

State of the ZEV Market

Massachusetts ZEV Commission Meeting

August 31, 2015



Center for
Sustainable Energy



Center for
Sustainable Energy™

What We Do



Energy Programs



Public Sector Services



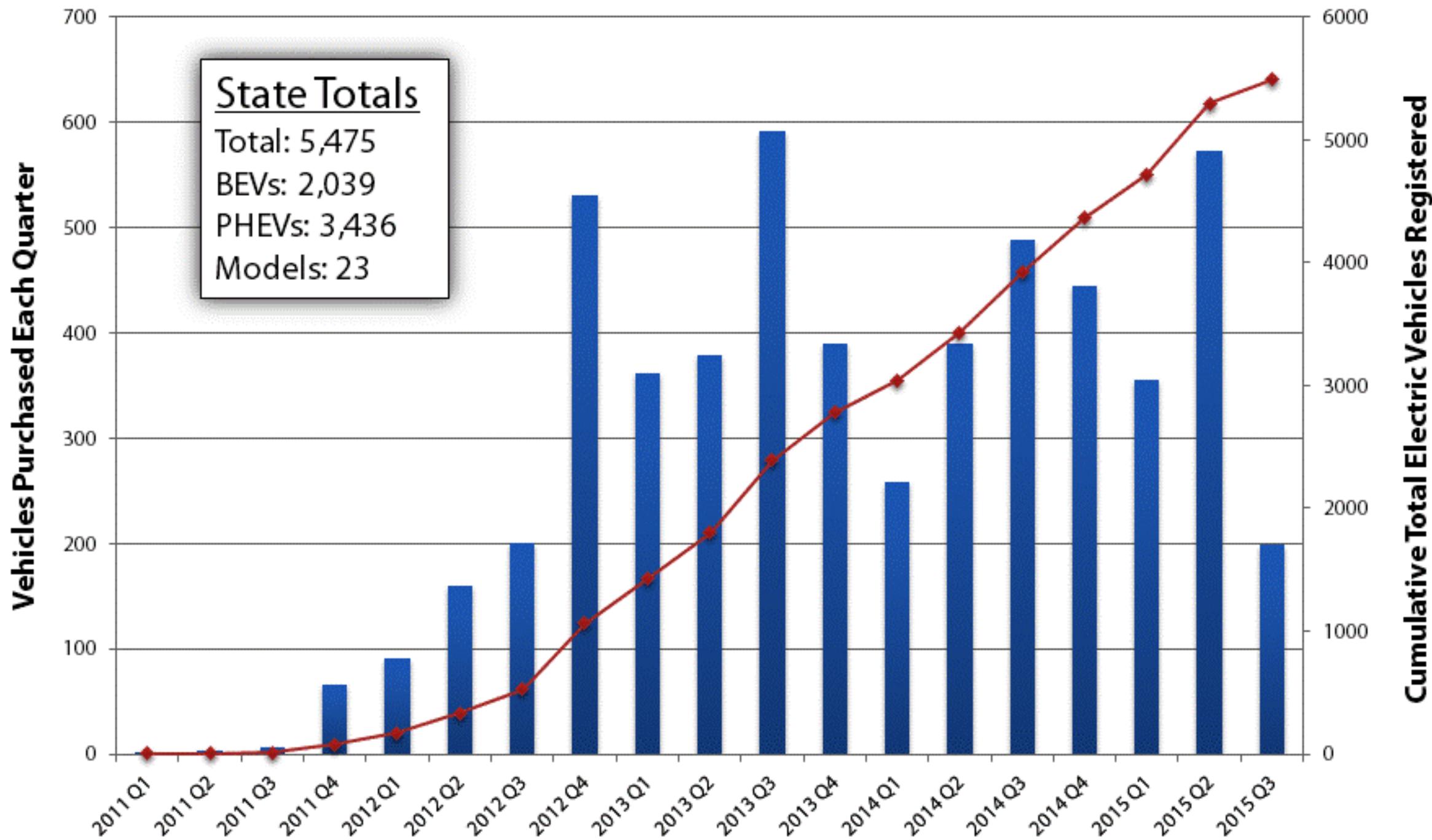
Workforce Training

Outline

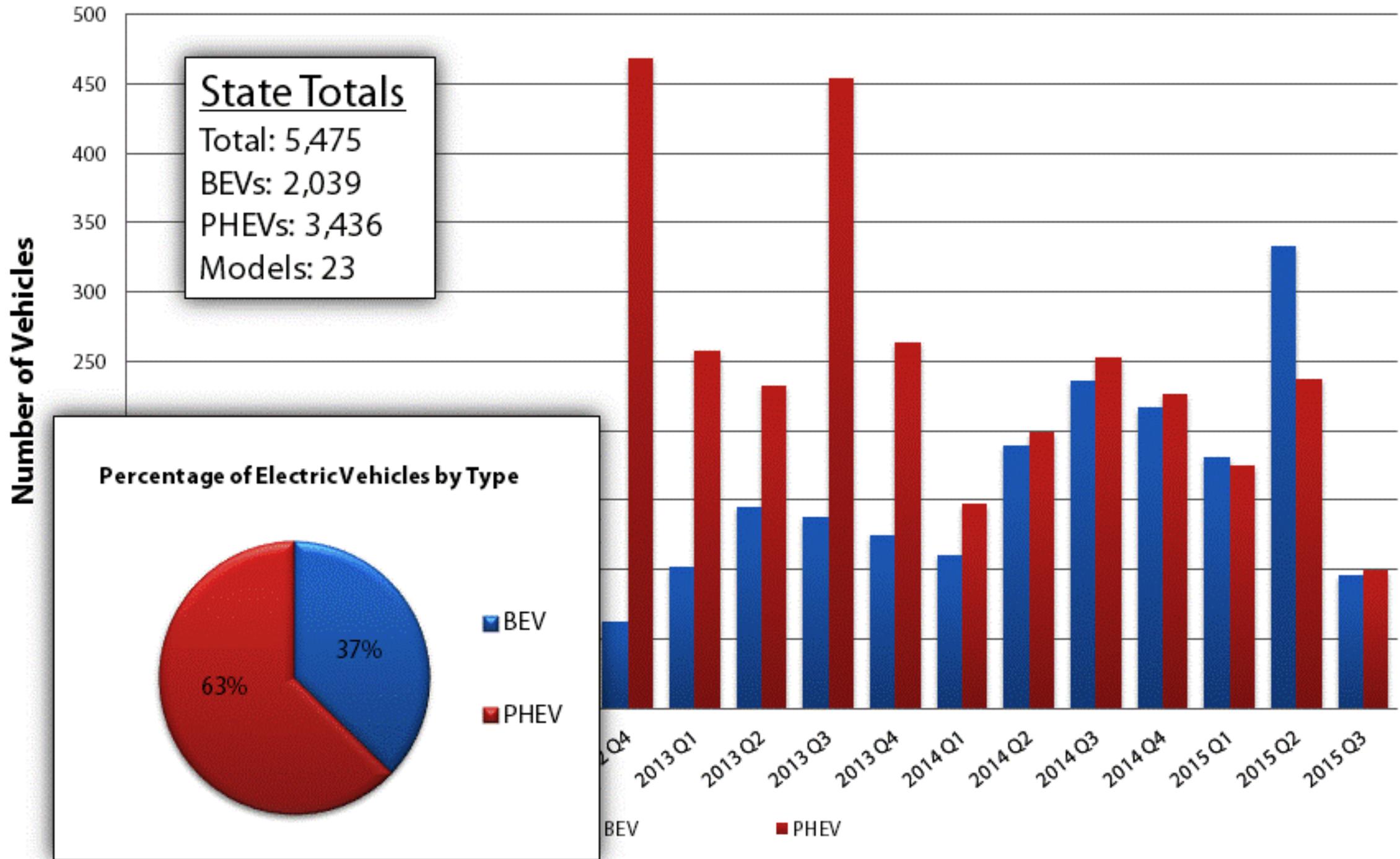
- Electric Vehicle Sales
- Growth of Market
- Vehicle Models
- Massachusetts Drivers
- Charging



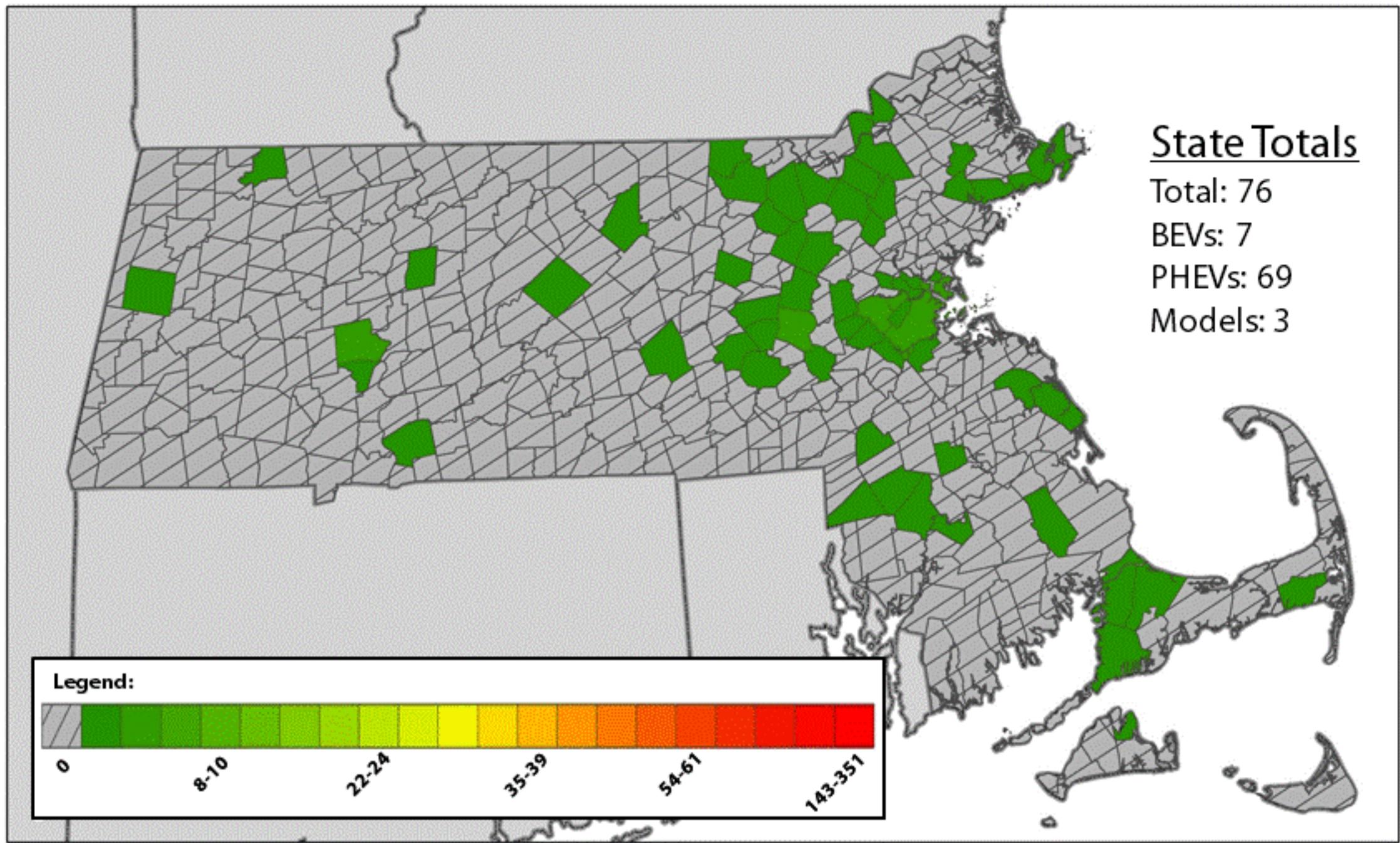
Electric Vehicle Sales



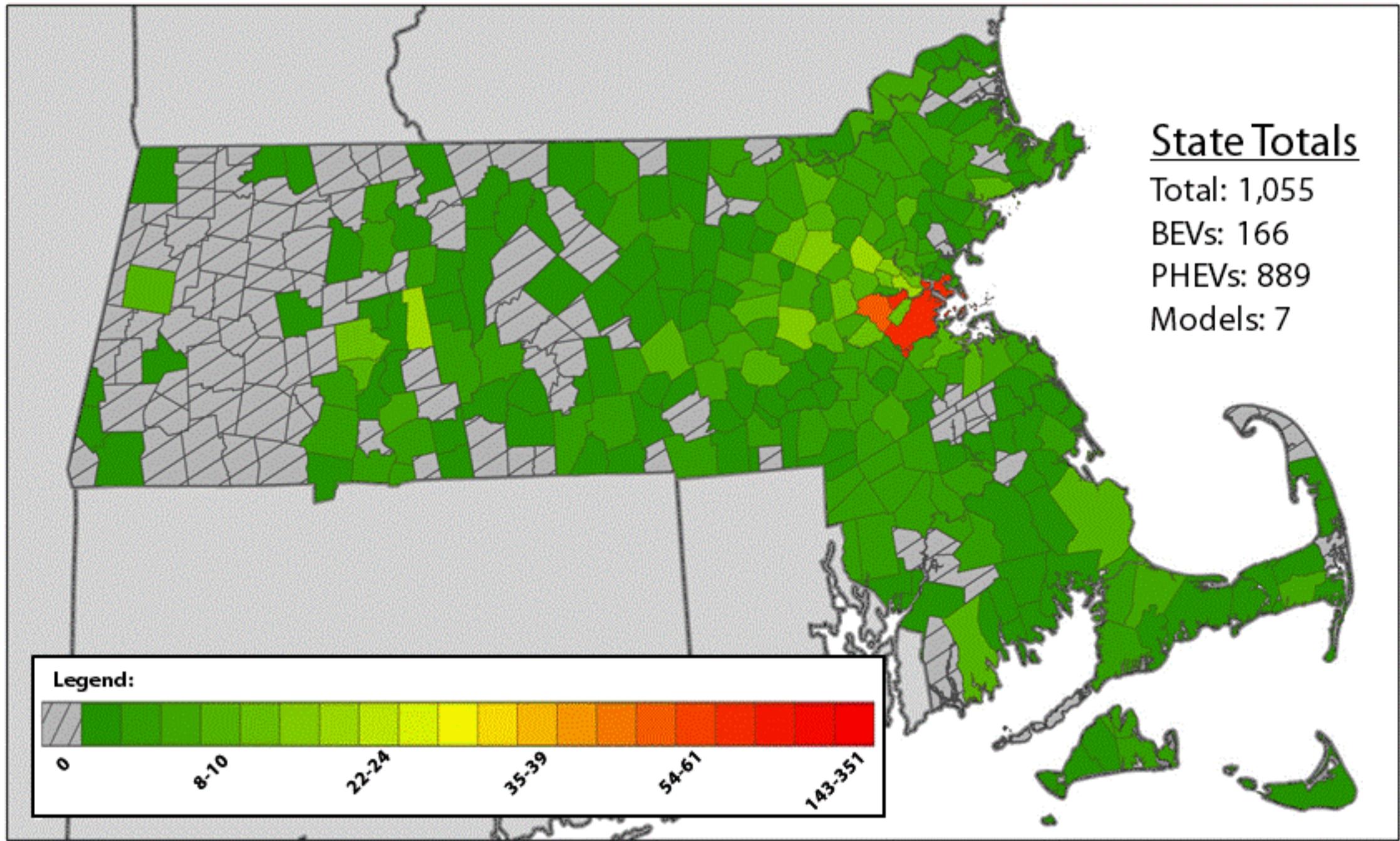
Electric Vehicle Sales by Quarter and Type



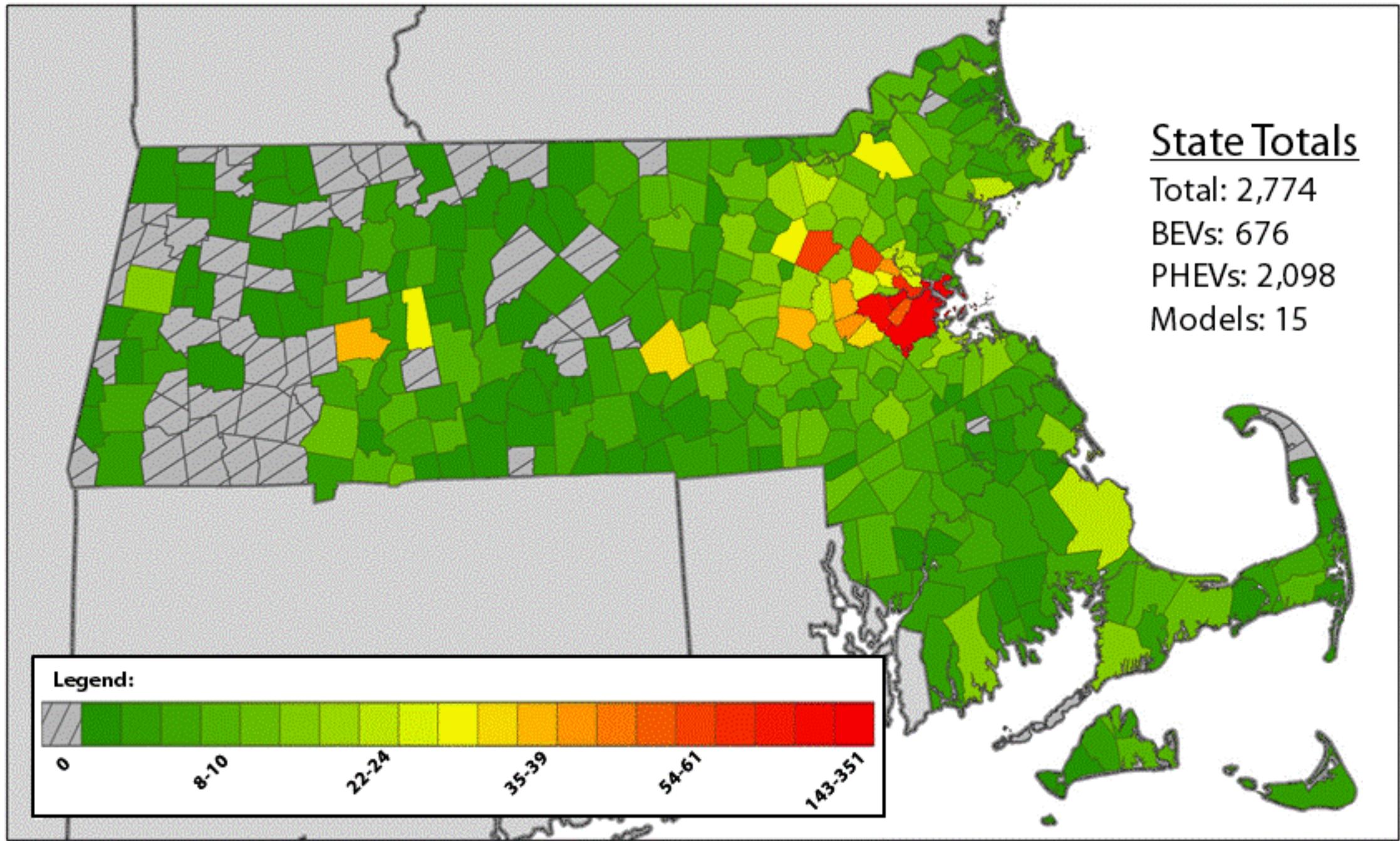
Cumulative Registrations by City/Town - 2011



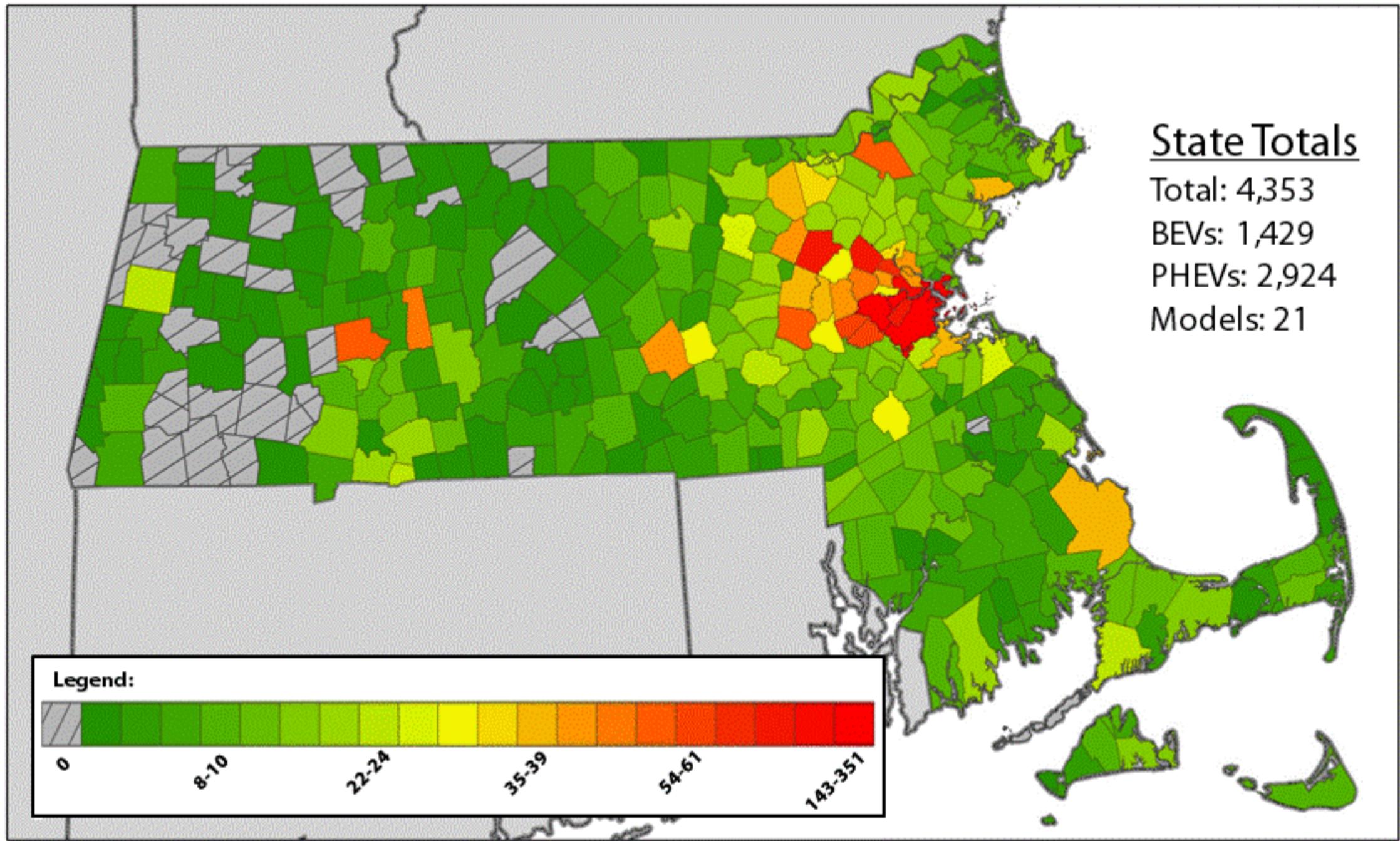
Cumulative Registrations by City/Town - 2012



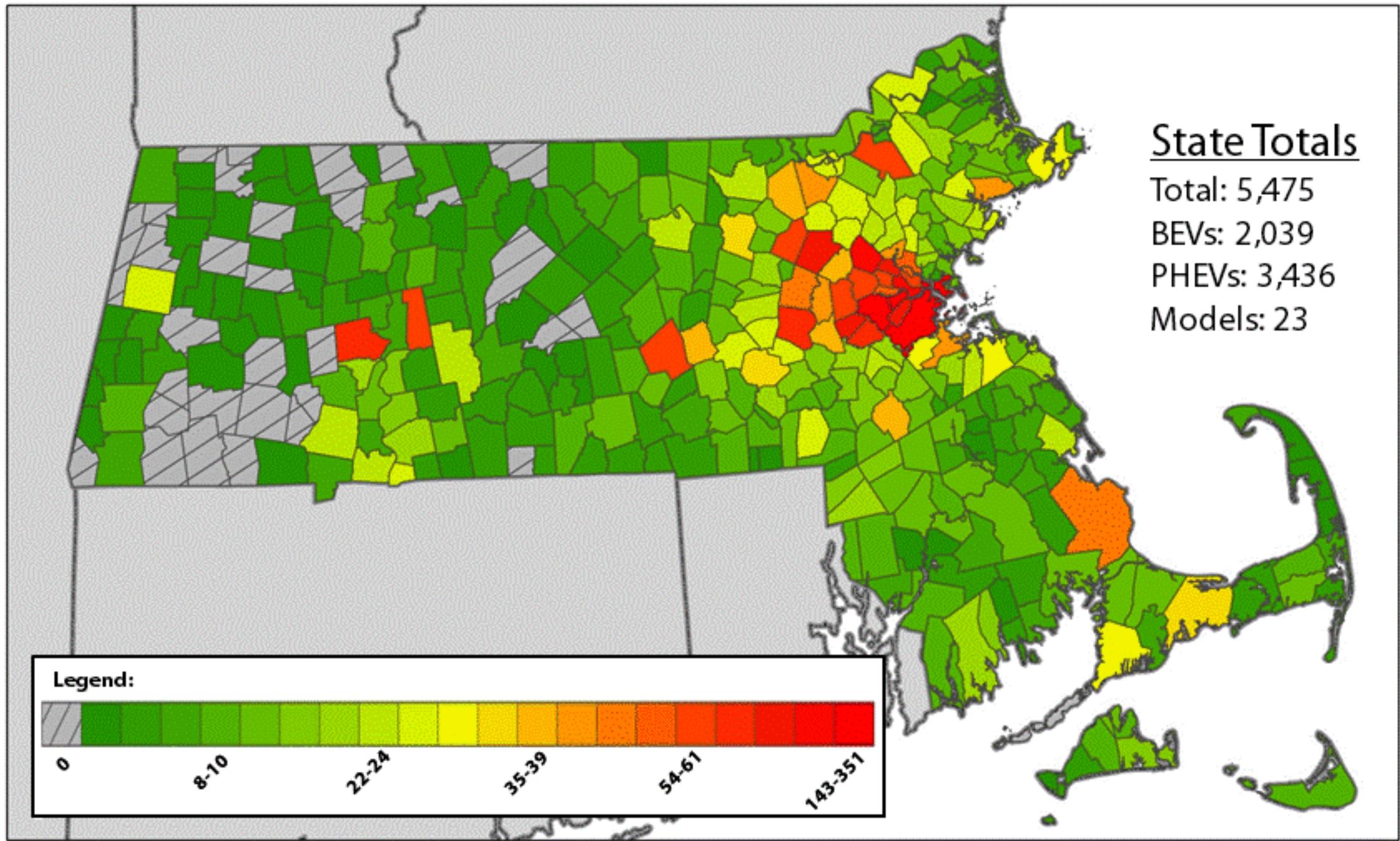
Cumulative Registrations by City/Town - 2013



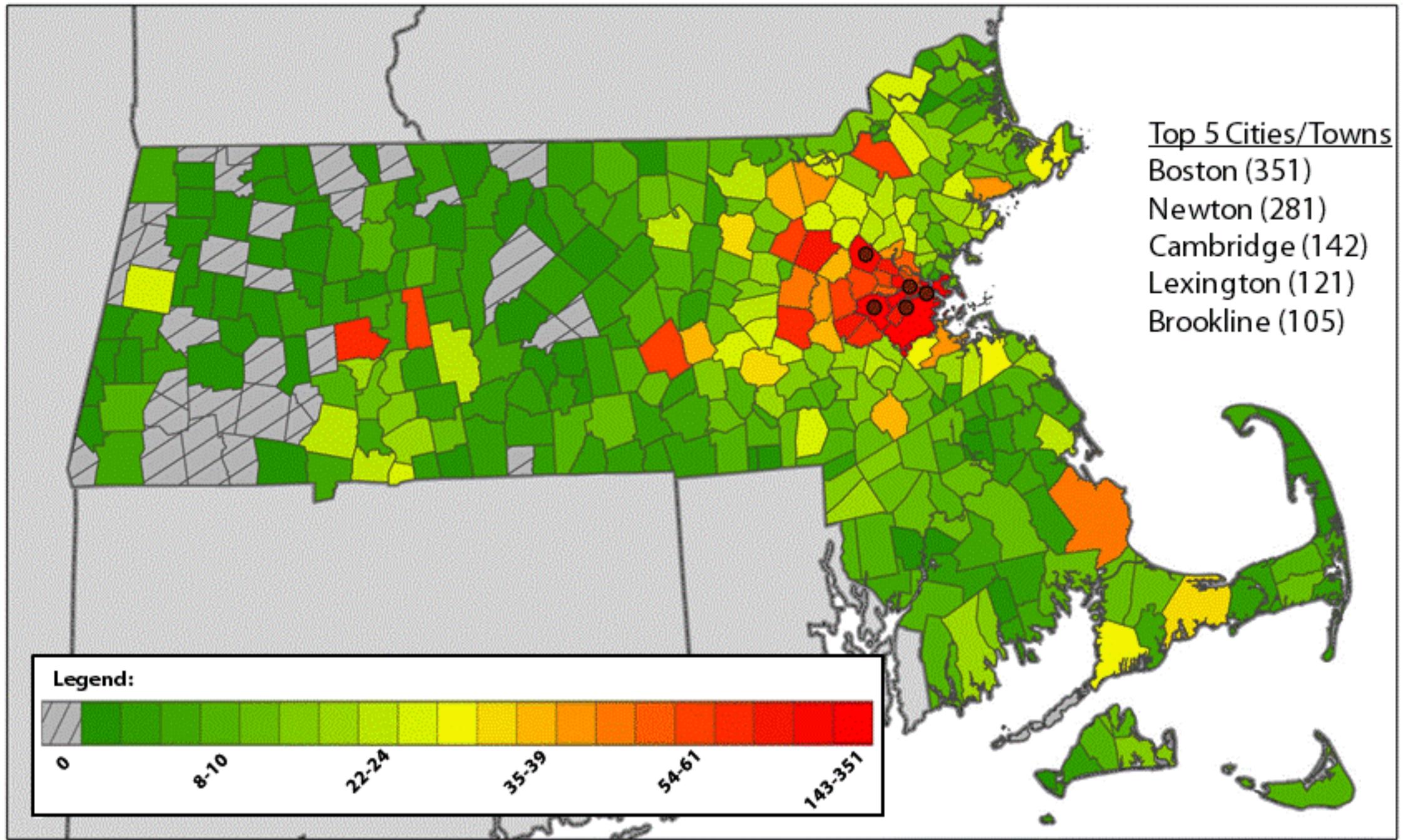
Cumulative Registrations by City/Town - 2014



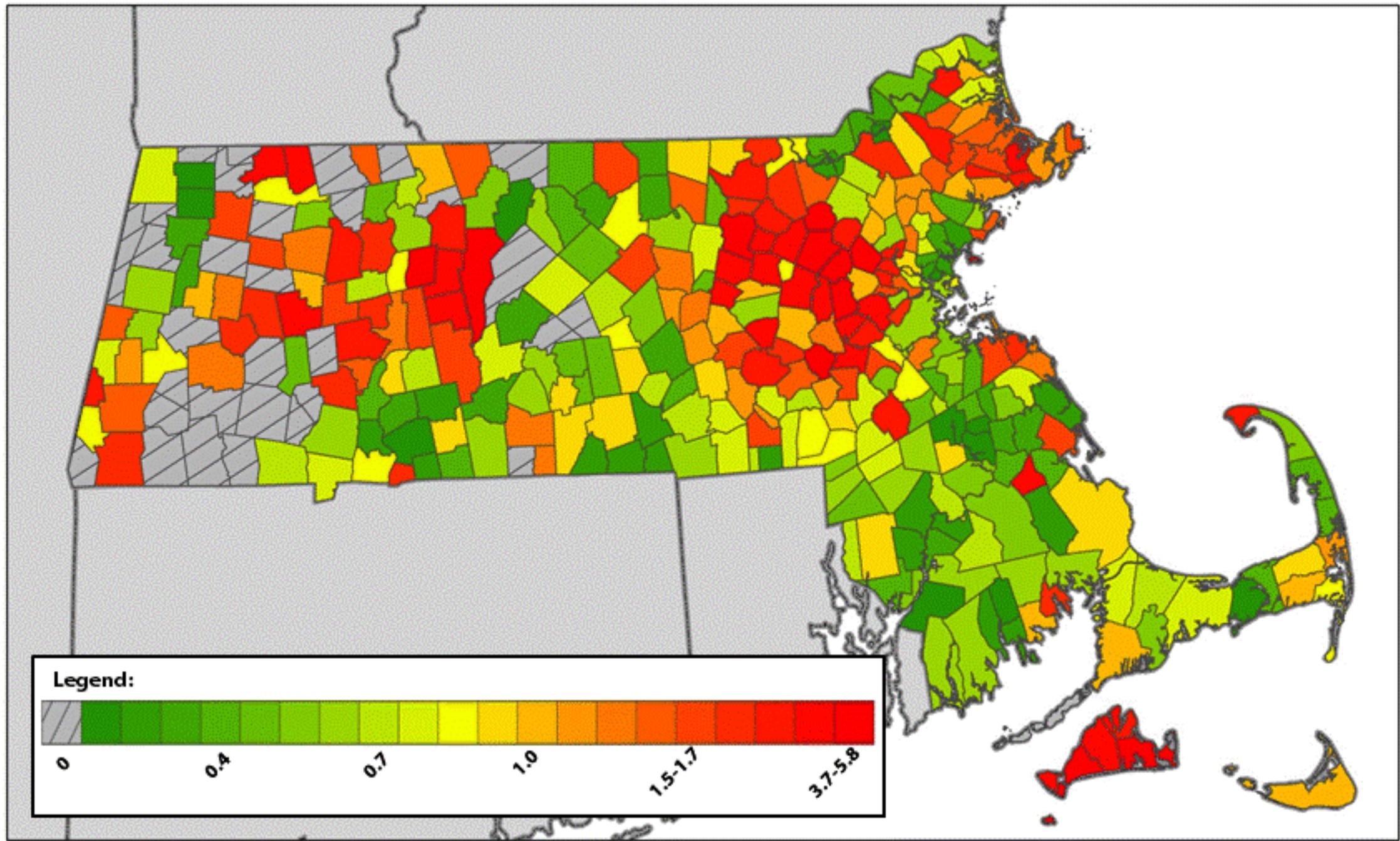
Cumulative Registrations by City/Town - 2015



Cumulative Registrations by City/Town - 2015



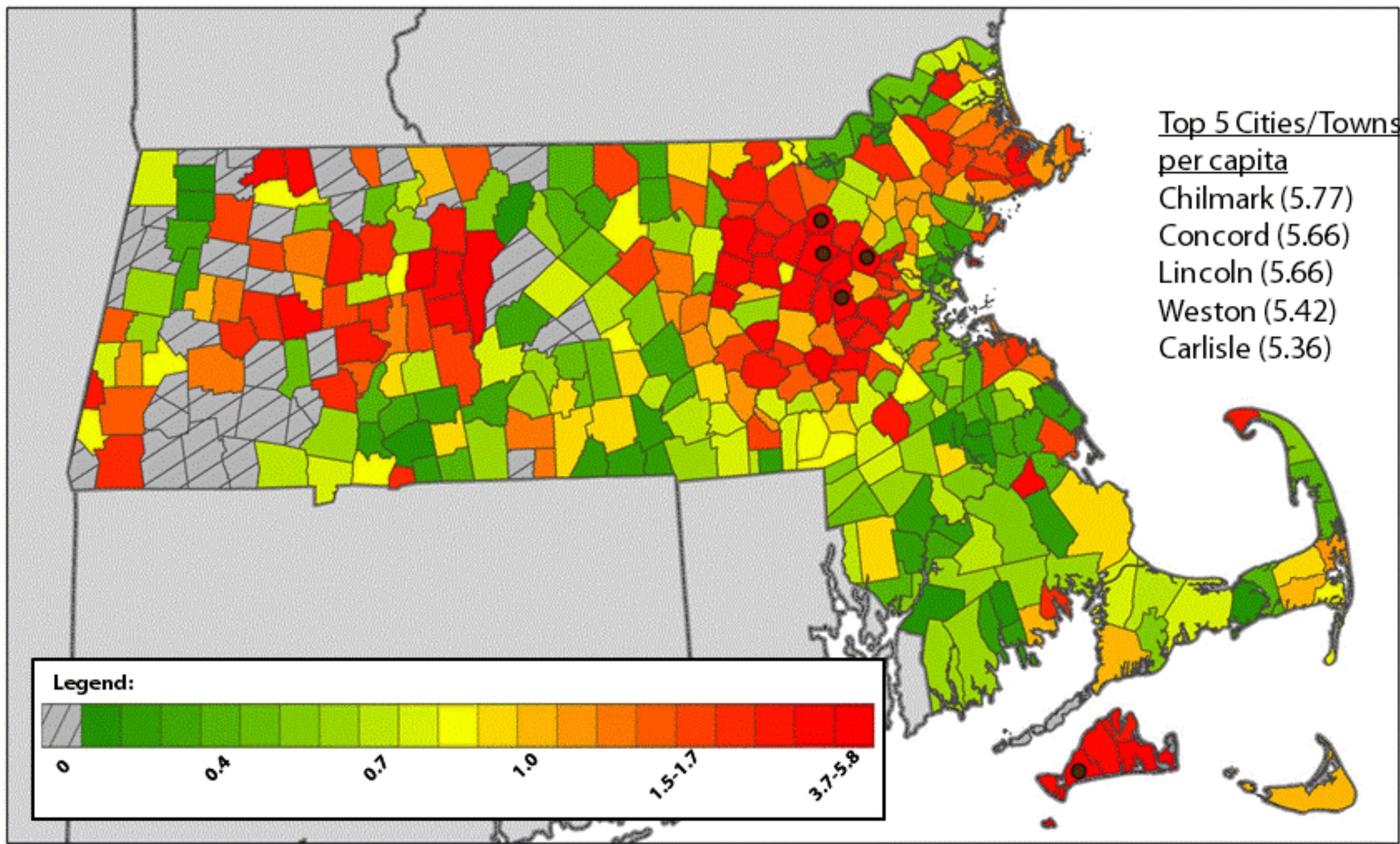
Per Capita ZEV Adoption by City/Town



Per Capita ZEV Purchases (Vehicles/1,000 residents), based on 2010 Census Population

Source: MassDOT Registry of Motor Vehicles

Per Capita ZEV Adoption by City/Town



Per Capita ZEV Purchases (Vehicles/1,000 residents), based on 2010 Census Population

Source: MassDOT Registry of Motor Vehicles

Top 5 Vehicle Models

9%

Ford C-MAX Energi



Nissan LEAF

12%



23%

Toyota Prius Plug-In Hybrid



16%

Tesla Model S



Chevrolet Volt

19%



Top 5 Vehicle Models

9%

Ford C-MAX Energi



Nissan LEAF

12%



23%

Toyota Prius Plug-In Hybrid

**All Other
Models
21%**

16%

Tesla Model S



Chevrolet Volt

19%



23 Models Currently in Massachusetts

- **BMW i3**
- **BMW i3 REX**
- **BMW i8**
- **Cadillac ELR**
- **Chevrolet Volt**
- **Ford C-MAX Energi**
- **Ford Focus Electric**
- **Ford Fusion Energi**
- **Honda Accord Plug-In**
- **Honda Fit EV**
- **Mercedes-Benz B-Class Electric Drive**
- **Mitsubishi i-MiEV**
- **Nissan LEAF**
- **Porsche 918 Spyder**
- **Porsche Cayenne S E-Hybrid**
- **Porsche Panamera S E-Hybrid**
- **Smart Electric Fortwo Cabriolet**
- **Smart Electric Fortwo Coupe**
- **Tesla Model S – 70 D**
- **Tesla Model S 60kwh**
- **Tesla Model S 85kwh**
- **Toyota Prius Plug-In Hybrid**
- **Volkswagen e-Golf**

Upcoming PHEVs

	Vehicle	Vehicle Category	Expected Release
	Volvo V60 PHEV	PHEV	2015
	Volkswagen Golf GTE	PHEV	2015
	Audi A4 e-quattro	PHEV	2015
	Audi A3 e-tron	PHEV	2015
	Hyundai Sonata Plug-in Hybrid	PHEV	2015

Upcoming PHEVs

	Vehicle	Vehicle Category	Expected Release
	Chevrolet Volt (MY2016)	PHEV	2015
	Mercedes S550 Plug-in Hybrid	PHEV	2015
	Mitsubishi Outlander PHEV	PHEV	2015
	Volvo XC90 T8 Plug-in Hybrid	PHEV	2015
	Mercedes C350 Plug-in Hybrid	PHEV	2016

Upcoming BEVs and FCEVs

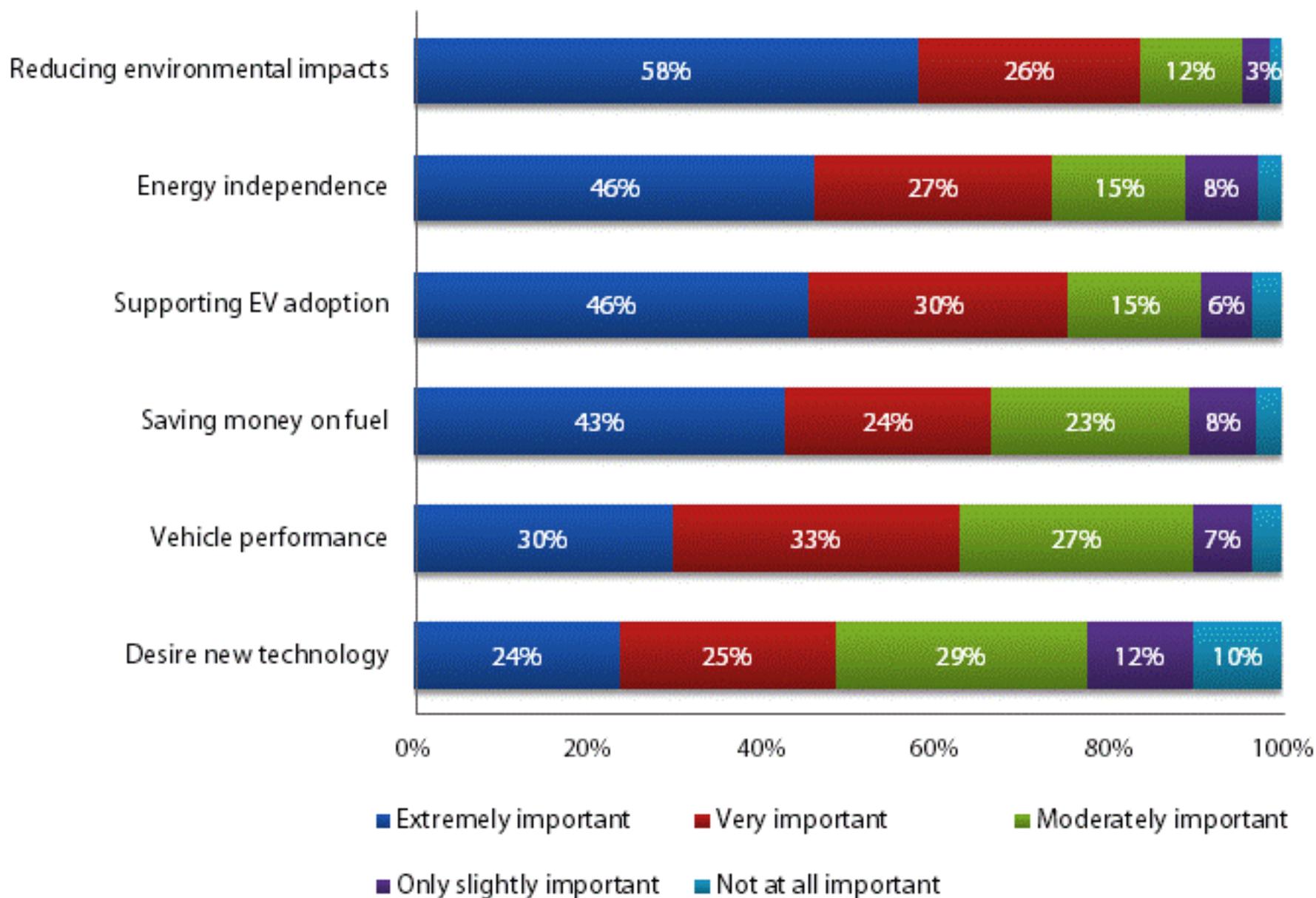
	Vehicle	Vehicle Category	Expected Release
	Tesla Model X	BEV	2015
	Chevrolet Bolt	BEV	2016
	Infiniti LE	BEV	2017
TBD in 2017	Tesla Model 3	BEV	2017
	Toyota Mirai	FCEV	Fall 2015

Demographics Summary

- **Average Age:** 50 years old
- **Sex:** 80% male
- **Median Household Income:** \$150,000 - \$199,999
- **Highest Level of Education:** 87% have at least a 4 year degree and over half have a graduate degree.
- **Single-Family Homeowners:** 86%
- **Installation of Solar:** Only 17% have installed solar PV, 24% are interested but 59% have no interest in solar

Motivations of Drivers

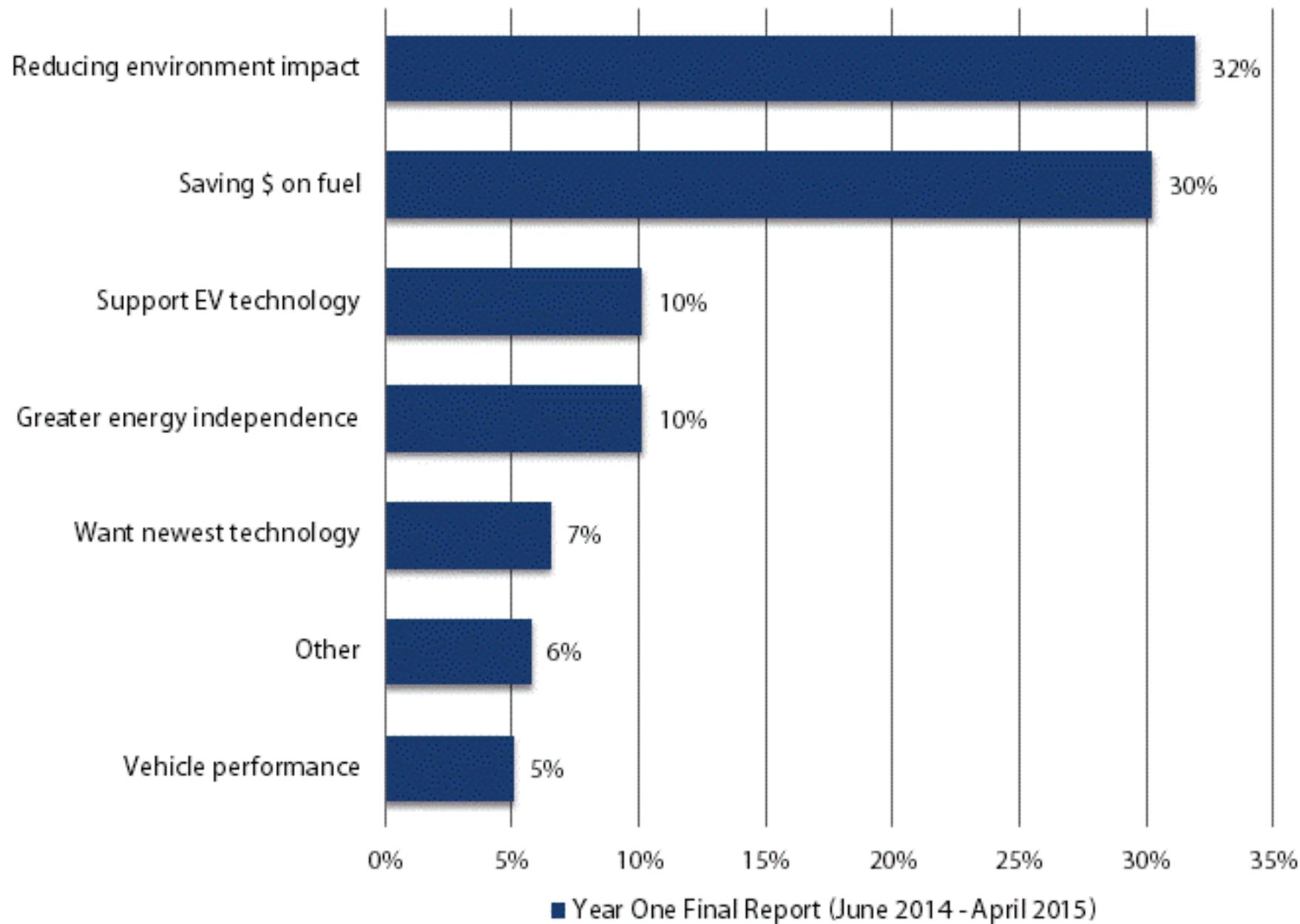
Adoption Motivations



- Reducing environmental impacts was the most important factor.
- Surprisingly, saving money on fuel was not in the top three most important factors.

Motivations of Drivers

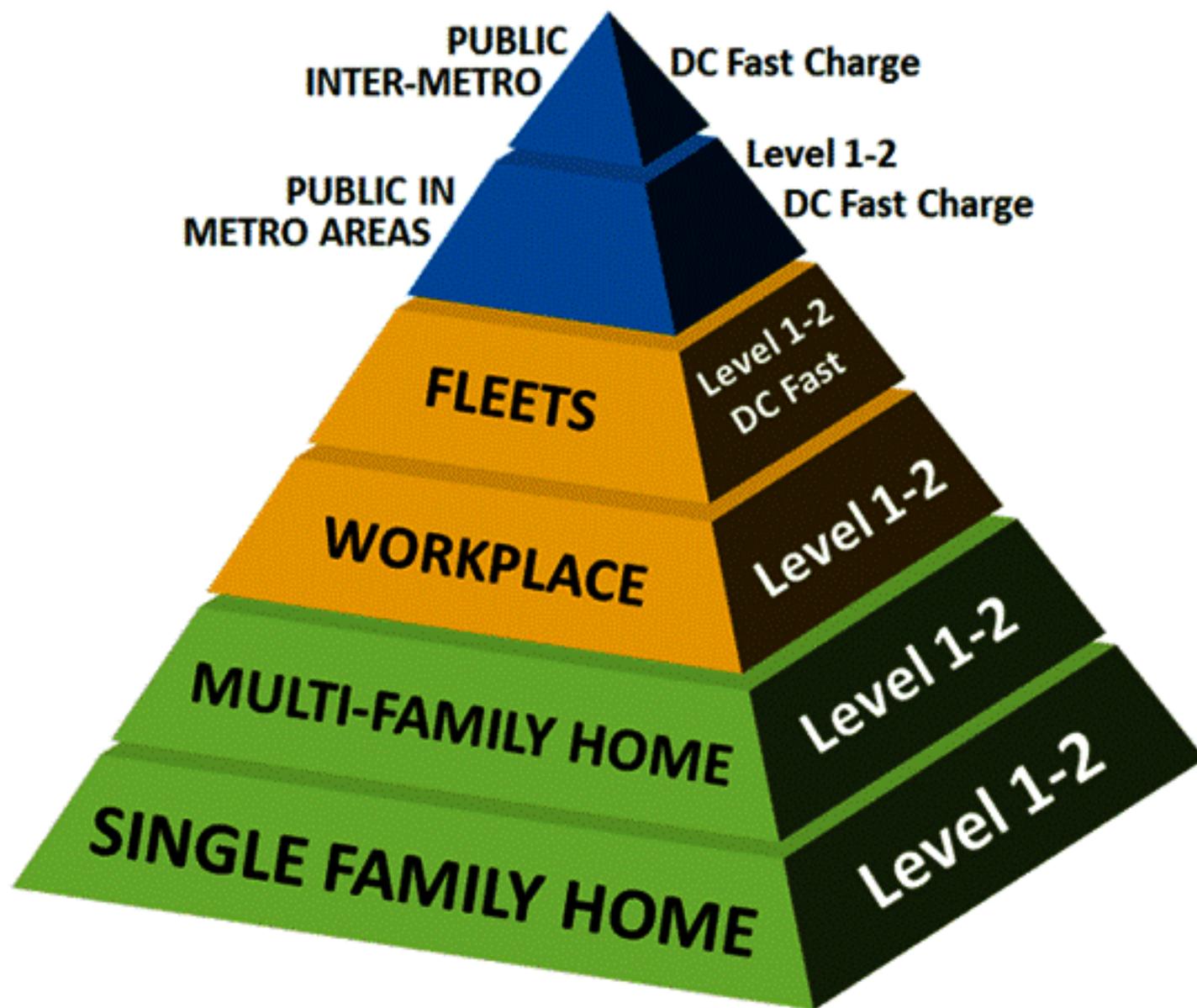
Primary Motivations for Purchase/Lease Over Time



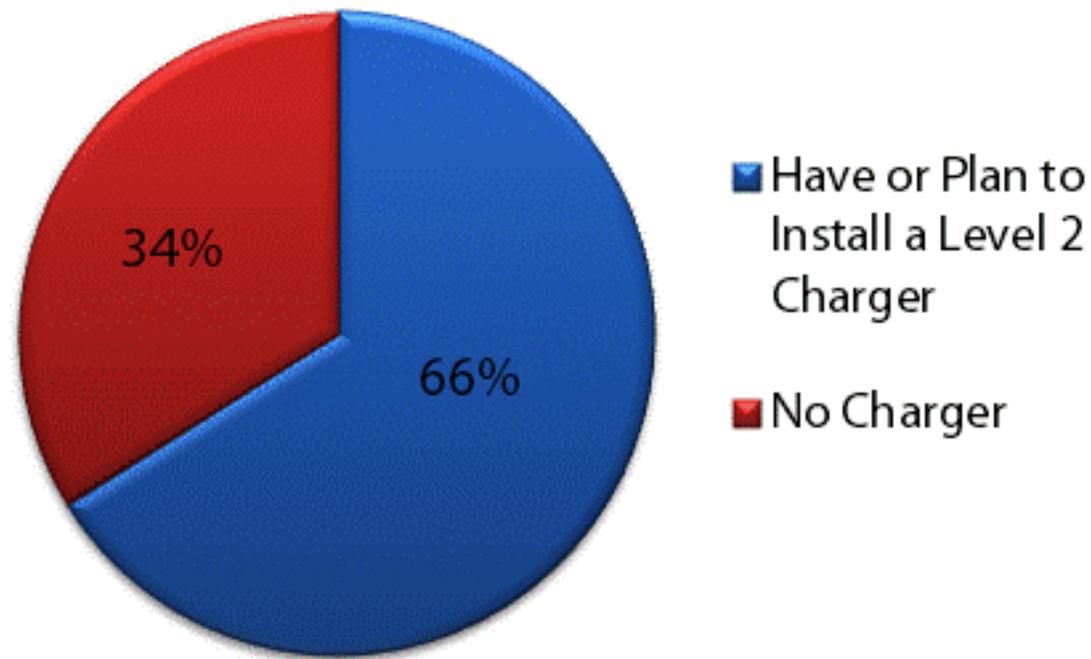
The primary motivation changed from saving money on fuel to reducing environmental impacts throughout the first year of the program.

Charging

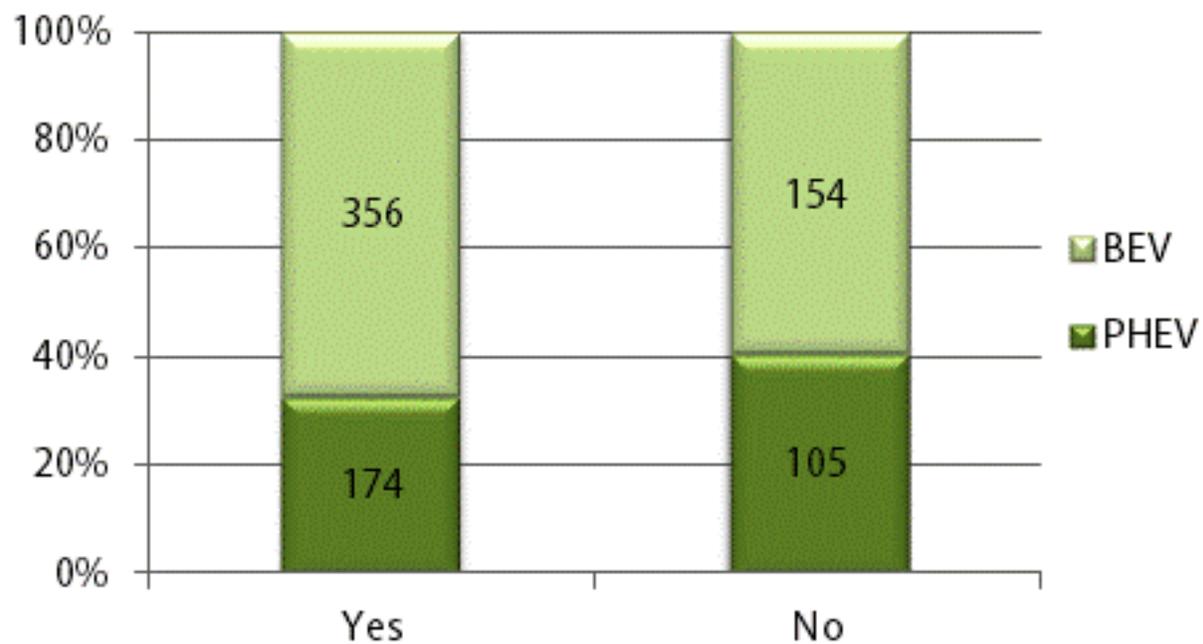
The majority of charging occurs at home, next workplace, lastly public charging.



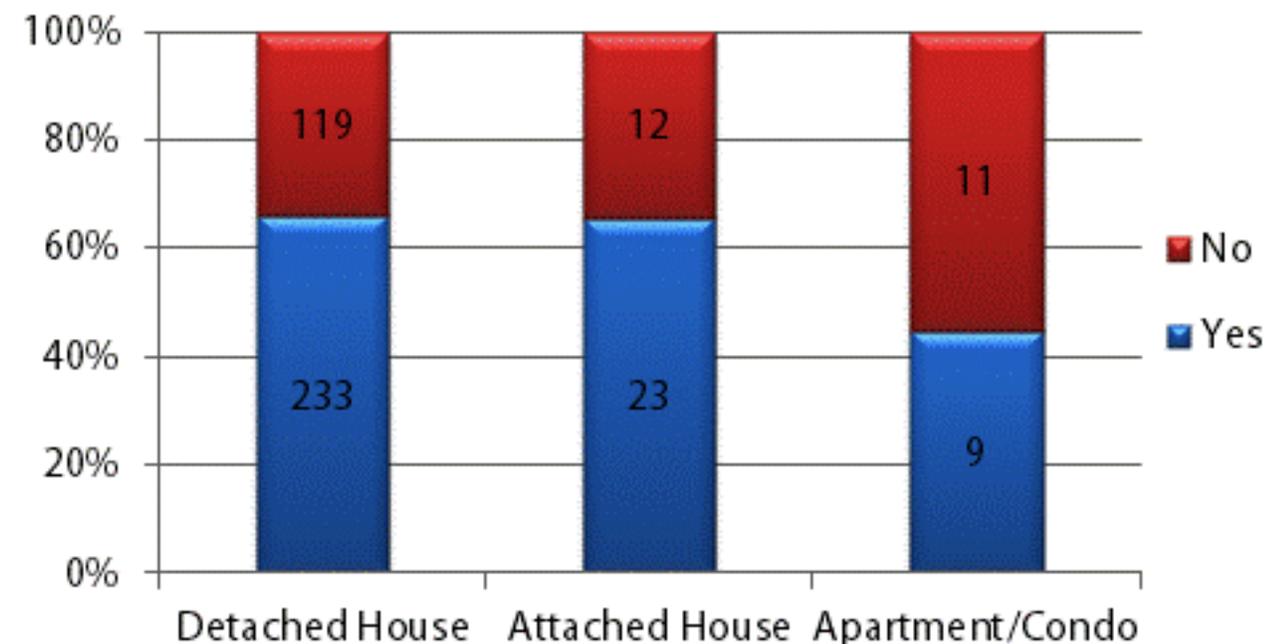
Charging: Residential



Plans to Install a Charger by Vehicle Type

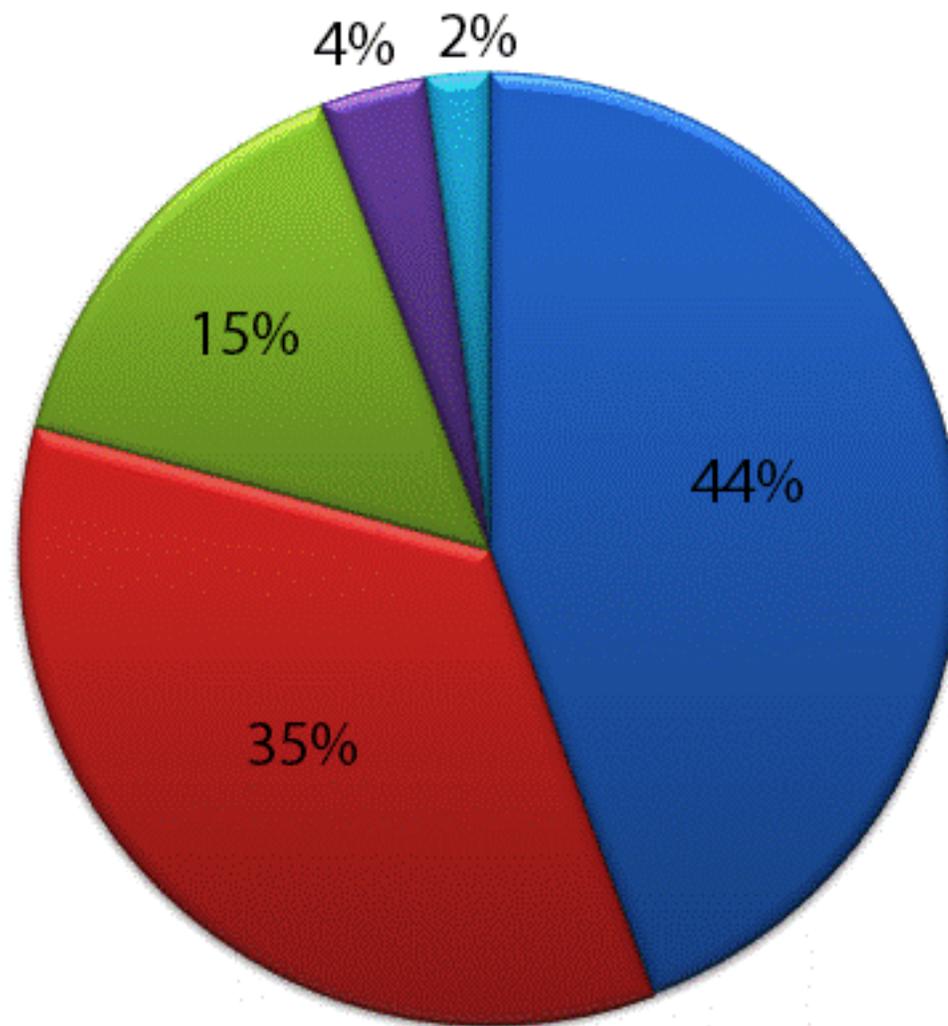


Plans to Install a Charger by Residence Type



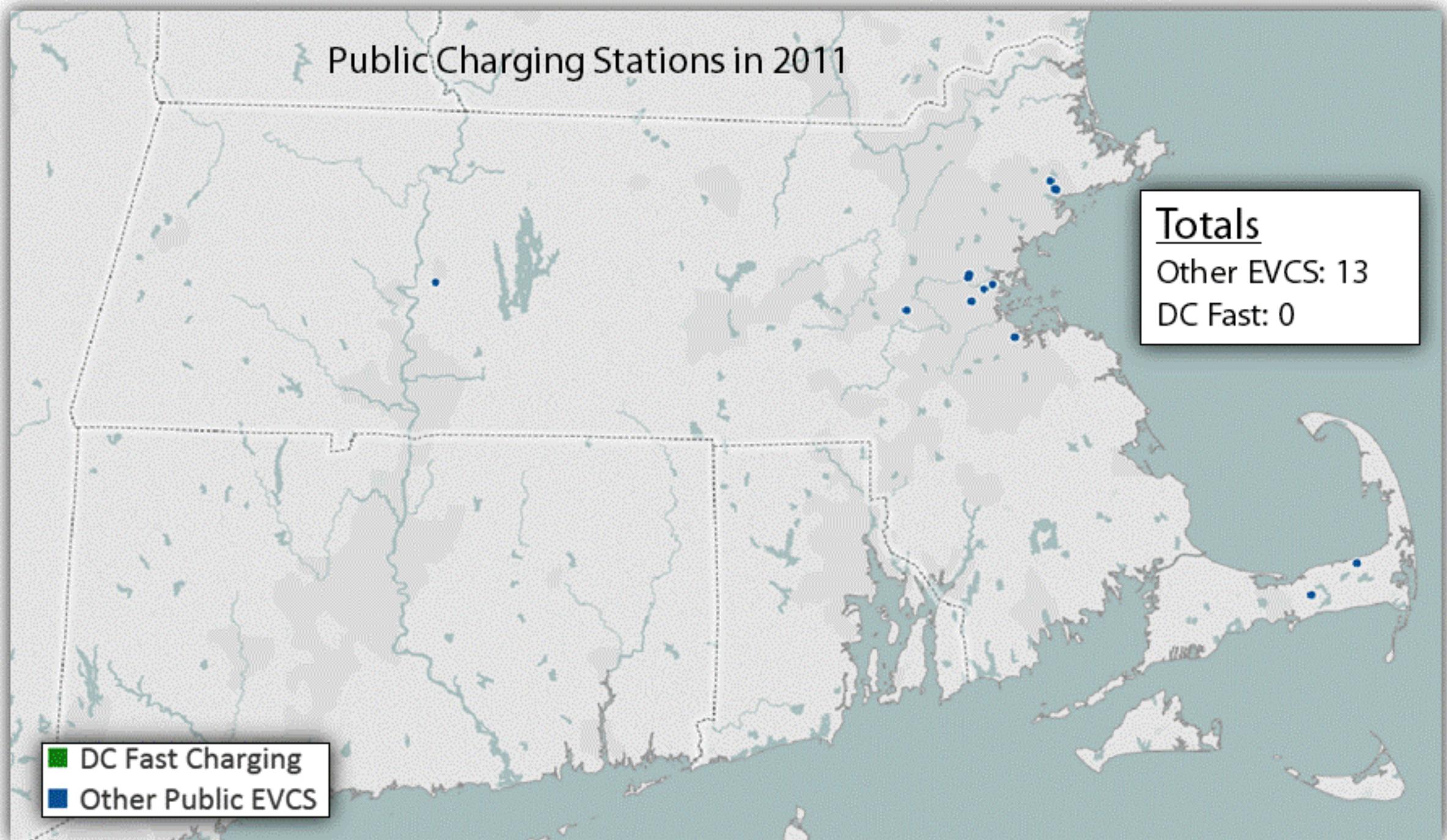
Charging: Workplace

Do you have access to charging at your workplace?



- No, but I would use if available
- Yes
- I don't work or I work from home
- No, and I would NOT use if available
- I'm not sure

Charging: Public



Charging: Public

