

# WORKPLACE CHARGING: PLUGGING INTO MARYLAND'S EV FUTURE

April 19, 2017



Maryland  
Energy  
Administration



Maryland  
Department of  
the Environment

**MDOT**  
MARYLAND DEPARTMENT  
OF TRANSPORTATION



# Agenda

## **10:00 – Welcome and Introduction:**

- Dr. Mary Beth Tung, Maryland Energy Administration
- Tim Shepherd, Maryland Department of the Environment
- Mike Jones, Maryland Energy Administration

## **10:30 – EVs and EV Charging 101 Panel:**

- Jean Gough, Nissan
- Joe Inglisa, SemaConnect
- Nathan Raith, Greenlots

## **11:30 – Break & Vendor Fair**

## **11:45 – Workplace Charging Experience Panel:**

- David Mackey, MOM's Organic Market
- Celso Guitian, UMBC
- Mike Wall, Clinton Electric

## **12:45 – Lunch, Vendor Fair, and Ride & Drive:**

Bob Bell Nissan, SemaConnect, ChargePoint, Clinton Electric, Greenlots, the City of Baltimore Office of Sustainability, and the Electric Vehicle Institute

# MARYLAND SUPPORTS ELECTRIC VEHICLE CHARGING

Maryland Energy Administration

Dr. Mary Beth Tung



# Maryland's EV Accomplishments

- Over 9,000 electric vehicles registered in the State
- 1,129 commercial charging stations, and numerous residential stations
- 921 chargers installed with MEA support alone

# Maryland State Agency Efforts and Roles



EVIP & AFIP

ZEV MOU

Install EVSE

EV / EVSE  
(Incentives / Rebates)

Maryland  
Clean Cars  
Program

Chair / Staff  
EVIC



Track EV  
Registrations

Workplace Charging Workshops and Public Outreach

# WELCOME TO WORKPLACE CHARGING

Maryland Department of the Environment

Tim Shepherd



# Maryland's Air Quality

- Maryland continues to experience high levels of ozone.
- Nitrogen Oxides (NO<sub>x</sub>) emissions lead to the formation of ground level ozone, a highly irritant pollutant.
- The transportation sector contributes to about 1/3 of Maryland's NO<sub>x</sub> emissions, which is projected to increase in the future.
- The Greenhouse Gas Reduction Act of 2016 requires Maryland to reduce GHG 40% by 2030.

# Growing the ZEV Market

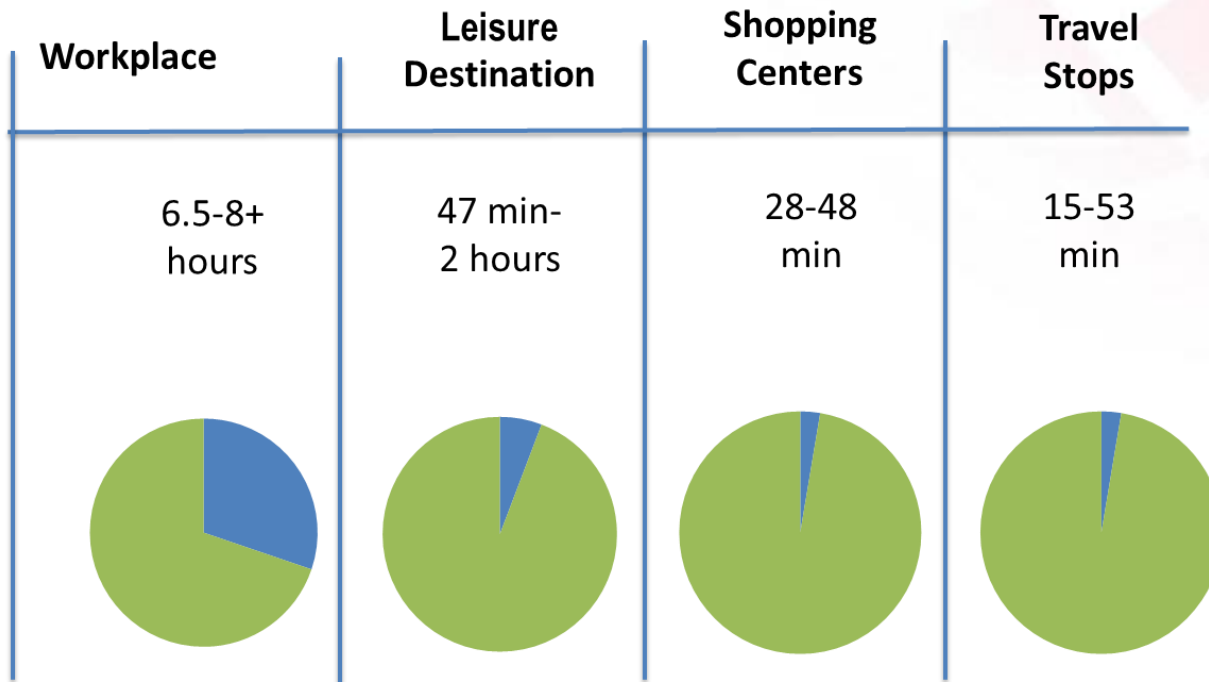
- EVs are the most effective strategy MD has to reduce emissions from the transportation sector.
- State focus on removing barriers to EV purchase and supporting the development of the charging infrastructure.



# Charging Levels

EVSE Options						
	Current Type	Amperage (amps)	Voltage (V)	Kilowatts (kW)	Charging Time	Primary Use
Level 1	Alternating current (AC)	12-16 amps	120V	1.3 to 1.9 kW	2-5 miles of range per hour of charging	Residential charging
Level 2	AC	Up to 80 amps	240V	Up to 19.2 kW	10-20 miles of range per hour of charging	Residential and public charging
DC Fast Charging	Direct current (DC)	Up to 200 amps	208-600V	50 to 150 kW	60-80 miles of range in less than 30 minutes	Public charging

# Workplace Charging: A Day in the Life of the Average Car



# Workplace Charging Benefits

Employee Benefit

Competitive Advantage

Corporate Sustainability

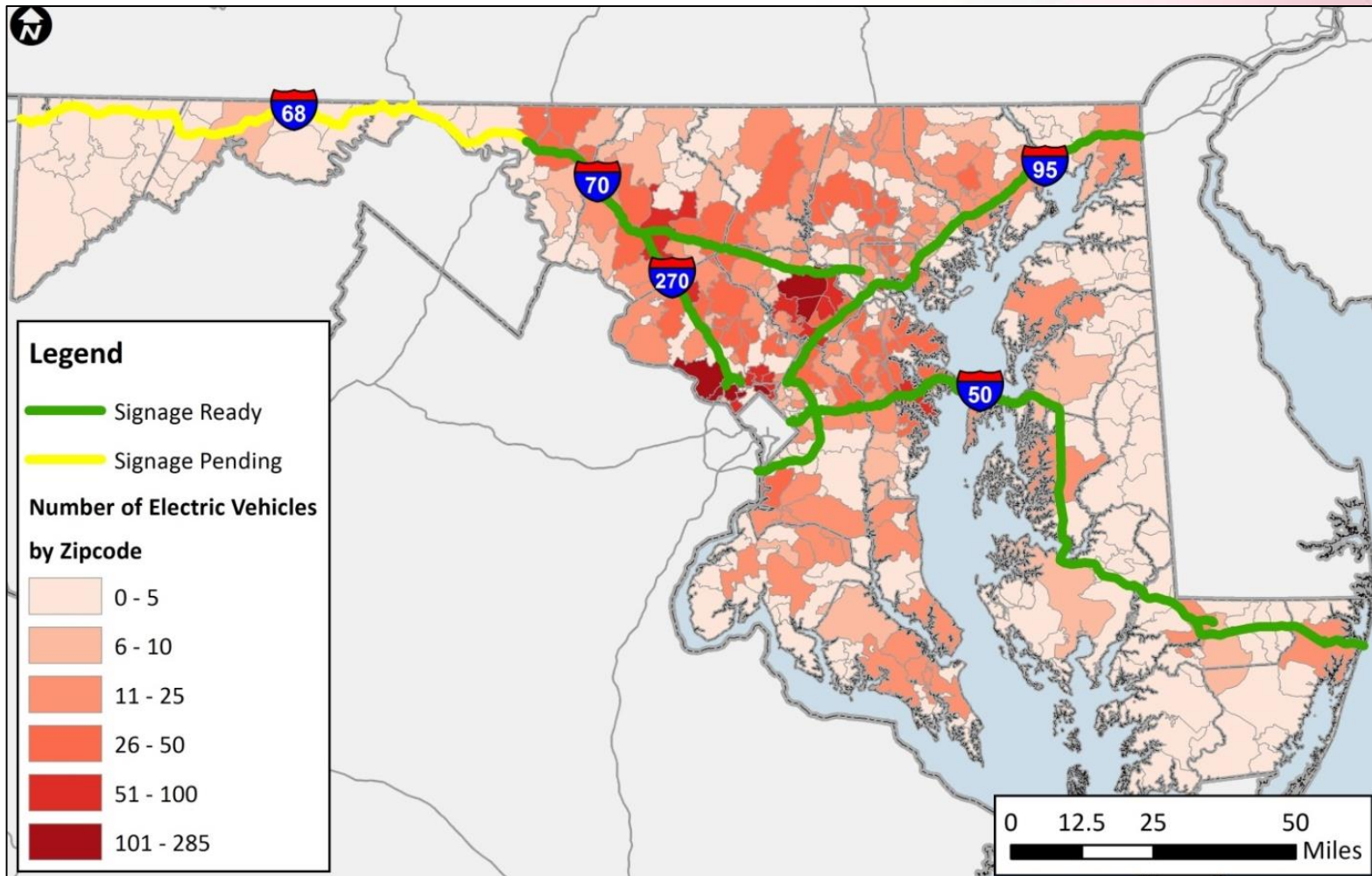
# INTRODUCTION TO MARYLAND EV INITIATIVES

Maryland Energy Administration

Mike Jones

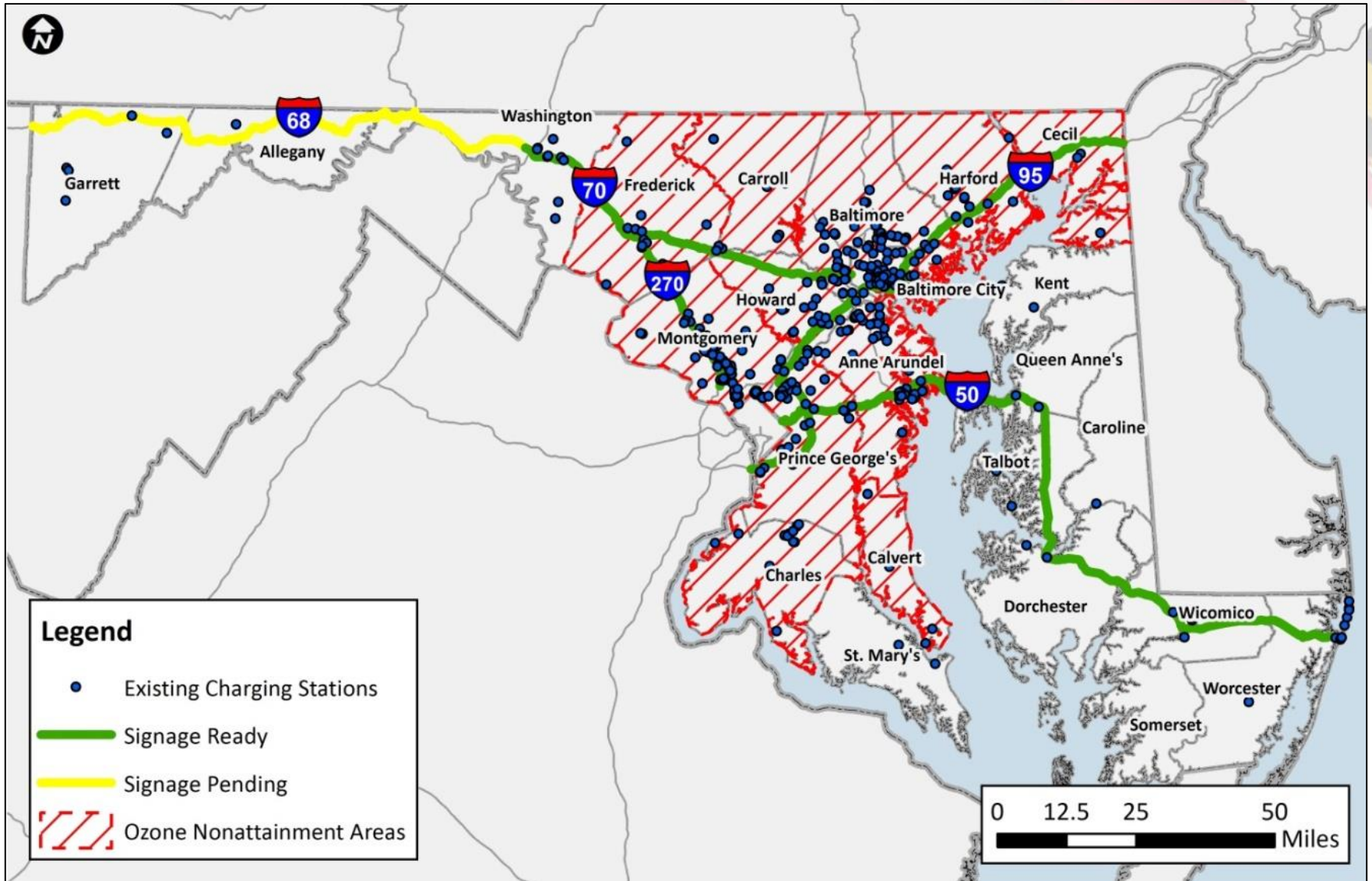


# Maryland's Existing EV Registrations

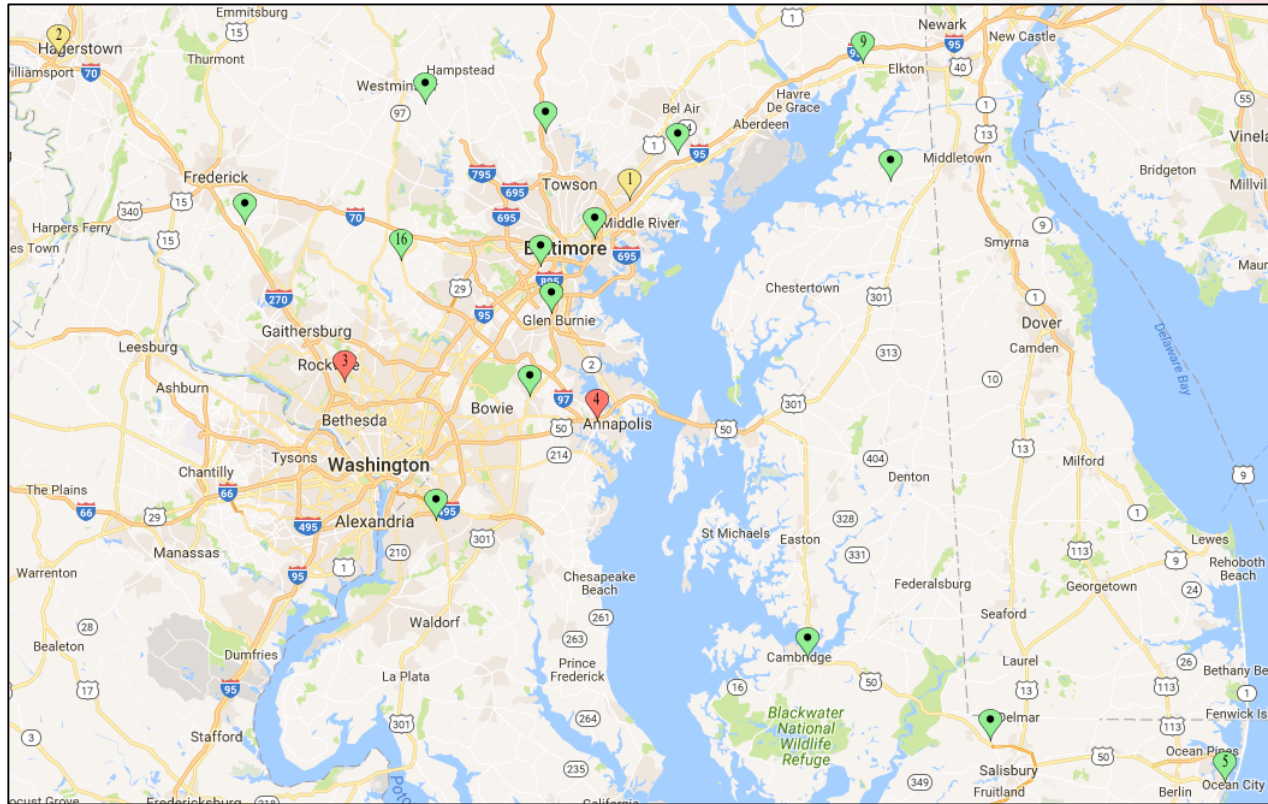




# Maryland's Existing EV Charging Stations and Nationally Designated EV Charging Corridors



# EVIP: Electric Vehicle Infrastructure Plan



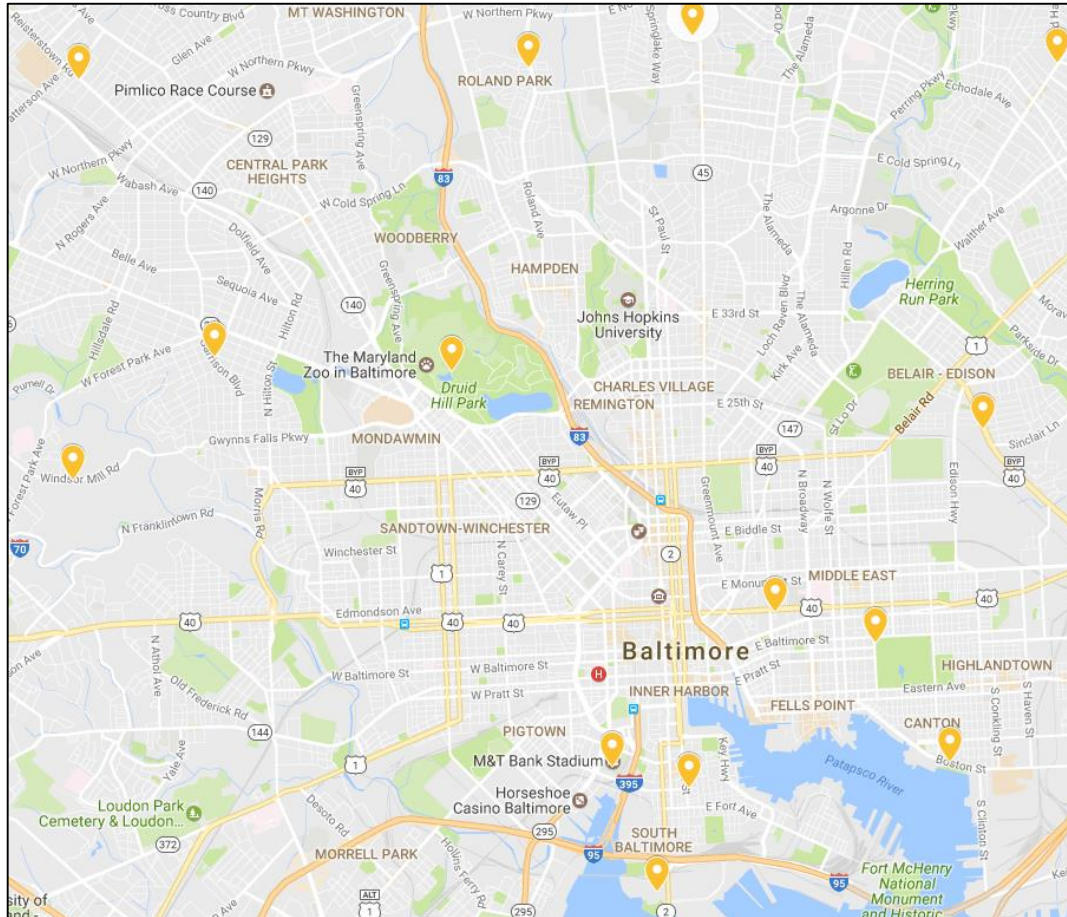
- DC Fast Charging
- \$1M; 50% match



**Maryland**  
Energy  
Administration



# AFIP: Alternative Fuel Infrastructure Program (FY16)



- Technology neutral
  - Includes DC Fast Charging
- \$2M: Min. 50% match
- Max. EV Award \$45K
- 14 DC Fast chargers at 14 locations



Maryland  
Energy  
Administration



# AFIP: Alternative Fuel Infrastructure Program (FY17)



- Technology neutral
  - Includes DC Fast Charging
- \$2M: Min. 50% match
- 37 DC Fast chargers at 11 locations



**Maryland**  
Energy  
Administration

# Clean Cars Act of 2017

## **Vehicle Excise Tax Credits\***

For new electric vehicles purchased after July 1, 2017 that have a total purchase price less than \$60,000 and have a battery capacity of at least 5 kWh:

- \$100 times the kWh battery capacity, up to **\$3,000**

## **Electric Vehicle Recharging Equipment Rebate Program\***

For qualified electric vehicle charging equipment, rebates are available for :

- Individuals: 40% of the cost of the station and installation, up to **\$700**
- **Business entities and State or local Governments:** 40% of the cost of the station and installation, up to **\$4,000**
- Retail Service Stations: 40% of the cost of the station and installation, up to **\$5,000**

# Additional Electric Vehicle Incentives

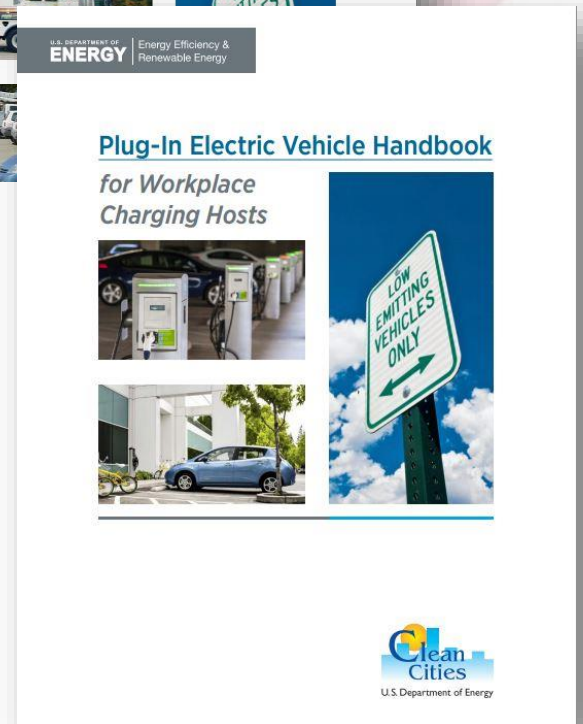
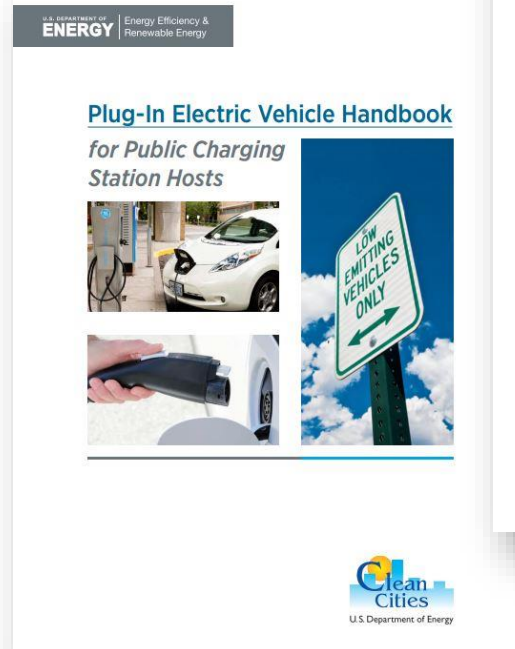
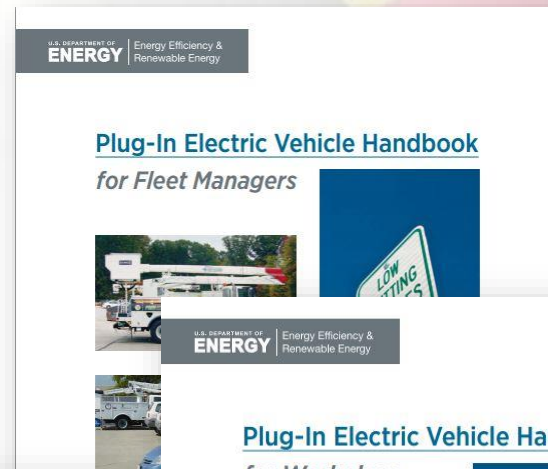
- HOV Lane Exemption Permits for PEVs
- MD Freedom Fleet Voucher (FFV) Program
- Federal PEV Tax Credit

# Getting Started: EV Handbooks

## Helpful Resource:

*Clean Cities PEV Handbooks* are great resources for fleet managers, station owners, and individuals who are ready to start using PEVs and infrastructure.

[afdc.energy.gov/publications](http://afdc.energy.gov/publications)



QUESTIONS?

