

# Commercial Vehicle Enforcement Emissions Survey

**Heavy-Duty Diesel Vehicle Inspection and Maintenance  
Working Group Meeting  
November 19, 2020**



**North Central Texas  
Council of Governments**

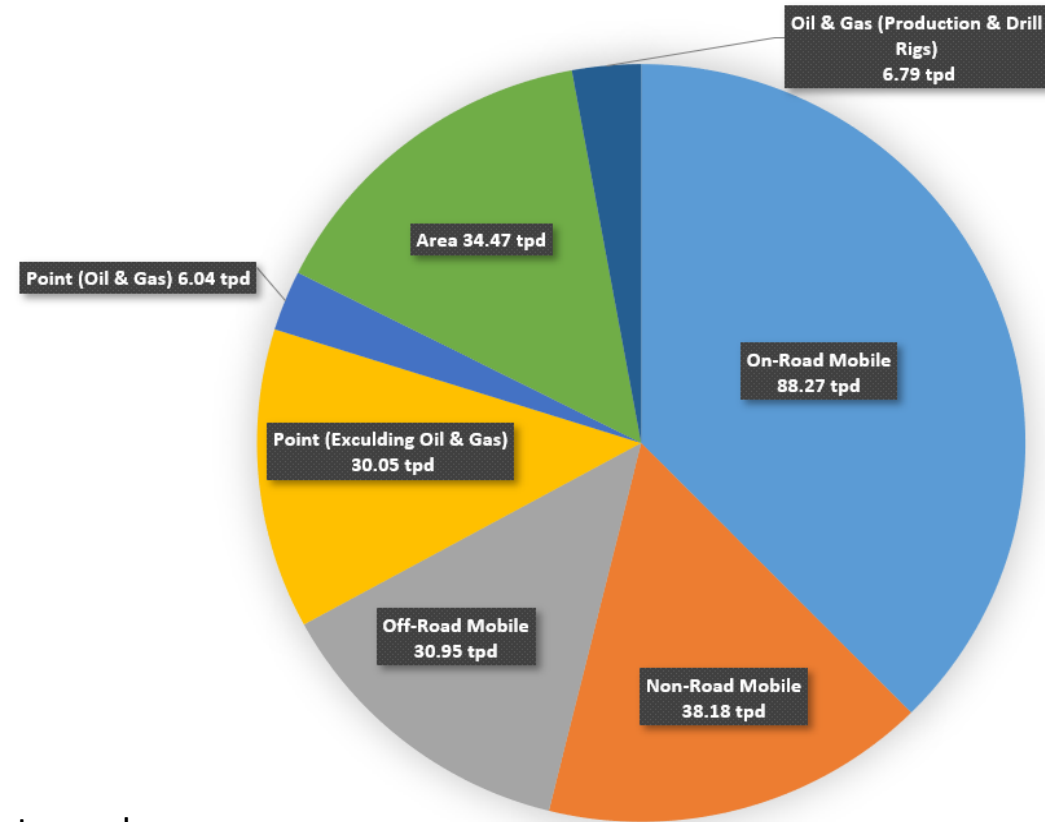
**Anthony Moffa  
Air Quality Planner**

# Commercial Vehicle Enforcement Emissions Survey

- In the State of Texas, diesel vehicles are not required to have their emissions tested annually as part of the inspection and maintenance (I/M) program.
- The largest portion – a combined 67% - of NO<sub>x</sub> emissions in 2020 are expected to come from mobile sources.
- Therefore, air quality initiatives in the region are focused on reducing pollution from that sector, especially from over-the-road cars and trucks.

## Motivation

Total Nitrogen Oxides (NO<sub>x</sub>) = 234.75 tons per day (tpd)

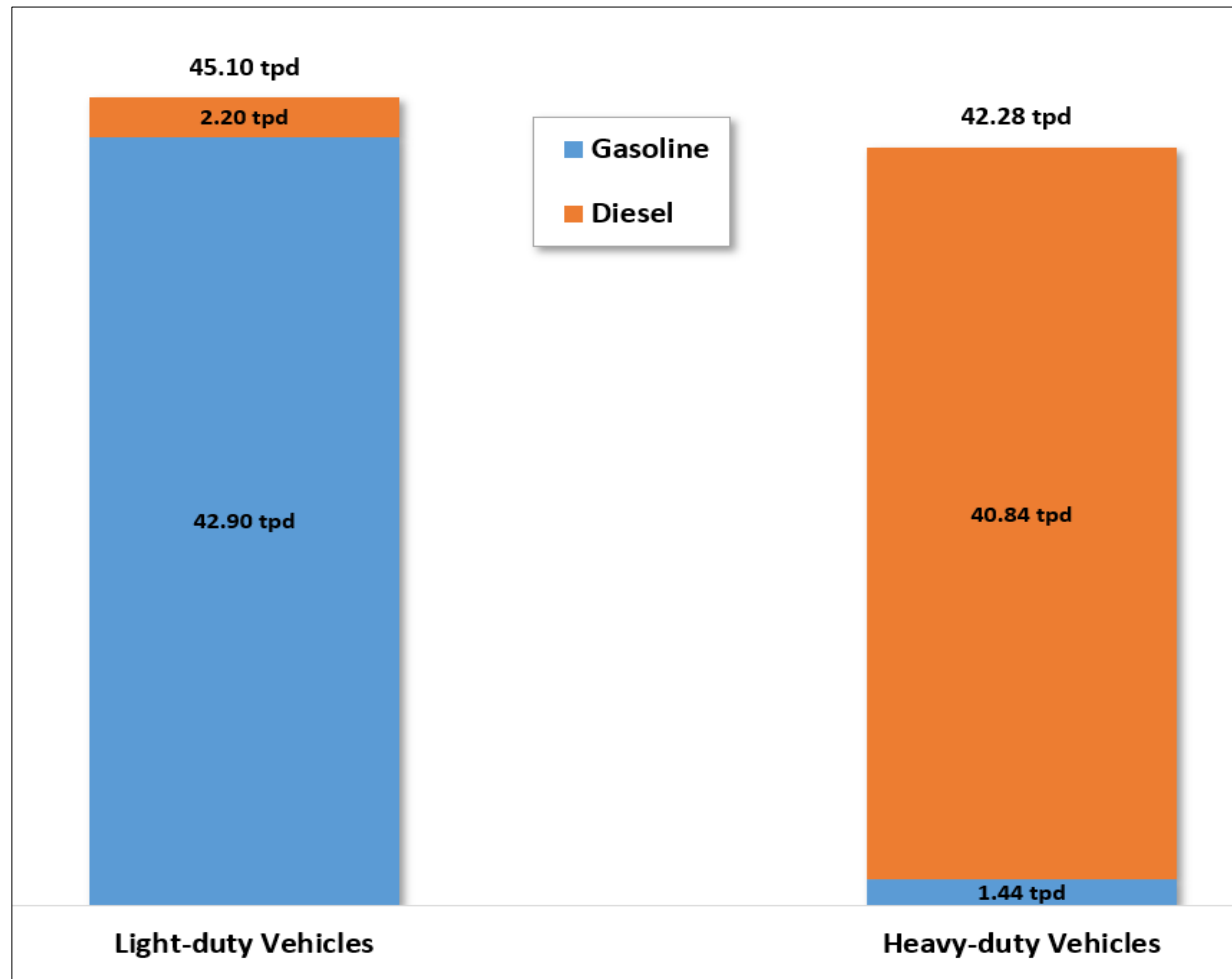


tpd = tons per day

Source: DFW Area Link-Based On-road Emission Inventories with MOVES2014b for 2012 and 2020

# Commercial Vehicle Enforcement Emissions Survey

## Motivation Continued



- Heavy-duty diesels account for roughly half of tons per day of NOx in the region despite accounting for a comparatively small percentage of on-road vehicles.

tpd = tons per day

Light-duty Vehicles = Passenger Cars, Passenger Trucks and Light Commercial Trucks

Heavy-duty Vehicles = Buses (Intercity, Transit and School), Refuse Trucks, Single-Unit Trucks and Combination Trucks

Motorcycles and Motor homes are excluded

Source: DFW Area Link-Based On-road Emission Inventories with MOVES2014b for 2012 and 2020

# Commercial Vehicle Enforcement Emissions Survey

## Survey Methodology

Air Quality staff worked with Commercial Vehicle Enforcement (CVE) officers during CVE events to collect data on truck emissions-related items; trucks chosen randomly by CVE officers for safety inspections with NCTCOG staff on-site to perform data collection.

Data collection consisted of visual inspections and driver questioning:

- Types of trucks – Make, model, year
- Location of roadside inspection
- Emissions device tampering
- Location of exhaust exit stack
- Presence of emissions Control Label on Engine
- Presence of SmartWay verified technologies
- Typical operating area
- Truck fleet size



# Commercial Vehicle Enforcement Emissions Survey

## Survey Methodology Continued

### Law Enforcement

- Trucks pulled into a large staging area off the highway by law enforcement
- Trucks were weighed to ensure compliance with axle counts and permits
- Safety items checked
  - Tires, bushings, brakes, lights etc.

### NCTCOG Survey

- Trucks visually inspected for presence of emissions equipment such as:
  - Selective catalyst reduction (SCR)
  - Exhaust gas recirculation (EGR)
  - Diesel particulate filter (DPF)
  - Check engine light illumination (CEL)
    - CEL codes were not pulled from vehicle



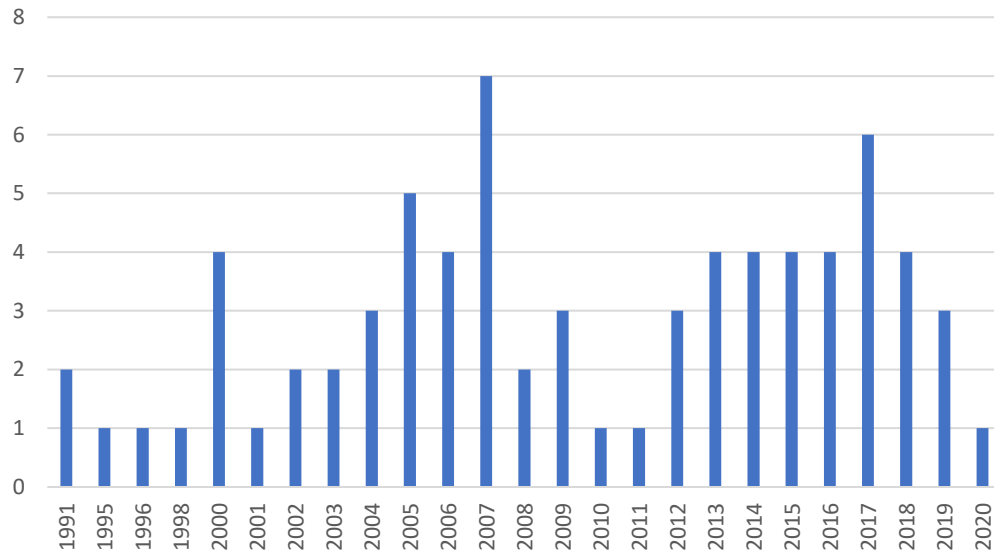
# Commercial Vehicle Enforcement Emissions Survey

## Survey Results

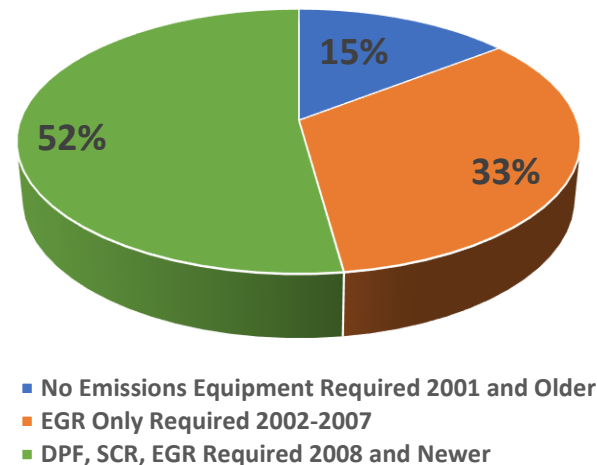
- 72 HD trucks were surveyed
- One truck had visible emissions tampering
  - EGR block-off plate
- One truck had an illuminated CEL

- 67% of the trucks were short haul, only operating in the region
- Over half of the trucks were model year 2007 and newer

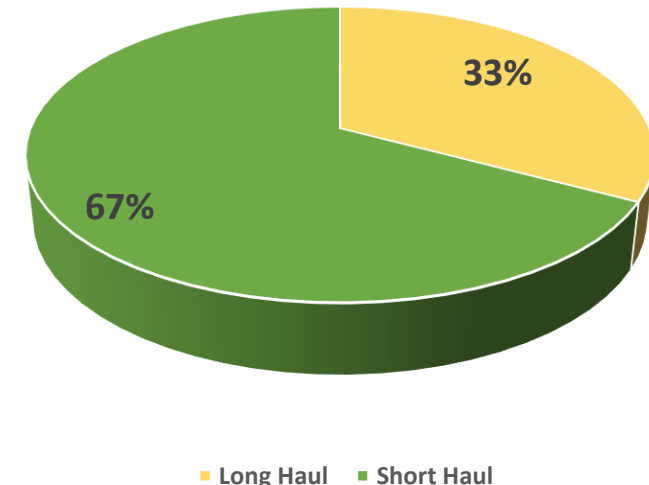
Trucks by Model Year



Emissions Equipment Requirements By Model Year



Typical Operation Area





# Commercial Vehicle Enforcement Emissions Survey

## Future Project

- NCTCOG is working on a pilot project to analyze tailpipe emissions from heavy-duty trucks utilizing the same CVE events as before.
- Through the use of remote sensing or similar technologies, these trucks would be screened during a real-world scenario combining their weight measurement with their exhaust gas readings to aid in emissions factor modeling and inventory.



**Questions?**

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