HEAVY-DUTY DIESEL INSPECTION AND MAINTENANCE PILOT – PHASE 2

Surface Transportation Technical Committee

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North Central Texas Council of Governments

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Background

Approved by Regional Transportation Council and Used Congestion Mitigation and Air Quality Improvement Program Funding

Investigate a Heavy-Duty Diesel Vehicle (HDDV) Inspection and Maintenance (I/M) Program for the Dallas-Fort Worth (DFW) Region

Characterize Nitrogen Oxides (NO_X) Emissions from HDDVs Utilizing Various Technologies

Assess Data, Validity, and Implications for HDDV I/M or Screening Programs

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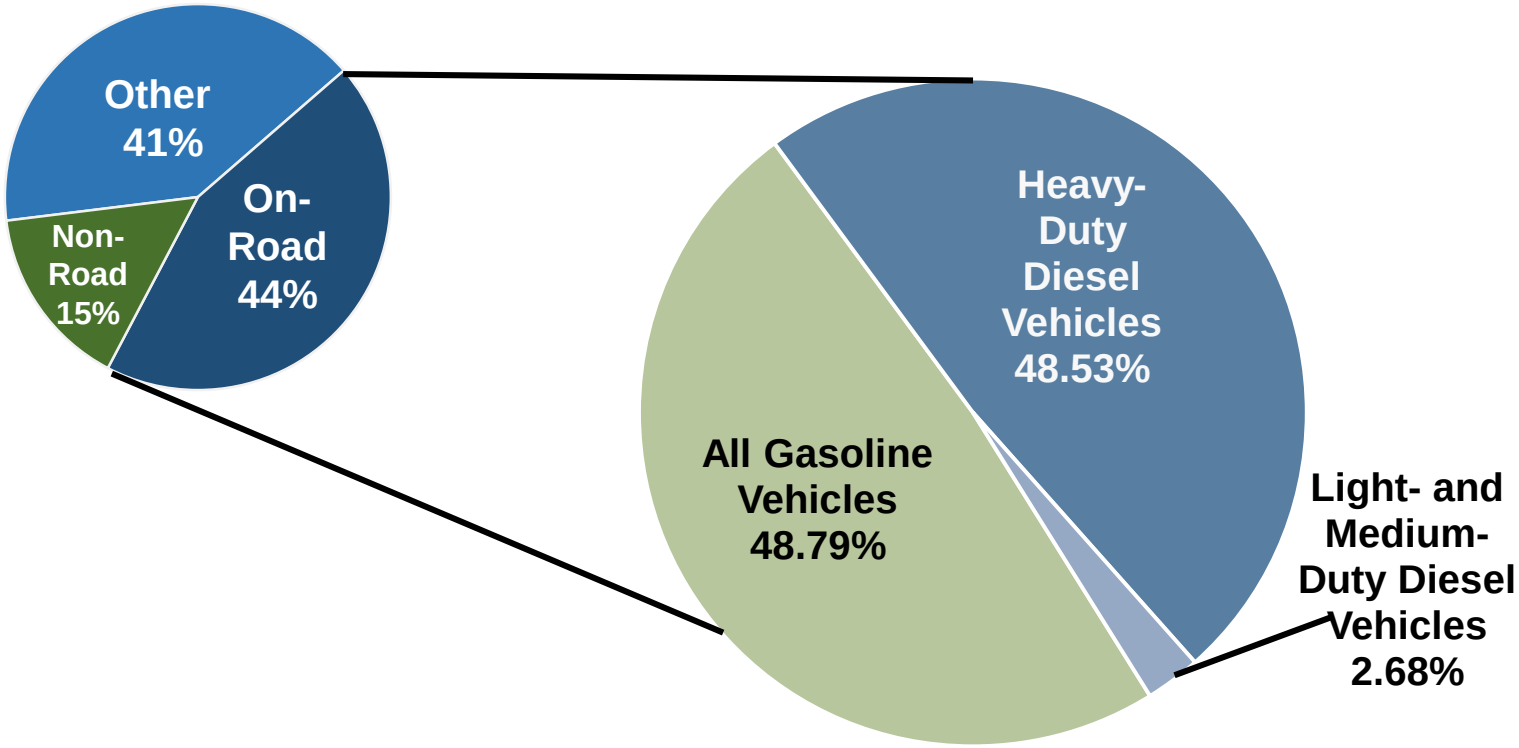
Project Purpose

Currently No Emissions Testing for Diesel Vehicles in Texas



Light-Duty Vehicles ≤ 8,500 lbs gross vehicle weight rating (GVWR)
Medium-Duty Vehicles = 8,501 – 14,000 lbs GVWR
Heavy-Duty Vehicles ≥ 14,001 lbs GVWR

2017 On-Road NOx Emissions Inventory
On-Road Emissions = 130.77 tons per day (tpd) NOx
Source: Texas Commission on Environmental Quality (TCEQ)

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Partners

North Central Texas Council of Governments (NCTCOG)

Texas A&M Transportation Institute (TTI)

Texas Department of Public Safety (DPS)

Texas Department of Transportation (TxDOT)

University of Denver (DU)

OHMS Overview

Three Major Components:

- **Exhaust Collection**
- **Vehicle Monitoring**
- **Emissions Analysis**

Photo Source: TTI

OHMS = On-Road Heavy-Duty Measurement System

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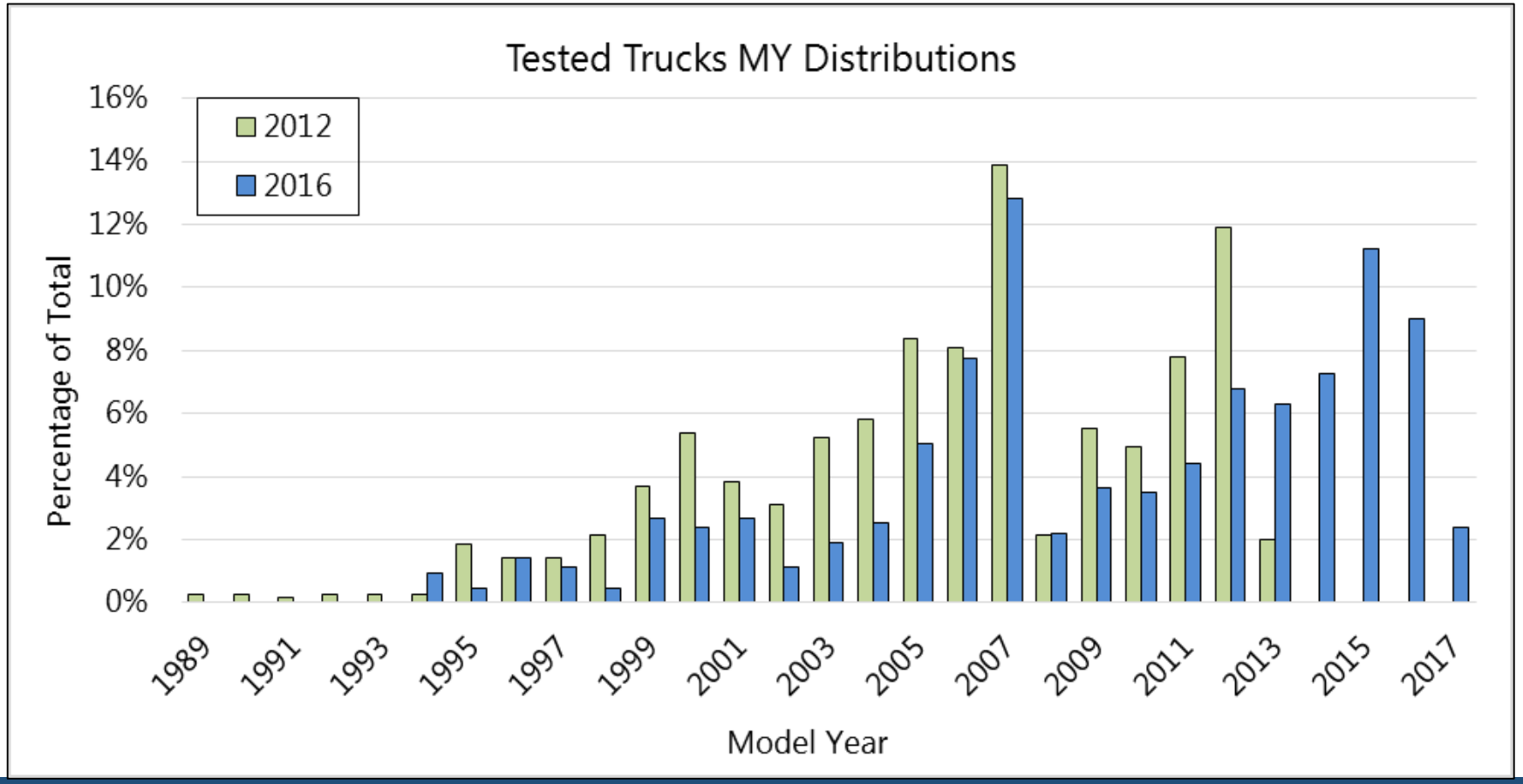
Field Study Results

Fleet Analysis:

Model Year 2007 Trucks Peaked in 2012 and 2016



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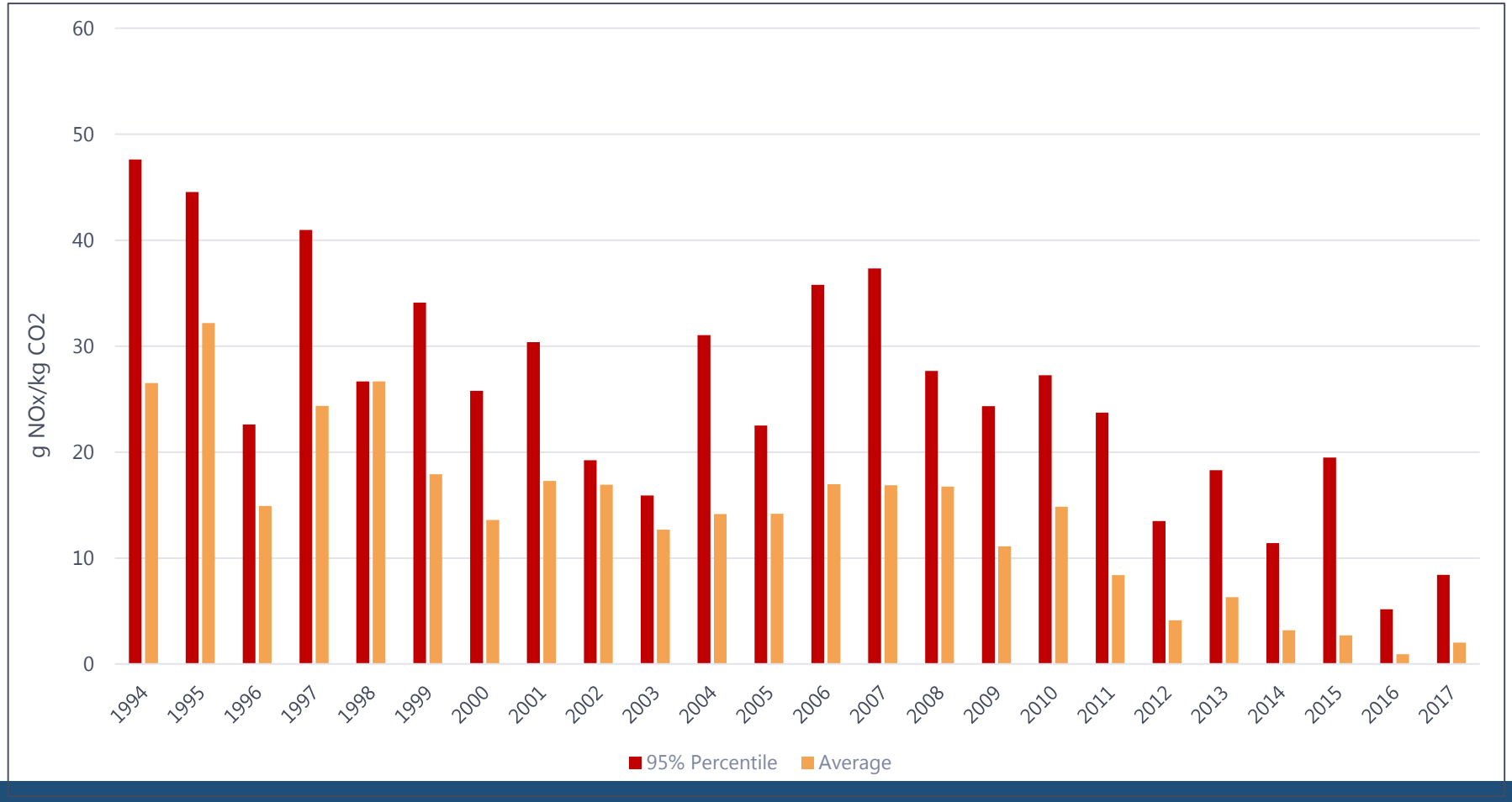
Field Study Results

NOx Results by Truck Model Year



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Potential Emissions Reductions in DFW Area

Classifying high-emitter (HE) as any truck higher than the 95th percentile within a model year (MY)

- **7.3% of vehicles accounted for 21% of total NOx emissions**
- **Potential reduction of 5.15 tons/day NOx if HE replaced with "average" vehicle from same MY**

Classifying HE as any truck higher than the 95th percentile of entire fleet

- **Potential reduction of up to 6.98 tons/day NOx possible depending on how the HE is replaced**

Potential Applications

I/M Programs

- **Clean Screening of Vehicles**
- **Identifying HE from a Fleet**

Enforcement of Emissions Reduction Devices

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Considerations and Next Steps

Further Research:

- **Low exhaust stack configurations**
- **Light-duty vehicles**
- **Truck load weights**
- **Truck speeds**

Implementation Considerations:

- **Legislative process**
- **Funding**
- **Deployment locations and enforcement**

Further Discussion:

- **Host stakeholder conference/workshop**

FOR MORE INFORMATION

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