



NC Advanced Clean Trucks – Stakeholder Session

January 25, 2023

Division of Air Quality



Welcome

- This meeting is for DEQ and the Division of Air Quality to provide interested stakeholders with an overview of the proposed Advanced Clean Trucks program.
- Ground Rules:
 - Please be respectful by staying on topic
 - This is not a public hearing – those will be later
- We want to hear from you!



Acronym List

DEQ: Department of Environmental Quality

DAQ: Division of Air Quality

EPA: U.S. Environmental Protection Agency

ACT: Advanced Clean Trucks

MHD or MHDV: Medium- and Heavy-Duty Vehicles

ZEV: Zero-Emission Vehicle

EO: Executive Order

EMC: Environmental Management Commission

AQC: Air Quality Committee

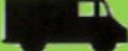



GHG: Greenhouse Gas

NOx: Nitrogen Oxide

PM/PM2.5: Particulate Matter

NAAQS: National Ambient Air Quality Standards



Class 2 - 6,001 to 10,000 lbs			
 Minivan	 Cargo Van	 Full-Size Pickup	 Step Van
Class 3 - 10,001 to 14,000 lbs			
 Walk-in	 Box Truck	 City Delivery	 Heavy-Duty Pickup
Class 4 - 14,001 to 16,000 lbs			
 Large Walk-in	 Box Truck	 City Delivery	
Class 5 - 16,001 to 19,500 lbs			
 Bucket Truck	 Large Walk-in	 City Delivery	
Class 6 - 19,501 to 26,000 lbs			
 Beverage Truck	 Single-Axle	 School Bus	 Rack Truck
Class 7 - 26,001 to 33,000 lbs			
 Refuse	 Furniture	 City Transit Bus	 Truck Tractor
Class 8 - 33,001 lbs & Over			
 Cement Truck	 Truck Tractor	 Dump Truck	 Sleeper

Truck Classifications

Vehicle classes are based on gross vehicle weight rating (GVWR).
Class 2 is subdivided into:

- **Class 2a:** GVWR of 6,001-8,500 lbs.
- **Class 2b:** GVWR of 8,501-10,000 lbs.

MHDVs under ACT consist of classes 2b-8.

Class 2b-3



Class 4-8



Class 7-8 Tractors



What to Expect Today

- **Review Executive and Departmental Actions**
- **Introduce California's Advance Clean Truck program**
- **Summarize transportation and emission profiles**
- **Discuss NC's ACT program development**
- **Solicit input and feedback**



Reducing GHGs: NC Executive Actions

Oct. 2018

EO 80

- Reduce GHG emissions by 40% below 2005 levels by 2025
- Increase total number of registered LD ZEVs to at least 80,000 by 2025
- Reduce energy consumption in state-owned buildings by 40% below 2002-2003 levels

Jan. 2022

EO 246

- Reduce GHG emissions by 50% below 2005 levels by 2030 & net-zero by 2050
- Increase total number of registered LD ZEVs to at least 1.25 million by 2030
- Increase the sale of ZEV so that 50% of in-state sales are zero emission by 2030
- NC DOT to develop Clean Transportation Plan by April 2023

July 2020

MHD ZEV MOU

- Advance & accelerate MHD ZEV sales & reduce GHGs from this sector
- 30% of all new MHD vehicle sales be zero-emission vehicles by 2030
- 100% of all new MHD vehicle sales be zero-emission vehicles by 2050

Oct. 2022

EO 271

- MHD vehicle manufacturers to sell increasing percent of ZEVs each year (Advanced Clean Trucks Program)
- NC DHHS to publish report on EJ impacts of transportation-related pollution
- NC DOT to develop NC ZEV Infrastructure Needs Assessment

Growing NC's Zero-Emission Vehicle Market

Executive Order 271

- Signed October 25, 2022
- Accelerate transition to clean energy economy
- Create good jobs and opportunities for all
- Protect public health and the environment
- Advance environmental justice and equity



Link to EO 271: <https://governor.nc.gov/media/3457/open>
EO 271 FAQ: <https://governor.nc.gov/media/3456/open>



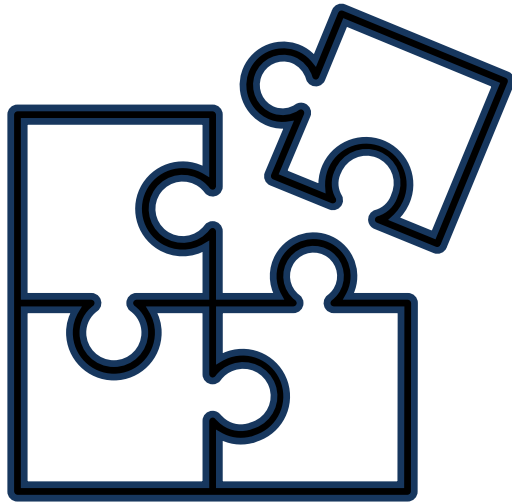
Executive Order 271 – Section 1

- **DEQ to develop rules for an Advanced Clean Trucks (ACT) program for consideration to the Environmental Management Commission (EMC).**
- **DEQ to collaborate with stakeholders in developing the rules.**

The ACT program will require medium- and heavy-duty vehicle manufacturers to sell an increasing percentage of zero-emission vehicles (ZEVs) over time.

- Provisions provide flexibility to manufacturers, through credits, trading & other features.
- Sales targets drive investment in other zero-emission technologies.
- Rules will ensure inventories of ZEVs will be available for purchase in the state.
- Bolsters NC's competitiveness in seeking federal support for clean energy development.





Executive Order 271 – Other Sections

2. **Distribution of State and Federal Funds**
3. **Complementary Strategies**
4. **Public Health and Health Equity**
5. **Zero-Emission Vehicle Infrastructure Needs Assessment**
6. **State Motor Fleet ZEV Transition**
7. **Environmental Stewardship Initiative**



California Advanced Clean Trucks Rule

The Advanced Clean Truck regulation is part of California's holistic approach to accelerate a large-scale transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8, resulting in decreases in greenhouse gases, NO_x, PM, and SO₂ emissions from this source sector over time.

The regulation has two components:

- Zero-emission truck sales targets
- Vehicle manufacturer reporting

ACT Rule ZEV Sales Targets by Model Year

Year	Class 2b-3	Class 4-8	Class 7-8 Tractors
2024	5%	9%	5%
2025	7%	11%	7%
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035+	55%	75%	40%



Transportation Sector Corridors and Emissions

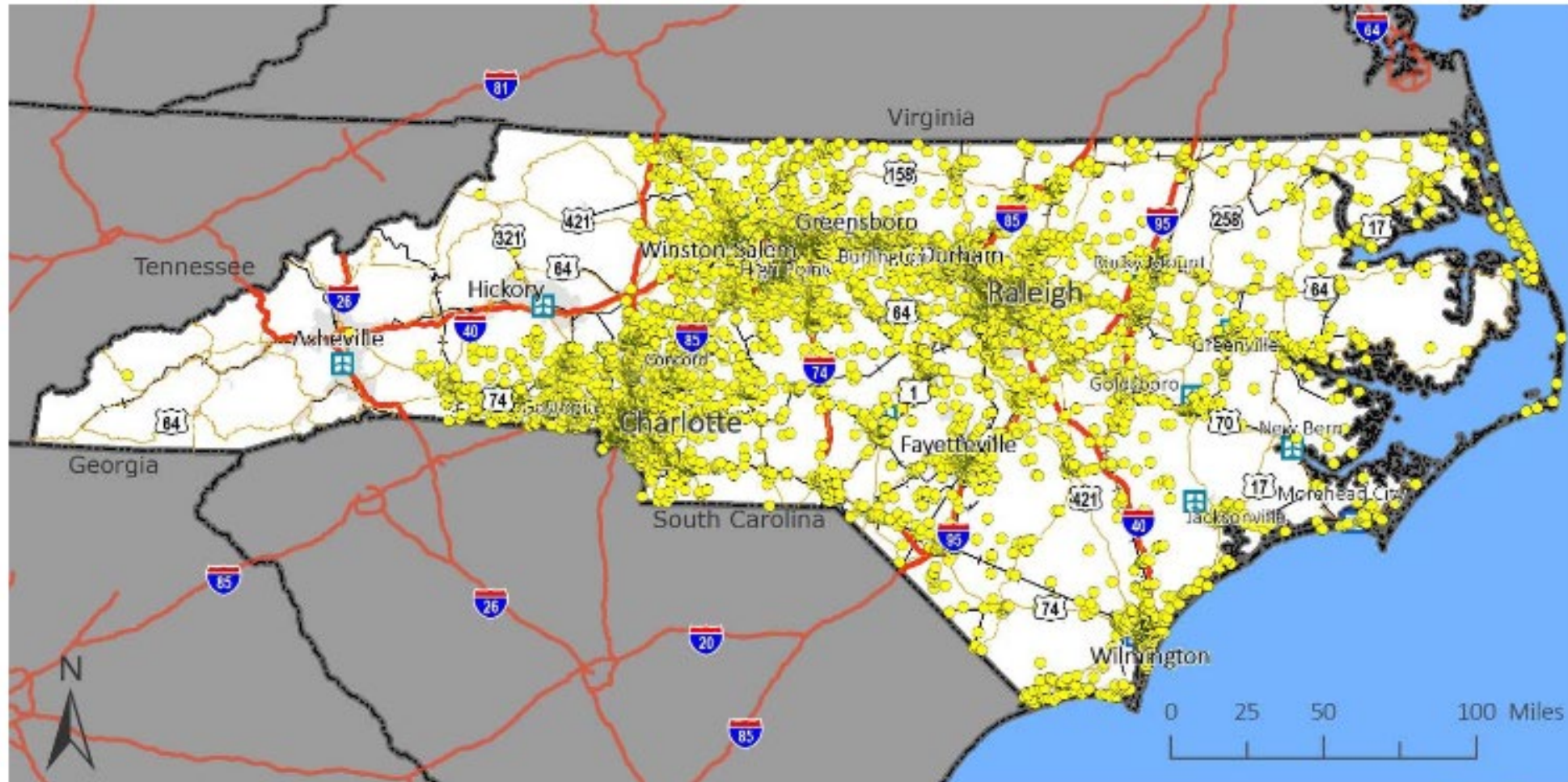


Average Annual Daily Truck Traffic, 2014



Source: North Carolina Statewide Multimodal Freight Plan, NC DOT

Manufacturing



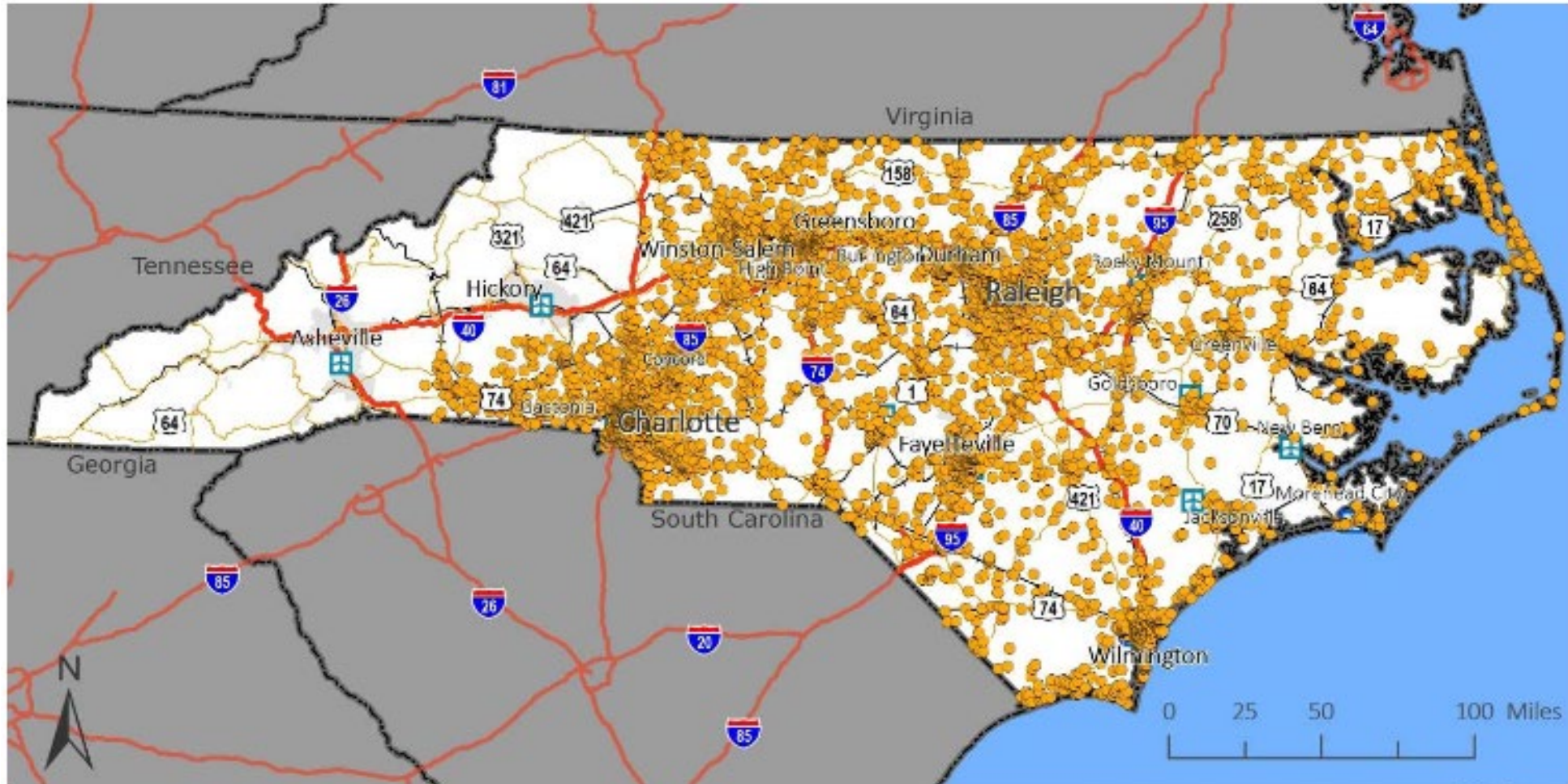
Manufacturing Firms in North Carolina

- Manufacturing
- Interstate Highway
- US Highway

Source: North Carolina Statewide Multimodal Freight Plan, NC DOT



Transportation/Warehousing



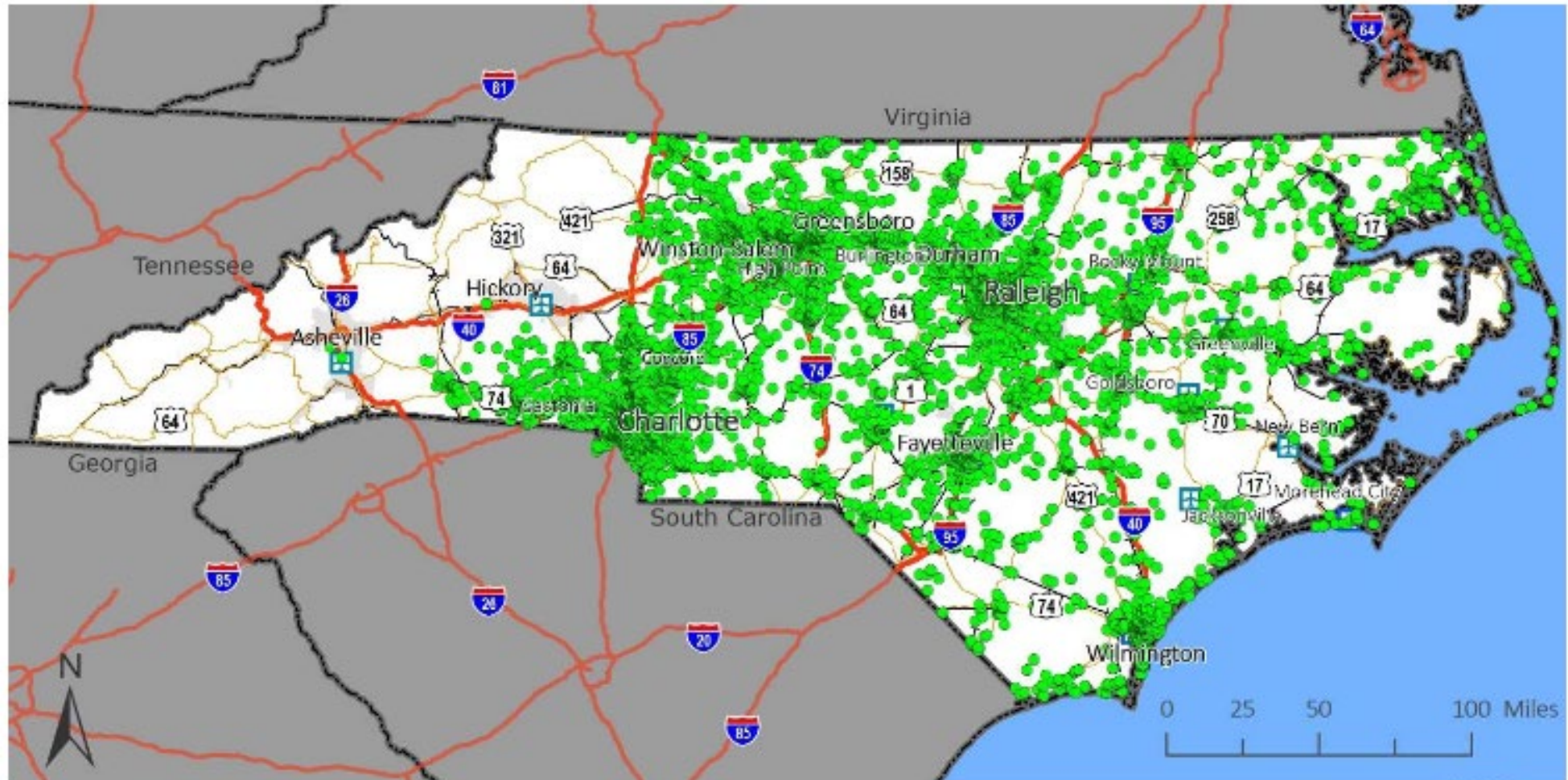
Transportation and Warehousing Firms in North Carolina

- Transportation/Warehousing
- Interstate Highway
- US Highway



Source: North Carolina Statewide Multimodal Freight Plan, NC DOT

Wholesale Trade



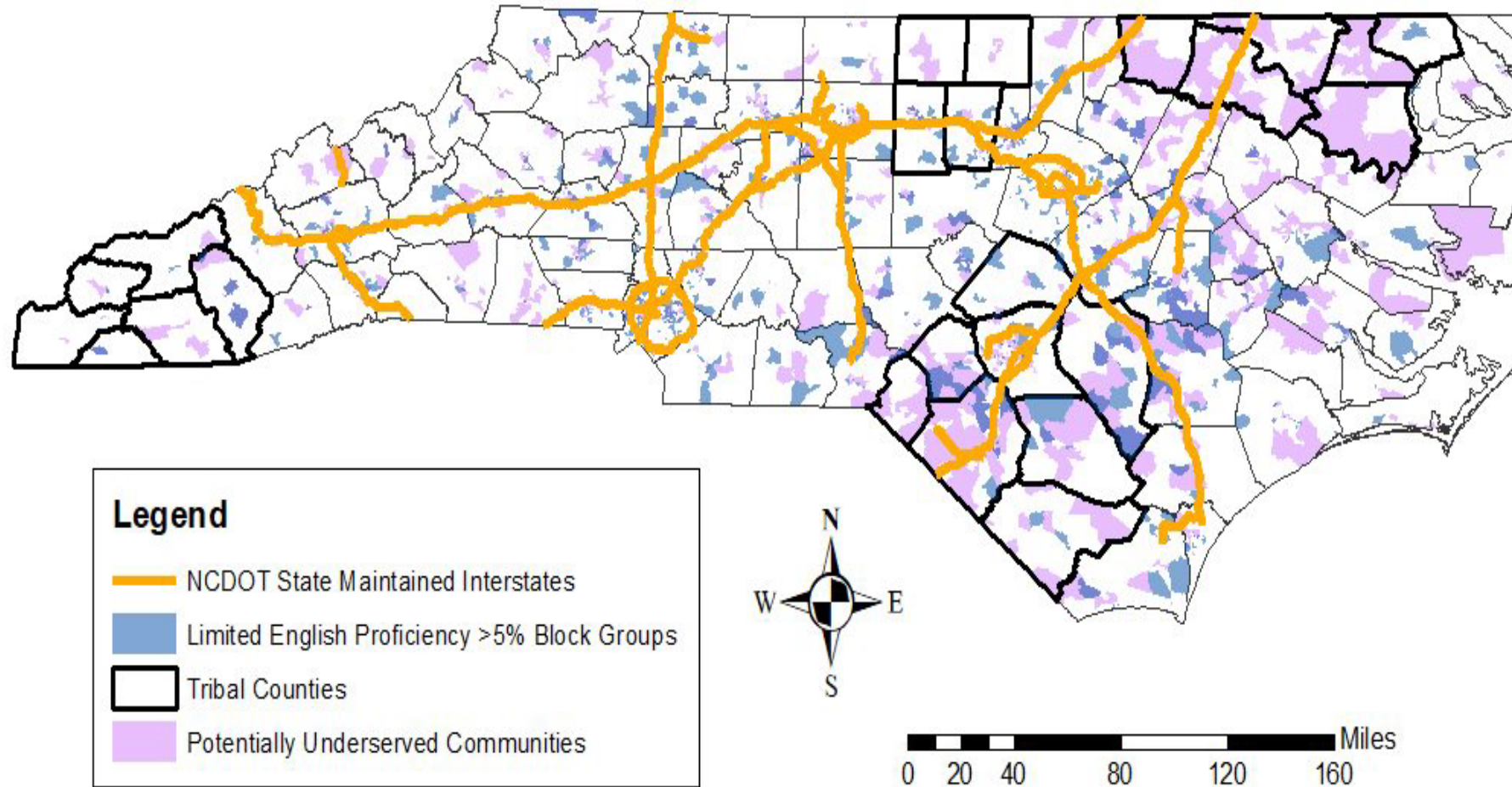
Wholesale Trade Firms in North Carolina

- Wholesale Trade
- Interstate Highway
- US Highway



Source: *North Carolina Statewide Multimodal Freight Plan, NC DOT*

NC Environmental Justice Communities



Source: NC DEQ – Environmental Justice Team

What environmental justice factors should the Department of Environmental Quality consider in the Department's analysis of the Advanced Clean Trucks rule?

Gross GHG Emissions by Economic Sector in 2018



2018 Gross GHG Emissions

159.5 million metric tons of CO₂e

CO₂ emissions from fossil fuel combustion:

81.3%

of total gross emissions

CO₂ emissions removed by forests & other lands:

26.4%

of total gross emissions

2005 - 2018 Change in Gross GHG Emissions

- ▼ **34.7%** — Electric Generation
- ▼ **16.5%** — Residential
- ▼ **3.5%** — Transportation
- ▲ **1.7%** — Industry*
- ▲ **3.3%** — Commercial

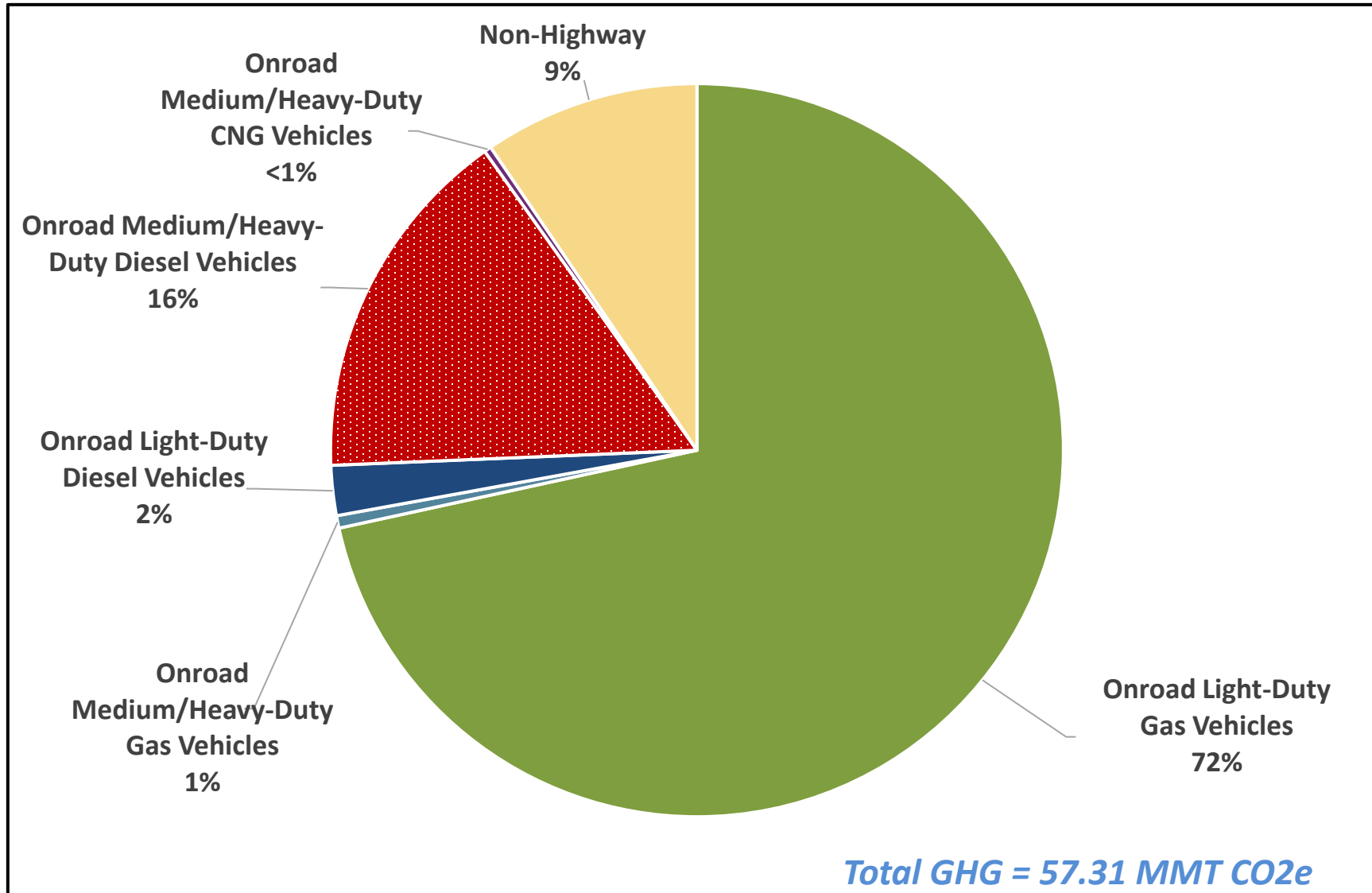
Statewide Net GHG Reductions (2005-2018)

↓ **23.0%**

For full report, see deq.nc.gov/GHGInventory

*Industry includes fossil fuel combustion, natural gas and oil processes, and industrial processes.

Distribution of 2018 North Carolina Transportation GHG Emissions



MHD Vehicles

- Represent 3.2% of NC's registered vehicles
- 32% of NC's on-road fine particle pollution (PM_{2.5}).
- 26% of NC's on-road nitrogen oxide (NO_x) emissions.
- NC is in statewide attainment with the PM_{2.5}, ozone, and all other National Ambient Air Quality Standards (NAAQS)
- Additional emission reductions would ensure ongoing compliance in the future when the U.S Environmental Protection Agency (EPA) lowers the NAAQS



Source: EPA 2017 National Emissions Inventory.

What are the greatest potential benefits to North Carolina that you see in adopting the Advanced Clean Truck rule?



What does the adoption of the Advanced Clean Trucks rule mean to you and your community or organization?

*What changes do you
envision ACT would
bring to your business or
your community?*

Clean Air Act Provisions

Clean Air Act Provisions and Prior EMC Actions

- **Section 209**

- State of California is required to request and be granted a waiver from EPA in order to implement any vehicle emissions standards that are unique (not less stringent) to the federal standards.
- EPA took comment on California's waiver request for the ACT rule in 2022.

- **Section 177**

- Other states can choose to adopt California's vehicle emission standards in lieu of federal standards.
- States are not required to seek EPA approval before adopting California standards.

- **EMC has adopted a California vehicle emission standard previously**

- See 15A NCAC 02D .1008 – Heavy Duty Diesel Engine Requirement



A closer look at Section 177

42 U.S. Code § 7507 (aka “Section 177”)

Notwithstanding section 7543(a) of this title, **any State which has plan provisions approved** under this part may adopt and enforce for any model year standards relating to control of emissions from new motor vehicles or new motor vehicle engines and take such other actions as are referred to in section 7543(a) of this title respecting such vehicles if—

- (1) **such standards are identical to the California standards** for which a waiver has been granted for such model year, and
- (2) California and such State adopt such standards **at least two years before commencement** of such model year (as determined by regulations of the Administrator).

Nothing in this section or in subchapter II of this chapter shall be construed as authorizing any such State to prohibit or limit, directly or indirectly, the manufacture or sale of a new motor vehicle or motor vehicle engine that is certified in California as meeting California standards, or to take any action of any kind to create, or have the effect of creating, a motor vehicle or motor vehicle engine different than a motor vehicle or engine certified in California under California standards (a "**third vehicle**") or otherwise create such a "third vehicle".



Specifically, Section 177 requires

Applicability

- Section 177 only provides authority to states with non-attainment plan provisions approved by EPA.
 - Most states, including NC, have had non-attainment plan provisions approved by EPA.

Identicality

- When adopting/enforcing motor vehicles emissions standards, Section 177 requires:
“... such standards are identical to the California standards for which a waiver has been granted for such model year ...”

Lead Time

- Section 177 provides:
“... California and such State adopt such standards at least two years before commencement of such model year ...”

Third Vehicle Prohibition

- Standards are either CA or Federal; states cannot cherry-pick standards



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2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035+	55%	75%	40%

Note: NC's entry year in the proposed ACT rule would be model year 2027.



ACT States

State	Beginning Model Year
California	2024
Oregon	2025
Washington	2025
New York	2025
New Jersey	2025
Massachusetts	2025
Vermont	2026





What are the biggest challenges to meeting the sales targets for MHD ZEV?

What does NC need to do to support a successful transition to zero-emission MHD vehicles in our state?

What are some potential challenges that the Department of Environmental Quality may face in developing the Advanced Clean Trucks rule?

Next Steps & Opportunities for Input

Rulemaking Tentative Timeline

Rulemaking Concept	November 2022
Draft rule and fiscal note to AQC	May 2023
Request to Proceed to Public Comment/Hearing - EMC	July 2023
Public process / Hearings	Aug. – Sept. 2023
Hearing Officer's Report to EMC / Adoption	November 2023
Potential Effective date	January 2024



Fiscal Note

- **§ 150B-19(e) of the Administrative Procedures Act (APA) states:**
“Each agency shall quantify the costs and benefits to all parties of a proposed rule to the greatest extent possible.”
- **The Fiscal Note provides a summary of these costs and benefits.**
- **For the ACT rules the costs will include: costs to manufacturers; fuel cost; infrastructure; maintenance; midlife costs; and other costs.**
- **Benefits from emission reductions comprise of avoided premature deaths, avoided hospitalizations for cardiovascular illness, avoided hospitalizations for respiratory illness, and avoided Emergency Room visits.**

Next Steps

- **Outreach process, including collaboration with:**
 - Local governments
 - Environmental justice organizations
 - Underserved communities
 - Vehicle manufacturers
 - Motor fleet owners
 - Electric utilities
 - NC Utilities Commission
 - Public health experts
 - Environmental organizations
 - Other interested stakeholders
- **Technical analysis**
- **Draft Rule Text Development**
- **Fiscal analysis**



Outreach Timeline

- **Information Session** – Jan. 9, 2023, from 3-4 p.m. via WebEx
- **Charlotte Stakeholder Meeting*** — Jan. 13, 2023, from 9-11 a.m.
- **Burlington Stakeholder Meeting*** — Jan. 23, 2023, from 4-6 p.m.
Live Spanish Interpretation Available
- **Pembroke Stakeholder Meeting*** — Jan. 25, 2023, from 1-3 p.m.
- **Stakeholder Input Webinar*** — Feb. 1, 2023, from 2-4 p.m. & 6-8 p.m. via WebEx. *Live Spanish Interpretation Available*
- **Final Stakeholder Webinar** — Feb. 21, 2023, from 1-2:30 p.m. via WebEx.

* Stakeholder meetings require registration. Learn more about outreach participation at deq.nc.gov/ACT.





How can the Department of Environmental Quality improve engagement with stakeholders, including Environmental Justice communities, during this process?



What other topics should the Department of Environmental Quality consider in the development of the Advanced Clean Trucks program that were not covered in the presentations today?

ACT Key Points

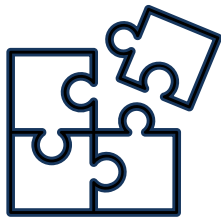
Rule applies to:

- Medium- and Heavy-Duty Manufacturers to meet sales targets
- Sales targets by vehicle type to increase each year
- Sales targets begin with model year 2027 if NC adopts rule by January 2024

Rule does not apply to:

- Fleet owners or operators
- Individual owners or operators
- Transit buses
- Agricultural or construction vehicles

Whole of Government Approach:



- Accelerate transition to clean energy economy
- Protect public health and the environment
- Advance environmental justice and equity
- Create good jobs and opportunities for all
- State Motor Fleet ZEV Transition
- Environmental Stewardship Initiative



Your Voice Matters

Today's slides to be posted on our website:

www.deq.nc.gov/ACT

Send us a comment via email or phone:

Email: daq.publiccomments@ncdenr.gov

Voice mail: 919-707-8726



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Additional Resources

Other State ACT information:

California - <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks>

Oregon - <https://www.oregon.gov/deq/rulemaking/Pages/ctr2021.aspx>

Washington - <https://ecology.wa.gov/Air-Climate/Air-quality/Vehicle-emissions/Clean-cars>

New York - <https://newyorktruckstop.com/2022/01/10/new-yorks-advanced-clean-truck-rule/>

New Jersey - <https://dep.nj.gov/stopthesoot/advanced-clean-trucks-rule-fleet-reporting/>

Massachusetts - <https://www.mass.gov/regulations/310-CMR-700-air-pollution-control>

Vermont - <https://dec.vermont.gov/air-quality/laws/recent-regs>

