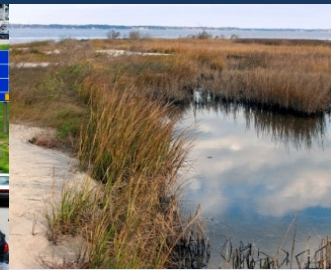


OTC Annual Meeting

June 4th, 2015

Princeton, NJ

Mobile Source Committee Update



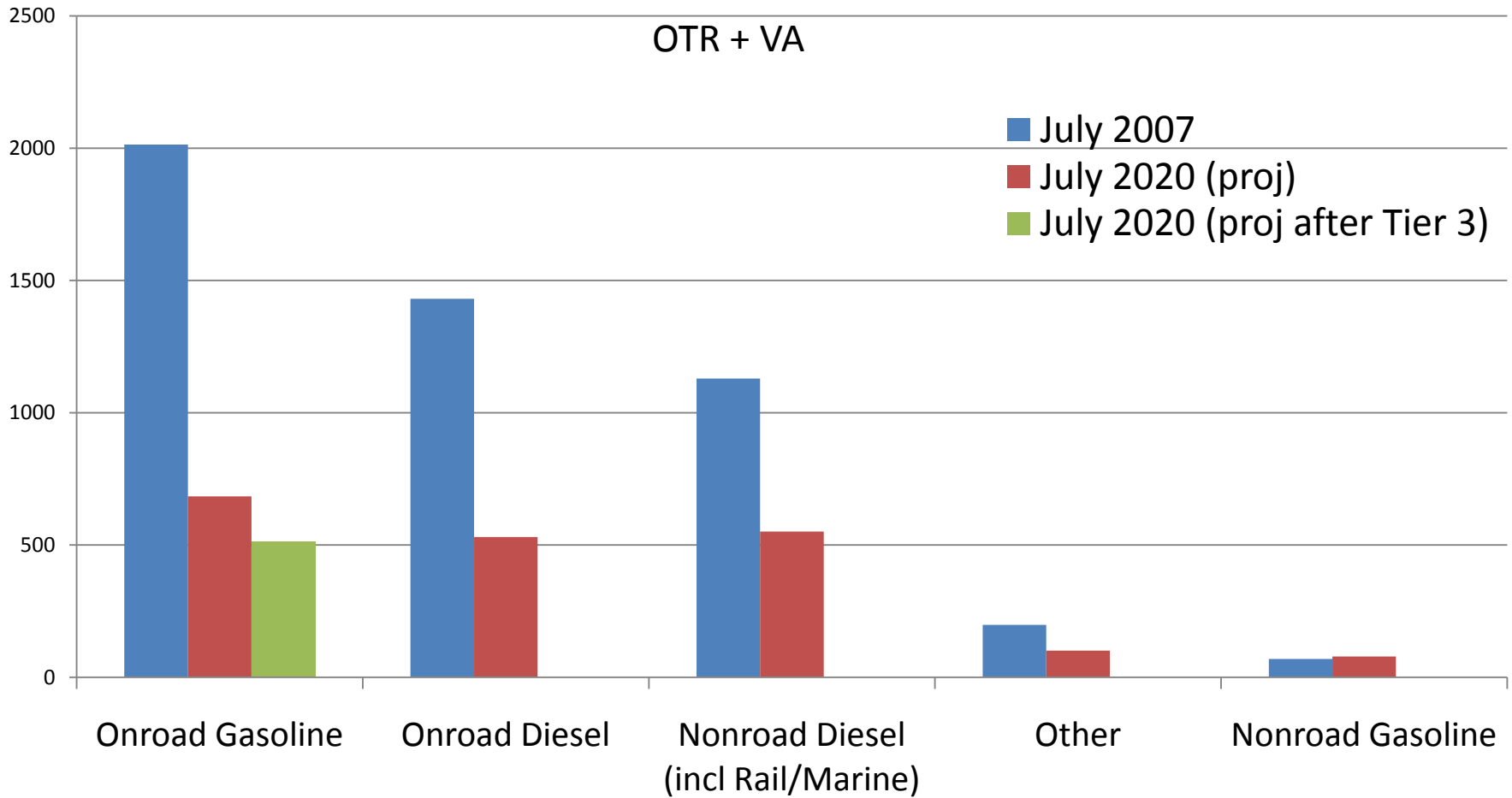
Committee Charge

- Goal: To identify potential strategies for consideration at the 2015 Fall Meeting
- Strategies Include:
 - Sectors of High Emission Reduction Potential
 - Heavy Duty Diesel Trucks
 - Passenger Vehicles
 - Movement of Goods
 - Construction Equipment
 - Pleasure craft
 - Ports & Petroleum Transfer Activities
 - Diesel I/M & SIP Credit
 - VMT Strategies
 - Additional Transportation Strategies

Average Daily July NOx Emissions

Average Daily NOx Tons (July)

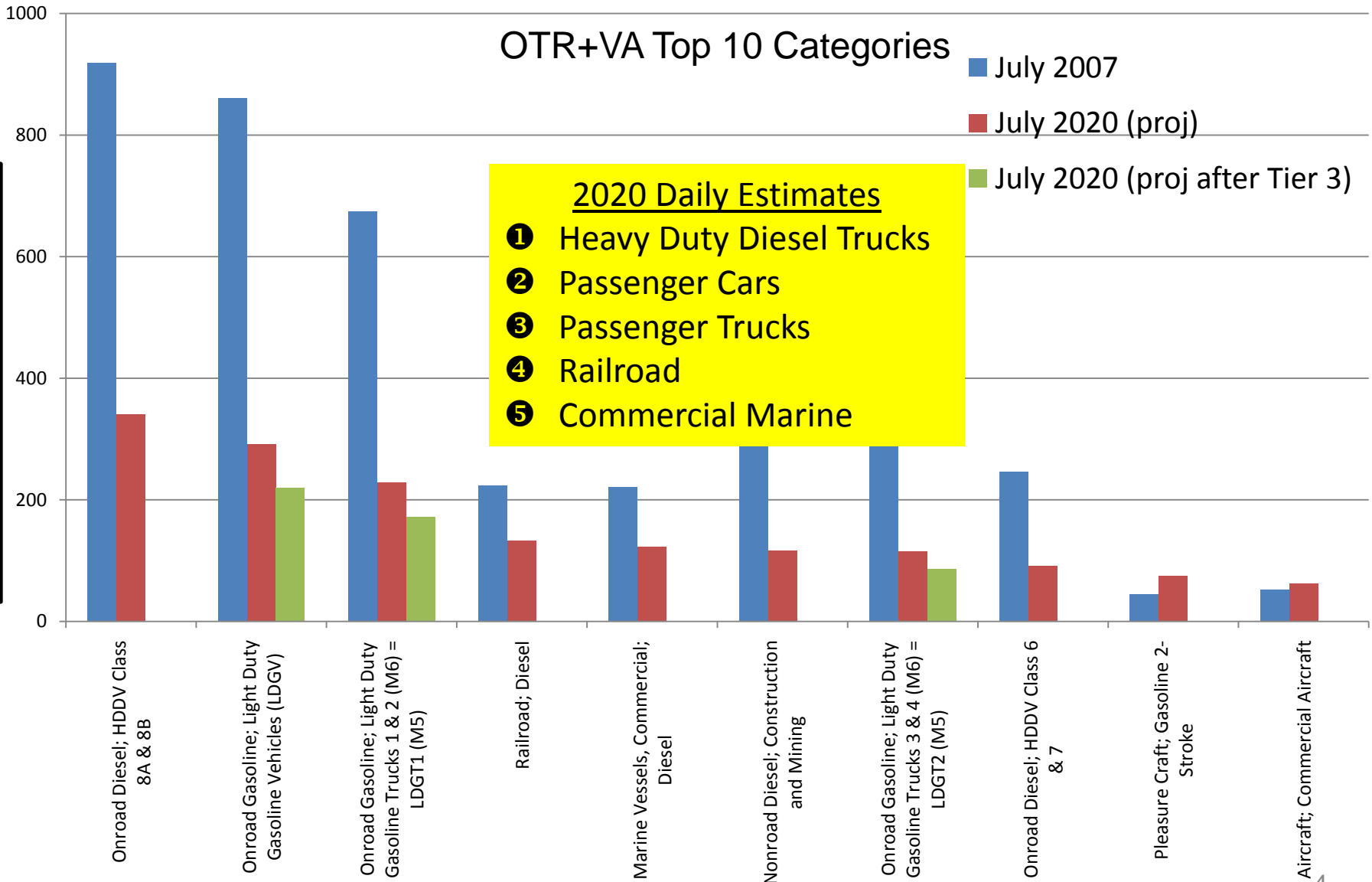
OTR + VA



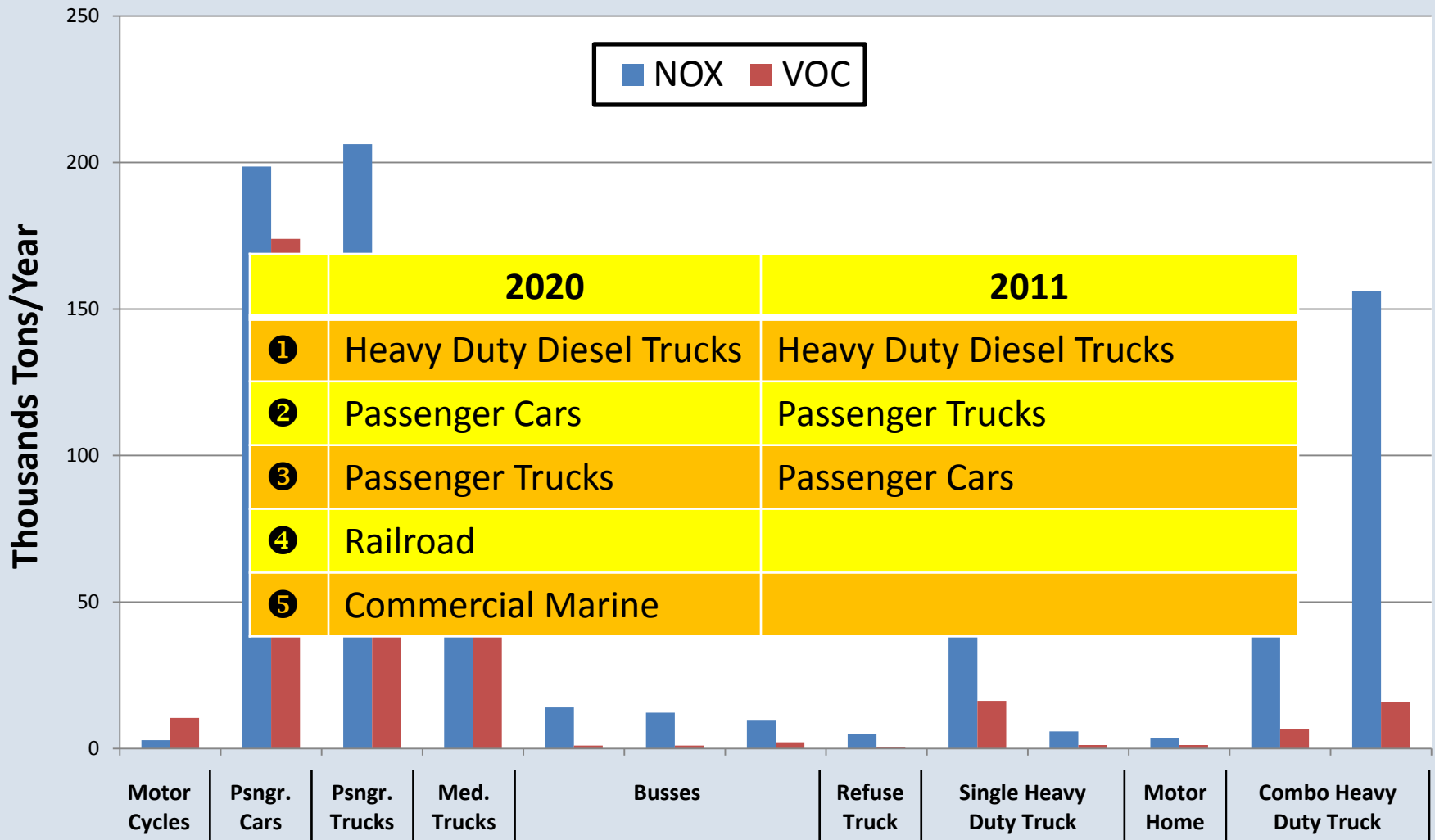
Average Daily July NOx Emissions

Average Daily NOx Tons (July)

OTR+VA Top 10 Categories



OTR+VA Onroad Mobile Inventory 2011



Aftermarket Replacement Catalytic Converter Update

- OTC requested EPA to update its existing National Program aftermarket replacement catalyst policy to be similar to the California Program in 2011.
 - Increase emission reductions
 - Improve durability
- Aftermarket Industry supportive of updated National Program.
- There is interest developing in states outside of the OTR for an updated Federal Program.
- OTC Aftermarket Workgroup is working to utilize MOVES to generate estimates of the emission reductions from an updated program.

Petroleum Transfer Activities

Workgroup looked into a variety of mechanisms for petroleum transfers (e.g. truck to train, ship to ship).

Workgroup found:

- That most of the activities that were occurring were regulated

Petroleum Transfer Operations

Transfer Between	CT	DE	DC	ME	MD	MA	NH	NJ	NY	PA	RI	VT	VA
Truck & Train	✓	✓			✓	✗		✓		✓	✓		
Truck & Storage Tank	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Train & Storage Tank	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Truck & Ship	✓	✓			✓	✓		✓		✓	✓		
Train & Ship	✓	✓			✓	✓		✓		✓	✓		
Ship & Ship		✓		✓	✗	✗			✗	✓	✓		
Storage Tank & Ship	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓



Occurring



Not Occurring

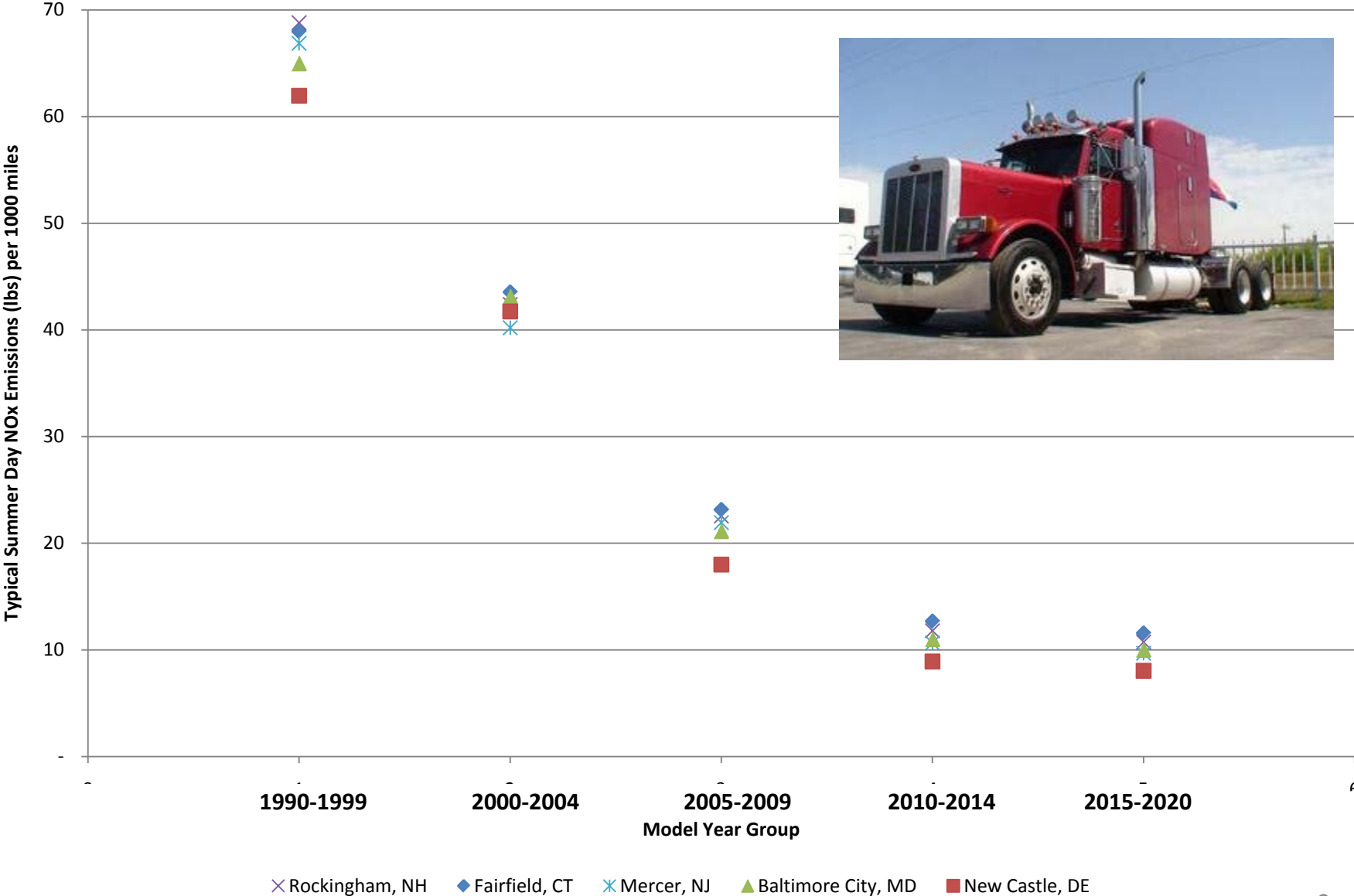


Regulated



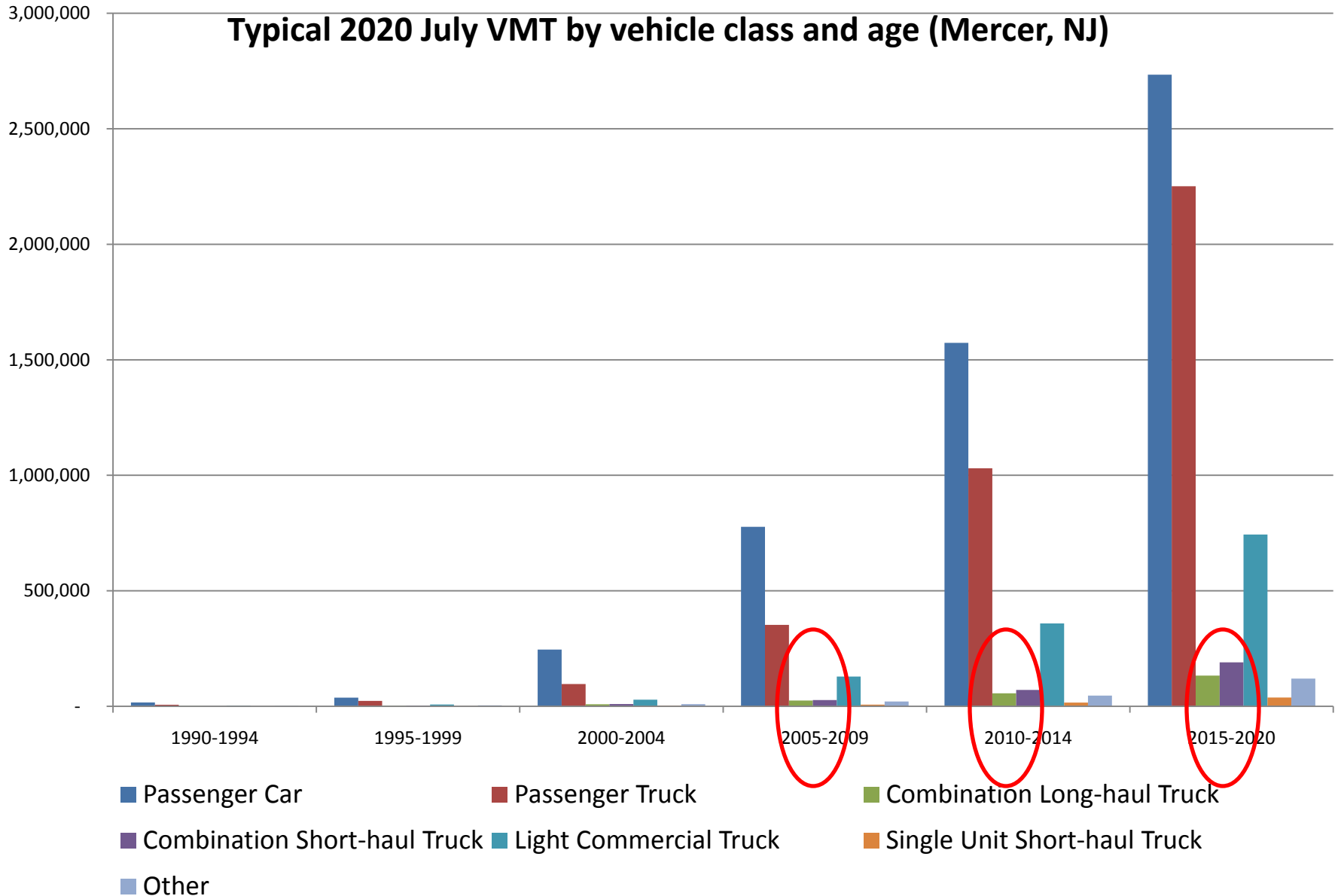
Not Regulated

Older Combo Long Haul Trucks Emit More Per Mile than Newer Ones



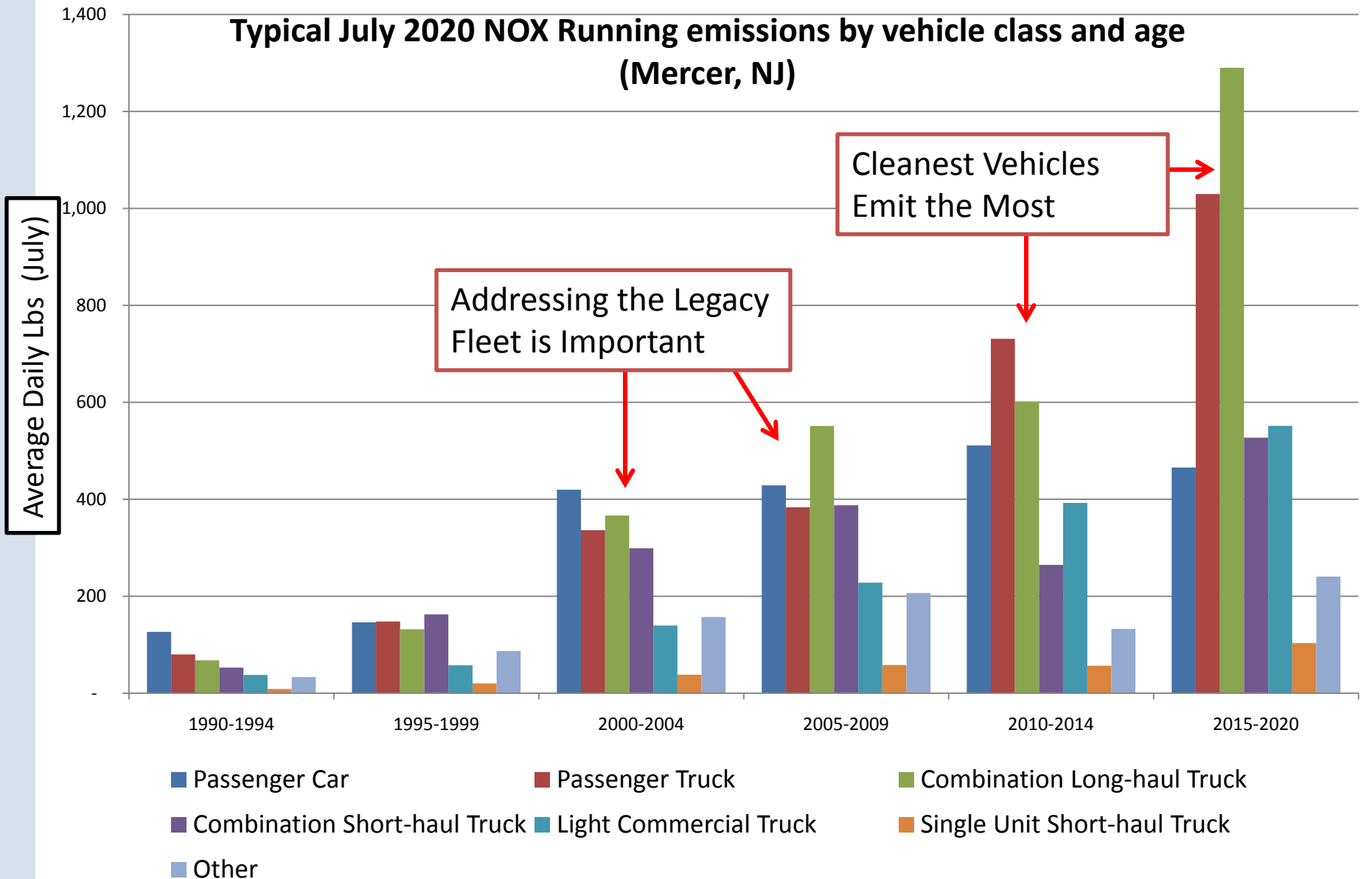
Newest Vehicles Are Used The Most

Average Daily VMT (July)



New and Legacy Fleet are Important

Typical July 2020 NOX Running emissions by vehicle class and age (Mercer, NJ)



OTC in the SmartWay® News

Ozone Transport Commission Affiliates

Recently, the [Ozone Transport Commission](#) (OTC), a coalition of Northeast and mid-Atlantic state air agencies, formally asked EPA to help increase participation in SmartWay in order to reduce emissions along heavily-traveled corridors in the region. So far, OTC state agencies from Connecticut, New Hampshire, and the District of Columbia have joined SmartWay. OTC member states CT, DC, MA, ME, NH, and VT are Affiliates. Patrice Thorpe is the SmartWay contact for more information.

CT, DC, MA, ME, NH, and VT are Affiliates

SmartWay on the Road

you can learn more about the honorees [here!](#)
Congratulations and thank you to all of our Affiliate Challenge honorees! We look forward to working with you and all our affiliates in the future.

Quick Links

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Are Additional Emission Reductions Possible from New Heavy Duty Engines?

- California & MECA are exploring –
 - Additional 90% NO_x reduction from 2010 heavy duty engine standards
 - Could provide significant ~ 40 - 50 tpd emission reductions in the OTR by 2028 if implemented beginning MY2020
 - Cost effectiveness ~\$2,500 / ton
 - Timeframe – Study Complete in ~1 year

Sensitivity Analysis for Additional Emission Reductions

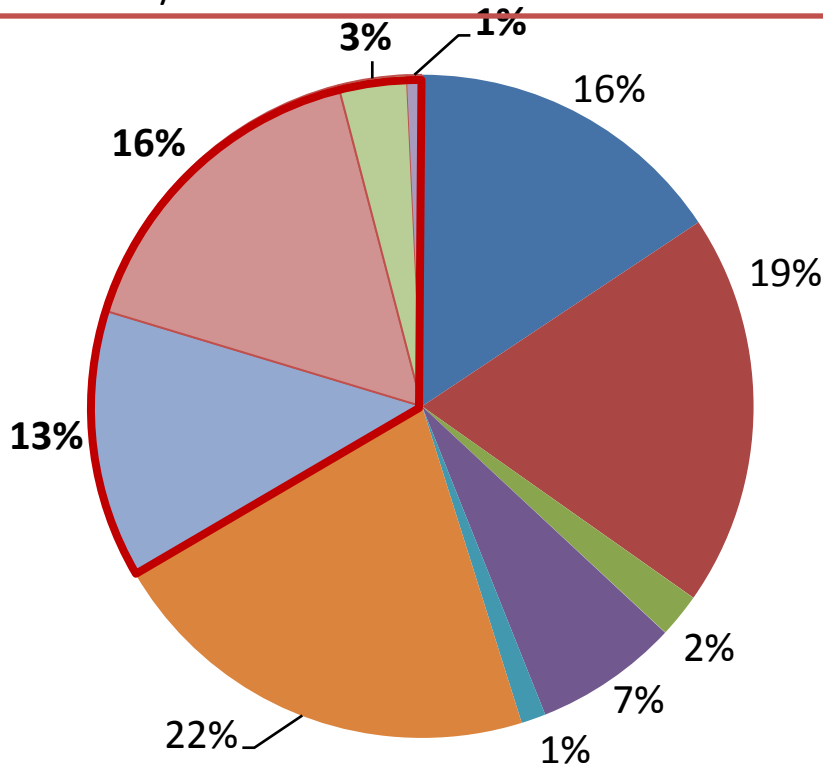
Measures Applied in Modeling Domain	Measures Applied in the OTR
<ul style="list-style-type: none">• Aftermarket Replacement Catalytic Converters• 90% Reduction in new onroad HD Engines beginning in MY2020• SmartWay[®]• Nonroad Retrofits/Replacements	<ul style="list-style-type: none">• ZEV MOU Implementation• Heavy Duty Diesel I/M• Nonroad Idling

2028 - Enable time for fleet turnover

OTR+VA 2028 Mobile Reductions

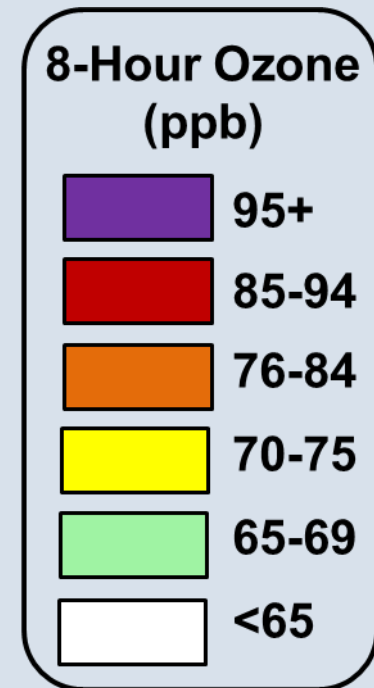
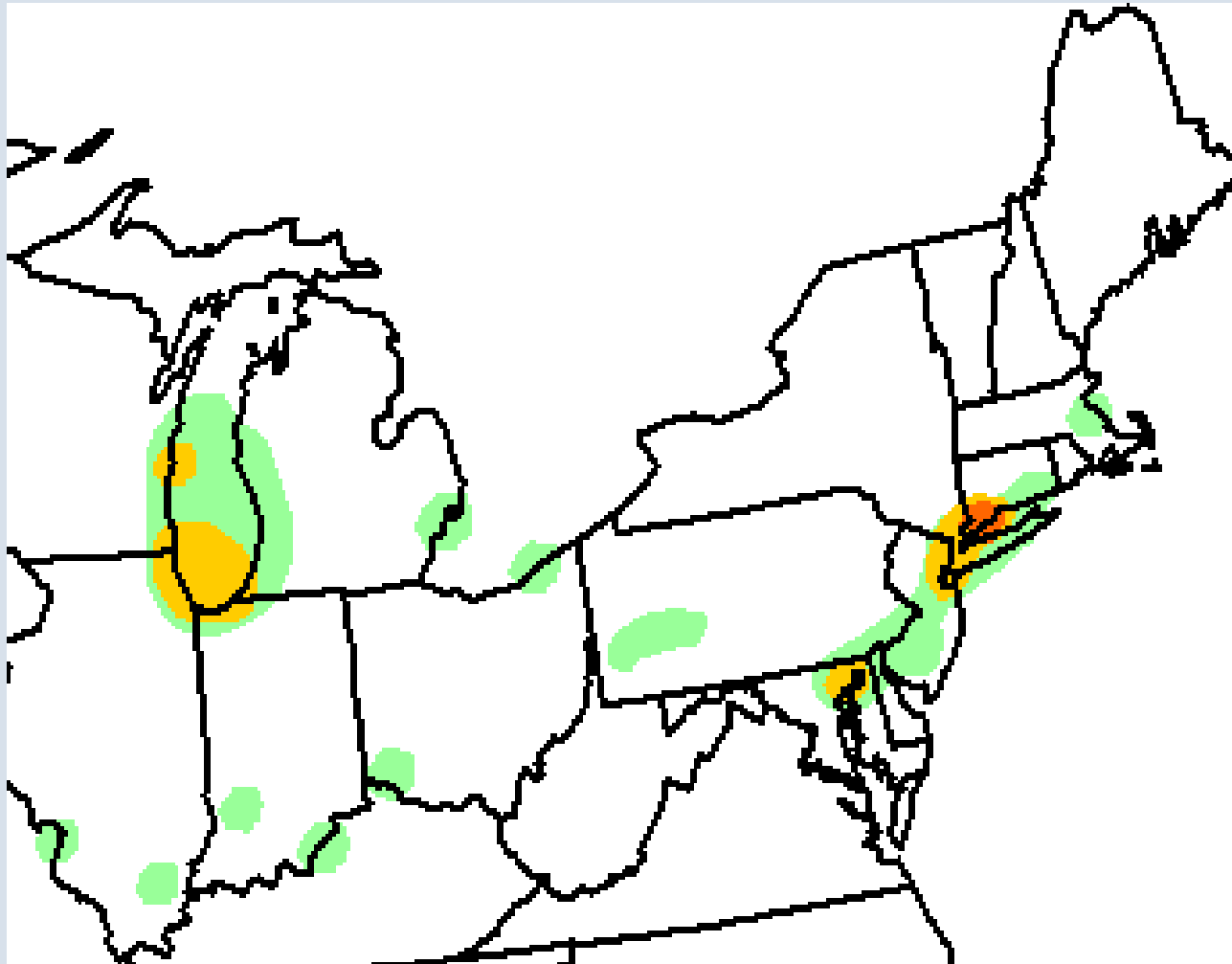
2028 NOx Emissions After Application of Mobile Source Measures

- EGU
- Nonpoint O/G
- Nonroad
- Rail & C1/C2 Marine
- NonEGU-Point
- Res Wood.
- Onroad
- Point O/G
- Area
- C3 Marine



Onroad (tons/year)	NOX	VOC
Aftermarket Catalytic Converters	9,200	800
EV	6,700	1,800
HDDV Duty Diesel I/M	9,300	-
HDDV New Engine Stnds	17,300	-
SmartWay	3,300	-
Sector Total Before Programs	160,000	39,000
Total Reduction	45,800	2,600
Percentage Reduction	29%	7%
Nonroad (tons/year)	NOX	VOC
Nonroad retrofits/replacements	3,200	-
Nonroad Idling	11,000	1,900
Sector Total Before Programs	126,000	239,000
Total Reduction	14,200	1,900
Percentage Reduction	11%	1%

2028 Proxy with Mobile Measures

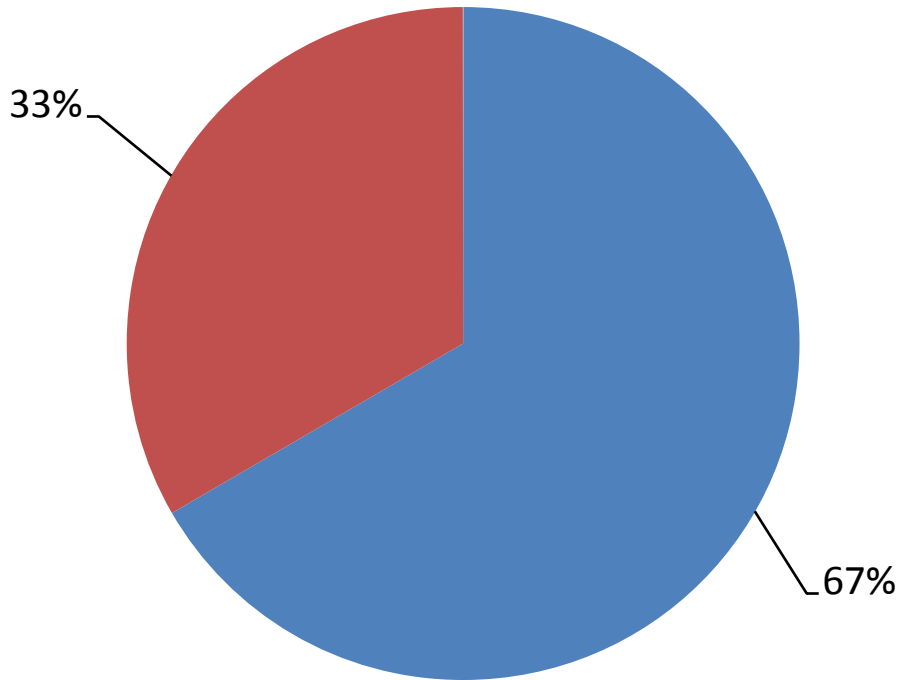


MARAMA Alpha emission inventories with noted marine vessel emission inventory issue

Future Opportunities?

2028 NOx Emissions After Application of Mobile Source Measures

■ Point/Area ■ Mobile



Next Steps

- Continue Work on Aftermarket Replacement Catalysts
 - Development of MOVES Approach to estimate the emission reductions
 - National Program
- Improve Calculation of SmartWay Benefits
- Increase knowledge of the potential for another round of heavy duty diesel engine standards