



MARYLAND ZERO EMISSION

Electric Vehicle Infrastructure Council

October 22, 2025

Agenda

- Welcome and Announcements
 - ZEEVIC Annual Report
 - MVA Updates
- Public Comments
- ZEEVIC Future
- Automaker Perspectives on the EV Market and Landscape
 - Ford Motor Company
 - Tesla, Inc.
 - Volvo Group North America
- Sneak Peak: Advanced Clean Trucks (ACT) Needs Assessment and Deployment Plan (NADP)
- Zero-Emission Vehicle Infrastructure Plan (ZEVIP) - Maryland EV Charging Suitability Tool
- Closing Remarks



Welcome and Announcements

Deron Lovaas, ZEEVIC Chair & MDOT Chief of Environment and Sustainable Transportation

Public Comments



ZEEVIC Annual Report



Maryland Zero Emission Electric Vehicle Infrastructure Council 2025 Annual Report



Presented by the
Zero Emission Electric Vehicle Infrastructure Council
(SB 714, Chapter 378, Acts of 2015)



Presented to
Governor Wes Moore
and the Maryland General Assembly

The 2025 Annual Report has been drafted and is currently being reviewed by ZEEVIC Members.

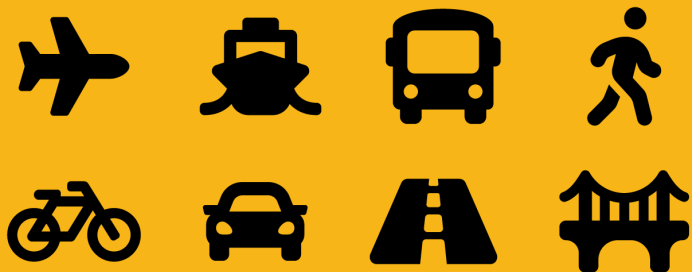
- Members are invited to review by **October 28, 2025.**





Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC)

October 22, 2025



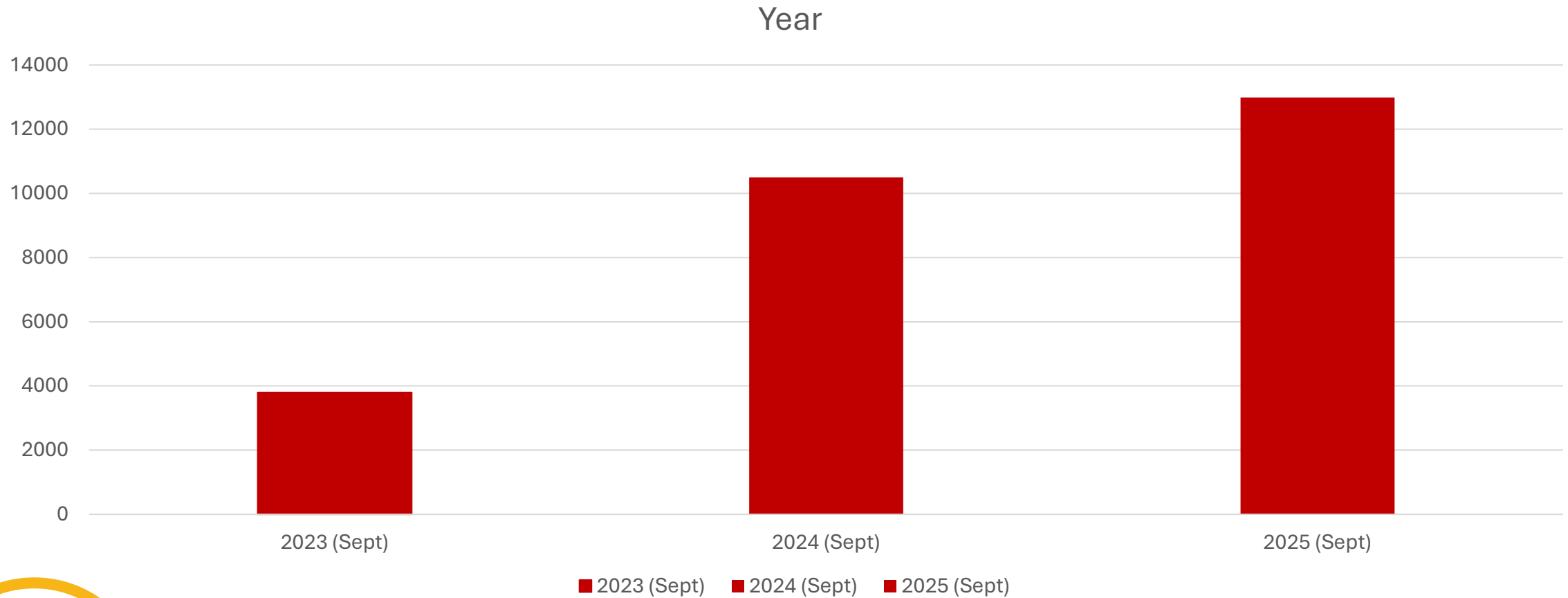
HOV Permit Program for Plug-in EVs

- High Occupancy Vehicle (HOV) Permit Program ended on **September 30, 2025**

Current/Final Program

- Program allowed single-occupant electric vehicles to drive on HOV lanes with permit displayed.
- Started June 2023
- Cost: \$5

HOV Permit Program for Plug-in EVs



HOV Permit Program for Plug-in EVs

Public Outreach

- **MVA Letter (9/8/25):** 13k permit holders noticed about the program and why
- **Website:** updated copy; ended purchase option in August
- **Stickers:** physical labels have printed expiration date
- **Contact Center:** updated FAQ training
- **Constituent Mail & Social Media:** responded to letters with justification
- **Key Legislator Notification**

HOV Permit Program for Plug-in EVs

IMPORTANT NOTICE: Federal HOV Permit Program Ending

**Beginning October 1st,
electric and hybrid vehicle
owners may no longer use
HOV lanes with less than
the required passengers.**



MDOT MARYLAND DEPARTMENT OF TRANSPORTATION
MOTOR VEHICLE ADMINISTRATION

Electric Vehicle Tax Credit

One-time Excise Tax Credit:

- \$1,000 for 2-wheeled zero emission electric motorcycle
- \$2,000 for 3-wheeled zero emission electric motorcycle
- \$3,000 for zero-emission plug in electric drive or fuel cell electric

Current Program:

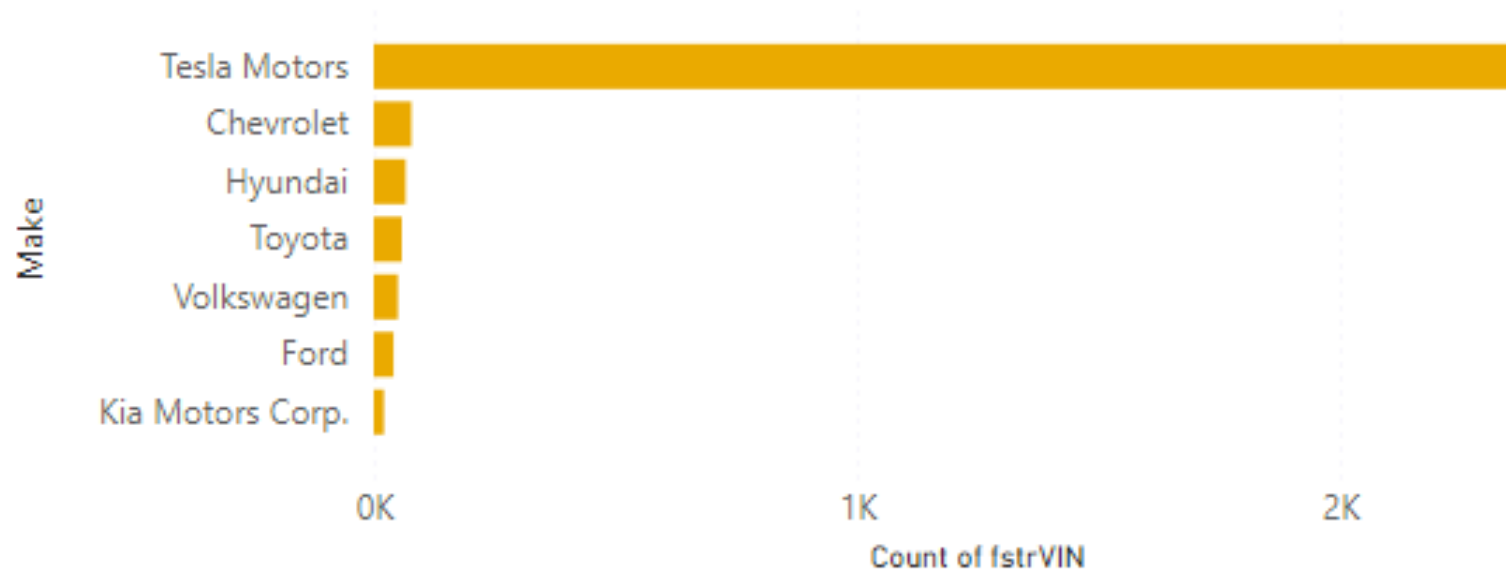
- New vehicle purchased/titled
after July 1, 2023, but before July 1, 2027
- \$8,250,000 each year (FY24 – FY27)

Electric Vehicle Tax Credit

Year	Tax Credits
FY 2024	2,749
FY 2025	2,750
FY 2026	2,725
FY 2027	--

Electric Vehicle Tax Credit (FY 2026)

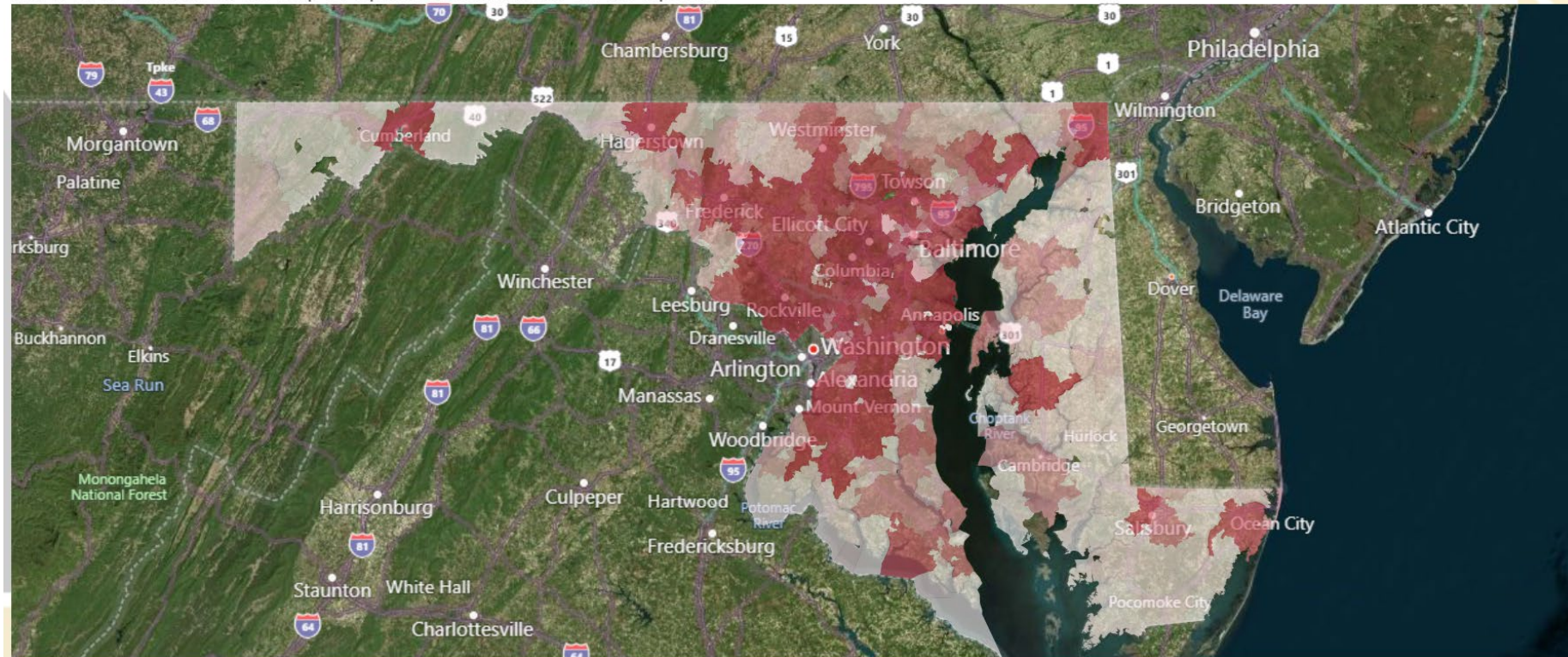
Vehicle Count by Make



Electric Vehicle Data Dashboard

EVs and Plug-In Hybrid Vehicles in Maryland by Zip Code

Hover over the area on the map for specific information from the zipcode.



mva.maryland.gov

ZEEVIC Future

Deron Lovaas, ZEEVIC Chair



ZEEVIC Future

June 30, 2026 Sunset Date

- Enacted in 2020 (HB232)
- Confirmed in 2024 (HB437)

ZEEVIC Final Report

- “On or before June 30, 2026, the Council shall submit a Final Report of its work and recommendations to the Governor and... General Assembly”

ZEEVIC Future – Status of Directives

In 2011, SB 176 assigned **14 directives** to the Council, which were modified to include fuel cell vehicles in 2019.

The Draft 2025 Annual Report – **Appendix B** lists the status of fulfilling each directive.

Considerable **progress** has occurred on all 14 directives (as enacted in 2011 & 2019).

Directive	Status
Develop an action plan to facilitate the successful integration of zero emission electric vehicles into the State's transportation network.	The original Electric Vehicle Infrastructure Action Plan was completed in 2012. Maryland's first plan for National Electric Vehicle Infrastructure (NEVI) Formula Funding Deployment was completed in 2022, and was updated annually 2023 through 2025. The Maryland Zero Emission Vehicle Infrastructure Plan (ZEVIP) is nearing completion in 2025 and is expected to be released in January 2026.
Assist in developing and coordinating Statewide standards for streamlined permitting and installation of residential and commercial electric vehicle charging and hydrogen refueling stations and supply equipment.	ZEEVIC has responded to this directive through its annual correspondence to the MGA during the Legislative Session. Certain ZEEVIC member organizations were participants in the EVSE Working Group, which recommended a framework for reliability and reporting standards for EV charging stations in a 2024 report to the Maryland General Assembly (MGA). To streamline installation, federal legislation created the Electric Vehicle Infrastructure Training Program (EVITP) certification. Contractors in Maryland now employ EVITP certified electricians.
Develop a recommendation for a Statewide electric vehicle charging and hydrogen refueling infrastructure plan, including placement opportunities for public charging and hydrogen refueling stations.	The original Electric Vehicle Infrastructure Action Plan was completed in 2012. The Maryland ZEVIP, which includes a Multi-Agency Strategy, is nearing completion in 2025, and is expected to be released in January 2026. An online EV Charging Suitability Tool was developed as a component of the ZEVIP.
Increase consumer awareness and demand for zero emission electric vehicles through public outreach.	Consumer-facing education and outreach material is maintained on the MarylandEV.org website maintained by MDOT. MarylandEV.org provides links and referrals to online materials provided by State agencies, Utilities and other outlets. The ZEEVIC Communications WG has met quarterly to facilitate cross-sector collaboration and amplify outreach initiatives.
Make recommendations regarding monetary and nonmonetary incentives to support ZEV ownership and maximize private sector investment in zero emission electric vehicles.	ZEEVIC has responded to this directive annually through correspondence to the MGA during the Legislative Session.

ZEEVIC Future

Thoughts from ZEEVIC Members & Friends?



Automaker Perspectives on the EV Market and Landscape



Automaker Perspectives on the EV Market and Landscape

Ford Motor Company

Mark Polster, Vehicle Environmental Regulatory Strategy Manager

Zero Emission Electric Vehicle Infrastructure Council Meeting

October 22, 2025



01

Welcome / Introduction

2025 Sustainability Aspirations

Climate Change

Achieve carbon neutrality
no later than 2050

Waste

Reach true zero waste to landfill
across our operations
Eliminate single-use plastics
from our operations

Air

Attain zero emissions from
our vehicles and facilities

Energy

Use 100 percent carbon-free
electricity in all manufacturing by 2035

Water

Make zero water withdrawals
for manufacturing processes
Use freshwater only for
human consumption



Materials

Utilize only recycled or renewable
content in vehicle plastics

Safety

Work toward a future that is
free from vehicle crashes and
workplace injuries

Human Rights

Source only raw materials that
are responsibly produced

Diversity, Equity, and Inclusion

Support a respectful, safe, and inclusive
workplace where each person is valued

Access

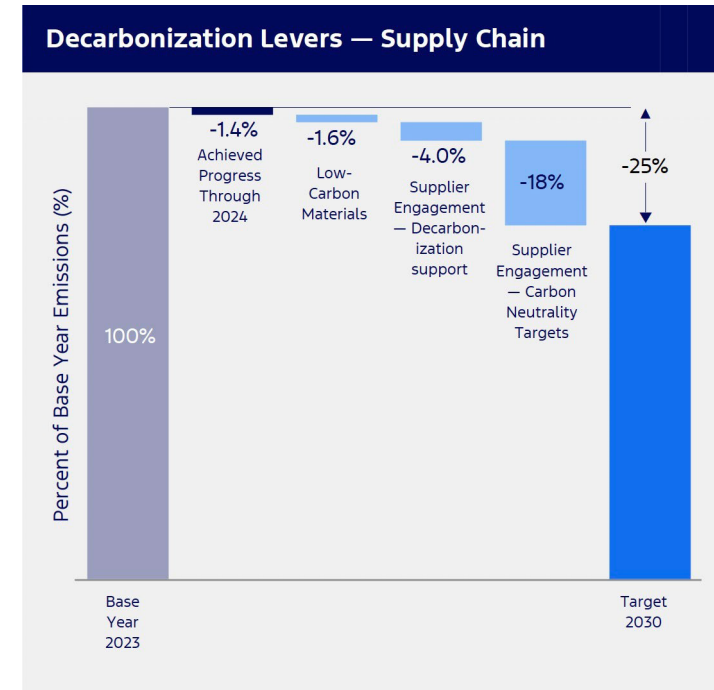
Drive human progress by providing
mobility and accessibility for all

2025 Integrated Sustainability and Financial Report

Key Highlight

Ford is still on track to achieve carbon neutrality across our vehicles, operations and supply chain no later than 2050.

- Over the last year, we decreased our carbon footprint across our vehicles and operations.
 - **49% reduction in absolute global operations GHG emissions** since 2017
 - **16% reduction in total Scope 3 GHG emissions** since 2019
- Ford has set a new science-based target to **reduce global supply chain emissions by 25% by 2030** relative to a 2023 baseline.



2025 Integrated Sustainability and Financial Report

Key Highlight

We continue to improve our manufacturing efficiency and supply chain sustainability.

- Ford is committed to sourcing 100 percent **carbon-free electricity** in all manufacturing by 2035.
- Over the past decade, Ford **recycled** an estimated **2 billion pounds of aluminum**.
- We helped launch **Transform: Auto** in North America to support suppliers adopting renewable electricity.



2025 Integrated Sustainability and Financial Report

Key Highlight

Electric vehicles remain central to our carbon neutrality strategy.

- Ford has introduced **15 new electric and plug-in hybrid models** globally between 2020 and the end of 2024.

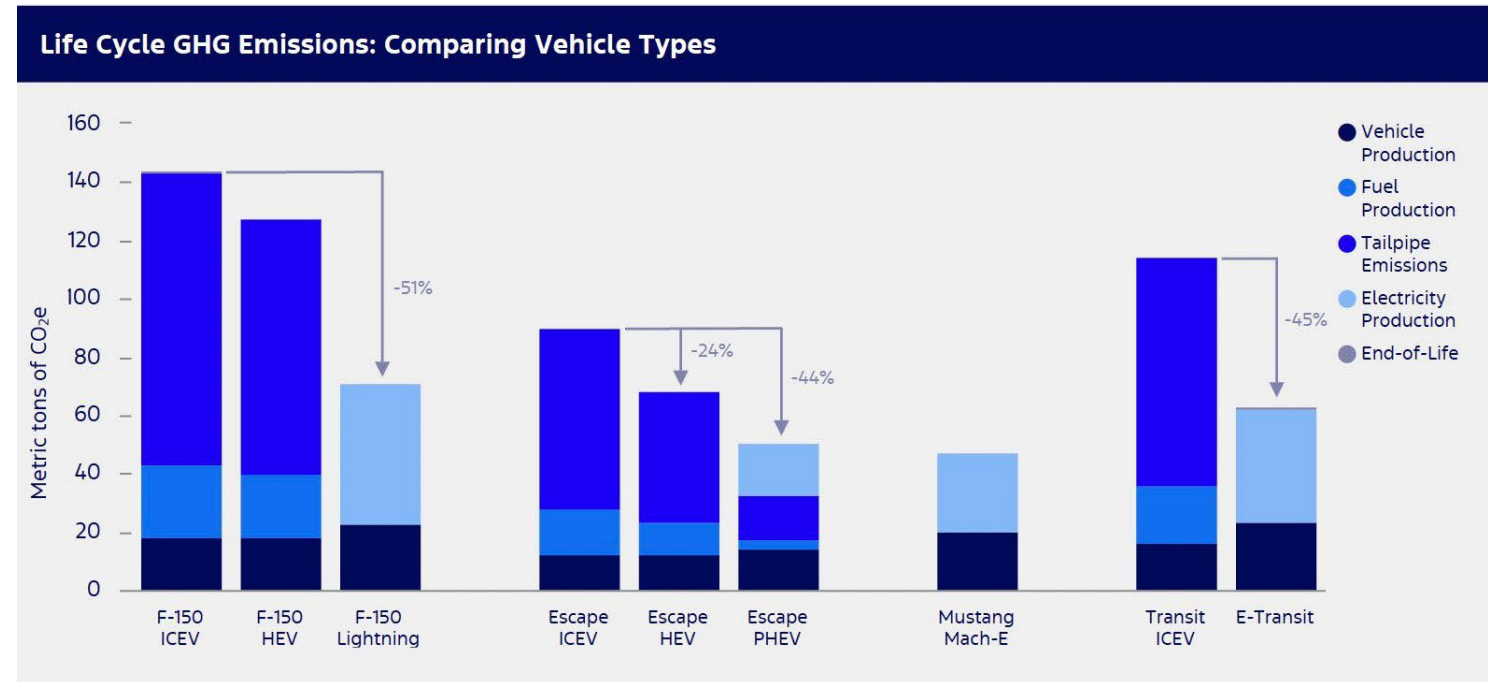


2025 Integrated Sustainability and Financial Report

Key Highlight / 05

We're making cleaner transportation more accessible — and proving it with new Life Cycle Assessment data.

- We've added new **Life Cycle Assessment** (LCA) reporting, which shows the carbon footprint of our electric, hybrid, gas and diesel vehicles.



Ford's \$5B Bet on America

- Nearly 120 years after the Model T, Ford is creating a new universal vehicle for the electric era
- Investing \$5B in U.S. manufacturing
 - \$1.9B in Louisville Assembly Plant
 - \$3B in BlueOval Battery Park Michigan
- Securing nearly 4,000 American jobs across vehicle and battery production
- Launching a new EV platform and production system



The Team & How We Work

- **Original 'Skunkworks'** (est. April 2022) co-located in Irvine now Long Beach, CA: Given license to work away from traditional corporate structure to be nimble and encourage cross-discipline collaboration
- **Now 500+ people** drawn from leading EV, tech, and automotive companies (Tesla, Rivian, Lucid, Apple) plus Ford veterans based in CA (Long Beach & Palo Alto) and 800 Republic, Dearborn
- **No silos:** Design, engineering, manufacturing, suppliers together from day one
- Systems integration mindset, **every part must earn its place**



Louisville Assembly Plant: Aug. 11

- **Platform and production process:** designed in parallel
- **Ford Universal EV Platform:** flexible, affordable, fun-to-drive, software-defined vehicles with OTA updates
- **Ford Universal EV Production System:** “Assembly tree” builds front unicast, rear unicast, and structural battery in parallel
- **First product:** midsize 4-door electric pickup (\$30K target adjusted for 2027), assembled in Louisville with U.S.-made LFP prismatic batteries
- **First in the world** to build vehicles with a 3-branch assembly tree process.



Why It's Important – Efficiency at Every Level

20% fewer parts, 25% fewer fasteners, 40% fewer workstations



Highest level of automation in final assembly of any Ford plant globally.



15% faster assembly after reinvesting in quality and automation

What's Next?

- First midsize electric truck launches 2027 in Louisville
- As quick as a Mustang EcoBoost ICE Vehicle
- Expands to multiple body styles for work and play



“

"Ford's next century of leadership in innovation starts right now. Let's go!" - Jim Farley

”

Our Advanced Next-gen Electric Vehicles Will Be Assembled in Louisville, Kentucky
And Will Be Built With LFP Batteries From Our All-New Battery Plant in Marshall, Michigan

Thank you



Ford

Q & A



Automaker Perspectives on the EV Market and Landscape

Tesla, Inc.

Tim Nies, Project Manager and Design Engineer, and Lilly Justman, Staff
Government Program Analyst

Accelerating Maryland's EV Future: Best Practices for Charging Programs and EVSE Permitting

Tim Nies and Lilly Justman, Tesla

October 22, 2025

Maryland Charging Program Recommendations

Goal: To deploy reliable charging quickly and efficiently

- NEVI
 - Standardize reporting with NEVI – no ad-ons
 - Fund more than 4 stalls and prioritize cost efficiency (\$/stall)
 - If funding is limited, place a cap on total site cost, not on total stalls
 - Maximize location flexibility; avoid limiting sites to specific interstate exits.
 - Fewer exits increases competition – increasing commercials making sites more expensive
 - Use uniform contracts across programs to reduce negotiation inefficiencies.
 - Simplify administrative barriers for rapid site deployment.
 - Deploy funds efficiently with visible, pre-scheduled funding rounds.
- State
 - Prioritize cost efficiency (\$/stall)
 - Prioritize reliability
 - Applicants with a history of poor charging operator performance should not be awarded funds
 - Remove CCS connector requirement to allow connector flexibility.
 - Remove tap-to-pay requirement; promote plug-and-charge innovation

Reassessing CCS1 Requirements in Charging Incentive Programs

- Current Issues with CCS1 Requirements
 - Encourages investment in an obsolete standard
 - All major auto OEMs have committed to the North American Charging System Standard (NACS)
 - NACS ports will increasingly be native in non-Tesla vehicles.
 - NACS has completed the official standardization process via SAE and is recognized as the J3400 standard (J3400/2)
 - For CCS1-native vehicles, carrying adapters is commonplace
 - Increases costs for drivers and infrastructure via higher hardware and maintenance expenses.
- Proposed Solution
 - Modify incentive programs to allow a choice between CCS1, NACS/J3400, or both.
- Benefits of Flexibility
 - Maximizes limited incentive funds by avoiding outdated CCS1 hardware.
 - Reduces vandalism (e.g., Magic Dock theft) and maintenance costs at Superchargers
 - Supports a one-connector standard future

Permitting Challenges & Goals

- **Other Processes Applied to EV Charging:** Most permit review processes were designed for large building construction.
- **Unnecessary Reviews:** Reviews do not apply to EV chargers, yet the departments still look at and delay the permits.
- **Varying Interpretations Between Jurisdictions:** Varying local interpretations of the process, extended timelines, and unforeseen requirements without a dedicated pathway for these projects.
- **The Goal:** Develop a predictable statewide approach that accelerates our shared goals.



Essential & Non-Essential Reviews

- **Planning Boards:** If EV charging is a statewide need, eliminate planning boards especially for funded programs.
- **Zoning:** Accessory use to an already established use.
- **Site Plan Revisions:** Not significantly changing parking or landscaping.
- **Building:** Not a structure, just an accessory use.
- **Storm Water:** Not a relevant review with minimal parking lot alterations.
- **Structural:** Relevant review for certain projects with uncommon pads and equipment not previously certified.
- **Electrical:** Relevant review as charging equipment mostly involves electrical components.



Proposed Solutions

- **Statewide Adoption of Standardized Process:** Require only the necessary reviews to include structural (for uncommon pads/equipment) and electrical reviews.
- **Accessory Use:** Classify EV charging as an accessory use.
- **Mandate Review Timelines:** Require specific timelines for reviews.
- **Mandatory Timelines for Authority Records:** AHJs need to provide requested documentation (plans for example) on an understood timeline.





Automaker Perspectives on the EV Market and Landscape

Volvo Group North America

Aravind Kailas, Advanced Technology Policy Director

V O L V O

OEM PERSPECTIVES ON THE FUTURE OF THE ELECTRIC VEHICLE LANDSCAPE

Maryland Zero Emission Electric Vehicle Infrastructure Council (ZEEVIC)

Aravind Kailas, Ph.D.

aravind.kailas@volvo.com

Volvo Group

2025-10-22

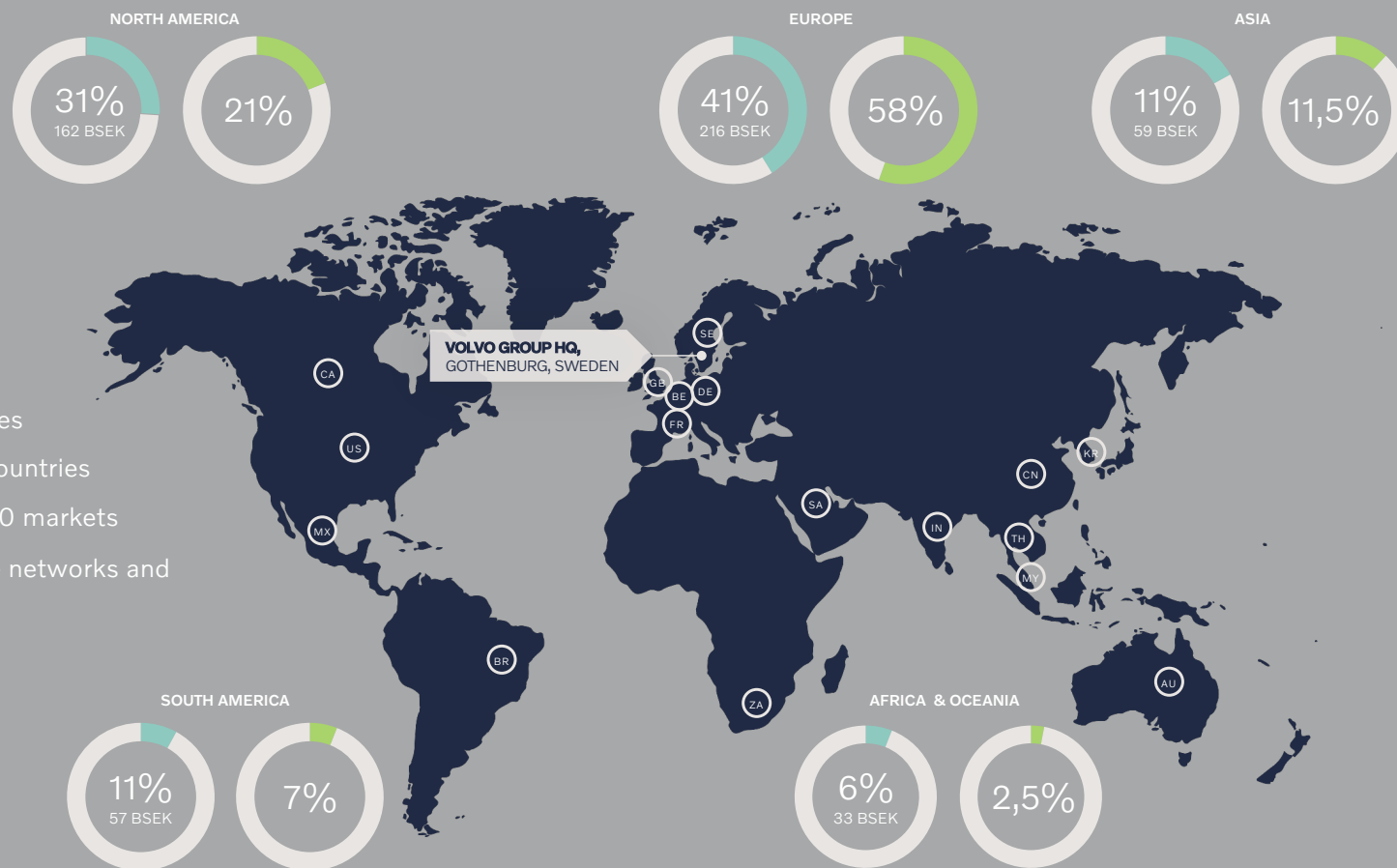
Volvo Group North America

- 16 manufacturing sites
- 9 parts distribution centers
- Global HQ for Mack Trucks



Global presence

- 102,000 employees
- Production in 17 countries
- Sales in almost 180 markets
- Worldwide service networks and dealerships



Our brands

Volvo Group's brand portfolio consists of several distinct brands, targeting a variety of customers and segments.

VOLVO

VOLVO
PENTA

ROKBAK

 RENAULT
TRUCKS

PREVOST

NOVABUS

MACK

 SDLG

milence 

FLEXIS

 EICHER


DONGFENG
Trucks

cespira

cellcentric

V O L V O

Our unique position in electric mobility

Volvo Group has also created Volvo Energy, which is dedicated to accelerating electrification.



Volvo VRNe



Mack LRe



Mack MDe



Mack MDe Bucket Truck



Volvo Electric Heavy
Construction Equipment

Volvo Group



Nova Bus LFSe+



Volvo Penta / Rosenbauer RTX
Electric Fire Truck



Volvo Penta / TICO Electric
Terminal Tractor



Volvo Penta Battery
Energy Storage Systems

V O L V O

3 x electric truck products, 2 x brands

Market leader in Class 8 electric trucks in Europe and North America



Class 8



Class 6



Class 8

A period of transition — Navigating policy and market headwinds

Federal shifts and freight softness are reshaping fleet investment timelines

- **Policy Landscape**
 - Federal funding and tax incentives nearly exhausted
 - Implementation uncertainty slowing fleet commitments
 - States and regions anchoring near-term momentum
 - Shift from incentives → accountability and coordination
- **Market Dynamics**
 - Freight softness delaying new-truck turnover
 - Electric truck demand below long-term projections
 - Cost pressures across materials, manufacturing, and capital
 - OEMs scaling responsibly with infrastructure readiness
- **State of Infrastructure**
 - Energization and permitting remain key bottlenecks
 - Limited proactive grid buildout outside rate cases
 - Affordability pressures amid rising electricity rates

Our strategic priorities

Scaling zero-emission freight solutions responsibly and in partnership

- **Customer-Centered Deployment**
 - Focused on operationally and infrastructure-ready fleets
 - Integrating vehicles, charging, and data for reliable scaling
 - Lessons from Volvo LIGHTS and JETSI, and utility coordination
- **Infrastructure Partnerships**
 - Collaborating with utilities, states, and coalitions (e.g., PACT)
 - Aligning production with charging and grid readiness
 - Supporting corridor buildouts and practical deployment frameworks
- **Responsible Scaling & Technology Balance**
 - Battery-electric today, hydrogen fuel cell tomorrow
 - Continuous improvement of efficient combustion technologies
 - Maintaining supply chain resilience and market stability



Maryland's opportunity to lead in zero-emission freight

Building scalable, cost-effective Class 8 battery-electric truck ecosystems

- **Strong Policy and Utility Foundations**
 - PSC leadership on transportation electrification planning
 - Utility engagement through grid modernization proceeding
 - Need for greater alignment with MDE, MDDOT, and ZEEVIC
- **Targeted Market Acceleration**
 - Launch a simple, multi-year cash rebate/HVIP-style incentive program
 - Reassess unused incentive funds and streamline access
 - Use data on Class 8 duty cycles to guide infrastructure siting
- **Ecosystem Investments**
 - Integrate M/HD charging into I-95 and I-81 freight corridors
 - Invest in workforce training for technicians and first responders
 - Coordinate vehicle, charging, and dealership readiness
- **Strategic Focus**
 - Start with beachhead regions to build visible, high-impact success stories
 - Collaborate with neighboring states on corridor-scale deployments



Closing perspective — Aligning for scalable, reliable progress

Partnerships and infrastructure readiness will define the next phase of ZEV adoption

- **Market Outlook**
 - Short-term freight softness, long-term fundamentals remain strong
 - Policy recalibration, not retreat — momentum continues
- **Collaboration and Confidence**
 - Coordination builds confidence across fleets and utilities
 - Shared accountability drives durable progress
- **Volvo Group Commitment**
 - Delivering reliable, scalable zero-emission freight solutions
 - Aligning product readiness with infrastructure readiness
 - Partnering with states and regions to maintain momentum

V O L V O

THANK YOU!



Sneak Peak: Advanced Clean Trucks (ACT) Needs Assessment and Deployment Plan (NADP)

Tim Shepherd, MDE

A stylized, abstract graphic in the top right corner of the slide. It features overlapping geometric shapes in shades of yellow, grey, and red, suggesting a car's silhouette and a road or path.

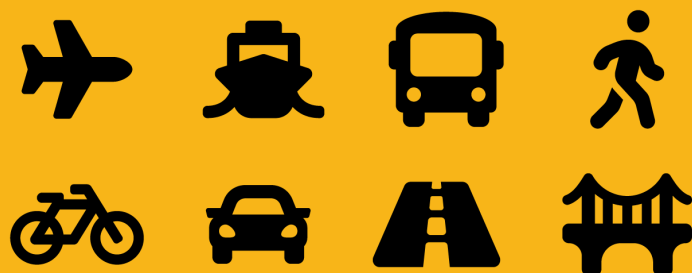
ZEV Infrastructure Plan (ZEVIP) - Maryland EV Charging Suitability Tool

Amanda Hinh, MDOT



ZEV Infrastructure Plan (ZEVIP) – Suitability Tool

October 22, 2025



The Maryland EV Charging Suitability Tool

Goal: To identify key areas of deployment for public light-duty EV charging infrastructure

Target Audience: Stakeholders interested in EV charger siting

- Local governments
- Local businesses and non-profits
- EV charging industry
- Property developers
- Electric utilities
- Others

The Maryland EV Charging Suitability Tool

Uses:

- Inform areas where light-duty EV charging infrastructure may be best utilized
- Inform grant program design and applications
- Inform future planning
- Create a shared understanding of light-duty EV charger siting in Maryland

**Supports the strategy and recommendations
that will be discussed in the ZEVIP**

What is the EV Charging Suitability Tool?

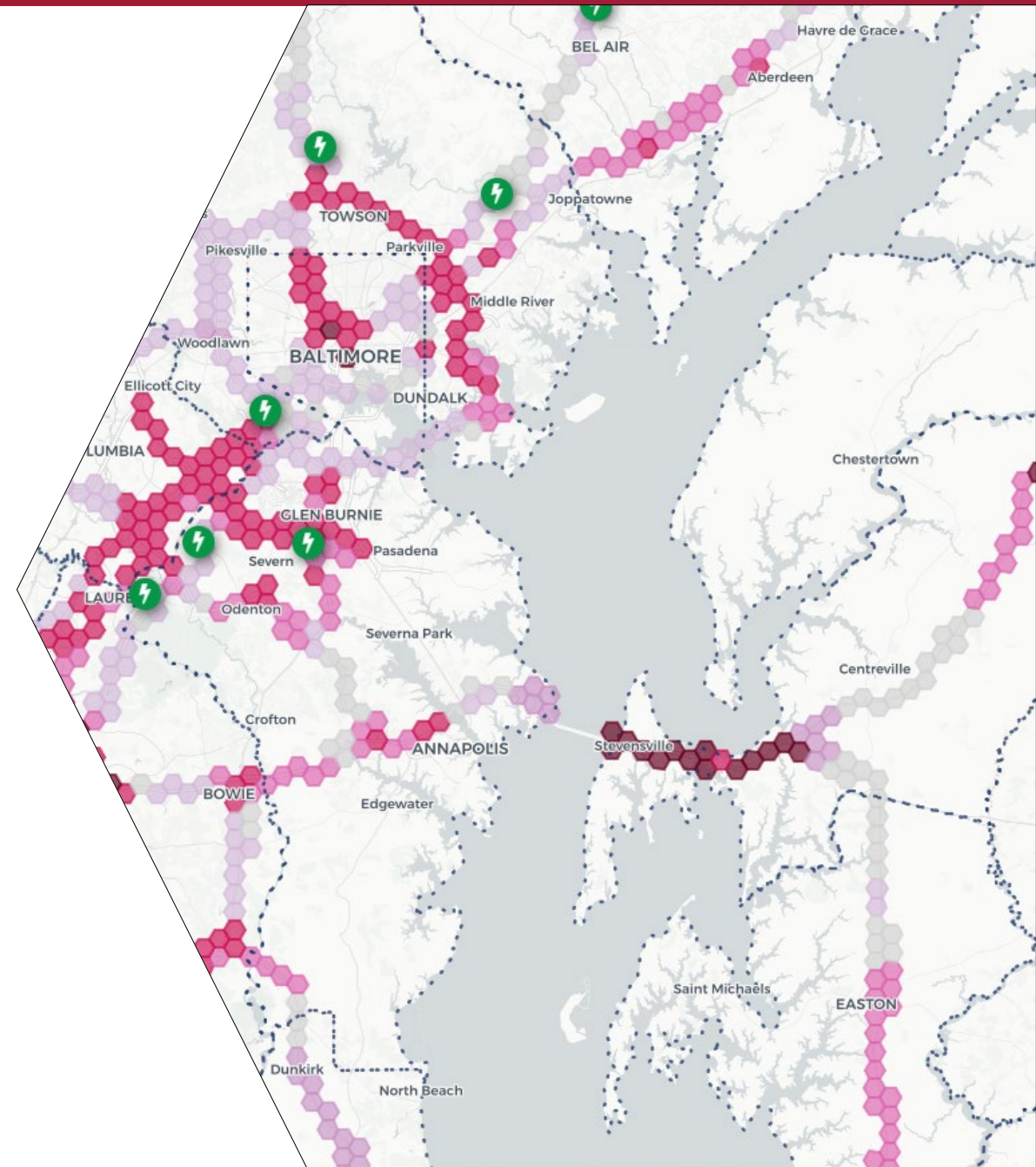
What it is...

- ✓ A tool to help inform local/state-wide decisions for public light-duty EV charging siting.
- ✓ A tool that considers different use cases for light-duty EV charging; corridor, workplace, high-density housing; and neighborhood.
- ✓ A tool to identify EV charging gaps at a high level and areas for light-duty EV charger siting.

What it is not...

- An economic or a cost/benefit analysis tool.
- A tool that will provide exact locations for light-duty EV charging.
- A tool that calculates GHG reductions or savings.
- A tool indicating the role of private vs. public investments

Suitability Methodology Overview



Charging Suitability Approach

- MD divided into 12,773 1-mile hexbins
- Suitability calculated using normalized and weighted data
 - Urban and non-urban data normalized separately
- Suitability range indicated by 6 shades



6

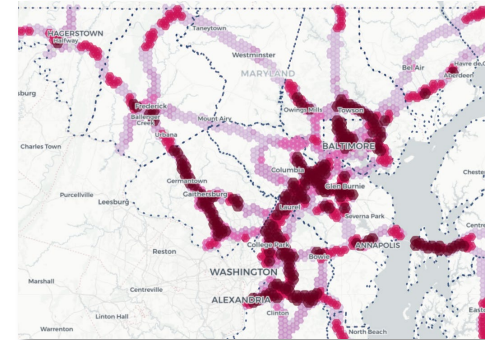
Less Suitable

1

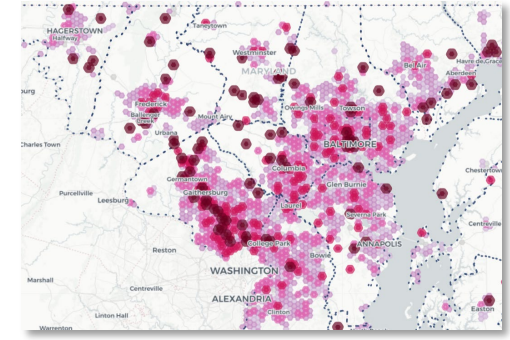
More Suitable

- Online user guides and demo. video

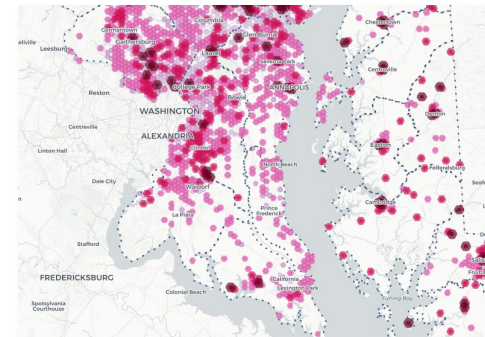
Four Charging Categories



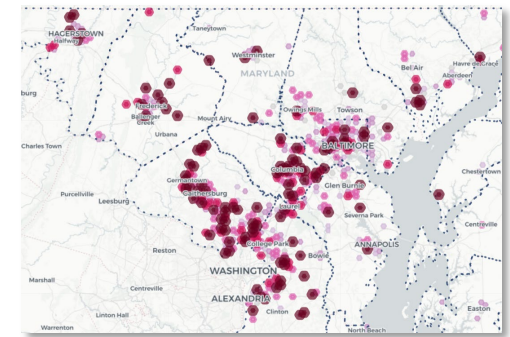
Corridor



Workplace



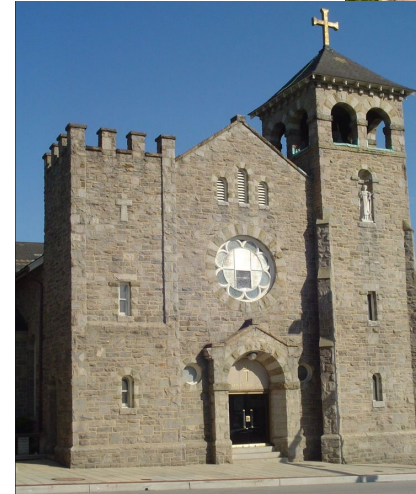
Neighborhood & Amenity



High Density Residential

Neighborhood and Amenity Charging

- Level 2 charging opportunities to "top off" at neighborhood amenities
- Inclusive of retail stores, recreation centers, libraries, and more
- Builds on existing travel patterns in neighborhoods
- Developed because neighborhood and amenity charging can increase daily useful range of EVs.



Neighborhood and Amenity Charging Suitability

Solving For:

- ✓ Broader Community where People Gather or Currently Stop
- ✓ Equitable Access to Charging

Data Layers

Retail Employment Den.

Healthcare Facilities

Recreation Points

Education Facilities

Community Centers

Mainstreets and Rural Villages

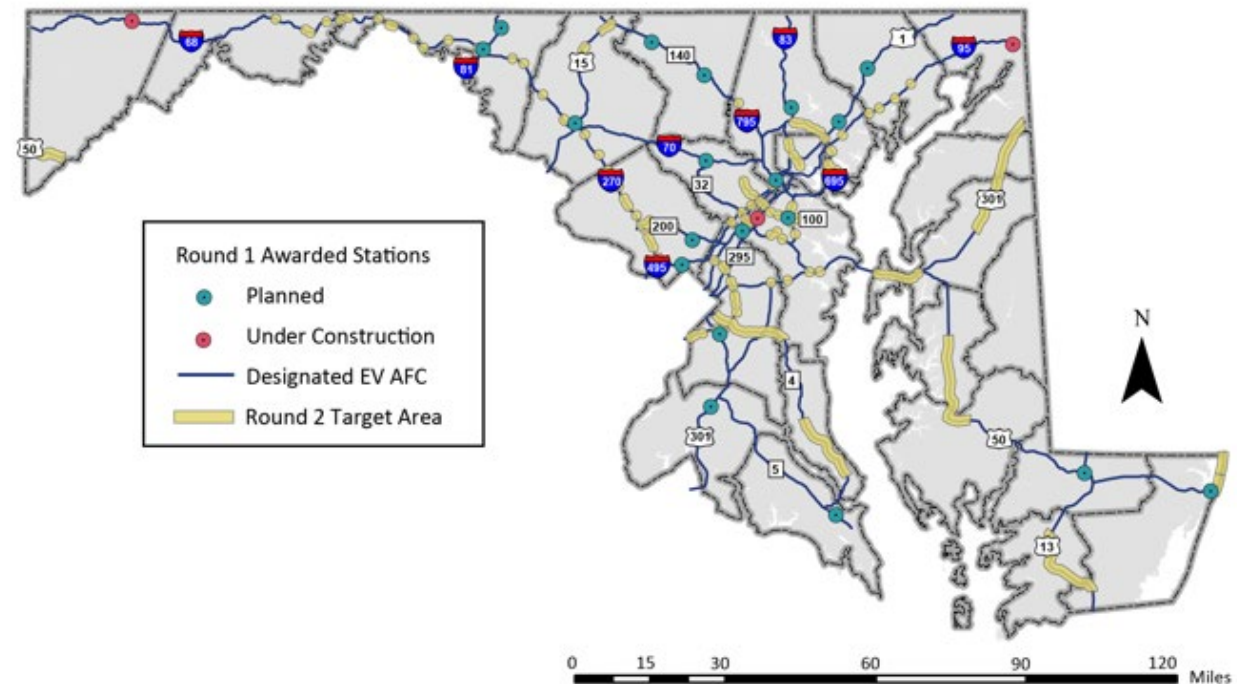
EV Origin

Existing L2 / DCFC

MDEnviroScreen

EV Corridor Charging

- EV Alternative Fuel Corridor (AFC): Major national highways and routes federally designated for strategic EV charging infrastructure installations
- Highways that support interstate and intrastate travel
- Targeted fast charging within 1 driving mile from AFC
- Considers National EV Infrastructure (NEVI) Target Areas and awarded sites



EV Corridor Charging Suitability

Solving For:

- ✓ Increased DCFC to Close Existing Gaps Along AFCs
- ✓ Addressing Range Anxiety
- ✓ High Vehicle Miles Traveled (VMT) / Retail-Based Employment
- ✓ Proximity to Existing DCFC
- ✓ NEVI Target Area gaps

Data Layers

AFC Hexbins

NEVI Round 2 Target Areas

Vehicle Miles Traveled (VMT)

Existing DCFC

OnTheMap (OTM) Employment

EV Registration

MDEnviroScreen

High Density Residential Charging

- High density housing including apartments, condominiums, rowhomes, and townhomes.
- Housing with no to limited dedicated at-home parking and charging
- Developed because according to the U.S. Department of Energy: about 80% of EV charging occurs at home



High Density Residential Charging Suitability

Solving For:

- ✓ Publicly Available Charging Adjacent to Multi-Unit Dwellings (MUDs)
- ✓ Some Urban Charging (Rowhomes)
- ✓ Equitable Access to Charging
- ✓ Focus on Existing Trips / Ownership

Data Layers

Apartments

MUD Multi-Fam. Mapper

Residential Condos

Rowhomes

Townhouses

EV Origin Trips

EV Registration

Proximity to Existing L2

Proximity to Existing DCFC

All Vehicles Origin

MDEnviroScreen

Workplace Charging

- Convenient charging access for employees at dedicated work locations
- Charging for drivers with no at-home charging and long commutes
- Developed because according to the U.S. Bureau of Labor Statistics: about 70% of employees work 35+ hours per week



Workplace Charging Suitability

Solving For:

- ✓ Commuter-Based EV Adoption
- ✓ Charging Network Resilience
- ✓ Employer Sustainability Leadership

Data Layers

Employment Density

Population Density (Work/School)

EV Origin / Destination

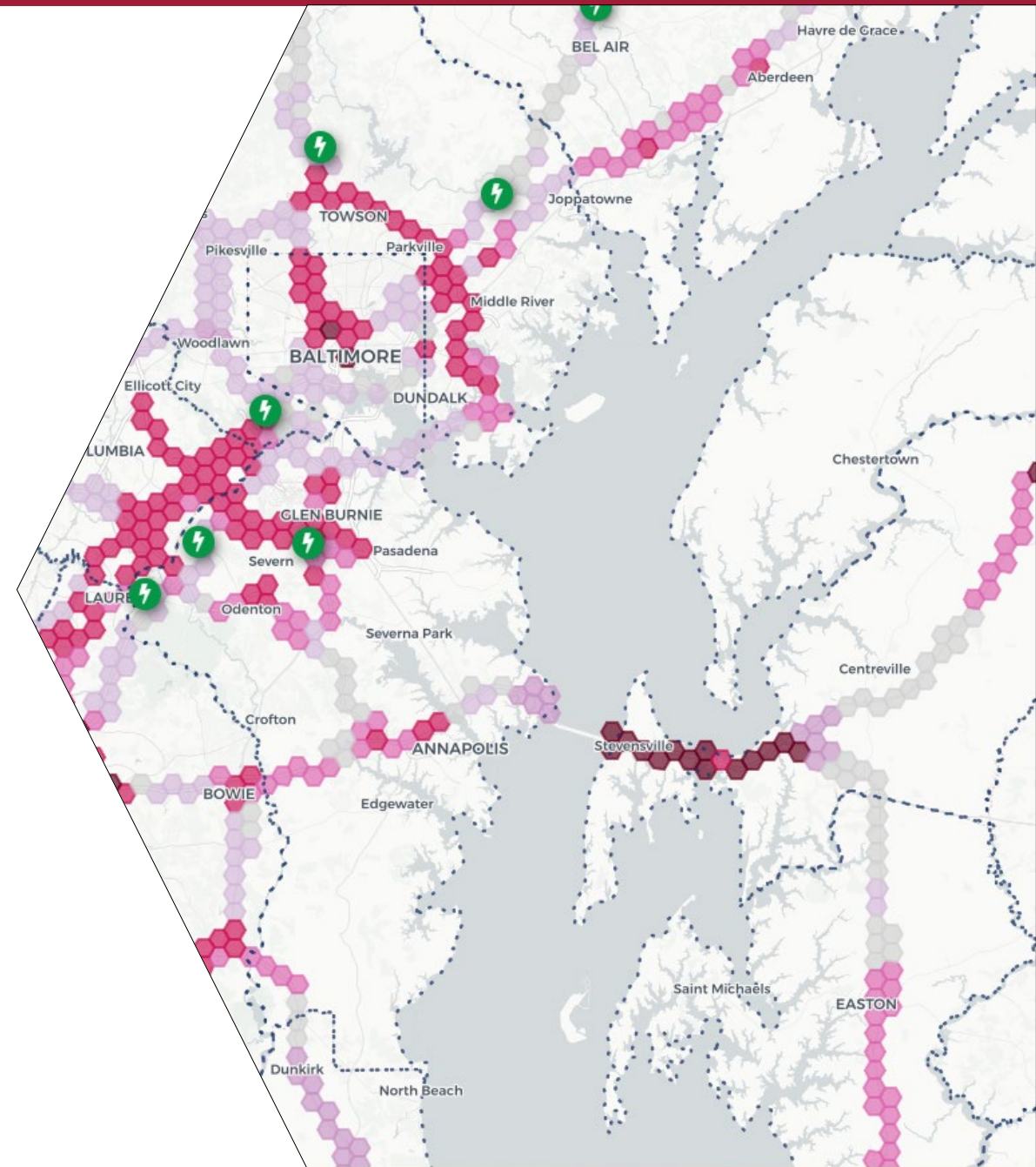
All Origin / Destination

Proximity to Existing L2

Proximity to Existing DCFC

Questions?

ahinh@mdot.maryland.gov



Closing Remarks

Next ZEEVIC quarterly meeting: **January 28, 2026**

2026 Meeting Series will be sent out in December

To receive ZEEVIC Meeting Notices, email: ZEEVIC@mdot.maryland.gov

ZEEVIC webpage: Mdot.Maryland.gov/ZEEVIC