

# **MULTI-STATE MEDIUM- AND HEAVY-DUTY ZERO-EMISSION VEHICLE ACTION PLAN:**

*A Policy Framework to  
Eliminate Harmful Truck and Bus Emissions*

Sarah McKearnan  
Senior Manager, Clean Transportation

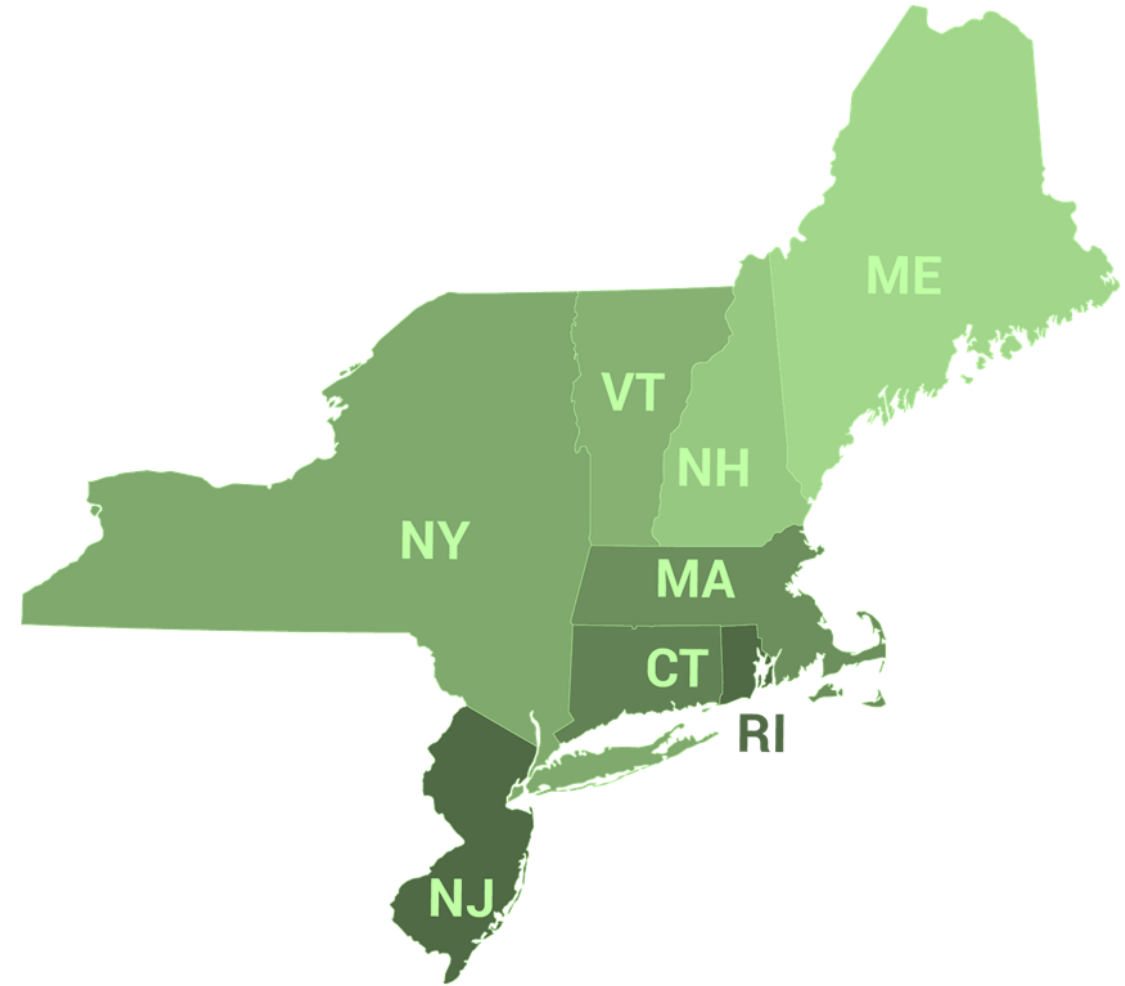


May, 2025

# Northeast States for Coordinated Air Use Management (NESCAUM)

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- Non-profit regional association of state air quality agencies in the Northeast U.S. (est. 1967)
- Provides scientific, technical, and policy support on wide range of air quality and climate issues
- Long history of collaborating with other states, federal agencies, and the automobile industry to promote low- and zero-emission vehicles
- Develops and leads multi-state initiatives, e.g.,
  - Mobile Sources Committee / Section 177 States
  - Multi-State ZEV Task Force



# Multi-State ZEV Task Force

- [Multi-State ZEV Programs Memorandum of Understanding](#) (2013) commits 10 states to collaborate to accelerate light-duty ZEV deployment
- Established the *Multi-State ZEV Task Force*, facilitated by NESCAUM, to coordinate ZEV policy and program development and implementation
- Task Force includes dozens of representatives from state environmental, energy, and transportation agencies in more than 20 states across the U.S.
- Unique forum for galvanizing state leadership on ZEV policy through research and analysis, peer exchange, and coordinated action on shared priorities



## State Zero-Emission Vehicle Programs Memorandum of Understanding

WHEREAS, the Signatory States have adopted regulations requiring increasing sales of zero-emission vehicles (ZEVs), or are considering doing so; and

WHEREAS, accelerating the ZEV market is a critical strategy for achieving our goals to reduce transportation-related air pollution, including criteria air pollutants, mobile source air toxics and greenhouse gas emissions (GHGs), enhance energy diversity, save consumers money, and promote economic growth; and

WHEREAS, our states are committed to reducing air pollution, including the emission of GHGs and other air pollutants from the mobile source sector; and

WHEREAS, many of our states have obligations or otherwise seek to reduce GHGs consistent with science-based targets by 2050; and

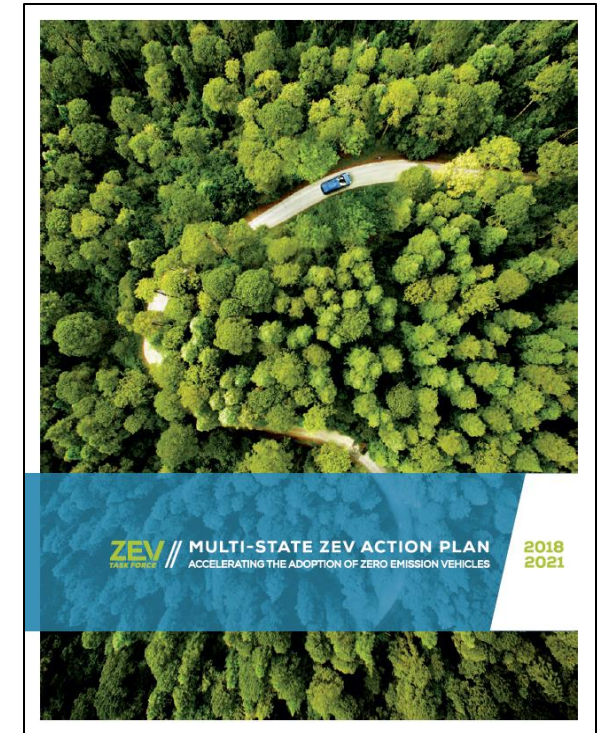
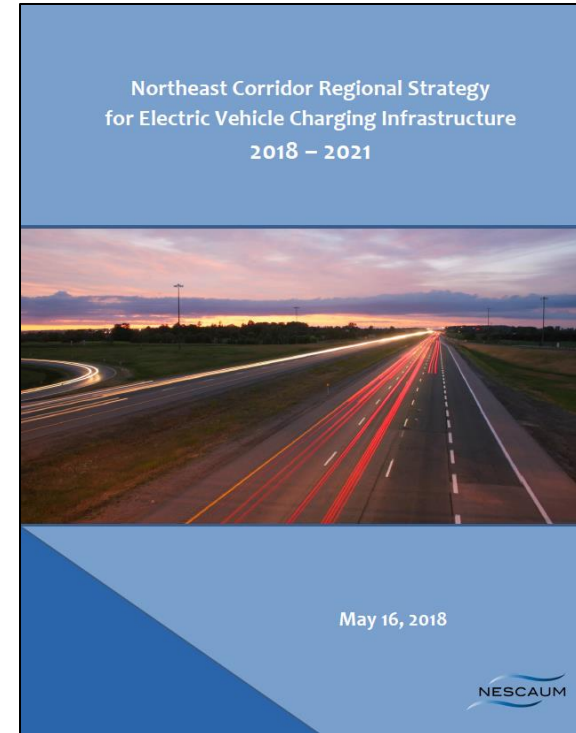
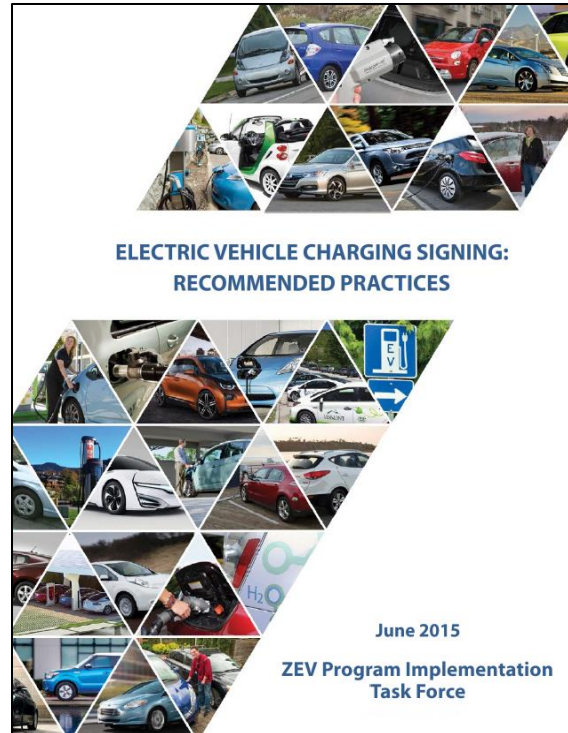
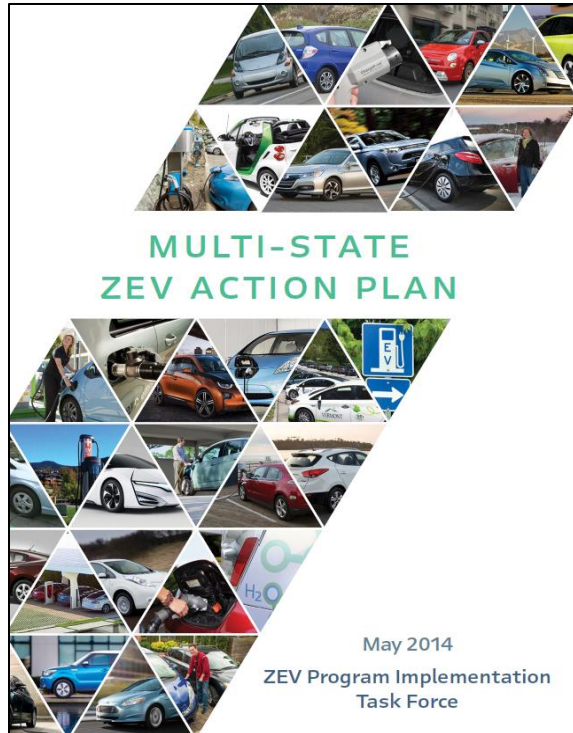
WHEREAS, motor vehicles are among the largest sources of GHGs and criteria air pollutants that adversely affect the health and well-being of our citizens in all of our states; and

WHEREAS, providing transportation alternatives such as ZEVs will help improve air quality, reduce the use of petroleum-based fuels in the transportation sector, protect consumers against volatile energy prices, and support the growth of jobs, businesses and services in a clean energy economy; and

WHEREAS, an increasing variety of vehicles that operate on hydrogen and low-cost electricity are commercially available and have the potential to significantly reduce emissions of criteria pollutants and GHGs, enhance consumer choice, and allow for home fueling; and

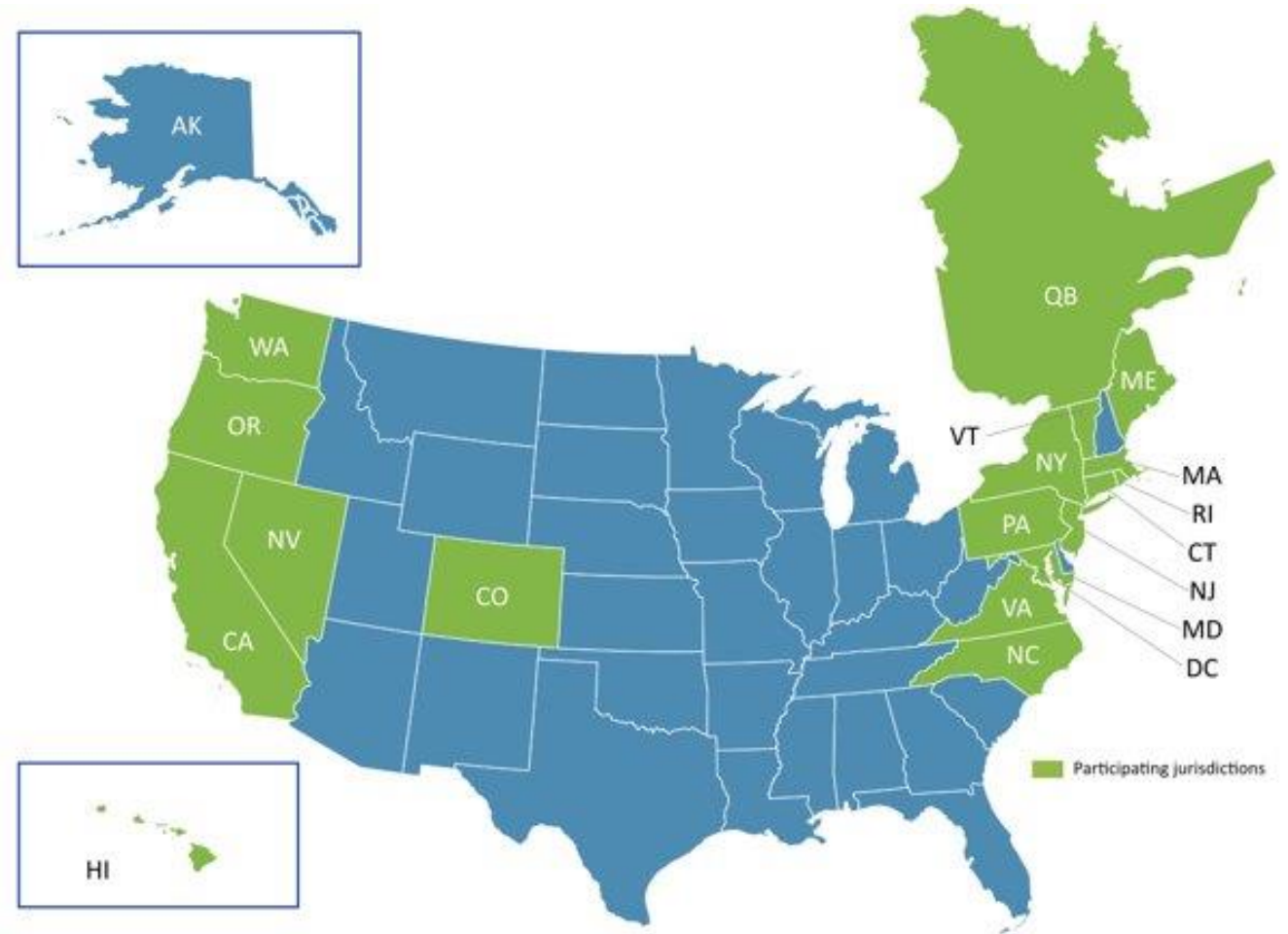


# Multi-State Light-Duty ZEV Initiative



# Multi-State Medium- and Heavy-Duty (MHD) ZEV Initiative

- *Multi-State Medium- and Heavy-Duty ZEV Memorandum of Understanding* (2020) commits 17 states, D.C., and Quebec to collaborate to advance electrification of trucks, vans, and buses
- Sets goals for at least 30% of MHD vehicle sales to be ZEVs by 2030 and 100% of sales to be ZEVs by no later than 2050
- Directs ZEV Task Force to develop a [\*Multi-State MHD ZEV Action Plan\*](#) to recommend policies to support widespread MHD vehicle electrification

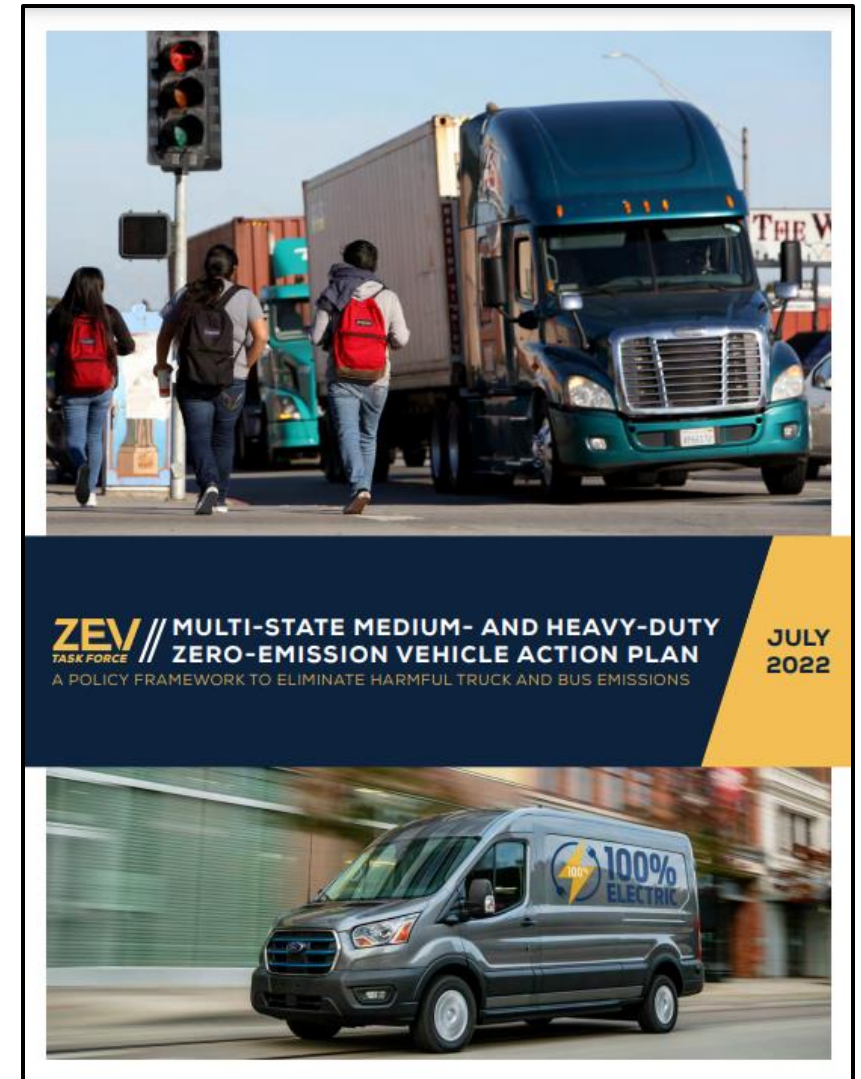




# Accelerating Electric Truck Adoption with the Multi-State MHD ZEV Action Plan

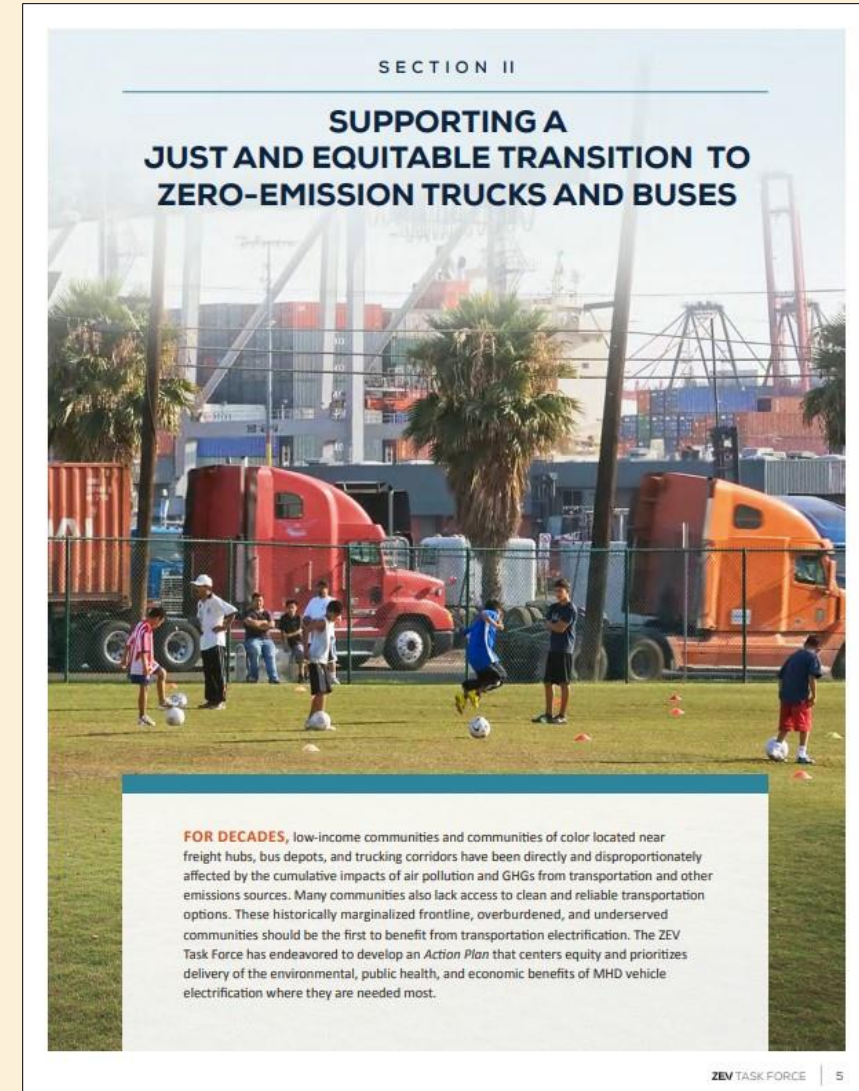
Released in July 2022, the *Action Plan* includes more than **65 strategies and recommendations** for policymakers to consider to rapidly and equitably accelerate electric truck and bus adoption, including:

- Adopting vehicle sales and purchase requirements like the Advanced Clean Trucks regulation;
- Implementing vehicle and infrastructure purchase incentives;
- Supporting utility investment in charging infrastructure;
- Introducing innovative financing mechanisms;
- Creating workforce development programs; and
- Prioritizing the deployment of public charging in communities and along travel corridors.

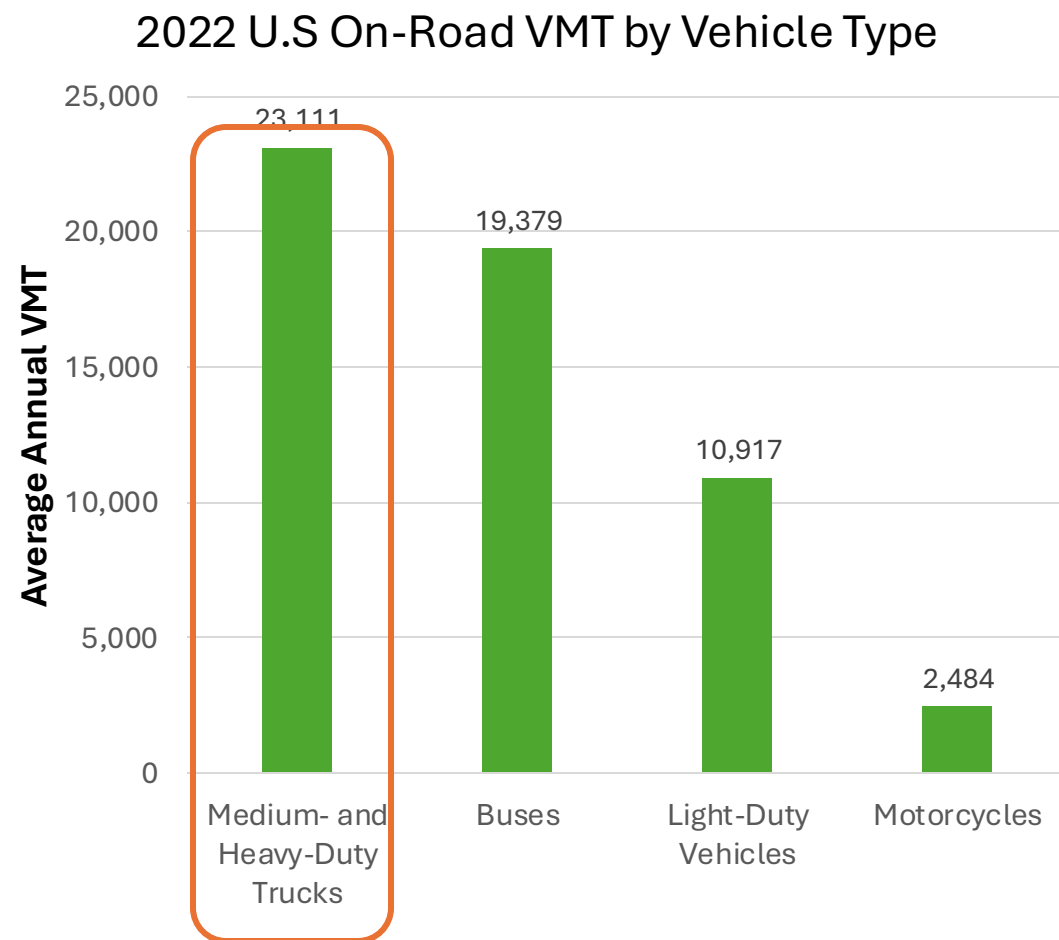
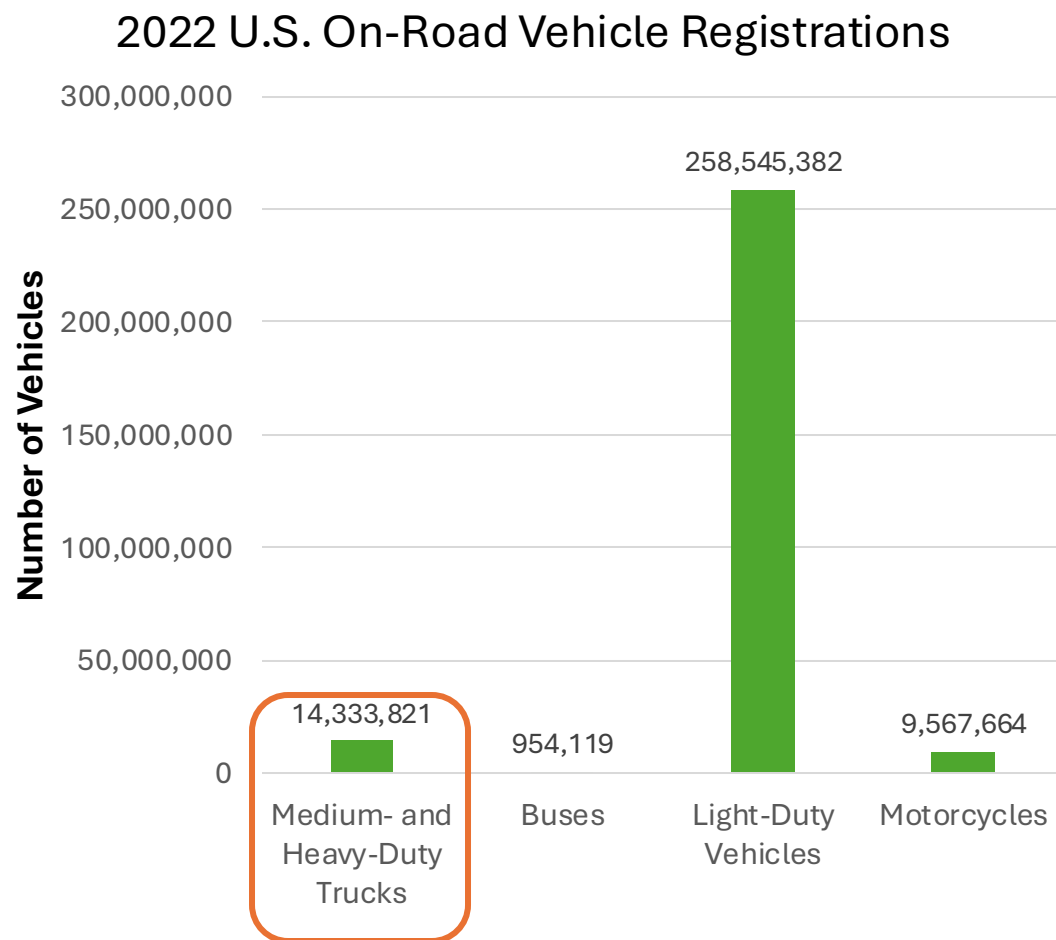


# Action Plan Development Process – July 2020 to July 2022

- 🚚 **Equity and Environmental Justice (EJ) Engagement** – National and MOU state-based equity and EJ organizations proposed principles and [recommendations](#)
- 🚚 **Stakeholder Advisory Group** – included equity and EJ advocates, MHD vehicle manufacturers, charging infrastructure providers, fleet representatives, environmental advocates, and others
- 🚚 **Informational Webinar Series** – Developed [webinars](#) to build knowledge of key issues and barriers to electrification
- 🚚 **Public Utility Engagement** – M.J. Bradley and Associates facilitated an engagement process with utilities from across MOU states to develop proposed [recommendations](#)
- 🚚 **Individual Stakeholder Engagement** – Received feedback on preliminary drafts from equity and EJ organizations, Stakeholder Advisory Group, and others



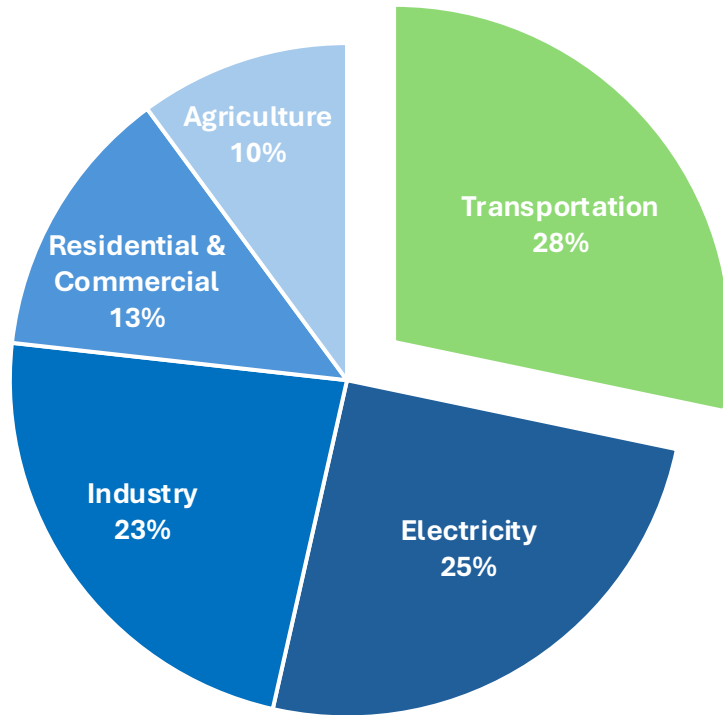
# The Oversized Impact of MHD Vehicles on Our Roads



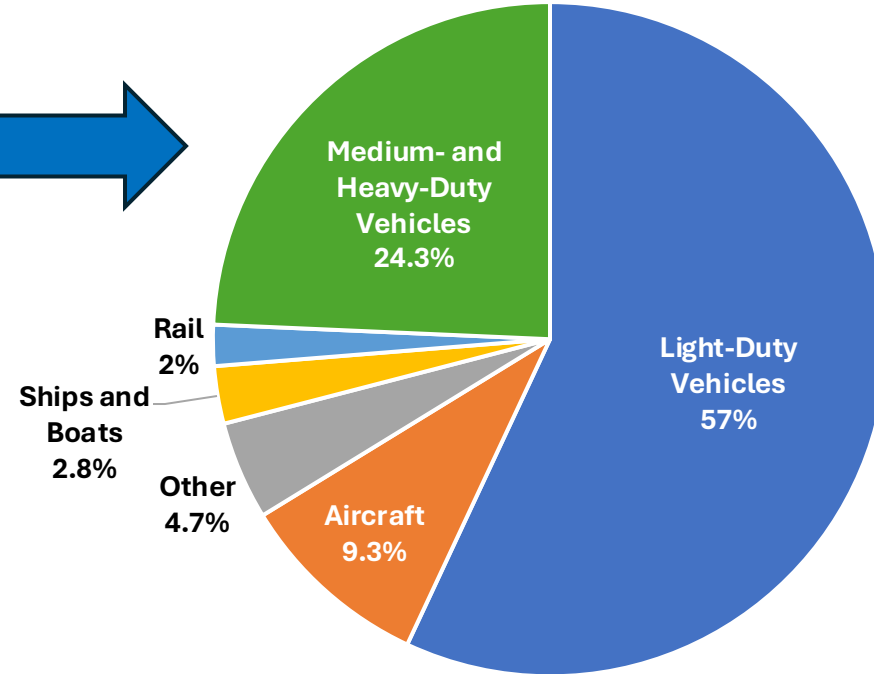


# MHD Vehicles Are a Significant Source of Greenhouse Gas Emissions

2022 U.S. GHG Emissions by Sector

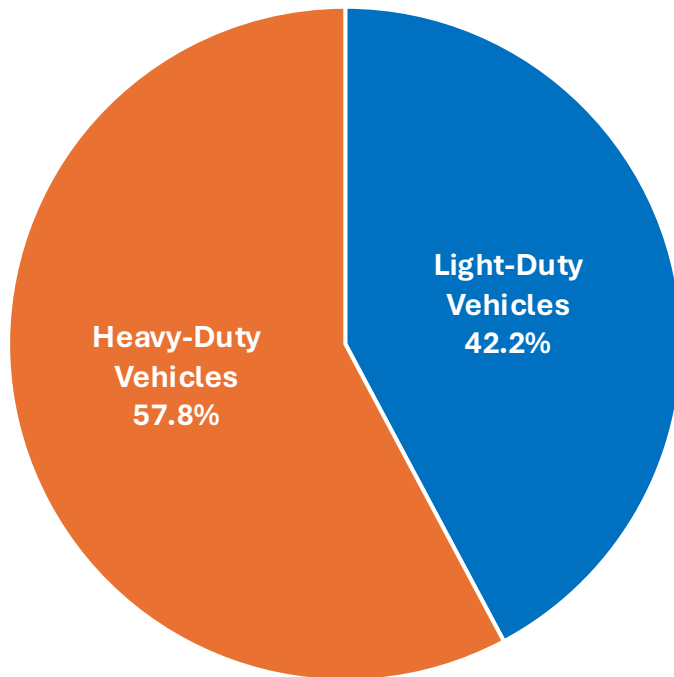


2022 U.S. Transportation GHGs by Source



# MHD Vehicles Are a Significant Source of Criteria Pollutant Emissions

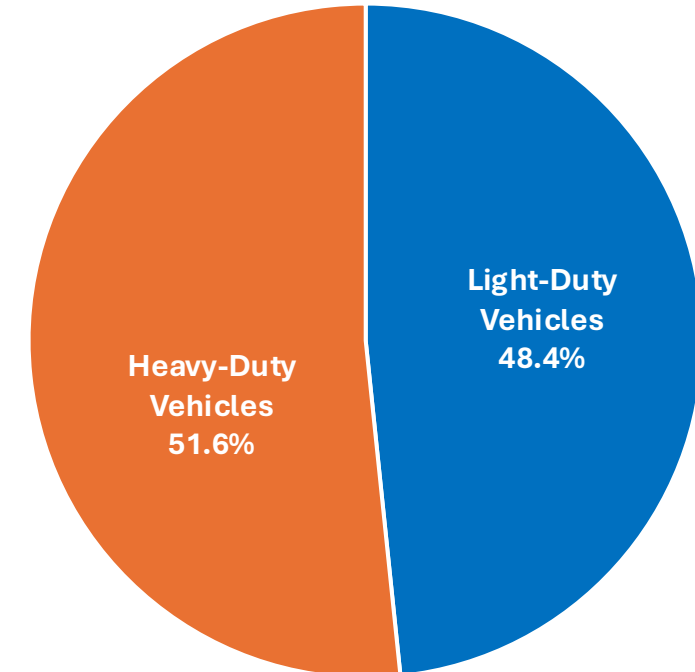
2020 U.S. On-Road NO<sub>x</sub> Emissions



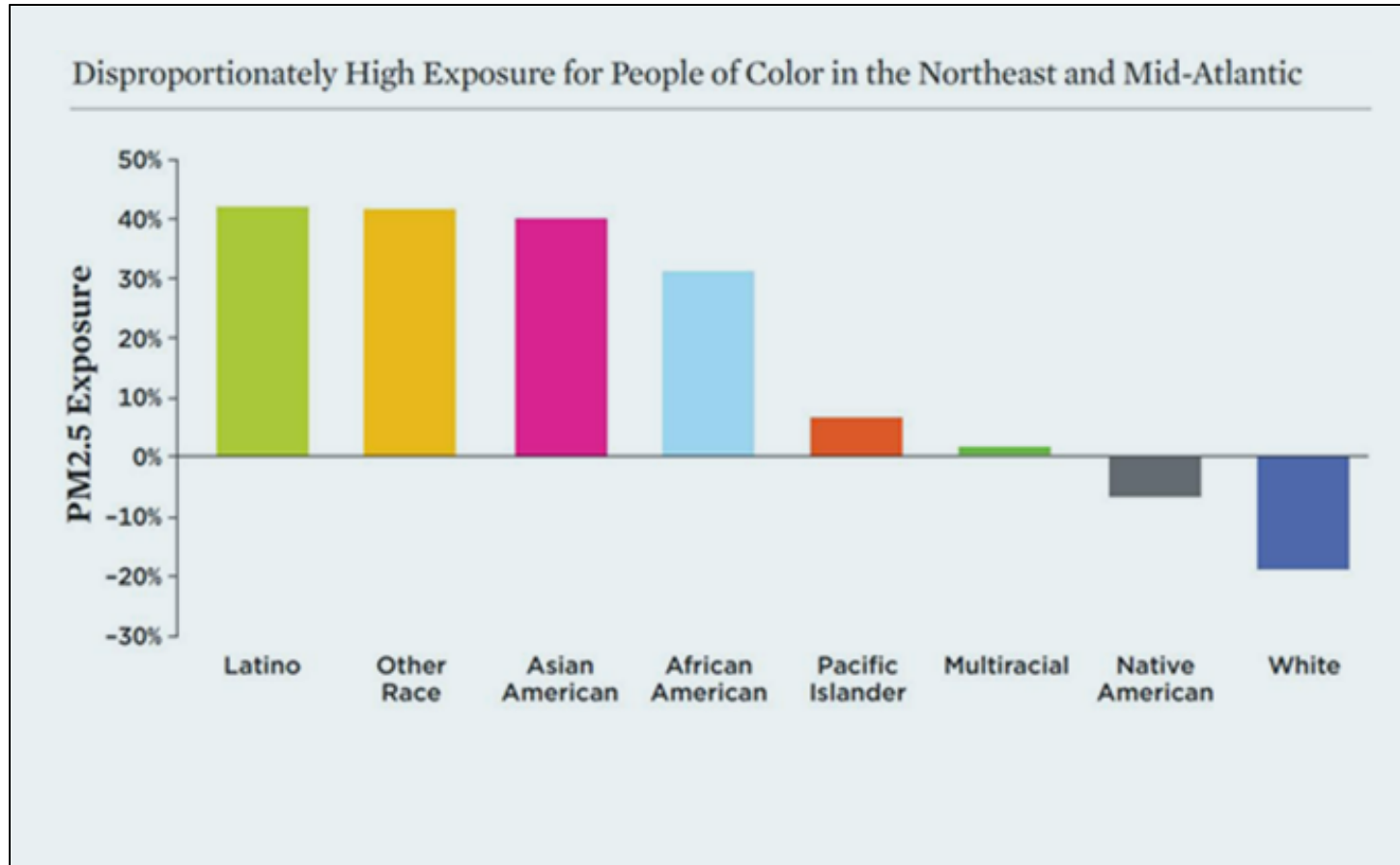
**NO<sub>x</sub>** – smog-forming oxides of nitrogen emissions are a precursor to ground-level ozone

**PM<sub>2.5</sub>** – particulate matter < 2.5 micrometers in diameter

2020 U.S. On-Road PM<sub>2.5</sub> Emissions



# Disproportionate Impacts on Frontline and Overburdened Communities



- Research shows a direct correlation between exposure to near-road air pollution and increased health risk
- Many low-income communities and communities of color are located near trucking corridors, ports, warehouses, and other emissions sources
- And are directly and disproportionately exposed to harmful pollutants and more vulnerable to the effects of climate change



# Benefits of MHD ZEV Deployment

- Reduce GHGs and mitigate climate change impacts
  - 100% MHD ZEV sales by 2050 would reduce MHD vehicle GHG emissions up to 73% below 2020 levels\*
- Improve air quality and health outcomes, especially in frontline and overburdened communities
  - 100% MHD ZEV sales by 2050 would reduce MHD vehicle NOx emissions 78-93%, and PM2.5 emissions 73%, below 2020 levels\*
- Attract private investment, generate economic growth
- Create high-quality jobs in automotive, transportation, and energy sectors, including vehicle and infrastructure design, manufacturing, installation, and maintenance





Source: Lion  
Electric

# MHD ZEV Action Plan Recommendations

## ➤ Equity Principles

- Develop inclusive, accessible, and transparent community engagement processes
- Ensure that MHD ZEV programs deliver direct benefits and just and equitable outcomes for frontline and overburdened communities

## ➤ Vehicle Sales and Purchase Requirements (e.g., Advanced Clean Trucks (ACT) + HD NOx, Advanced Clean Fleets, Innovative Clean Transit)

- Require manufacturers to sell and fleets to purchase MHD ZEVs
- Establish state fleet, school bus fleet, and public transit fleet electrification targets

## ➤ Vehicle and Infrastructure Purchase Incentives

- Establish incentive programs, e.g., point-of-sale (most effective), tax credits/waivers, toll exemptions, parking fees, registration fees
- Reserve funding to benefit frontline/overburdened communities and small/minority-owned fleets and independent owner/operators





Source: Volvo

# MHD ZEV Action Plan Recommendations

## ➤ Electric Utility and Utility Regulator Actions

- Adopt targets for infrastructure deployment that align with state air quality, climate, and transportation electrification goals
- Adopt rate structures, infrastructure incentives, and fleet support programs tailored to meet fleet planning and operational needs
- Prioritize utility investments in frontline/overburdened communities

## ➤ Mobilizing Private Capital to Finance Fleet Conversions

- Work with transit agencies, school districts, utilities, green banks, and others to explore and adopt policies and financing approaches to generate private investment in fleets and infrastructure

## ➤ Outreach and Education

- Work with utilities, manufacturers, charging/fueling providers, fleets, independent owner/operators, and other partners to develop outreach and education programs tailored for all fleet types





# MHD ZEV Action Plan Recommendations

## ➤ Economic Equity for Workers

- Adopt a “whole-of-government” approach and mobilize interagency coordination to address important labor issues
- Partner with workers, schools, industry, and others to develop training and apprenticeship programs for vehicles and infrastructure

## ➤ Community Air Monitoring

- Partner with communities and sensitive populations to design and deploy community air monitoring programs to identify “hot spots”
- Develop appropriate indicators and geographic mapping systems to define and identify frontline/overburdened communities

## ➤ Planning for and Deploying Public Charging and Fueling Infrastructure

- Coordinate with other agencies and partners to plan for highway and community public infrastructure, charging and parking needs
- Support development of a standardized, interoperable, reliable, and accessible fast-charging network for MHD ZEVs





Source: Lion Electric

# MHD ZEV Action Plan Recommendations

## ➤ Ongoing Multi-State Research and Policy Evaluation

- Collect data to evaluate effectiveness of MHD ZEV policies
- Support research to inform the development of sustainable battery manufacturing and supply chains and approaches to battery reuse
- Evaluate potential state actions to support port electrification

## ➤ Local Government Recommendations (Appendix A)

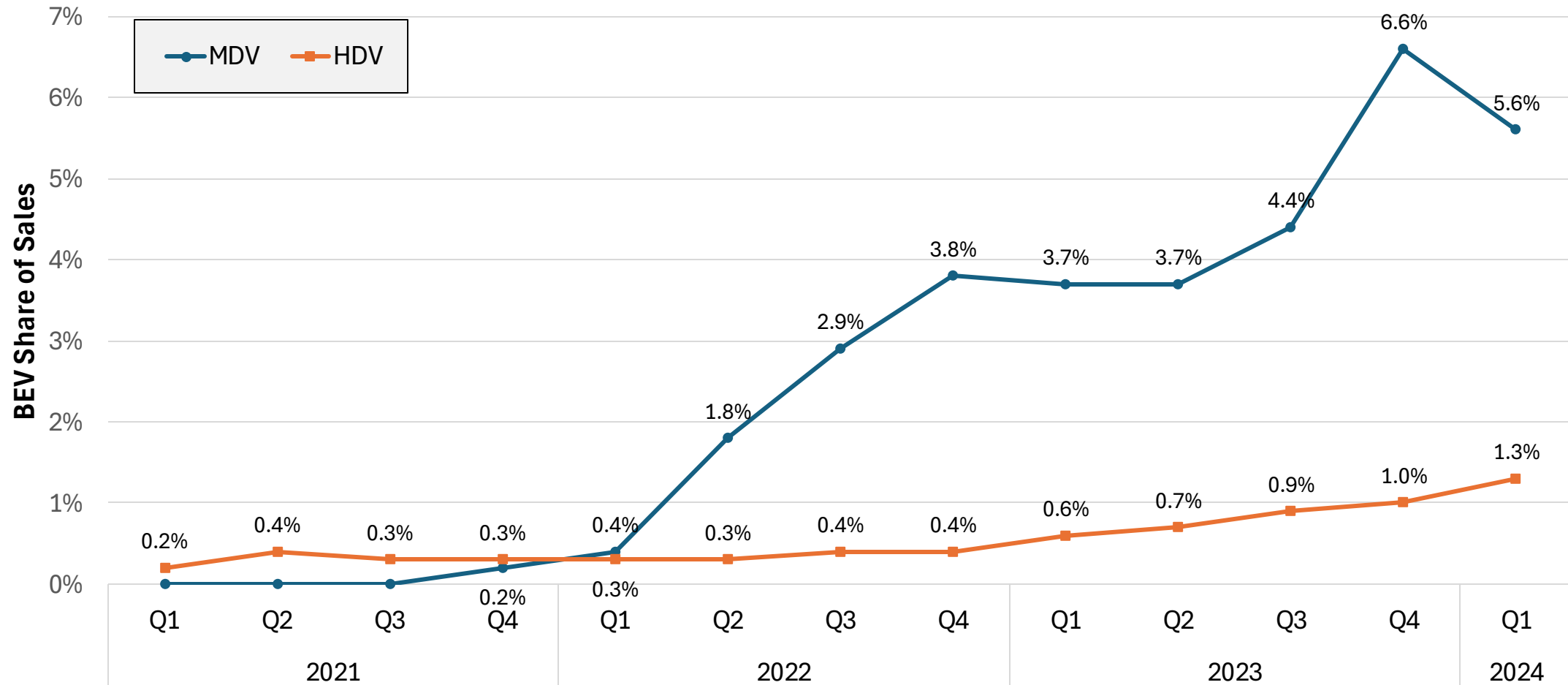
- Engage in planning for charging/fueling infrastructure deployment
- Incentivize MHD ZEV adoption with monetary (e.g., tax credits) and non-monetary (e.g., zero-emission zones) approaches
- Amend local codes/rules to minimize administrative burdens for infrastructure planning, permitting, and construction

## ➤ Federal Government Recommendations (Appendix A)

- Adopt increasingly stringent emissions standards for MHD vehicles
- Statutory and policy changes to allow ZEV charging/fueling along interstate rights-of-way and streamline federal funding processes

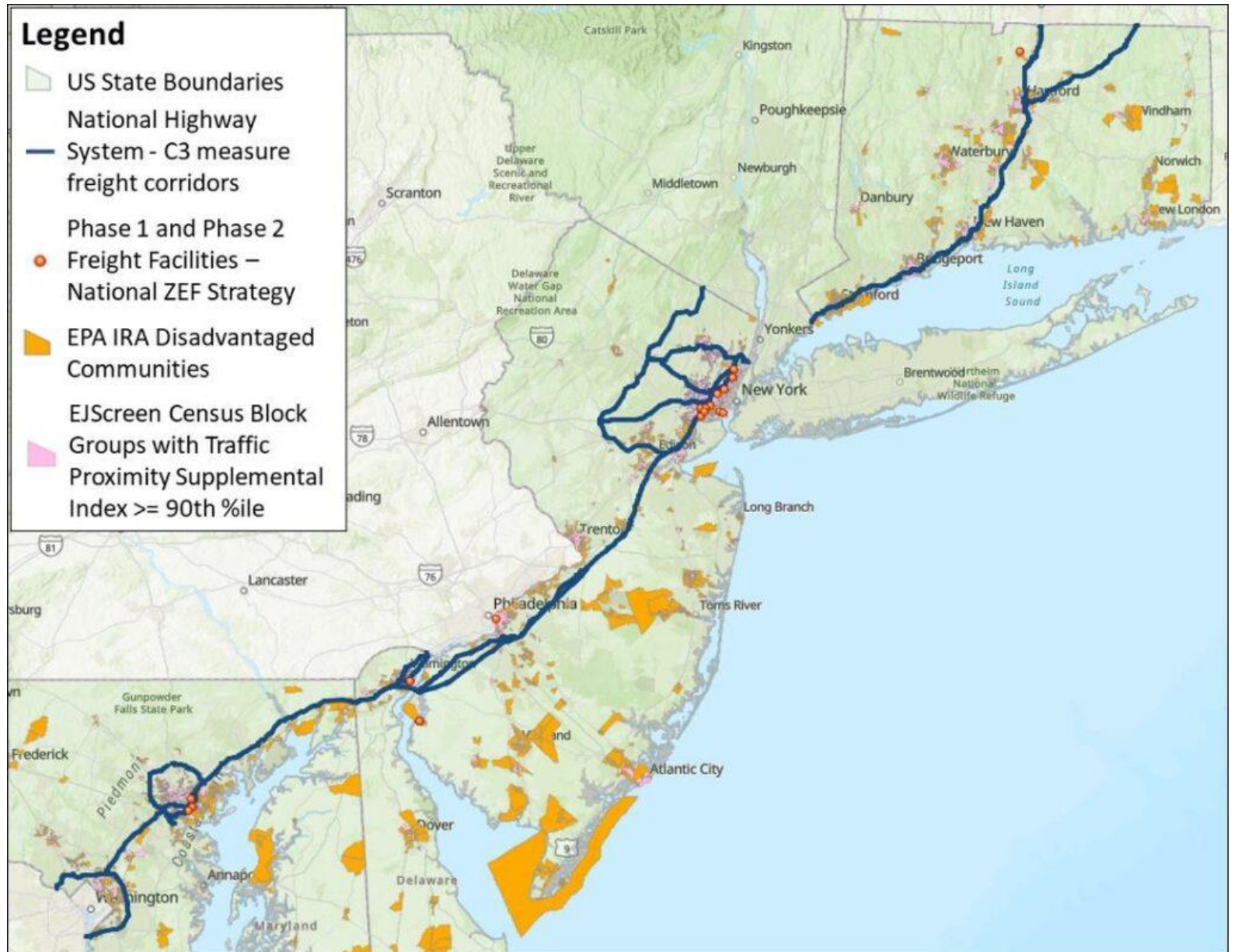
# The U.S. MHD BEV Market is Beginning to Take Off

MHD BEV Sales in the U.S.: 2021 Q1 - 2024 Q1






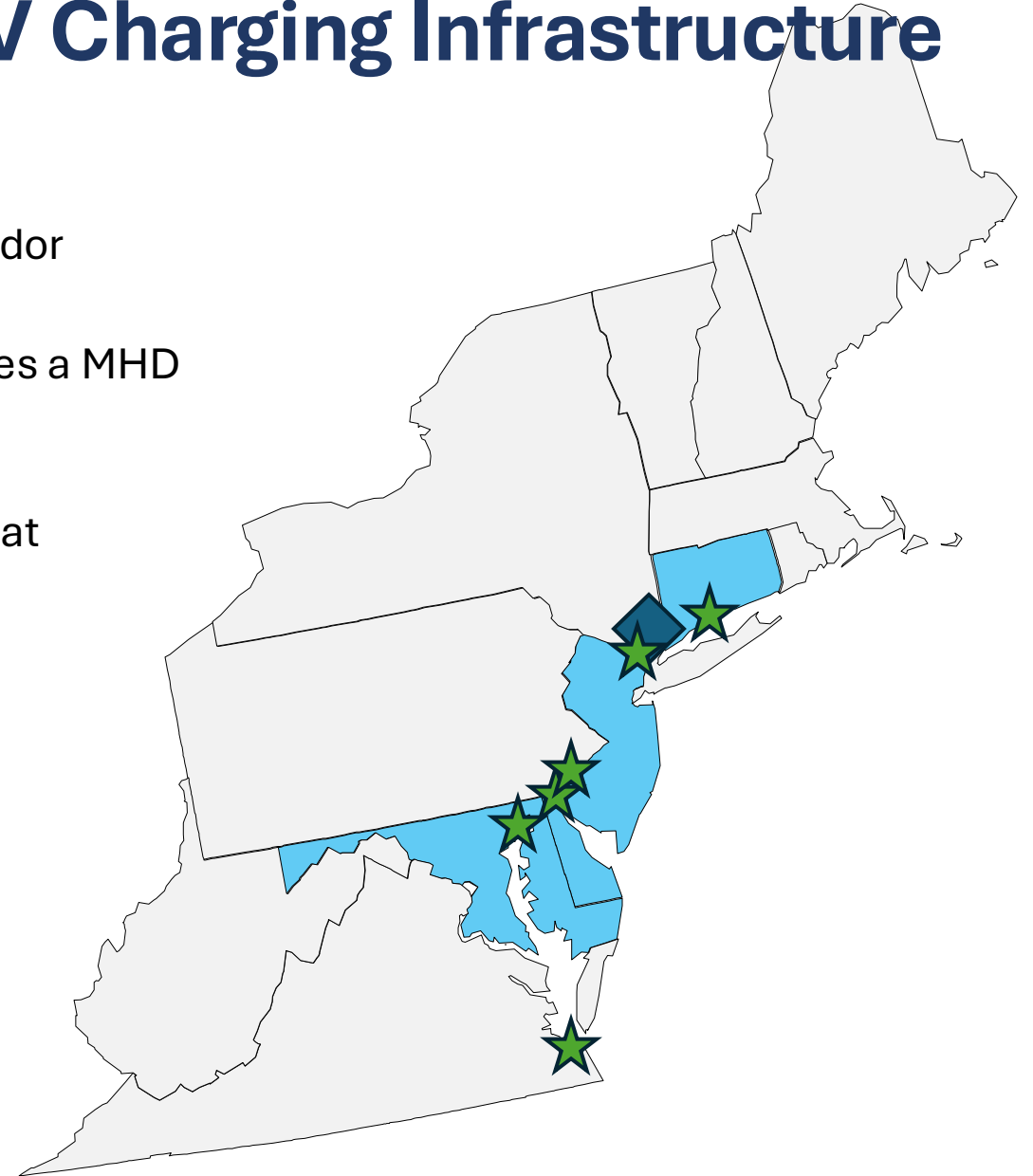


# Clean Corridor Coalition



# Awarded Funding for MHD EV Charging Infrastructure

-  \$250 million in CPRG funding to electrify I-95 freight corridor
-  \$30 million in CFI funding for a project in NYC that includes a MHD EV charging component
-  \$1.1 billion in Clean Ports Program funding for projects that include a MHD EV charging component
  - Port of New Haven (\$34M)
  - Port of New York and New Jersey (\$344M)
  - Port of Philadelphia (\$78M)
  - Port of Wilmington (\$128M)
  - Port of Baltimore (\$146M)
  - Port of Virginia (\$380)



# Questions?

## **For possible discussion:**

Given the change in federal policy priorities and funding, which strategies are currently most promising for supporting and accelerating the transition to medium- and heavy-duty zero-emission vehicles?

What are the biggest barriers that participants see for regional MHD ZEV deployment in the greater DC area, and how can they be overcome?



# THANK YOU!

**Sarah McKearnan**

**[smckearnan@nescaum.org](mailto:smckearnan@nescaum.org)**

**802-477-3927**

