



# NC Advanced Clean Trucks – Information Webinar

January 9, 2023  
Division of Air Quality



# *Agenda*

- **Executive Order 271 & Advanced Clean Trucks**
- **Reducing Greenhouse Gases from Transportation Sector**
- **NO<sub>x</sub> and PM<sub>2.5</sub> Emissions from MHD Vehicles**
- **Clean Air Act Provisions**
- **Next Steps / Timeline**



# 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 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.



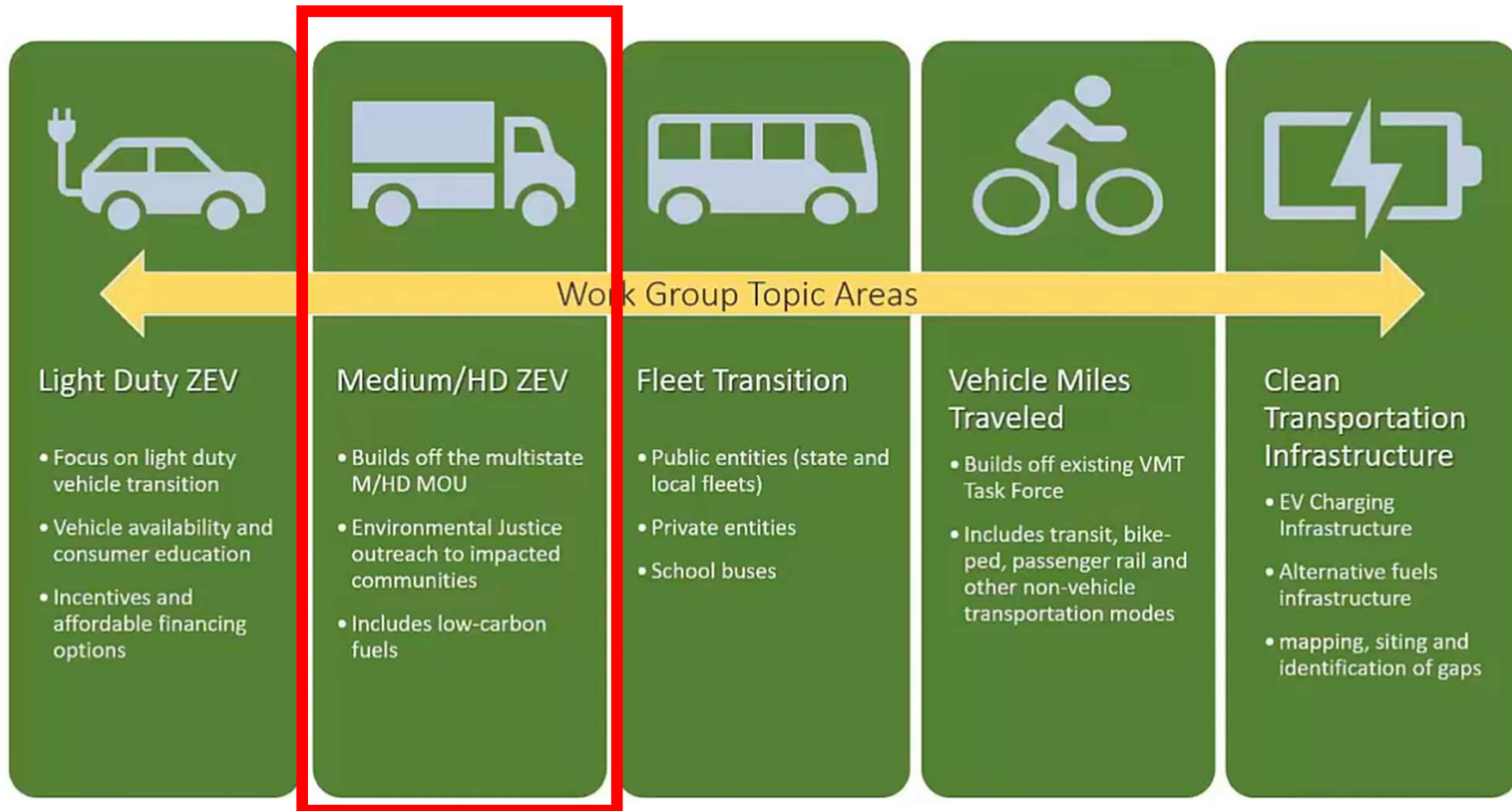
## *Executive Order 271 – Other Sections*

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**





# NC Clean Transportation Plan



## *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<sub>x</sub>, PM, and SO<sub>2</sub> emissions from this source sector over time.**

**The regulation has two components:**

- Zero-emission truck sales
- Company and fleet reporting



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

## 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%

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



# *Reducing Emissions*

## *Through Funding Opportunities*



### **Volkswagen Settlement**

- Phase 1: ~\$30,000,000 awarded
- Phase 2: ~\$63,000,000 (in process)

### **State Energy Office**

- Infrastructure and Investment Jobs Act and Inflation Reduction Act opportunities

### **Diesel Emission Reduction Act (DERA)**

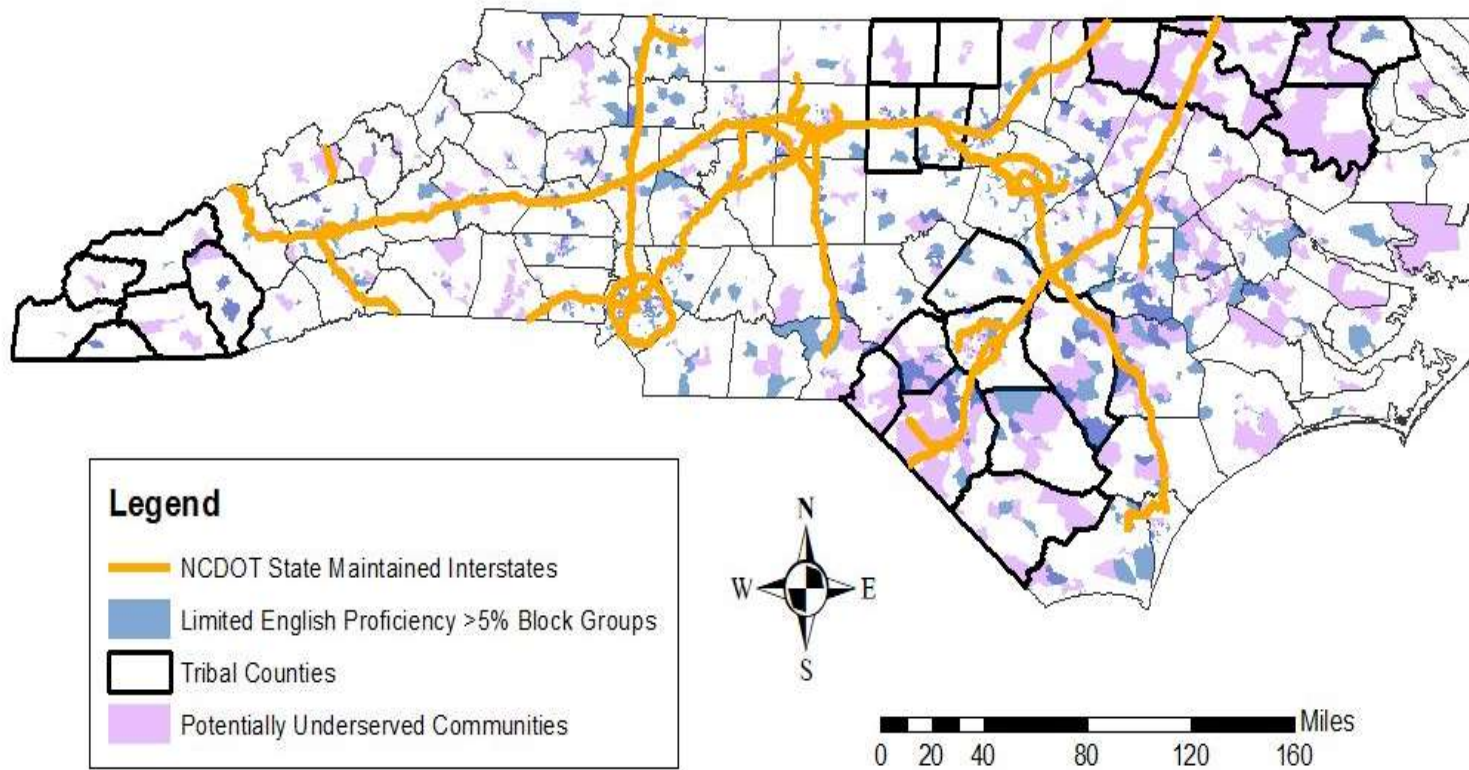
- EPA funding for DAQ's Mobile Sources Emissions Reductions Grants. Applications open every fall.

### **National Electric Vehicle Infrastructure (NEVI) Plan**

- NC DOT submitted plan August 2022
- \$109 million expected from Bipartisan Infrastructure Law



# NC Environmental Justice Communities



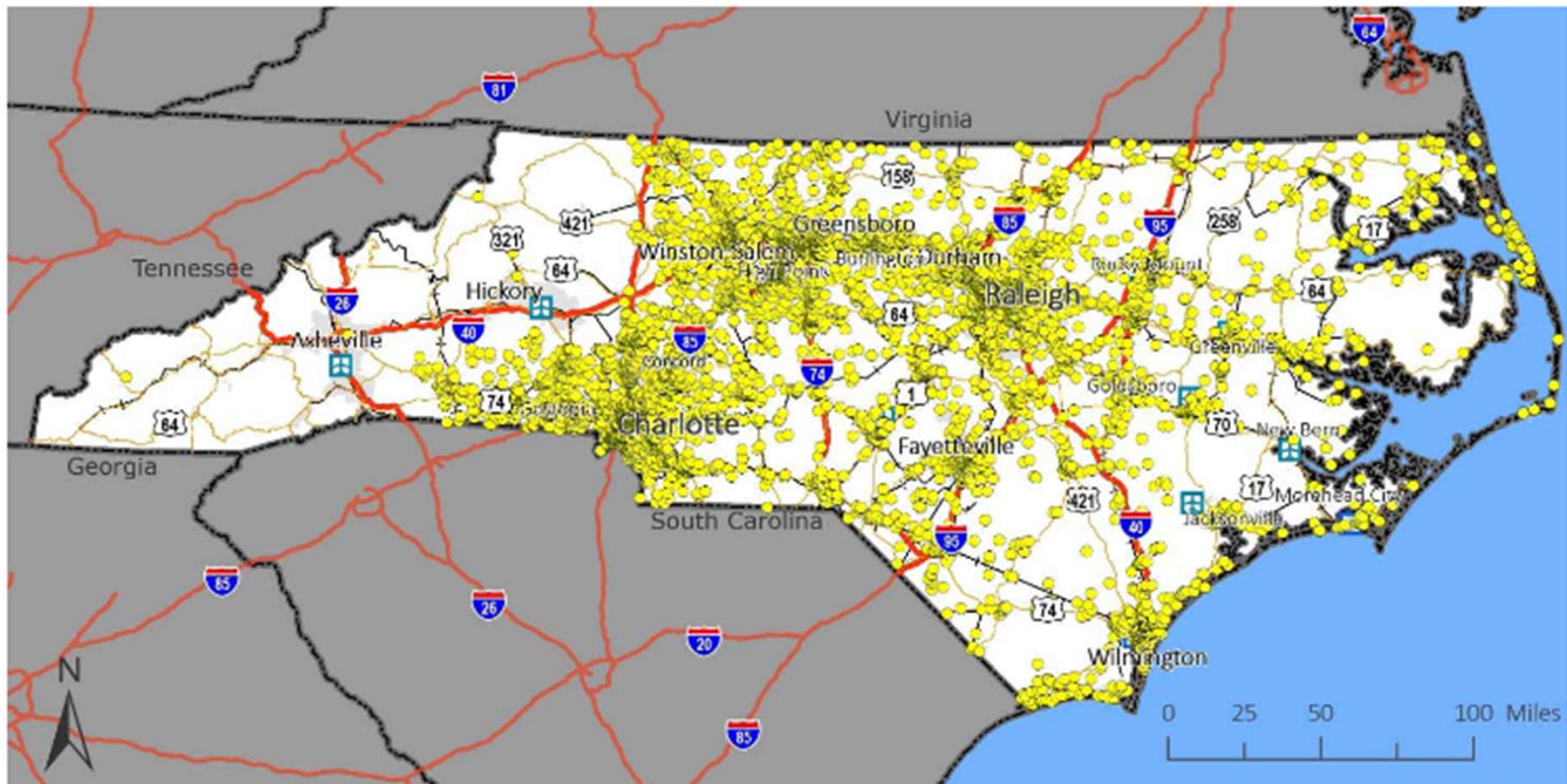


# Average Annual Daily Truck Traffic, 2014



Source: North Carolina Statewide Multimodal Freight Plan, NC DOT

# Manufacturing

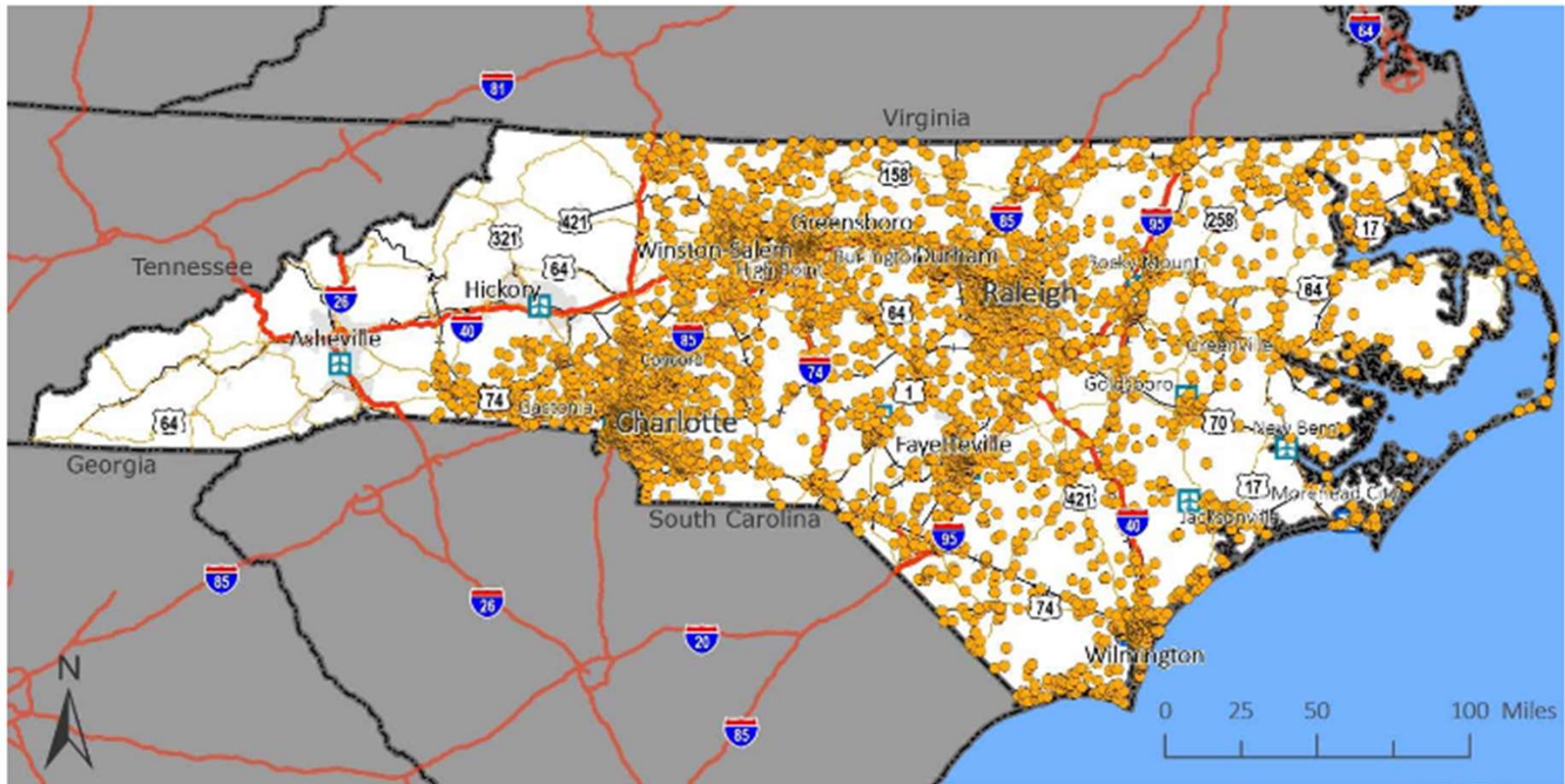


Manufacturing Firms in North Carolina

- Manufacturing
- Interstate Highway
- US Highway



# Transportation/Warehousing



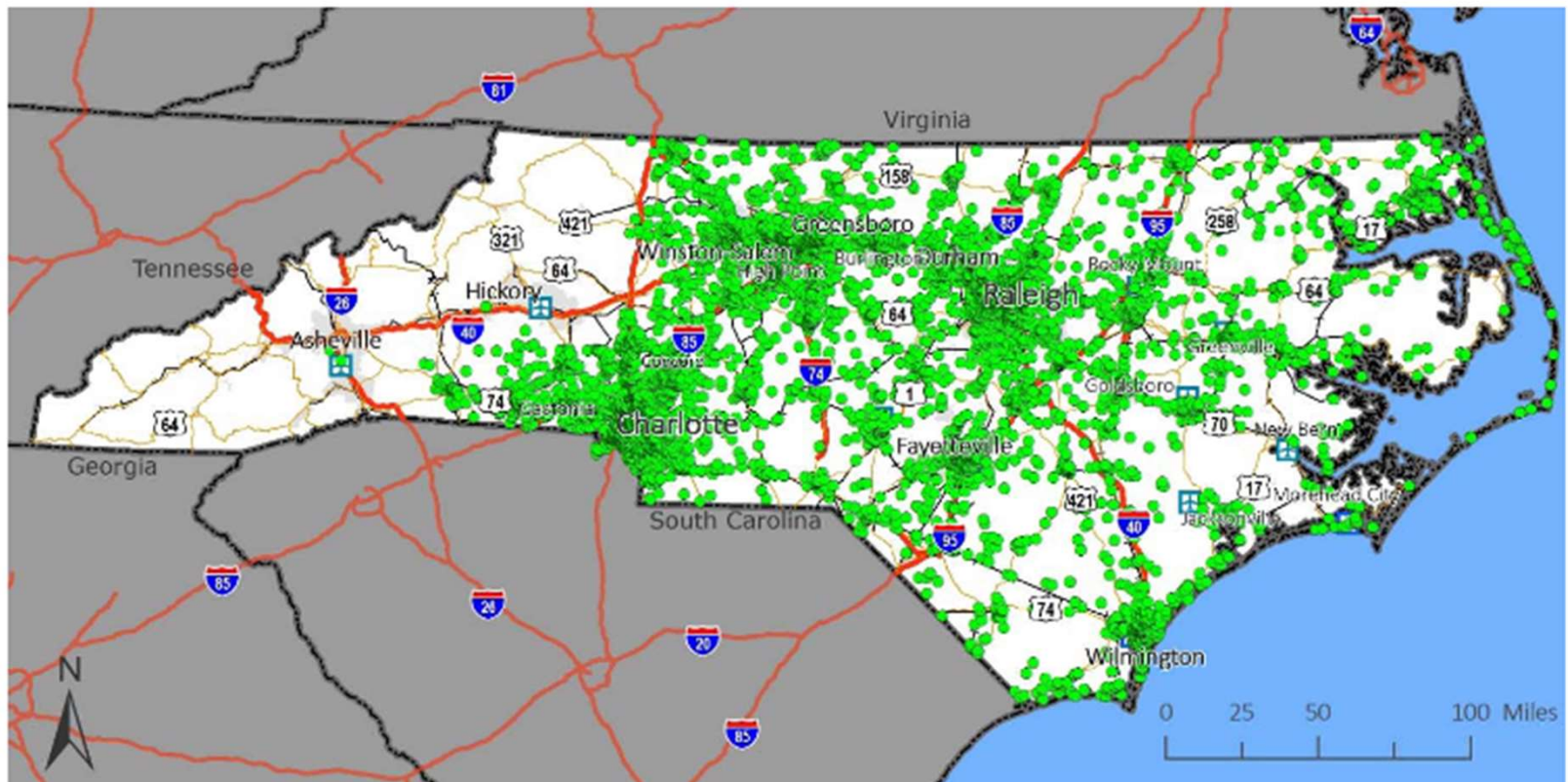
Transportation and Warehousing Firms in North Carolina

- Transportation/Warehousing
- Interstate Highway
- US Highway





# Wholesale Trade



Wholesale Trade Firms in North Carolina

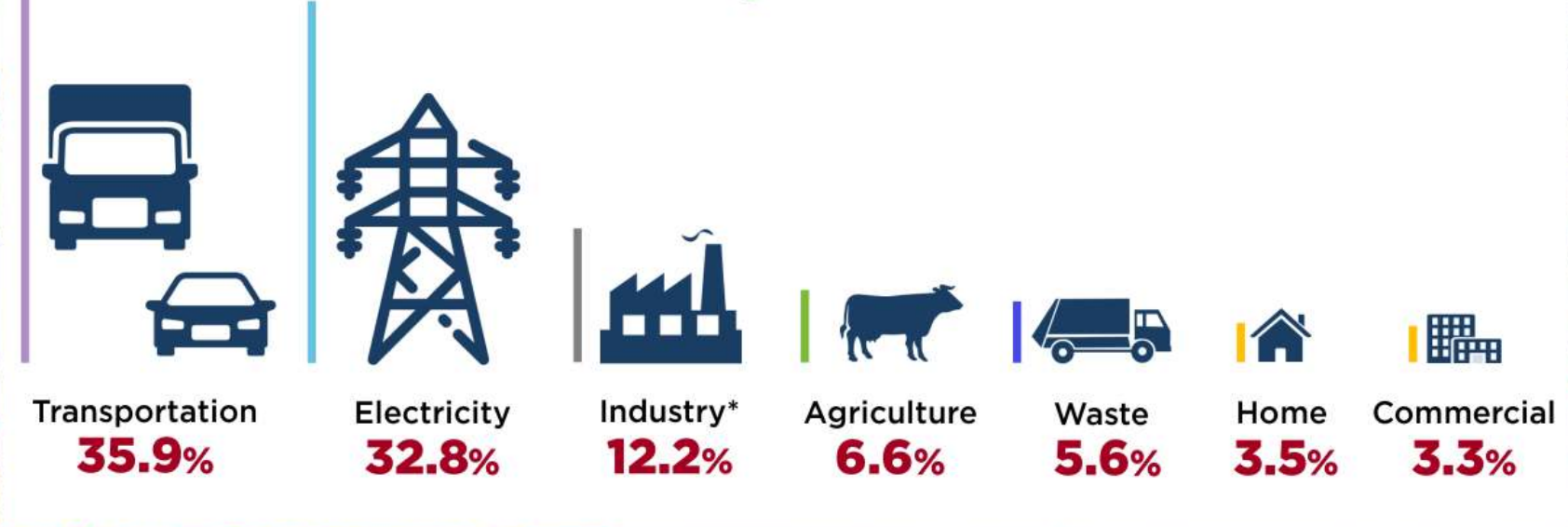
- Wholesale Trade
- Interstate Highway
- US Highway



# *Role of Transportation Sector in the GHG Emissions Inventory*



## Gross GHG Emissions by Economic Sector in 2018



### 2018 Gross GHG Emissions

**159.5** million metric tons of CO<sub>2</sub>e

CO<sub>2</sub> emissions from fossil fuel combustion:

**81.3%**

of total gross emissions

CO<sub>2</sub> 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

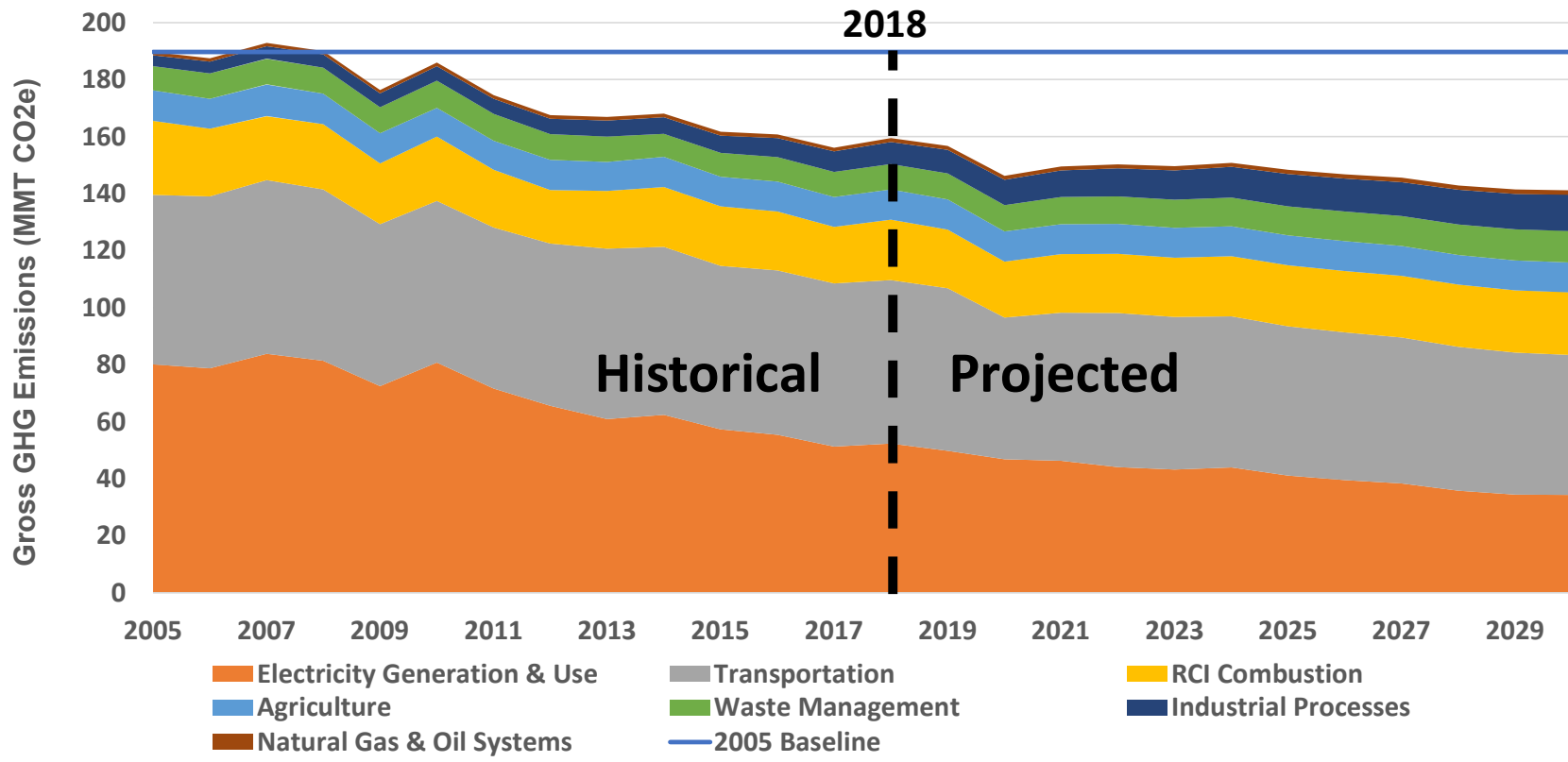
### Statewide Net GHG Reductions (2005-2018)

↓ **23.0%**

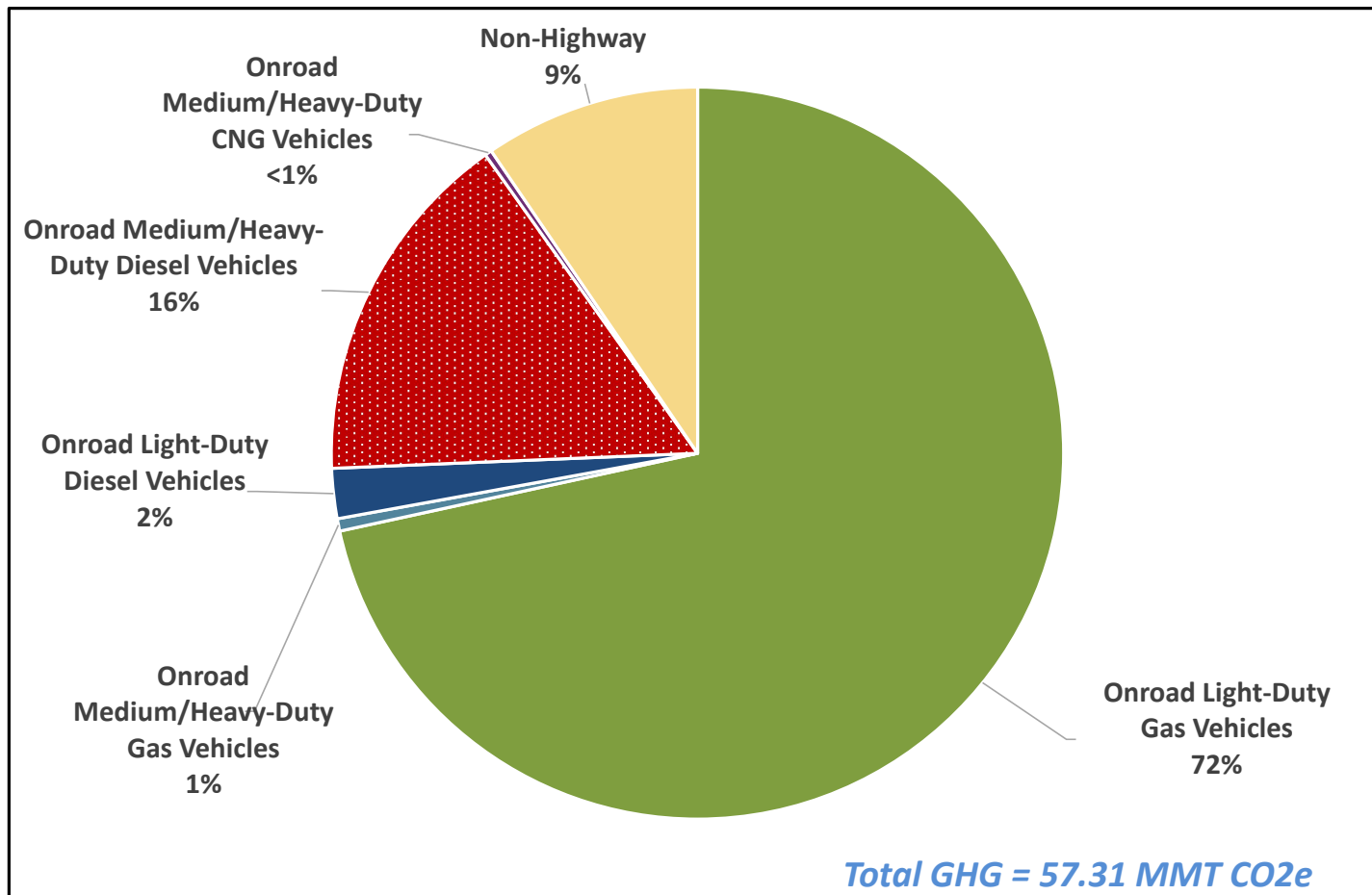
For full report, see [deq.nc.gov/GHGInventory](http://deq.nc.gov/GHGInventory)

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

# NC Gross GHG Emissions Trends by Source Sector, 2005-2030



## Distribution of 2018 North Carolina Transportation GHG Emissions



# *Importance of Transportation Sector in the $PM_{2.5}$ Emissions Profile*



## *Particulate Matter from MHD vehicles*

- 32% of NC's on-road fine particle pollution (PM<sub>2.5</sub>) emissions come from MHD vehicles.
- NC is currently attaining PM<sub>2.5</sub> ambient standards statewide.
- EPA proposed a lower (more stringent) PM<sub>2.5</sub> standards on 1/6/23.
  - Annual standard - Range of 9-10 ug/m<sup>3</sup>
- How would lower PM<sub>2.5</sub> standards impact NC?







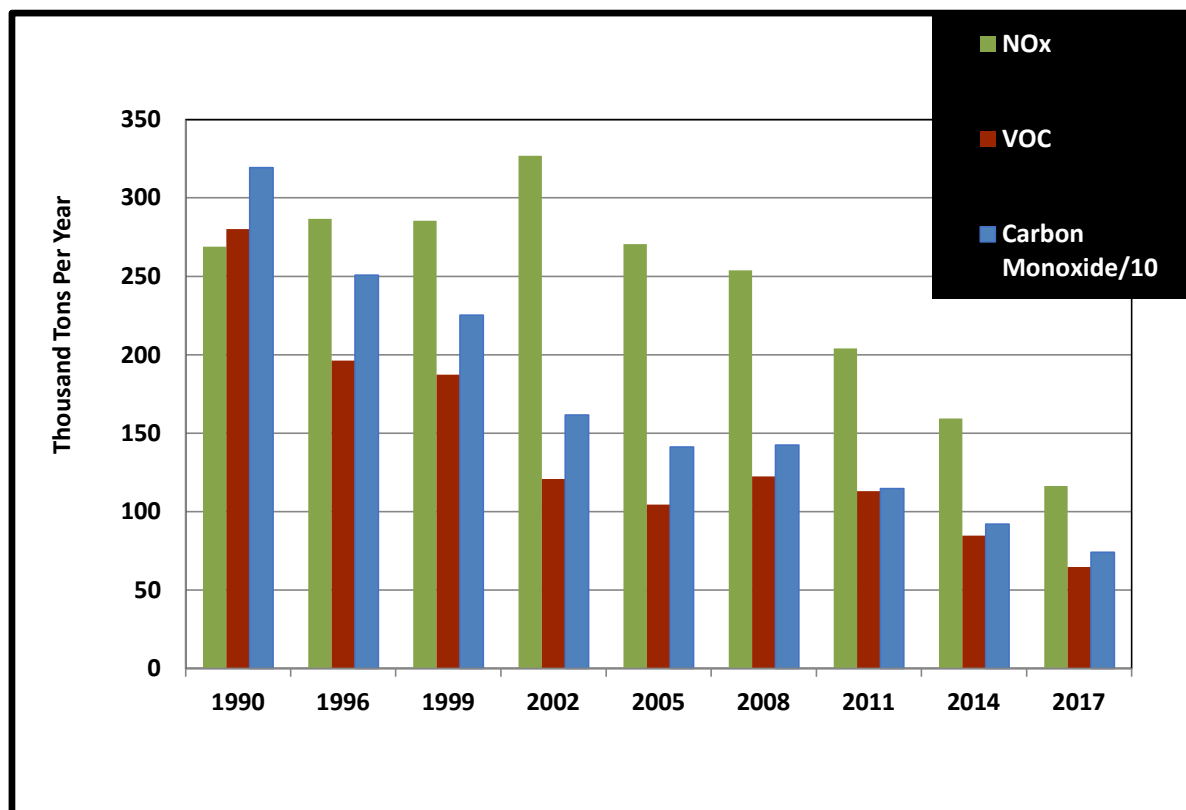
# ***Importance of Transportation Sector in the $\text{NO}_x$ Emissions Profile***

## *Nitrogen Oxide (NO<sub>x</sub>) from MHD vehicles*

- **26% of NC's on-road nitrogen oxide (NO<sub>x</sub>) emissions come from MHD vehicles.**
- **NO<sub>x</sub> emissions lead to the formation of ground-level ozone.**
- **Ozone is a criteria pollutant with national standards.**
  - NC is currently in attainment for ozone ambient standards statewide.

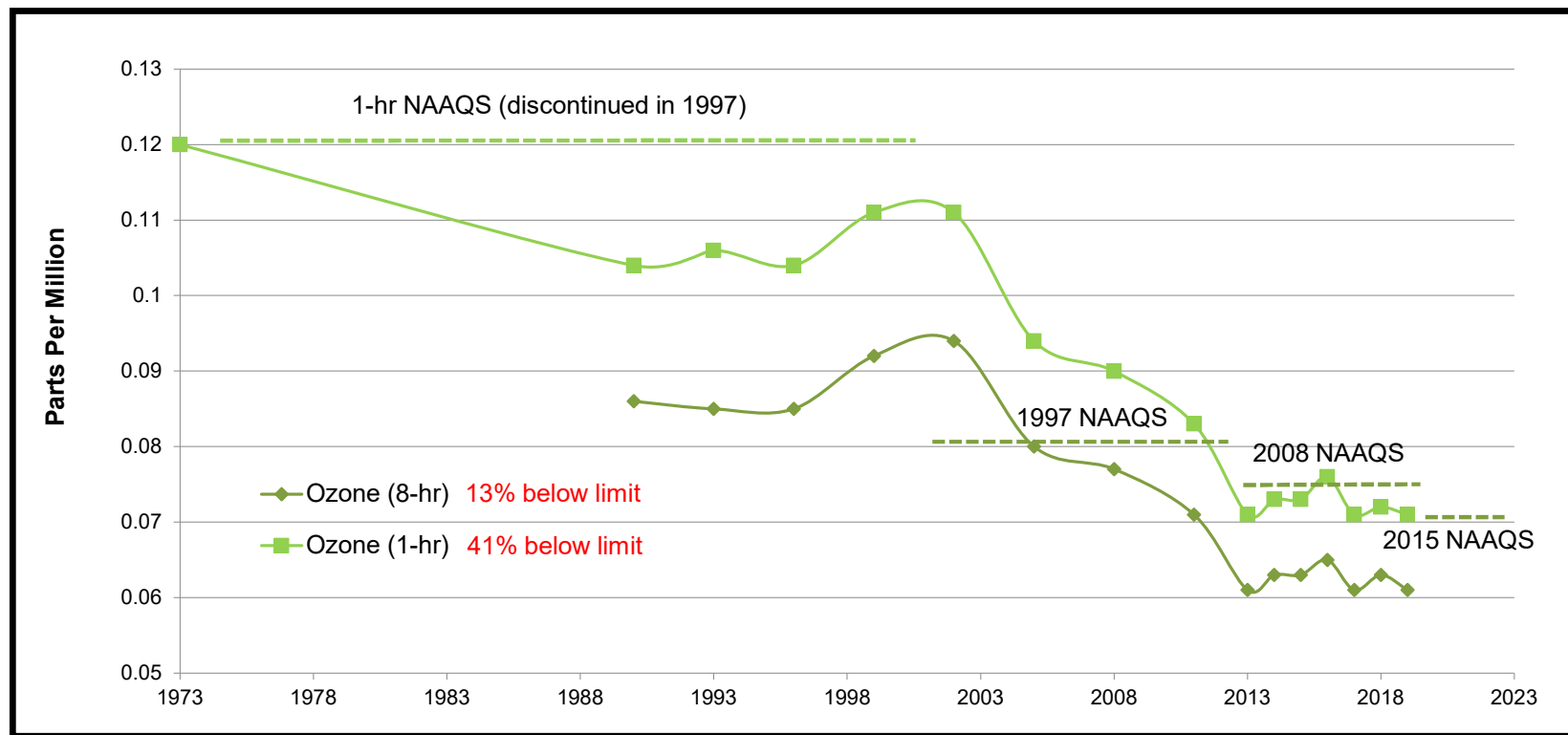


## On-road Mobile Source Emissions Reductions\*



\* The NOx emissions spike in 2002 is attributed to EPA adjusting the onroad emissions model.  
\*\* CO emissions represented in this chart were divided by a factor of 10 for comparability purposes.

## Statewide Average Ozone Concentrations



***Clean Air Act Provisions***  
***ACT Participants***  
***Next Steps***

# *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 CA'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 CA 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



## *ACT States*

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



## *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**



# *Rulemaking Tentative Timeline*

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



# *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.

**Pembroke Stakeholder Meeting\*** — Jan. 25, 2023, from 1-3 p.m.

**Stakeholder Input Webinar\*** — Feb. 1, 2023, from 2-4 p.m. via WebEx.

**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](https://deq.nc.gov/ACT).



## *Your Voice Matters*

Today's recording and slides to be posted on our website:

**[www.nc.deq.gov/ACT](http://www.nc.deq.gov/ACT)**

Can't make a meeting? Send us a comment via email or phone:

**Email:** [daq.publiccomments@ncdenr.gov](mailto:daq.publiccomments@ncdenr.gov)

**Voice mail:** 919-707-8726





# Contact information

## Questions about outreach/public information:

### **Robin Barrows**

Allied Programs Branch Supervisor  
NC Division of Air Quality  
[robin.barrows@ncdenr.gov](mailto:robin.barrows@ncdenr.gov)  
919-707-8445

### **Shawn Taylor**

Public Information Officer  
NC Division of Air Quality  
[shawn.taylor@ncdenr.gov](mailto:shawn.taylor@ncdenr.gov)  
919-707-8446

## Questions about rules development:

### **Randy Strait**

Planning Section Chief  
NC Division of Air Quality  
[randy.strait@ncdenr.gov](mailto:randy.strait@ncdenr.gov)  
919-707-8721

### **Mike Abraczinskas, EIT, CPM**

Director  
NC Division of Air Quality  
[Michael.abraczinskas@ncdenr.gov](mailto:Michael.abraczinskas@ncdenr.gov)  
919-707-8447



*Questions?*

