



Preparing for Emerging Technologies *State and Local Partnerships*

Colleen Turner – Assistant Director, Office of Planning and Capital Programming
Maryland Department of Transportation
December 3, 2019



Connected & Automated Vehicles in Maryland

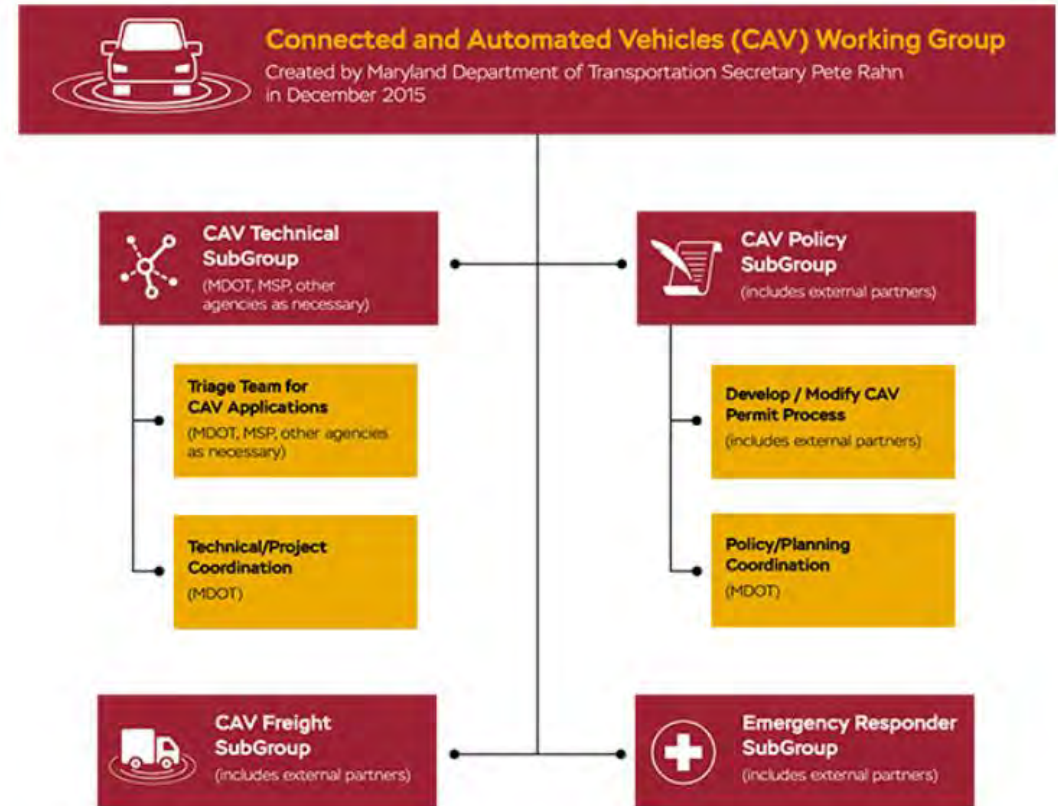
Positioning Maryland as a Leader

Fast Facts

for Connected and Automated Vehicle (CAV) Technology

Vision for CAV in Maryland

Maryland's Vision for Connected and Automated Vehicles (CAV) is to uphold and enhance a **Safe, Efficient, and Equitable** transportation future by delivering collaborative and leading-edge CAV solutions. Maryland is open for business and eager to realize the life-saving and economic benefits of CAV technology, while ensuring safety for all. We are embracing CAV technology and innovation through continuing collaboration with partners interested in researching, testing, and implementing CAVs in Maryland.



<http://www.mva.maryland.gov/safety/MarylandCAV/>

Positioning Maryland as a Leader

Maryland Locations to Enable Testing Sites (LETS) for CAV

Maryland has designated a number of sites, owned by MDOT and its partners, that can be used for the testing of connected and automated vehicle technologies. Explore the map for information and contacts for these sites, which offer a variety of testing scenarios and conditions.



Maryland Locations to Enable Testing Sites (LETS) for CAV

Interactive Map

Explore locations throughout Maryland offering unique and innovative testing opportunities for CAV technology.

Launch

	Beltsville Driver License Test Course
	BWI Dorsey Road Gold Lot
	BWI Old Ridge Road Parking West Lot
	Cumberland Driver License Test Course
	Dorsey MARC Station
	Easton Driver License Test Course
	Frederick Driver License Test Course
	Gaithersburg Driver License Test Course
	Glen Burnie Driver License Test Course

for CAV

Filter by CountyFilter by Fee

1 of 27

Rogers Avenue Metro Station

How to get started

Please submit an Expression of Interest before testing on any of the sites shown here.

Where is this Located?

Address: 4300 Hayward Avenue, Baltimore, MD 21215

Facility Details

Test Facility Type: Parking Lot/Paved Area

General Description: Parking spaces

(View from street)

Facility Size: 17.5 Acres

Facility Width:

Facility Length:

Usage Cost: Fee Required

Facility Restrictions

Government Agency Allowed? Yes

Private Sector Allowed? Yes

Military Allowed? Yes

1 of 27

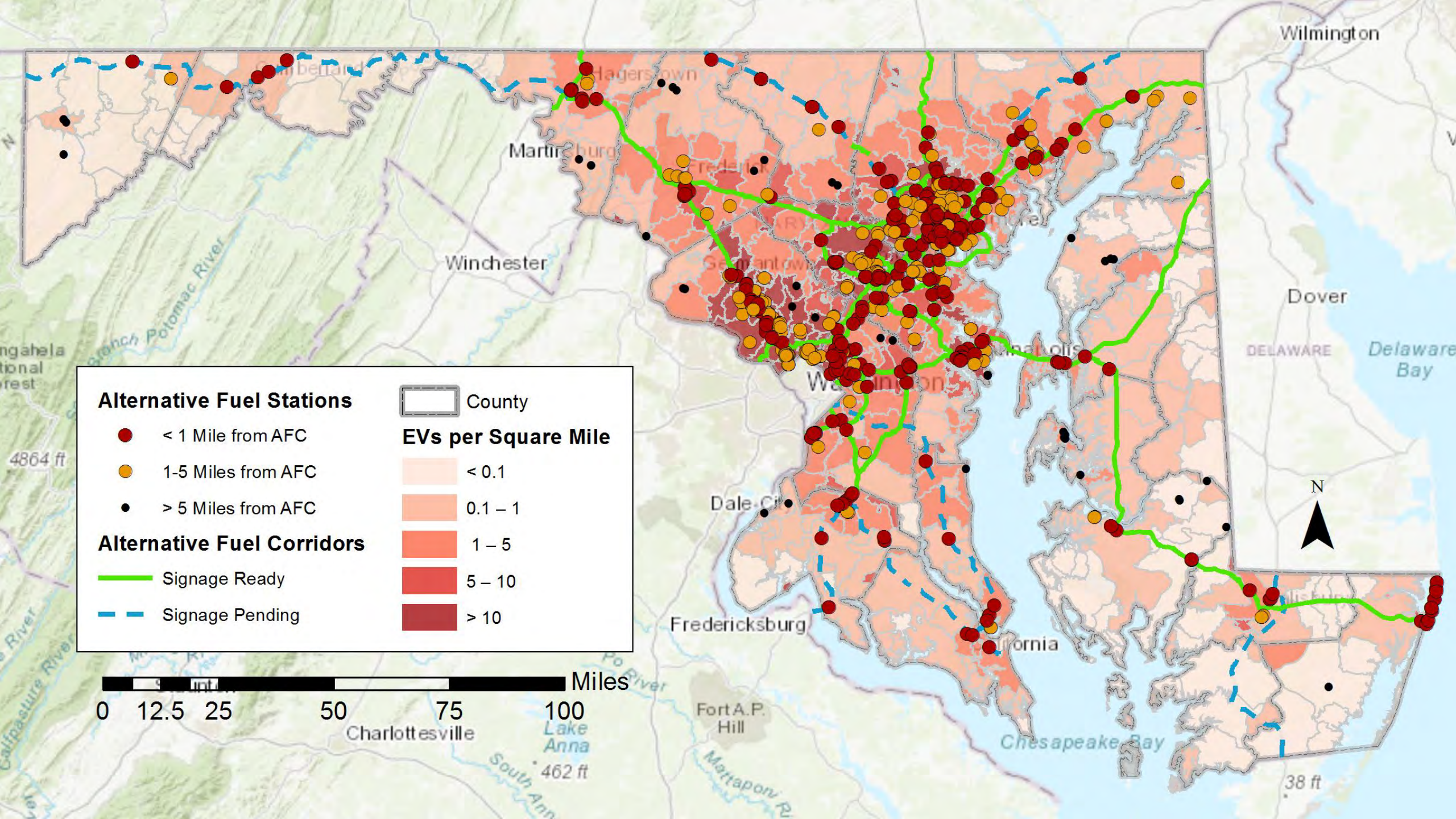
RogersAveMetro.PNG

DISCLAIMER: Safety, mobility and access of all commuters is MDOT's primary focus. The testing locations are available for CAV testing only after a permit has been obtained, and based upon availability, all at the sole discretion of MDOT or its agents. MDOT provides no assurances that the sites will be available for the requested dates and time. MDOT assumes no liability beyond that

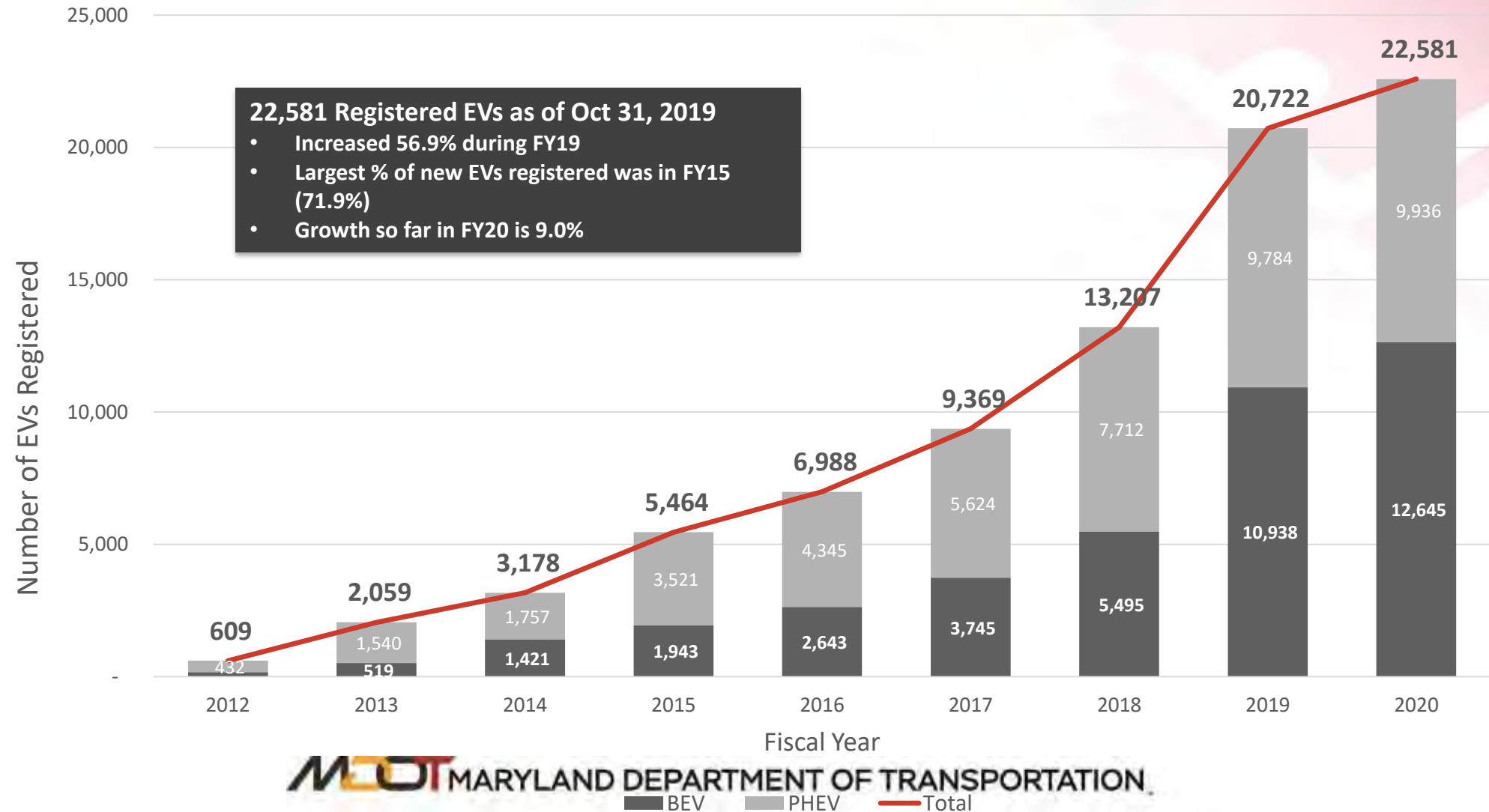
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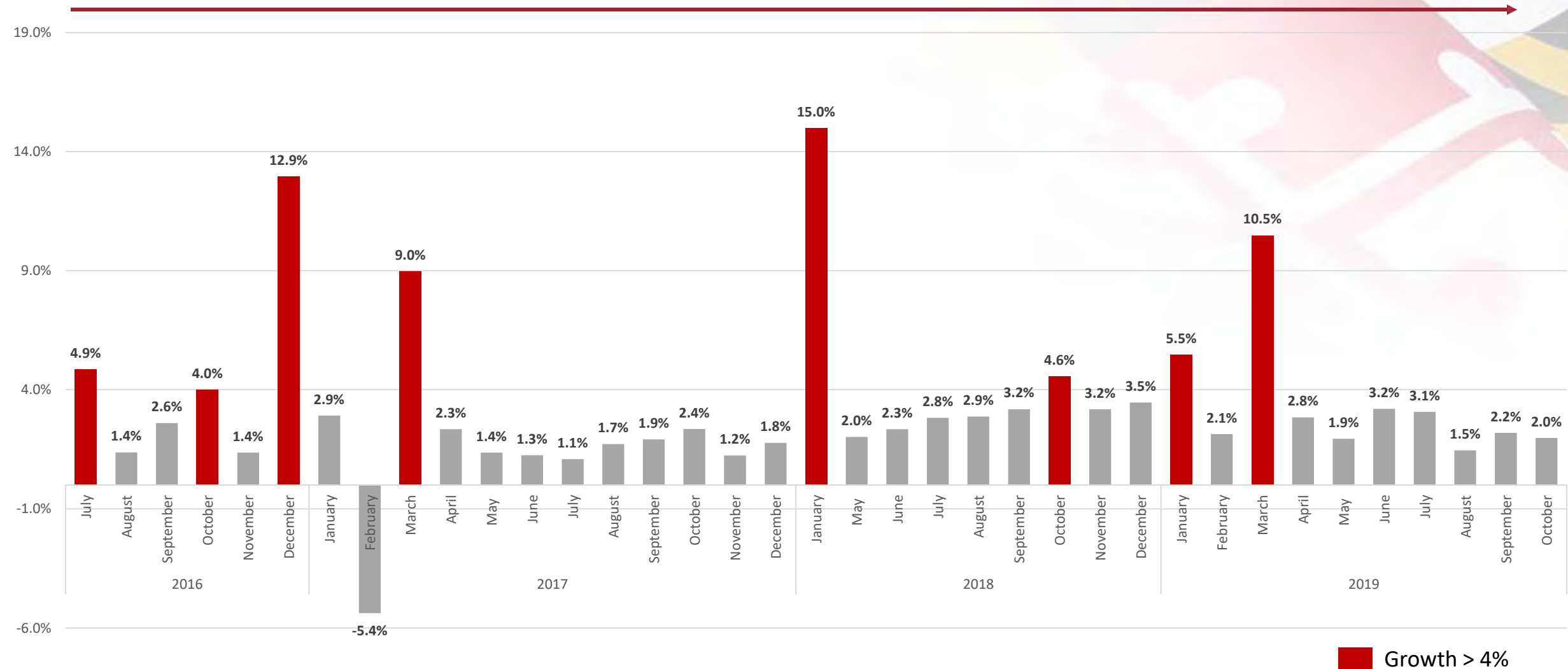
Electric Vehicles in Maryland



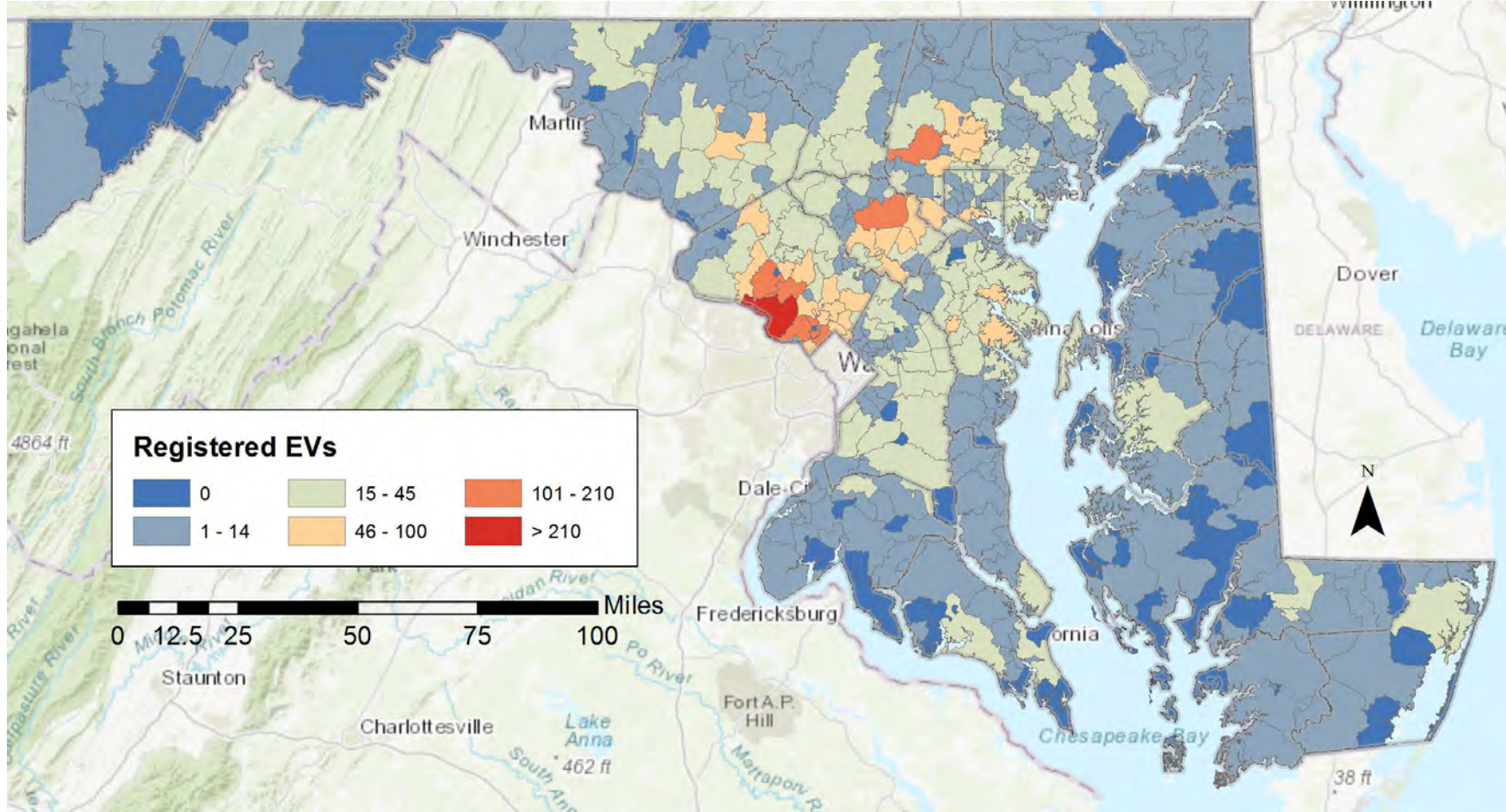
EV Registration



EV Growth (% of New Registrations)

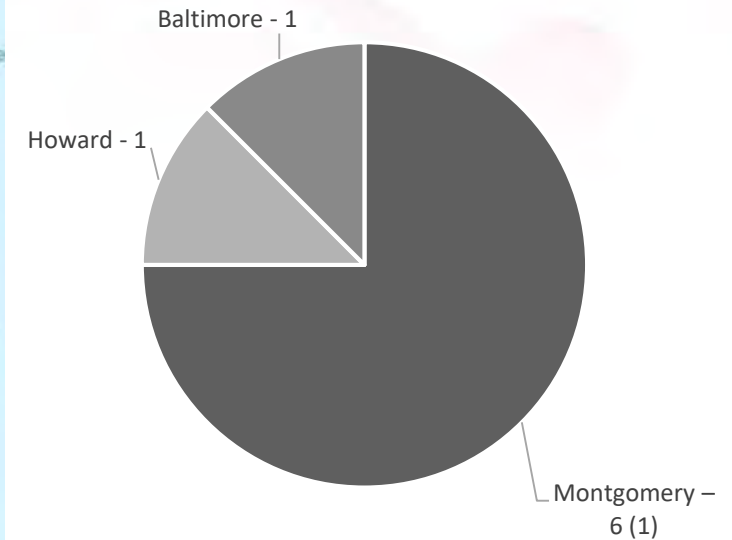


EVs by ZIP Code – June 2016



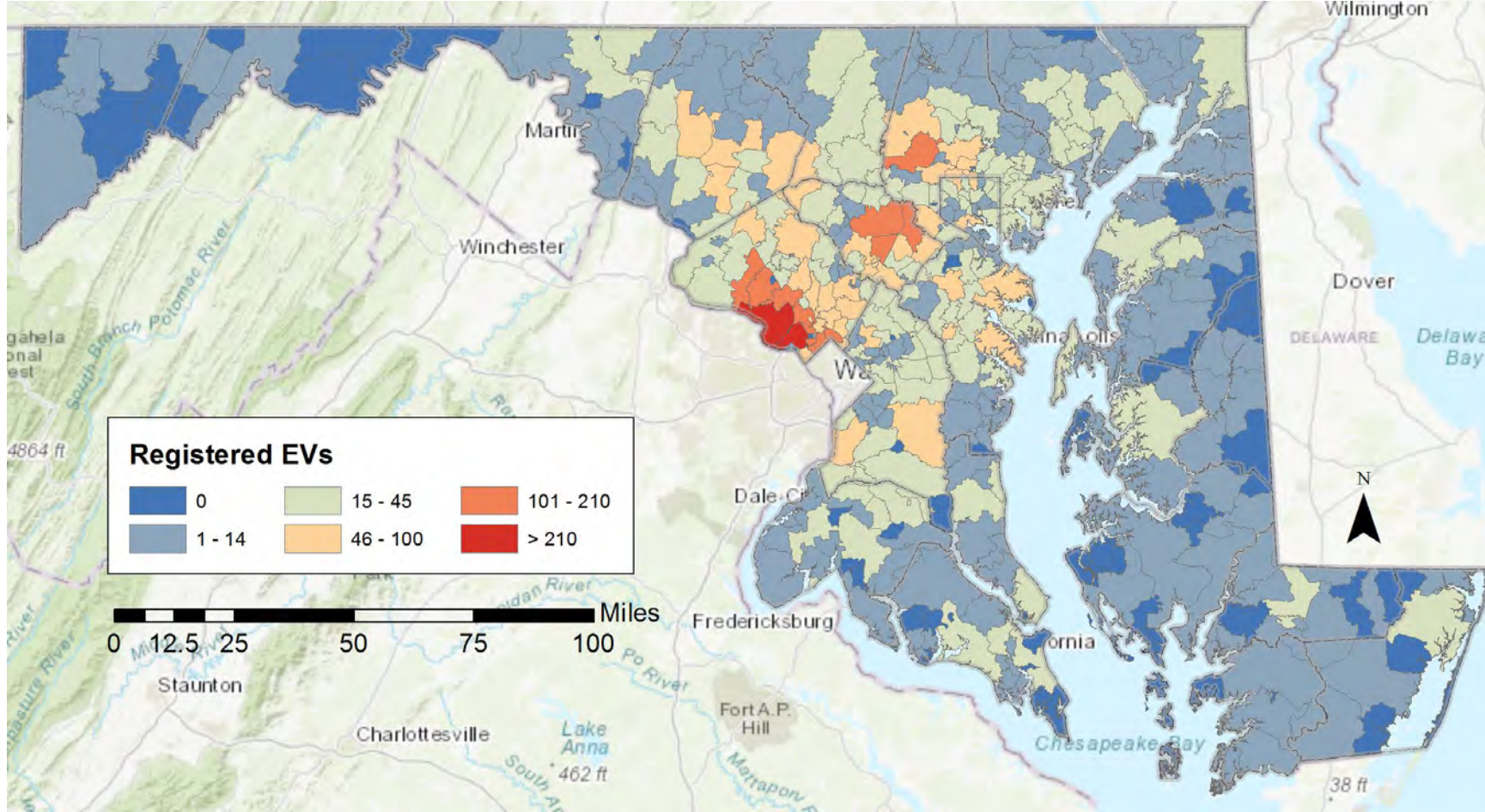
605 Zip Codes

- 8 Zip Codes with > 100 EVs registered
- 1 Zip Code with > 210 EVs registered
- 101 Zip Codes with No EVs registered



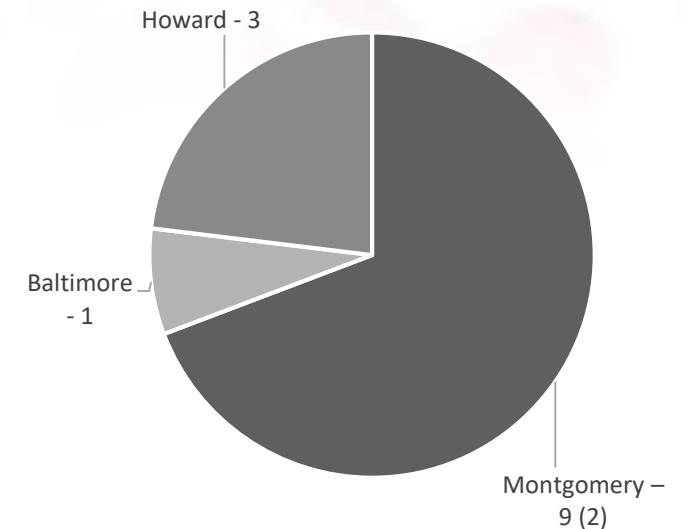
23 Counties, 1 Independent City

EVs by ZIP Code – December 2016



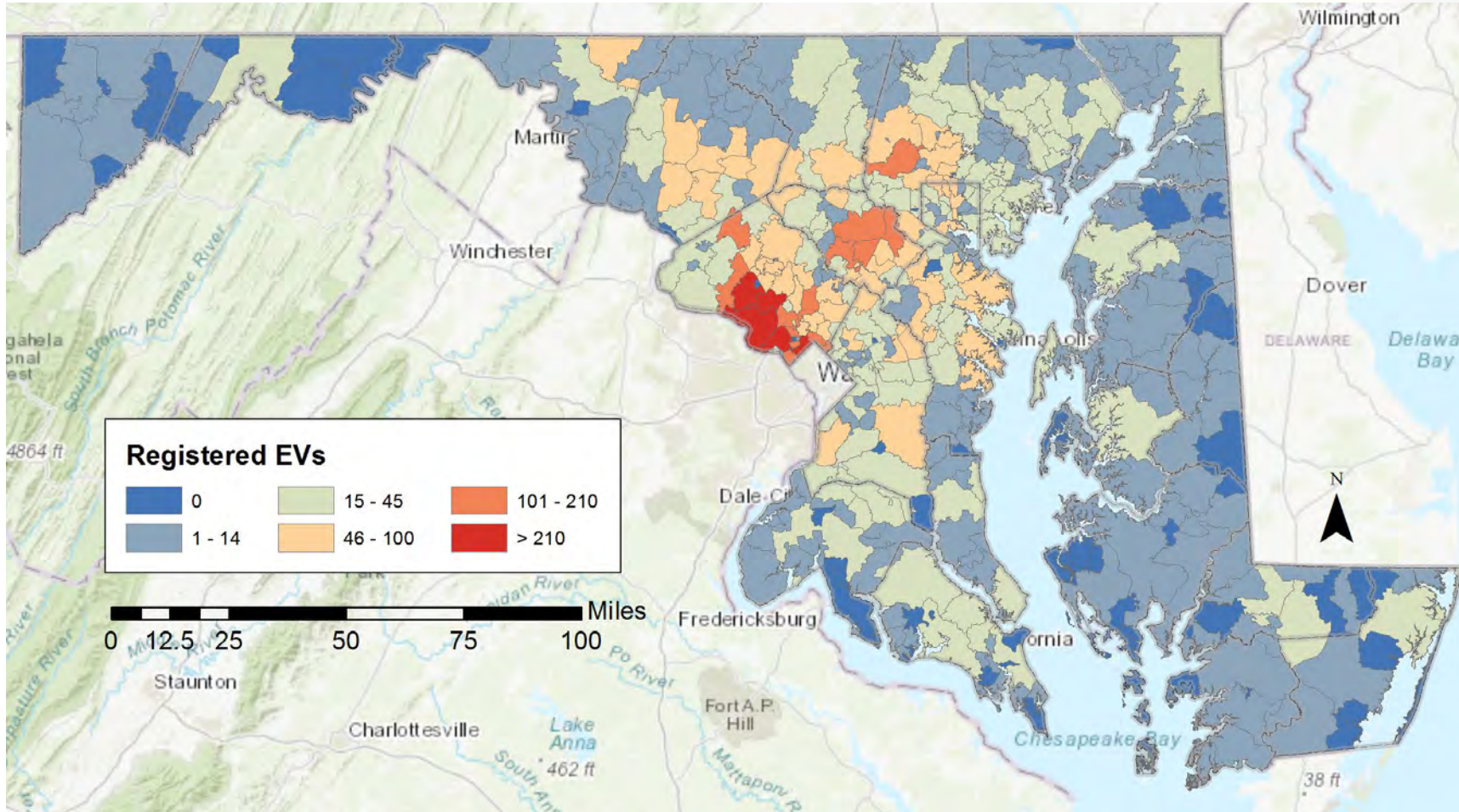
605 Zip Codes

- 13 Zip Codes with > 100 EVs registered
- 2 Zip Codes with > 210 EVs registered
- 89 Zip Codes with No EVs registered



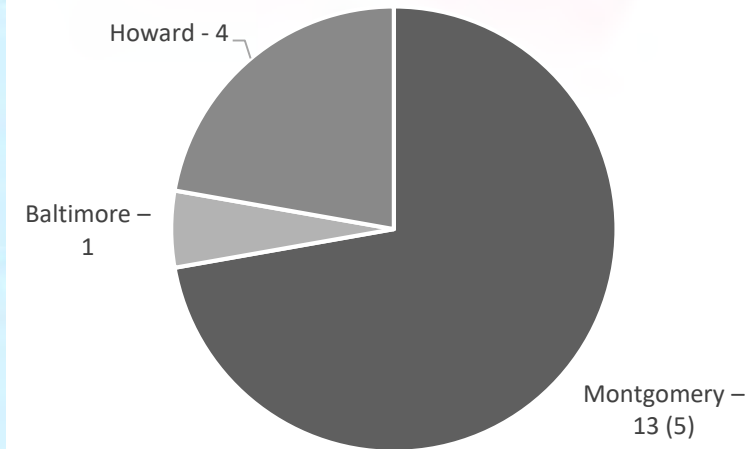
23 Counties, 1 Independent City

EVs by ZIP Code – December 2017



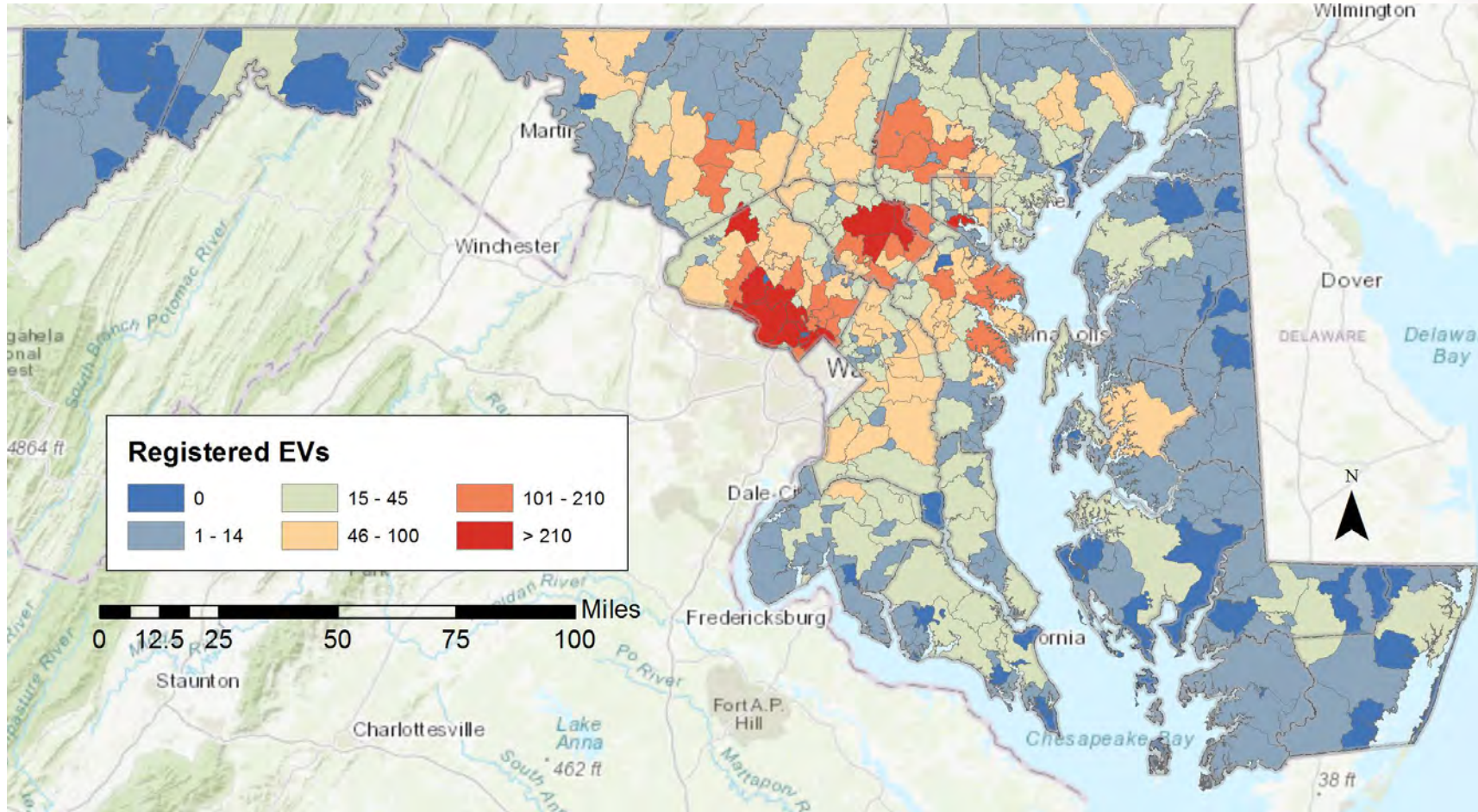
605 Zip Codes

- 18 Zip Codes with > 100 EVs registered
- 5 Zip Codes with > 210 EVs registered
- 81 Zip Codes with No EVs registered



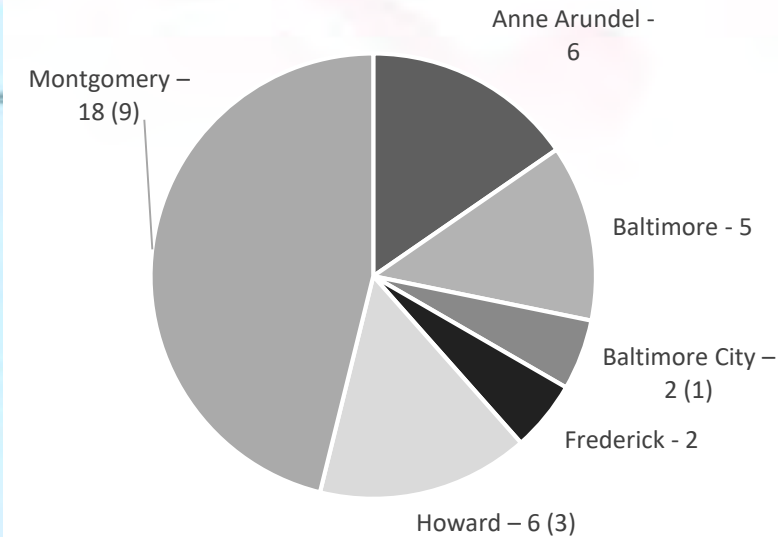
23 Counties, 1 Independent City

EVs by ZIP Code – December 2018



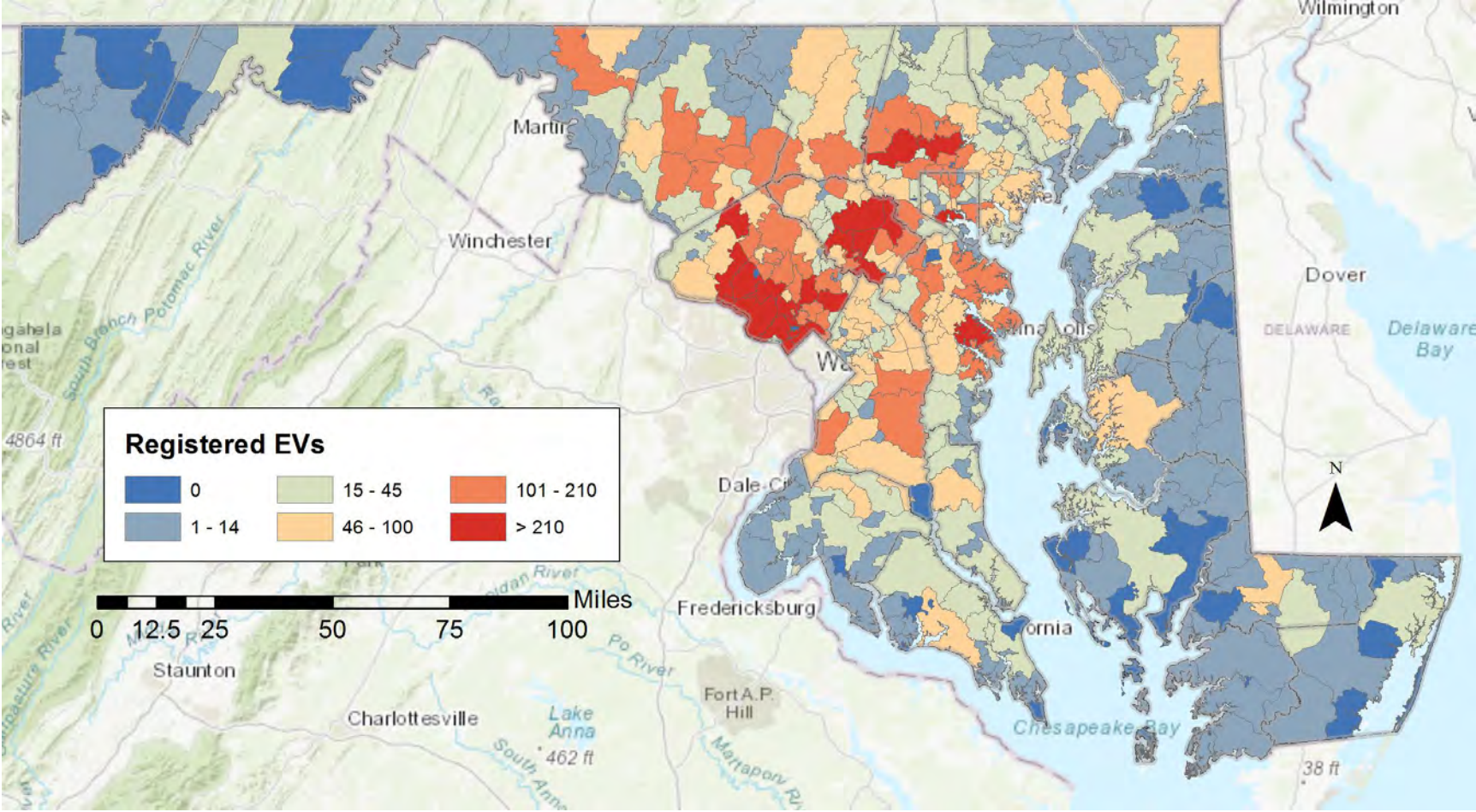
605 Zip Codes

- 39 Zip Codes with > 100 EVs registered
- 13 Zip Codes with > 210 EVs registered
- 68 Zip Codes with No EVs registered

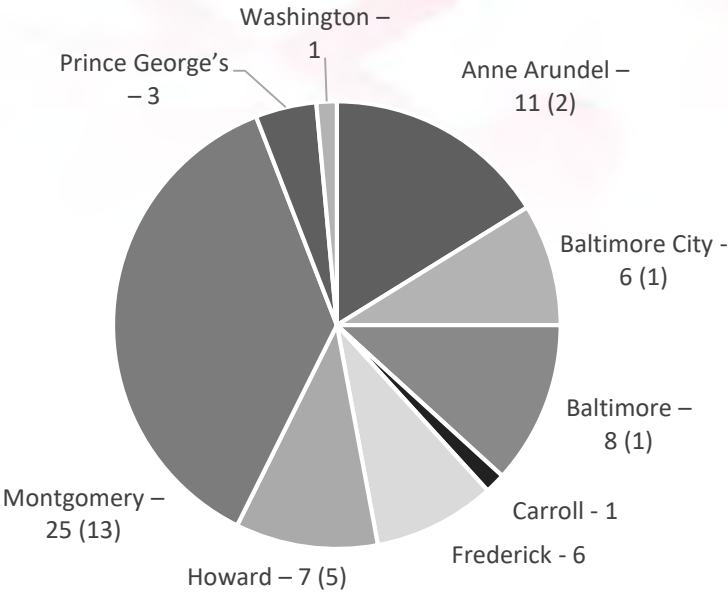


23 Counties, 1 Independent City

EVs by ZIP Code – October 2019



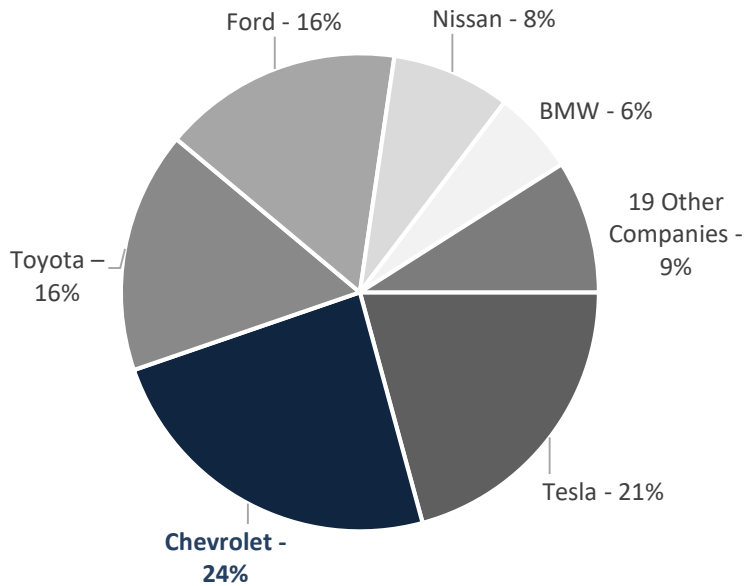
- 605 Zip Codes**
- 68 Zip Codes with > 100 EVs registered
 - 22 Zip Codes with > 210 EVs registered
 - 56 Zip Codes with No EVs registered



23 Counties, 1 Independent City

EV Market Share

January 2018

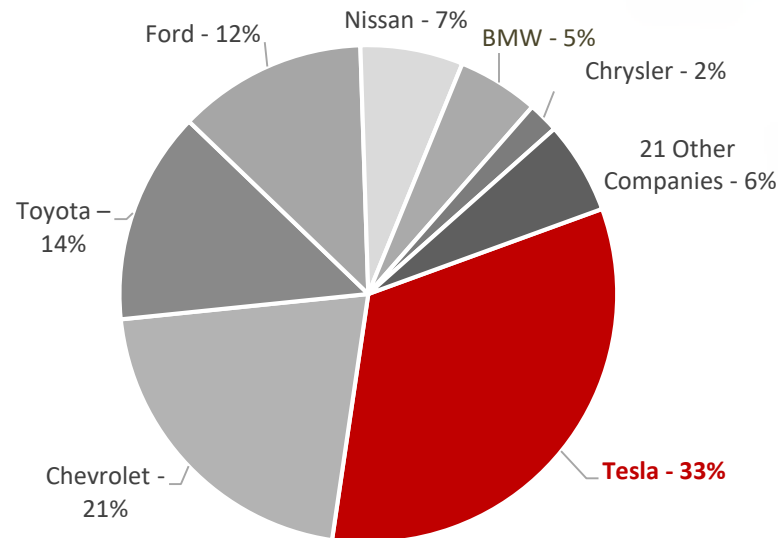


11,906 EVs Registered

25 Companies

- 91% - 6 Companies
- 9% - 19 Other Companies

December 2018

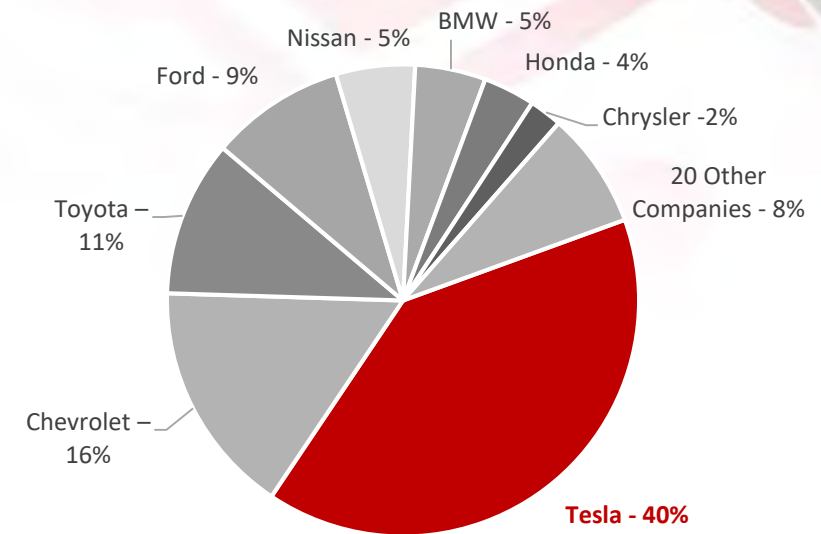


16,093 EVs Registered

28 Companies

- 94% - 7 Companies
- 6% - 21 Other Companies

October 2019



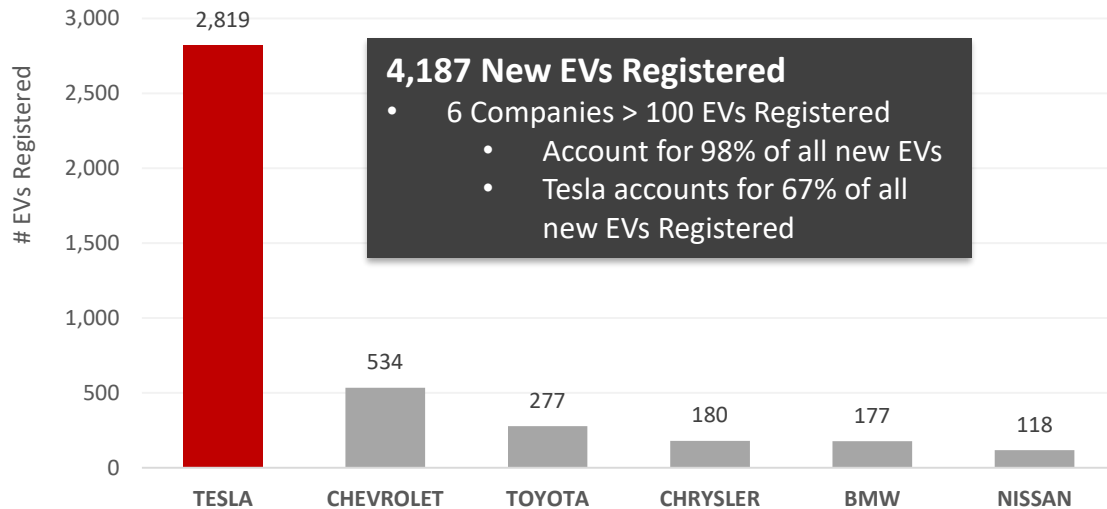
22,581 EVs Registered

28 Companies

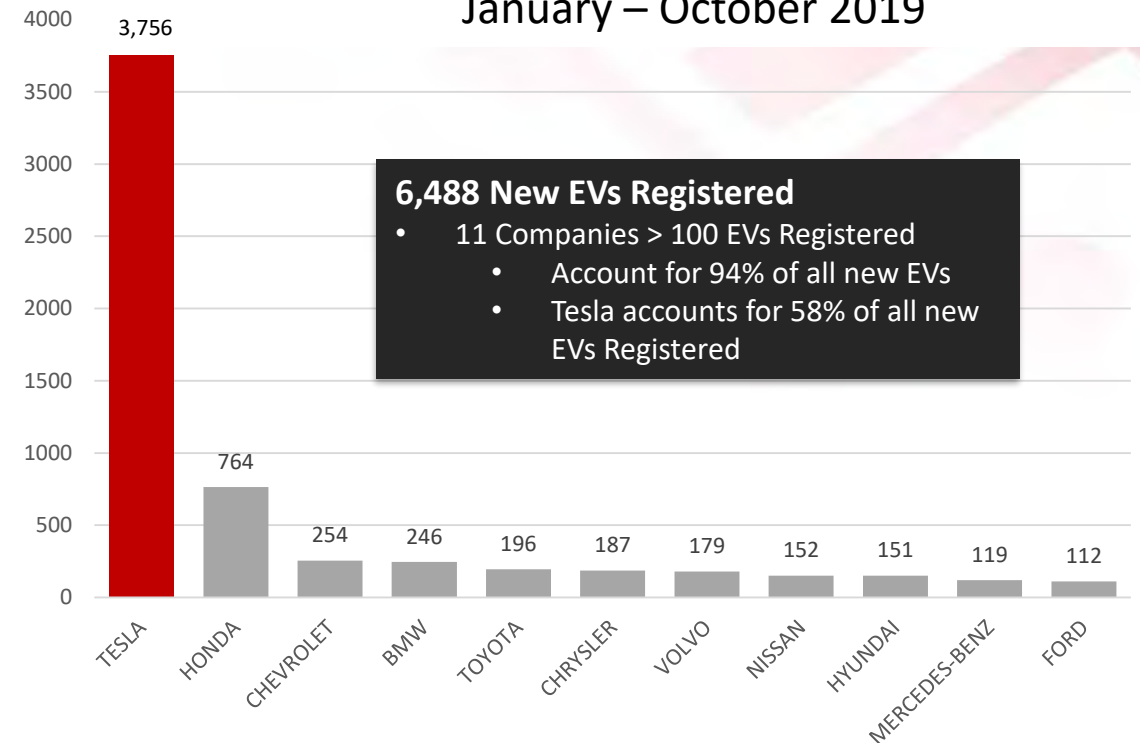
- 92% - 8 Companies
- 8% - 20 Other Companies

Make of New EVs Registered

January - December 2018



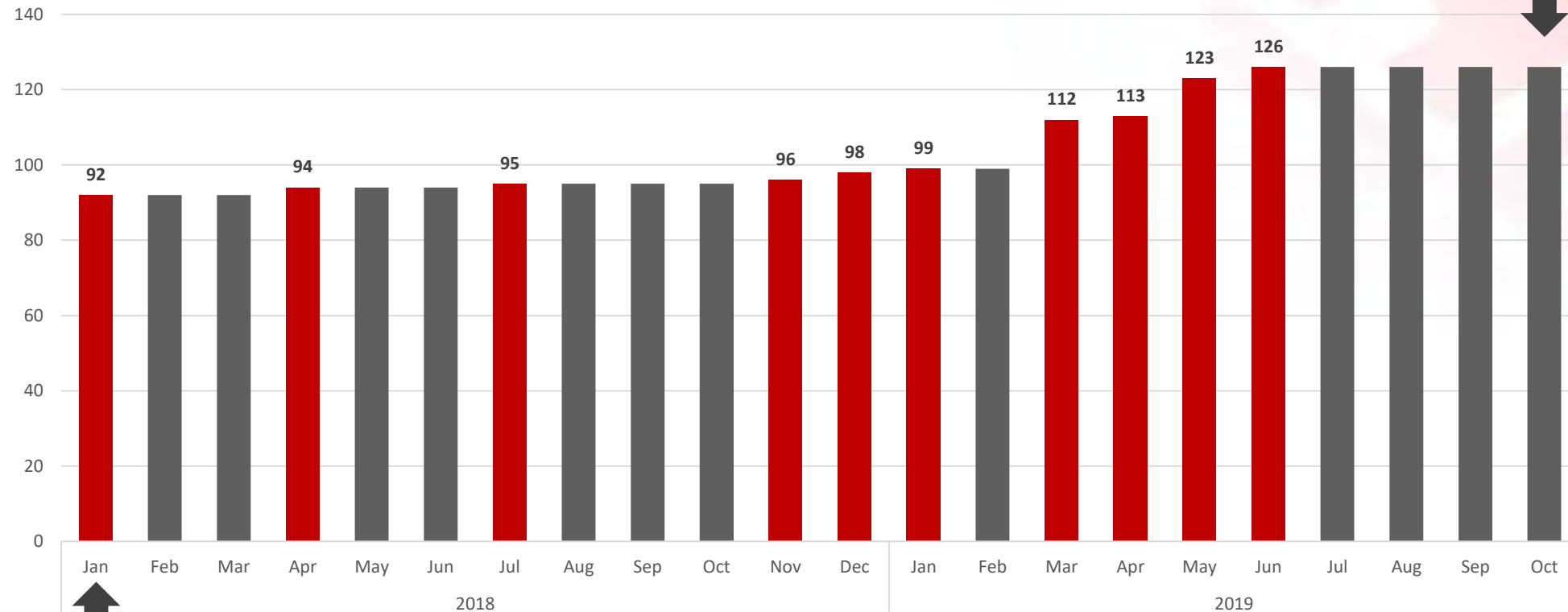
January – October 2019



Models Registered

126 Models Registered

- 6 Models > 1,000 registered EVs
 - Model 3 – 5,263 (23.3%)
 - Model S – 2,412 (10.7%)
 - Prius Prime – 1,281 (5.7%)
 - Volt – 1,199 (5.3%)
 - Prius Plug-in – 1,135 (5.0%)
 - Model X – 1,088 (4.8%)



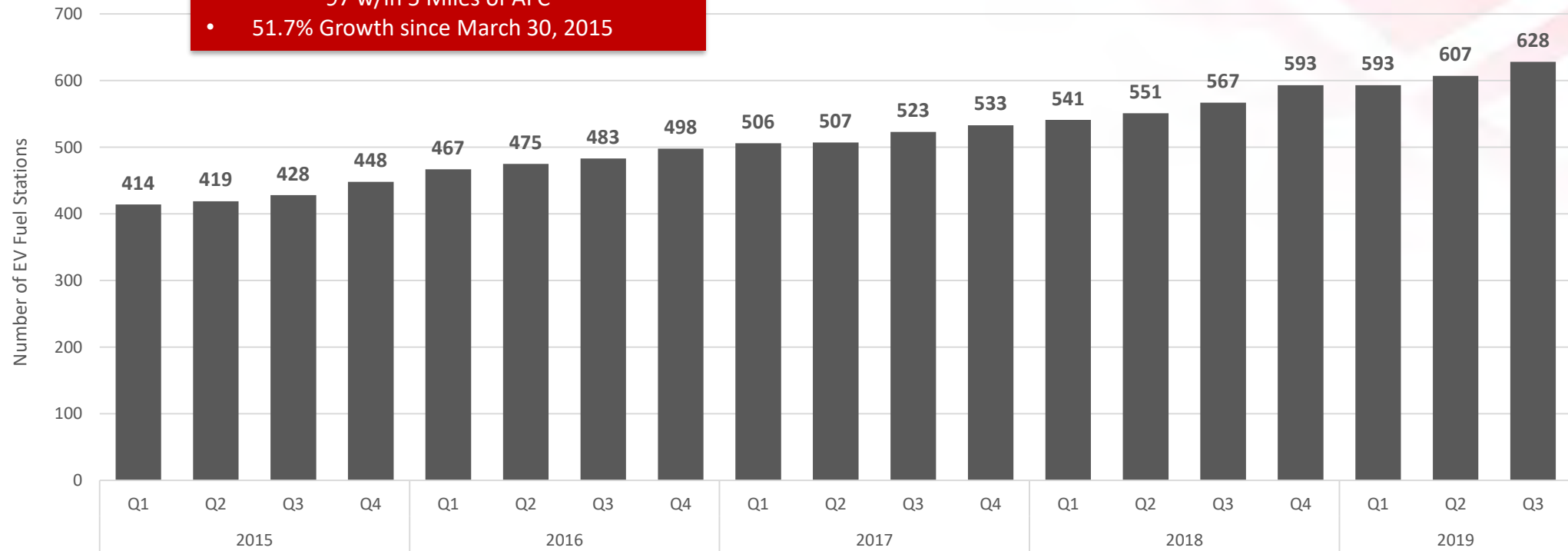
92 Models Registered

- 3 Models > 1,000 registered EVs
 - Model S – 1,734 (14.5%)
 - Volt – 1,310 (11%)
 - Prius Plug-in – 1,248 (10.5%)

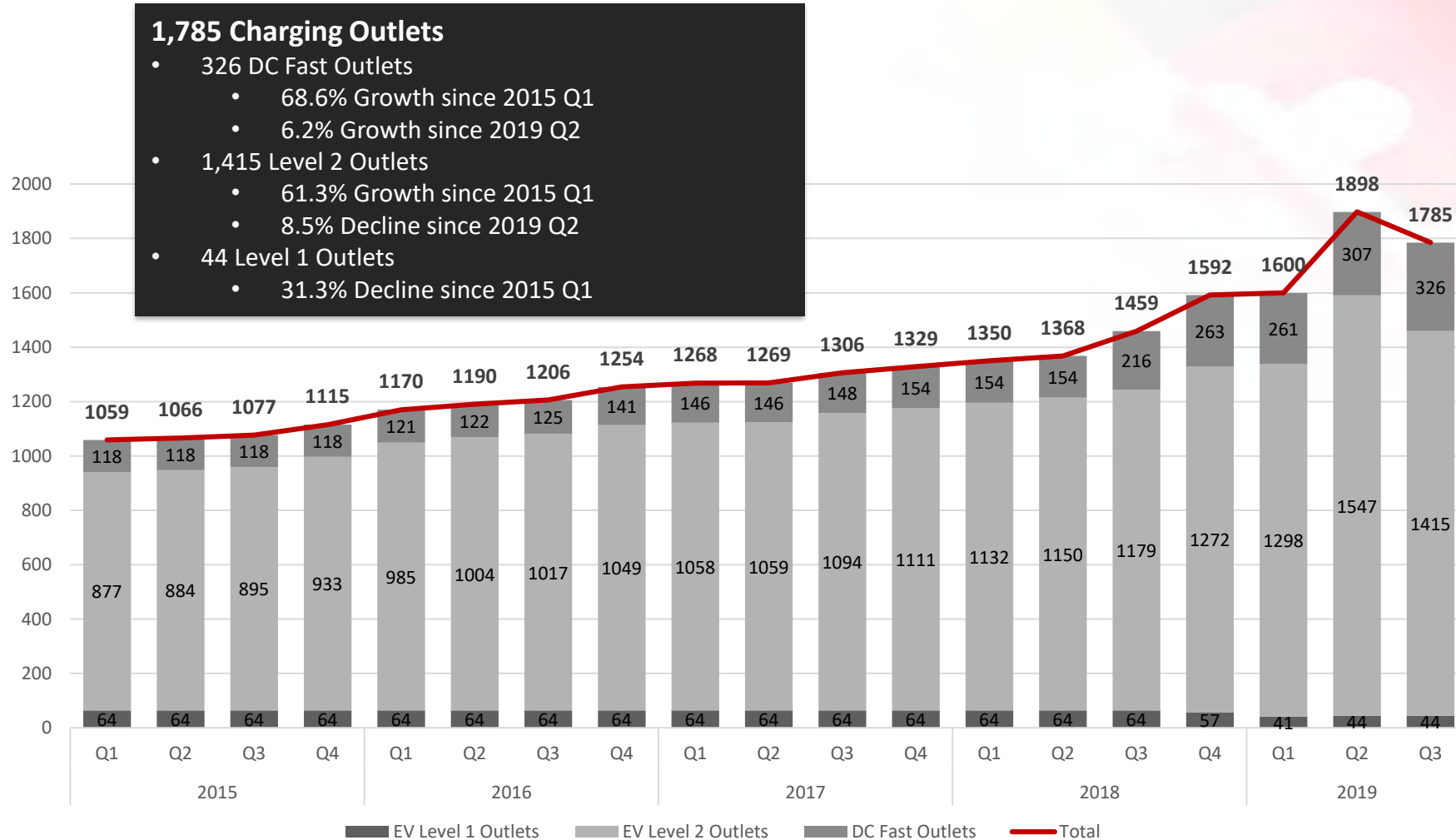
EV Fuel Stations

628 Charging Stations

- 583 Stations w/in 5 Miles of AFC (92.8%)
- 99 DC Fast Charging Stations (15.7%)
 - 97 w/in 5 Miles of AFC
- 51.7% Growth since March 30, 2015



Charging Outlets





Coordinated Planning for Emerging Technologies

Purpose & Goals

To provide local jurisdictions throughout the State of Maryland with an opportunity to share planning innovations, voice needs, and gain access to educational materials relating to emerging technologies that will impact the transportation network and infrastructure. This coordination proposal will begin with collaboration on emerging technologies, such as Connected and Automated Vehicles (CAV) and Zero Emission Vehicles (ZEV).

Goals

- Develop a broad communication strategy would allow all local jurisdictions in Maryland wishing to collaborate to engage with MDOT and MDP to advance emerging technologies.
- Identify and document needs, challenges, and opportunities with the integration of emerging technologies.
- Ensure that local jurisdictions are provided with educational tools to understand and meet the needs of emerging technologies.
- Provide a wholistic picture of 'Maryland's Readiness' for emerging technology.

Workplan

1. Develop & Administer Pre-Survey to Local Jurisdictions
2. Analyze Pre-Survey Data and Develop Content for Emerging Technologies Webinar
3. Administer Emerging Technologies Webinar
4. Post-Survey Following Emerging Technologies Webinar
5. On-Going Communication

Pre-Survey

Emerging Technologies Survey

The Maryland department of Transportation would like to provide local jurisdictions throughout the State of Maryland with an opportunity to share planning innovations, voice needs, and gain access to educational materials relating to emerging technologies that will impact the transportation network and infrastructure. This coordination will begin with collaboration on emerging technologies, such as Connected and Automated Vehicles (CAV) and Zero Emission Vehicles (ZEV).

This survey will serve as an initial step in supporting the following Planning for Emerging Technologies goals:

- Develop a broad communication strategy would allow all local jurisdictions in Maryland wishing to collaborate to engage with MDOT and MDP to advance emerging technologies.
- Identify and document needs, challenges, and opportunities with the integration of emerging technologies.
- Ensure that local jurisdictions are provided with educational tools to understand and meet the needs of emerging technologies.
- Provide a wholistic picture of 'Maryland's Readiness' for emerging technology.

Thank you for your participation in this short survey.

Communication – MPOs & Local Government


WELCOME

Introduction

Maryland Local Government Zero Emission Electric Vehicle Infrastructure Survey

The Maryland Department of Transportation (MDOT), in coordination with the Maryland Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC), is gathering input from counties and municipalities on their experiences with Electric Vehicles (EVs), Electric Vehicle Supply Equipment (EVSE), and EV Chargers. Please provide us your insights on EVSE within your region, including known locations of future EVSE and potential locations of EVSE, so that we can better coordinate EV efforts within the State.

[Begin](#)



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ZEEVIC, formerly known as the Electric Vehicle Infrastructure Council (EVIC), was established through legislation introduced in 2011 as part of a package of bills to promote EVs.

2

3

4

5

CHALLENGES RANKING

SURVEY QUESTIONS

LOCATE STATIONS

WRAP UP

2

Challenges to Installation

What to do

Next Task

Order your top 5 items above this line

Uninformed about EVs

Few EVs

Permitting or Zoning

Maintenance

Installation Cost

Lack of Interest

Other

Electricity Pricing

Few Electric Vehicles in Area



The limited number of EVs within the community negates the need for EV infrastructure at this time.

Comment

Locate Stations

Possible Charging Locations

What to do

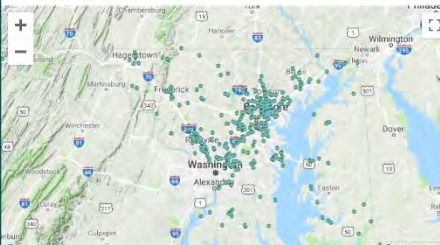
Next Task

Please drag and drop at least 1 markers on the map

Legend

Optimal Site

Planned Station



3

Survey

What to do

Next Task

Introduction

Interest

Role

Fleet

Plans

Comment

Your Role

What do you see your jurisdiction's role in the community relative to EV charging stations? Please check all that apply.

☐ To educate and advise the community

☐ To install EV charging stations

☐ To coordinate between the necessary parties

☐ Other

☐ None

Select all of the Maryland funding programs for EVs or EVSEs that you are aware of and/or have been communicating to your community.

☐ EV Excise Tax Credit

☐ EVSE Rebate Program

☐ Alternative Fuel Infrastructure Grant Program

☐ Upcoming Utility EVSE Rebates

☐ VVW Settlement Funds

[Next](#)

5

Wrap Up

What to do

Final Questions

Name

Type...

Organization

Type...

Title

Type...

Email

Type...

Zip Code

Type...

Please add me to the ZEEVIC mailing list


Select...

[Return Final Questions](#)


[Done](#)

Thank You

Thank you for taking our survey. Please fill in the final questions so we can learn about who you are and better coordinate EV efforts within the State. Also, if you wish to learn more about funding opportunities for EVs or EVSE, please consider joining the ZEEVIC mailing list.



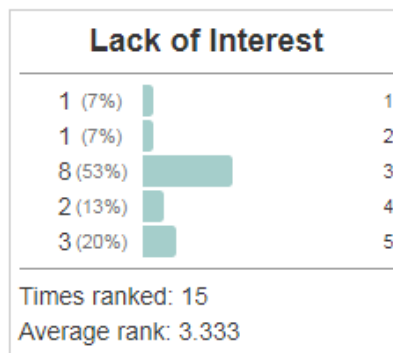
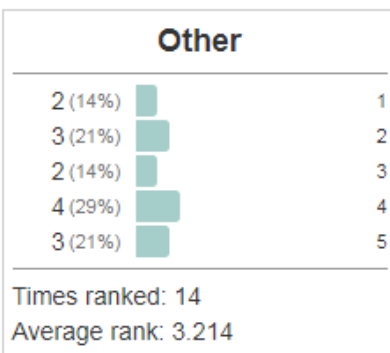
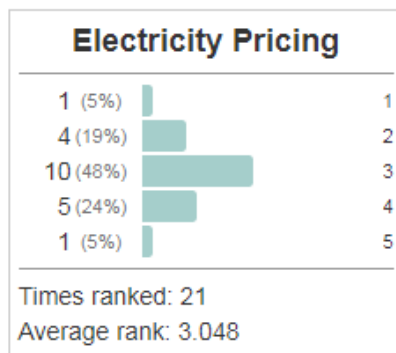
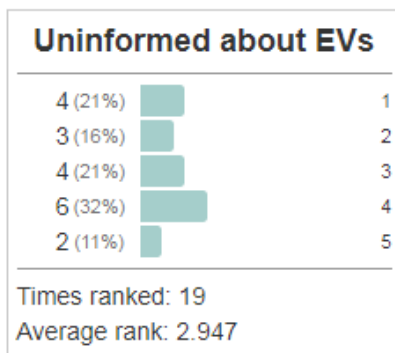
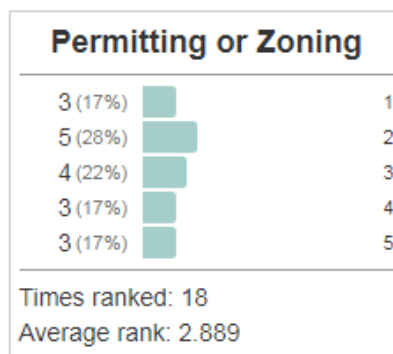
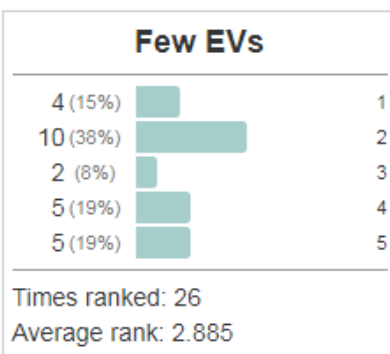
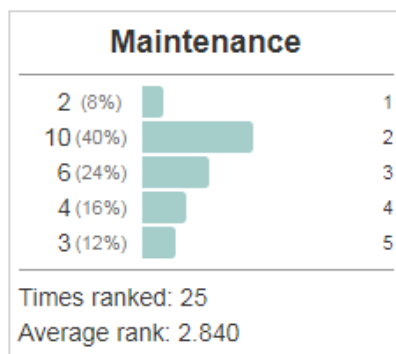
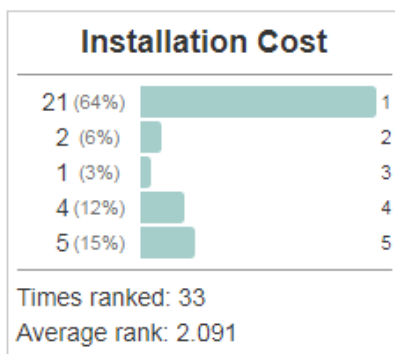
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MetroQuest

46 Participants

- 30 Government Agencies
- 1 Non-Government (Greenbelt Homes, Inc.)



How many EVSEs has your jurisdiction installed

12 More than 5
12 None
11 2-5
5 1

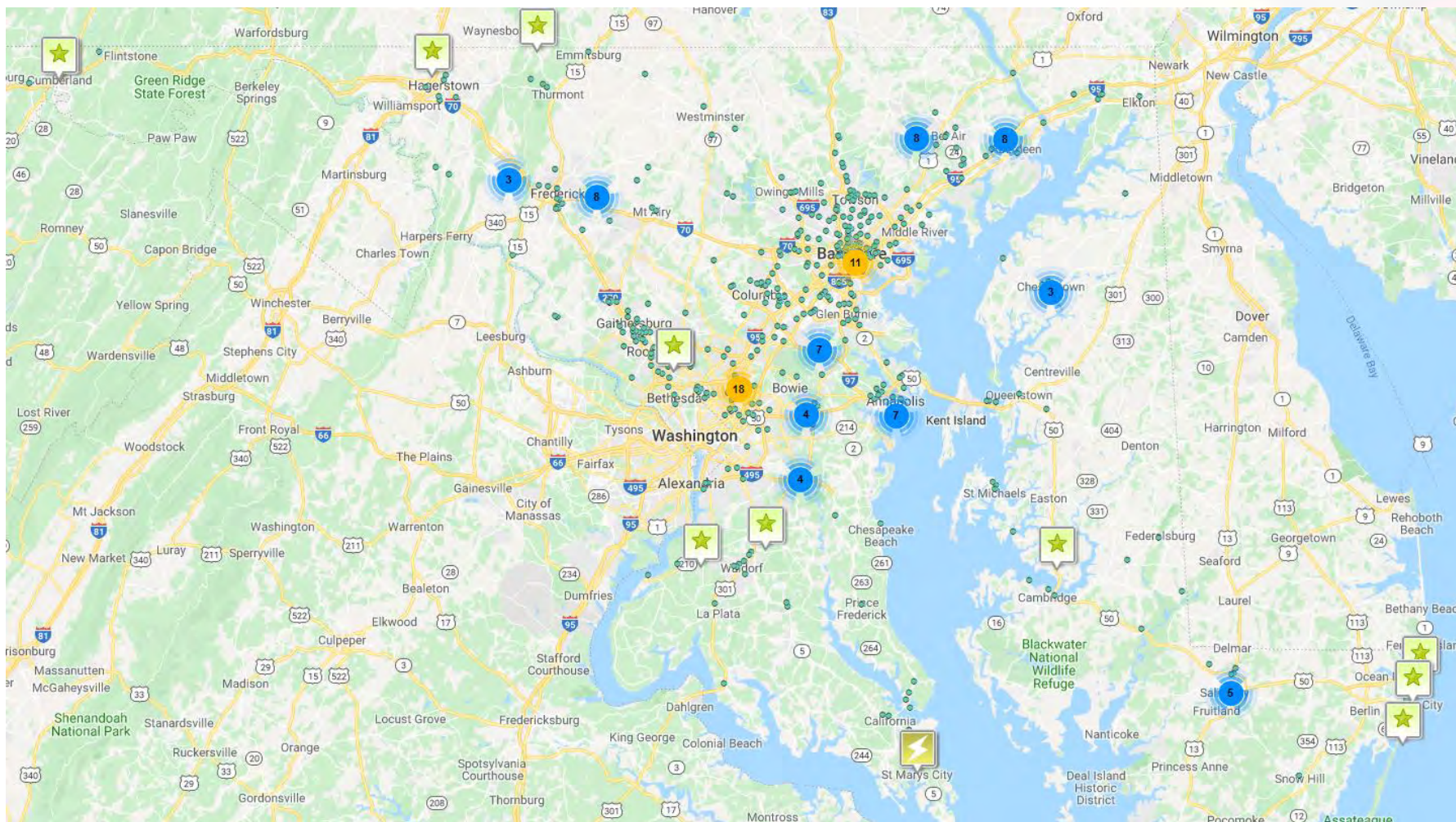
40 Total

Are you planning on installing an EV charger with

11 No
10 Yes, Level 2
8 Maybe
4 Yes, DC Fast
4 Yes, unsure of charging level

37 Total

MetroQuest



25 Planned Stations

- 20 Govt-Owned Open to Public
- 1 Govt-Owned Closed to Public
- 1 Privately-Owned Open to Public
- 3 No Info Provided

74 Optimal Sites

- 45 Govt-Owned Open to Public
- 14 Privately-Owned Open to Public
- 2 Govt-Owned Closed to Public
- 2 Unsure
- 11 No Info Provided

QUESTIONS?

Colleen Turner, Assistant Director, OPCP
Maryland Department of Transportation

cturner@mdot.state.md.us

410-865-2773

Public Outreach





Events Updates

Maryland EV Events	Location	Estimated Attendance	Touch Points	Date
World Heritage Festival	West Shore Park Baltimore, MD	1,000	141	7/20/19
Festival Latino de Maryland	Timonium Fairgrounds Timonium, MD	1,500	251	8/4/19
Latin Heritage Festival	Veterans Plaza Silver Spring, MD	2,500	754	8/11/19
Caribbean Food and Wine Festival	Howard County Fairgrounds West Friendship, MD	12,000	351	9/7/19
Hagerstown Hispanic 13th Annual Festival	Hagerstown Fairgrounds Hagerstown, MD		375	9/15/19
42nd Annual Korean Festival	Howard County Fairgrounds West Friendship, MD	50,000	1,027	9/21/19
Howard County Diwali Festival (IONHoCo Diwali Mela 2019)	Meadowbrook Athletic Club Ellicott City, MD 21043	5,000	201	10/20/19
Chinese Lunar New Year Celebration	Richard Montgomery High School Rockville, MD	800		2/16/20

3,100 Total
Touchpoints

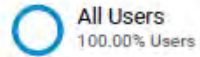


#MarylandEV

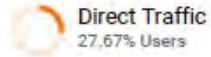
Website Analytics

Audience Overview

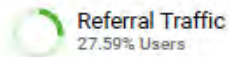
Sep 1, 2019 - Nov 15,



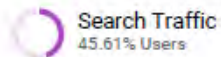
All Users
100.00% Users



Direct Traffic
27.67% Users



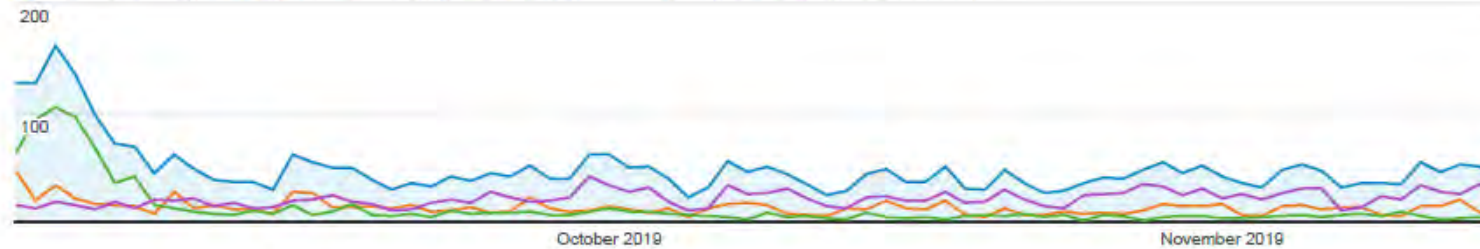
Referral Traffic
27.59% Users



Search Traffic
45.61% Users

Overview

● Users (All Users) ● Users (Direct Traffic) ● Users (Referral Traffic) ● Users (Search Traffic)



Users
All Users
3,346

Direct Traffic
926

Referral Traffic
923

New Users
All Users
3,252

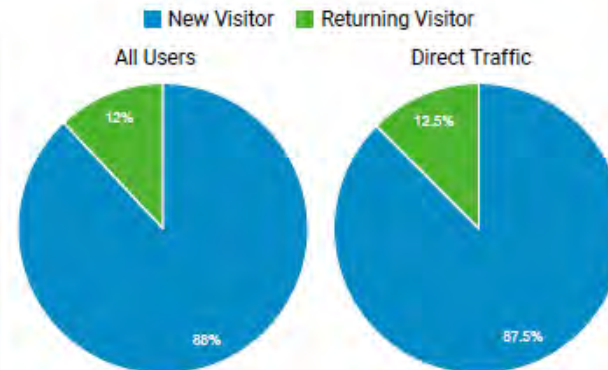
Direct Traffic
909

Referral Traffic
848

Sessions
All Users
3,946

Direct Traffic
1,126

Referral Traffic
1,040



Website Analytics, Top Pages

September 1 to November 15, 2019

Page Views: 6,723

Audience Overview

Search Traffic: 46%

Referral Traffic: 27%

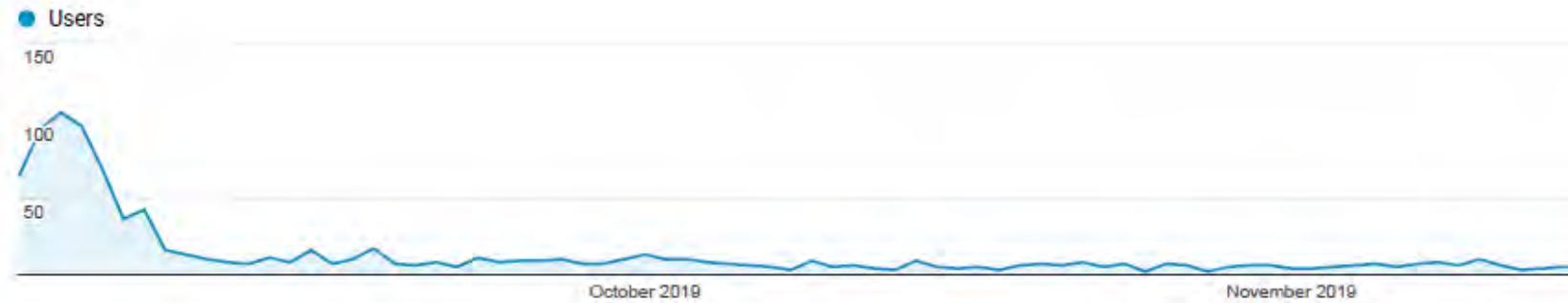
Direct Traffic: 27%

Top Pages Visited:

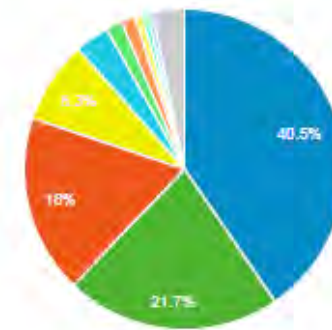
1. Homepage: 2,482 (36%)
2. Incentives: 2,417 (35%)
3. Charging: 597 (8%)
4. Ev-101: 318 (4%)
5. About-bevi: 99 (1.4%)
6. Resources/ev-calculators: 97 (1.4%)
7. Hydrogen-101: 96 (1.4%)
8. resources/useful-links/90 (1.3%)

Website Analytics, referral sources

September 1 to November 15, 2019



Source	Users	Users	Contribution to total: Users
	923 % of Total: 27.59% (3,346)	923 % of Total: 27.59% (3,346)	
1. m.facebook.com	375	40.45%	
2. pepco.com	201	21.68%	
3. bge.com	167	18.02%	
4. facebook.com	77	8.31%	
5. delmarva.com	32	3.45%	
6. smeco.coop	15	1.62%	
7. l.facebook.com	13	1.40%	
8. baidu.com	7	0.76%	
9. annapolisgreen.com	5	0.54%	
10. blog.feedspot.com	5	0.54%	



Social Media Analytics

Page Summary Last 28 days

Export Data

Results from Oct 21, 2019 - Nov 17, 2019

Note: Does not include today's data. Insights activity is reported in the Pacific time zone. Ads activity is reported in the time zone of your ad account.

Organic Paid

Actions on Page

October 21 - November 17



We have insufficient data to show for the selected time period.

Page Views

October 21 - November 17

46

Total Page Views ▲ 130%



Page Previews

October 21 - November 17

3

Page Previews ▲ 200%



Page Likes

October 21 - November 17

1

Page Likes ▲ 0%



Post Reach

October 21 - November 17

172

People Reached ▲ 213%



Story Reach

























October 21 - November 17

Get Story Insights

See stats on how your Page's recent stories have performed.

Learn More

Social Media Analytics, continued

Reach: Organic / Paid Post Clicks Engagement								
Published	Post	Type	Targeting	Reach	Engagement	Promote		
11/14/2019 3:36 PM	 MDOT and ZEEVIC efforts were honored with a Visionary Award for			92		3 3		 Boost Post
11/07/2019 11:30 AM	 Thanks to BGE, 500 additional EV charging stations will be opened in			125		12 8	 	Boost Post
11/06/2019 10:21 AM	 Have you checked with your local utility yet to see if a rebate is			60		1 1	 	Boost Post
10/20/2019 8:59 PM	 We are enjoying our time here at the IONHoCo Diwali Mela 2019! Happy			66		8 1	 	Boost Post