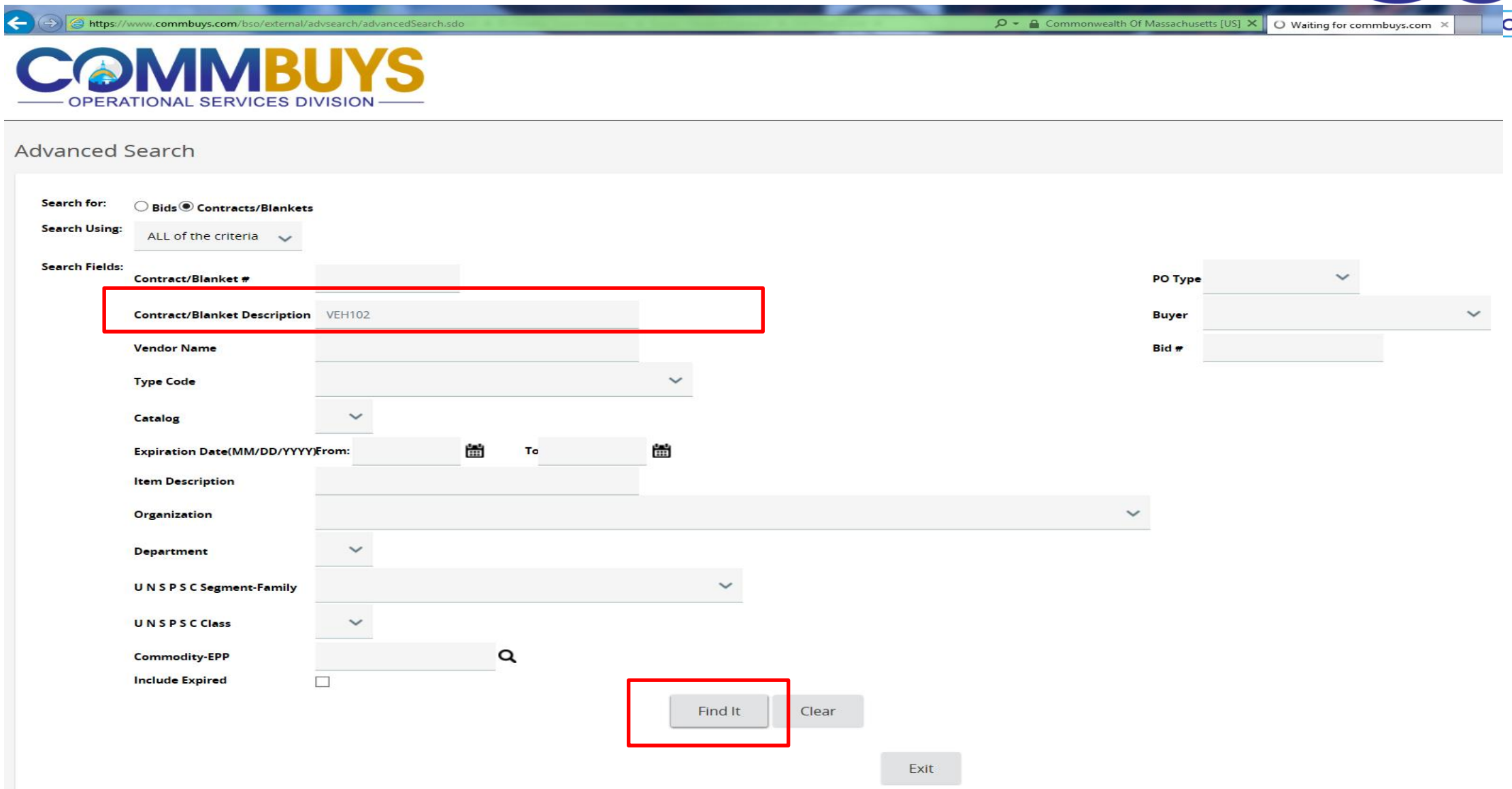
https://www.commbuys.com/bso/external/advsearch/advancedSearch.sdo
Commonwealth Of Massachusetts [US]
Waiting for commbuys.com
CES DIVISION
COMMBUYS
OPERATIONAL SERVICES DIVISION
Advanced Search
Search for:
Bids
Contracts/Blankets
Search Using:
ALL of the criteria
Search Fields:
Contract/Blanket #
PO Type
Contract/Blanket Description
VEH102
Buyer
Vendor Name
Bid #
Type Code
Catalog
Expiration Date(MM/DD/YYYY)From:
To
Item Description
Organization
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Include Expired
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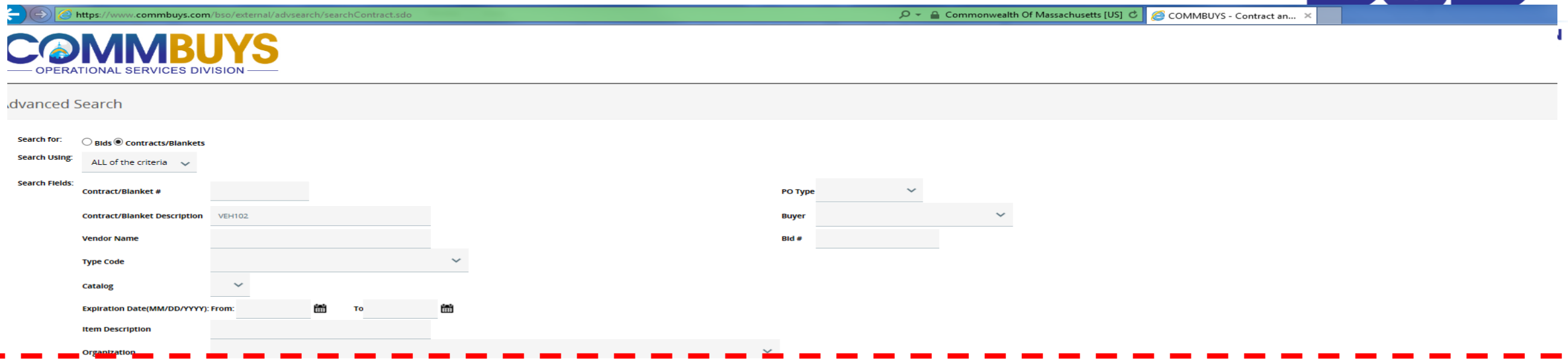


Results

Contract/Blankets 1#	Bid #	Description	Vendor Name	Type Code	Begin Date	End Date
PO-17-1041-ENE01-ENE01-8957		VEH102 Advanced Vehicle Technology Equipment, Supplies and Services Designated DOER SWC Category 3	Conversion Vendor	SW	10/14/2016	10/16/2019
PO-17-1041-ENE01-ENE01-8956		VEH102 Advanced Vehicle Technology Equipment, Supplies and Services Designated DOER SWC Category 2	Conversion Vendor	SW	10/14/2016	10/16/2019
PO-17-1041-ENE01-ENE01-8945		VEH102 Advanced Vehicle Technology Equipment, Supplies and Services Designated DOER SWC Category 1	Conversion Vendor	SW	10/14/2016	10/16/2019

Exit

Massachusetts Electric Vehicle Incentive Program (MassEVIP) - FLEETS

SEJAL P. SHAH

NOVEMBER 1, 2016

WHY EVs?

- Price volatility of gasoline -- How long do you think gas prices will stay low?
- Over the lifetime of an EV, an owner can save thousands of dollars in fuel and maintenance costs.
- EVs not only decrease greenhouse gas (GHG) emissions but also significantly reduce smog forming emissions.
- Same performance as a conventional ICE (Internal Combustion Engine) vehicle.

MassEVIP: Fleets

Provides incentive funding to Massachusetts entities to acquire:

- Battery-electric vehicles (BEVs) – no ICE (Internal Combustion Engine)
- Plug-in hybrid vehicles (PHEVs)
- Level 2 dual head charging stations

MassEVIP: Fleets -- Eligible Entities

- Public Entities
  - Municipalities
  - Public Universities and Colleges
  - State Agencies

New Bedford

Braintree

MassEVIP: Fleets – Vehicle Incentives

$7,500 acquire* Battery Electric Vehicle (BEV)

Fall River – Nissan Leaf (4)

*Acquire = Purchase or Lease

$5,000 acquire* Plug-in Hybrid Vehicle (PHEVs)

Scituate – Chevy Volts (2)

$750 to purchase Zero Emission Motorcycle (ZEM)

MassEVIP: Fleets – Charging Station Incentives

- Incentive* is to acquire and install a Level 2 Dual Head Charging station

- 1-2 BEVs = $7,500
- 3-4 BEVs = $10,500
- 5+ BEVs = $13,500

*Entities must purchase at least one battery electric vehicle to receive incentive for charging station

Melrose Charging Station

MassEVIP: Fleets -- Program Requirements

- Will commit to using the vehicle in the Commonwealth for at least 36 months
- Entities must purchase at least one battery electric vehicle to received incentive for charging station
- Charging station must be publicly accessible and space used specifically for electric vehicles

EVs on State Contract VEH98

Chevrolet Volt
PHEV – 53 miles electric

Ford Fusion PHEV – 20 miles electric

Ford Focus BEV – 76 miles electric

Ford C-Max Energi PHEV – 20 miles electric

Hyundai Sonata PHEV – 27 miles electric

Nissan Leaf BEV - 84-107 miles electric

PHEV = Plug-In Hybrid Electric Vehicle

BEV = Battery Electric Vehicle

MassDEP

EVs **NOT** on State Contract
VEH98 **BUT ELIGIBLE - BEVs**

Kia Soul EV – 93 miles electric

Smart For Two – 68 miles electric

Mitsubishi I-MiEV – 62 miles electric

VW E-Golf - 83 miles electric

CHEVY BOLT – 238 miles electric

BMW i3 – 81-90 miles electric

Mercedes Benz B250e –
87 miles electric

BEV = Battery Electric Vehicle

MassDEP

EVs **NOT** on State Contract
VEH98 **BUT ELIGIBLE - PHEVs**

Toyota Prius Prime – 22 miles electric

Audi A3 Sportback e-tron – 30 miles electric

BMW X5 xDrive40e – 19 miles electric

BMW 330e – 22 miles electric

Mercedes Benz S-Class 550e – 20 miles electric

PHEV = Plug-In Hybrid Electric Vehicle

Charging Stations

Chelmsford

Brockton

Barnstable

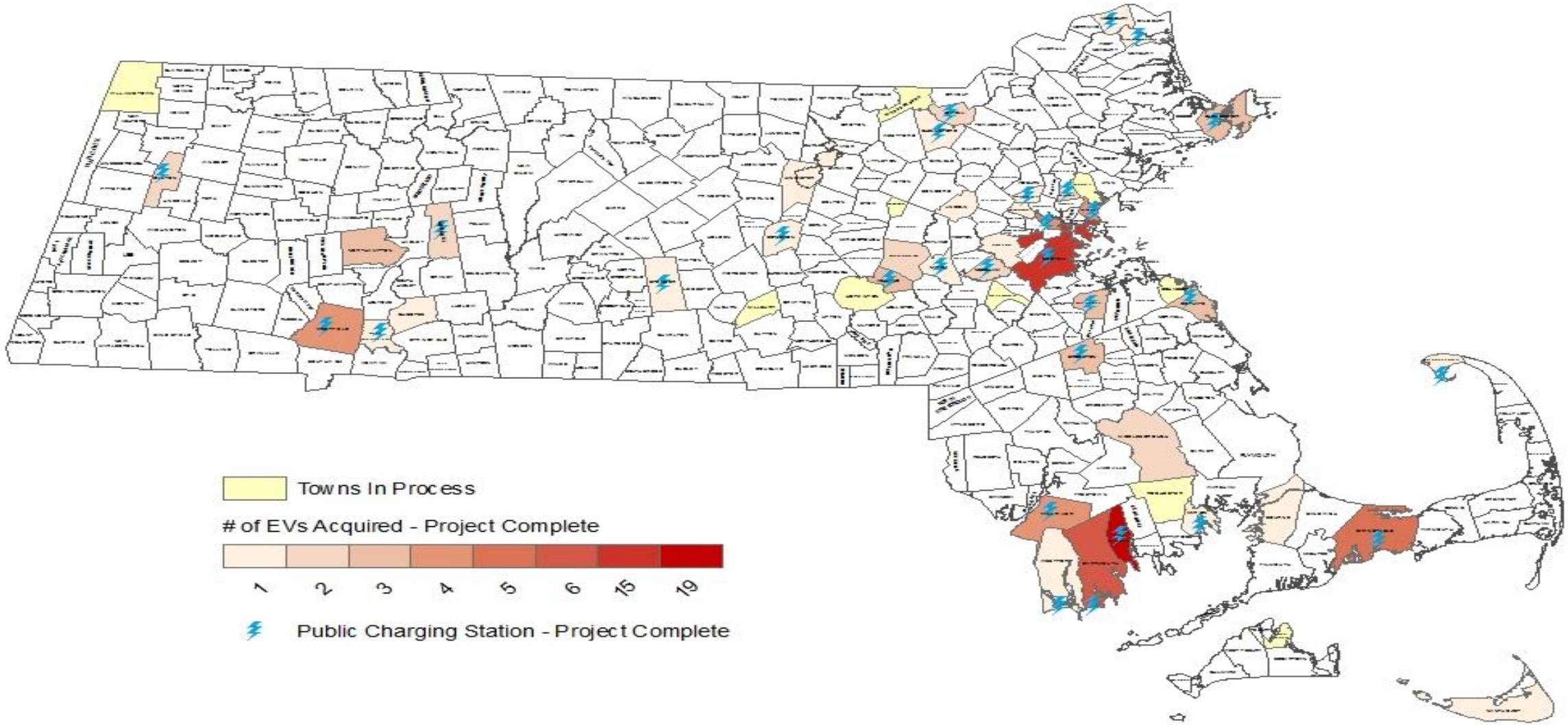
MassEVIP: Fleets -- SO FAR

Through August 31, 2016, awarded ~$1.9 million:

- 57 separate entities
- Vehicles and Charging Stations Awarded
  - 42 Plug-In Hybrid Vehicles (PHEVs)
  - 147 Battery Electric Vehicles (BEVs)
  - 1 Zero Emission Motorcycle (ZEM)
  - 60 Level 2 Dual Head Charging Stations

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection

MASSACHUSETTS ELECTRIC VEHICLE INCENTIVE PROGRAM (MASSEVIP): FLEETS



August 31, 2016

Contact Information and Webpage

Massachusetts Electric Vehicle Incentive Program web site:
www.mass.gov/eea/agencies/massdep/air/grants/massevip.html

For information on the MASSEVIP: Fleets program contact:

Ms. Sejal Shah
Sejal.shah@state.ma.us
(617) 556-1015

Natick's Electric Vehicle Projects

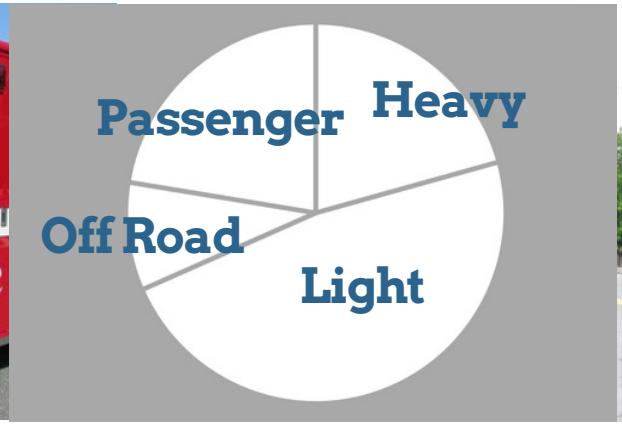
NATICK CASE STUDY

EQUIPMENT MAINTENANCE

- Maintenance Responsibilities for 205 registered vehicles and 500+ pieces of misc. equipment
- Manages the Town's only fuel depot
- Vehicle/Equipment Procurement
- Vehicle Insurance Claim Management
- Surplus Property Disposition

OUR FLEET

205
vehicles+

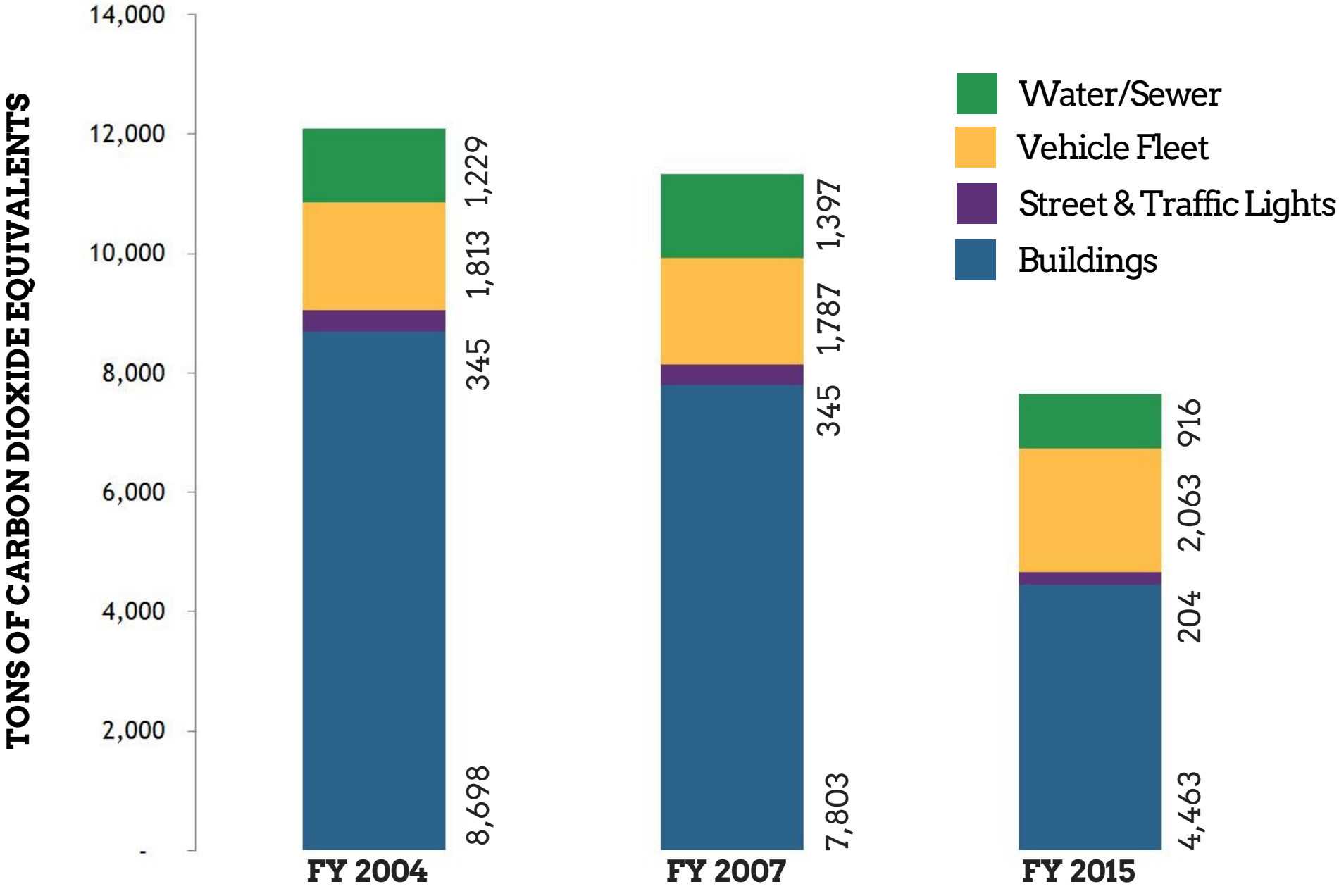


213k
gallons of fuel/year

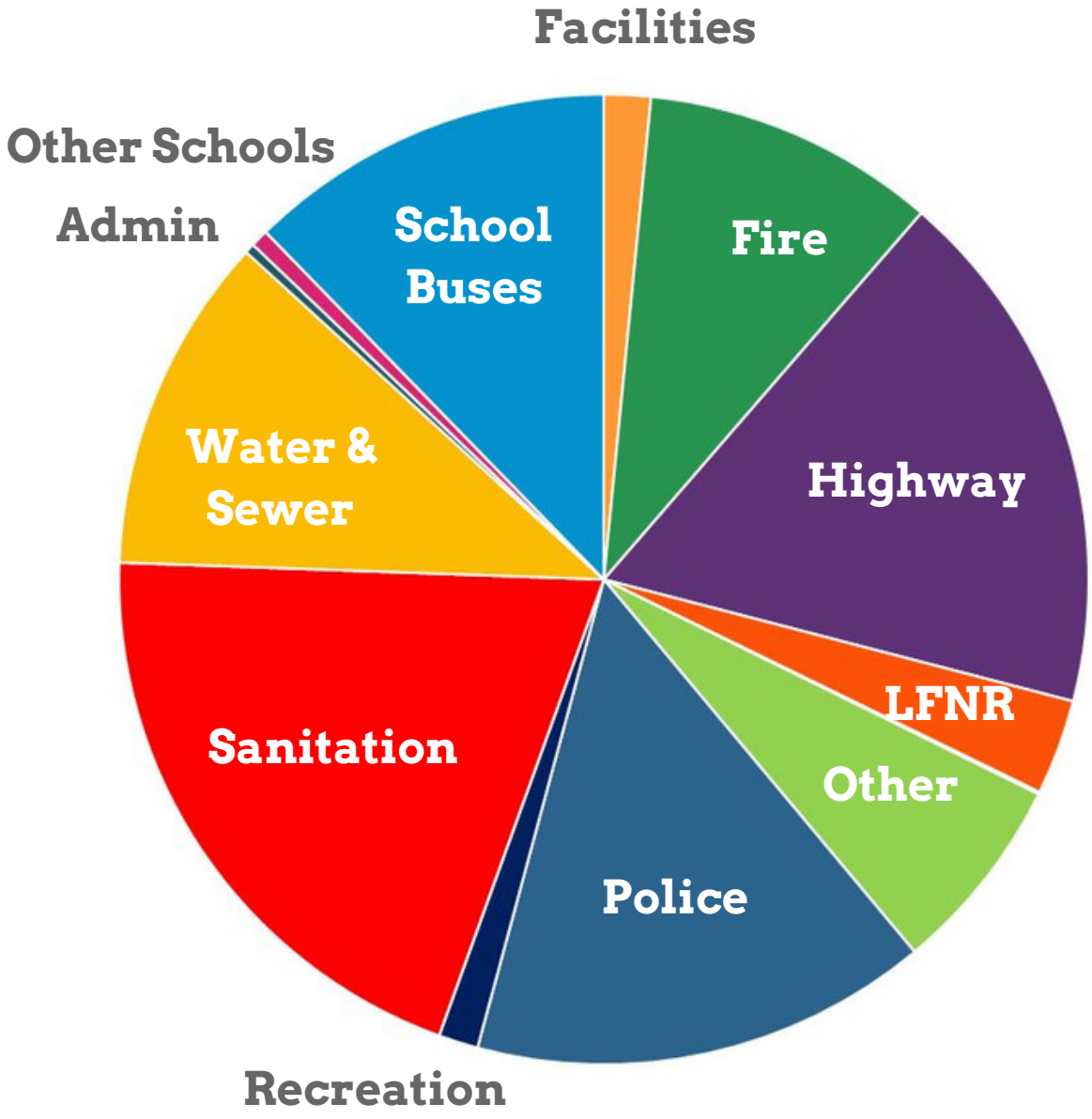
2.3m
miles/year

$455k
fuel costs/year

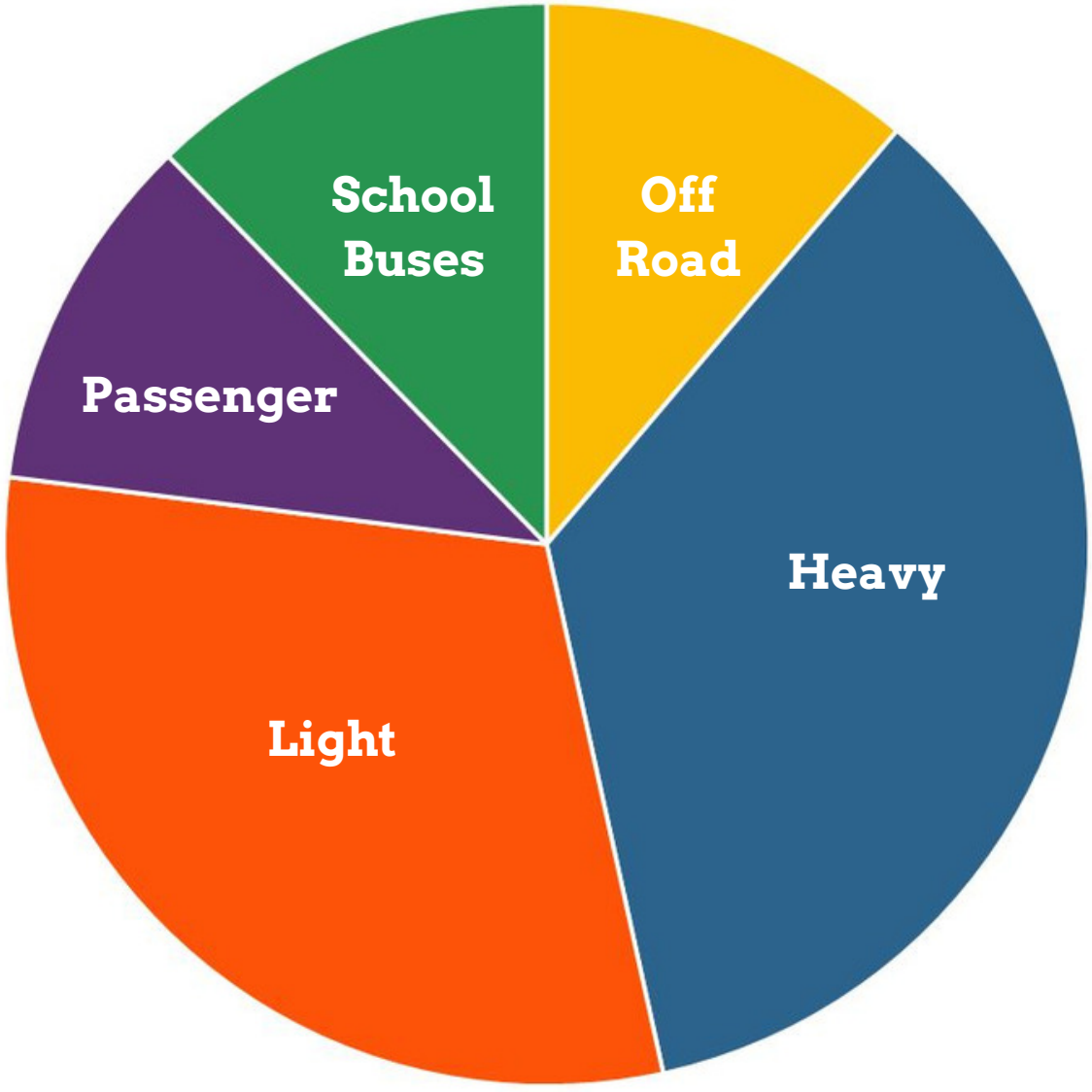
MUNICIPAL EMISSIONS

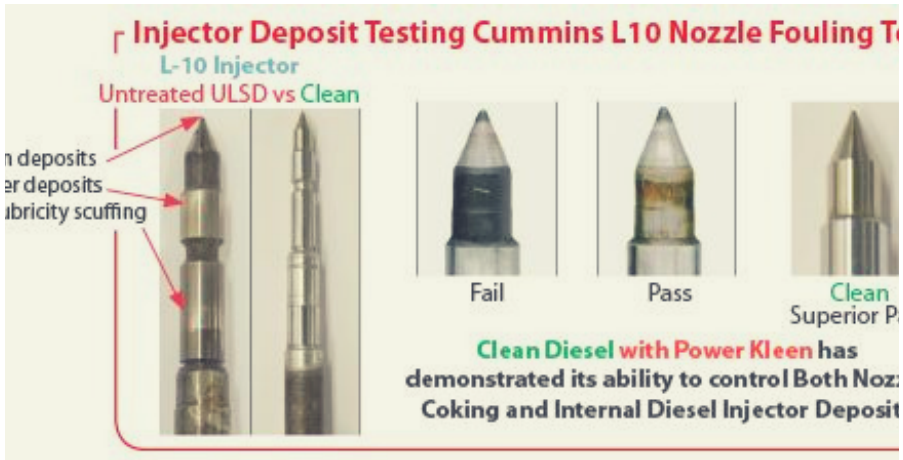


FLEET EMISSIONS BY DEPT



BY VEHICLE TYPE





GREEN INITIATIVES

- Town Policy on Purchase of Fuel Efficient Vehicles
- Fuel Additive
- Pursue Alternative Fuel Vehicles
  - Compressed Natural Gas (CNG)
  - Hybrid Electric
  - All Electric
  - Challenges
- Computerized Maintenance and Service Order System
  - GPS
  - Linked to Fuel Management System

FUNDING

2016 Ford Focus Electric

State Contract Price	**$26,460**
MassEVIP Grant	-$7,500
Incremental DOER Grant	-$9,956
Net Cost to Town	$9,004

Charging Station

Estimated Cost	**$13,025**
MassEVIP Grant	-$7,500
Incremental DOER Grant	-5,525
Net Cost to Town	$0!

THANK YOU

TOWN OF NATICK
WWW.NATICKMA.GOV/249/PUBLIC-WORKS

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JILLIAN WILSON MARTIN

@NatickPublicWorks

@NatickDPW

Q & A

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Megan Aki, MAPC

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THANK YOU

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