



Session 2

Heavy-Duty Introduction

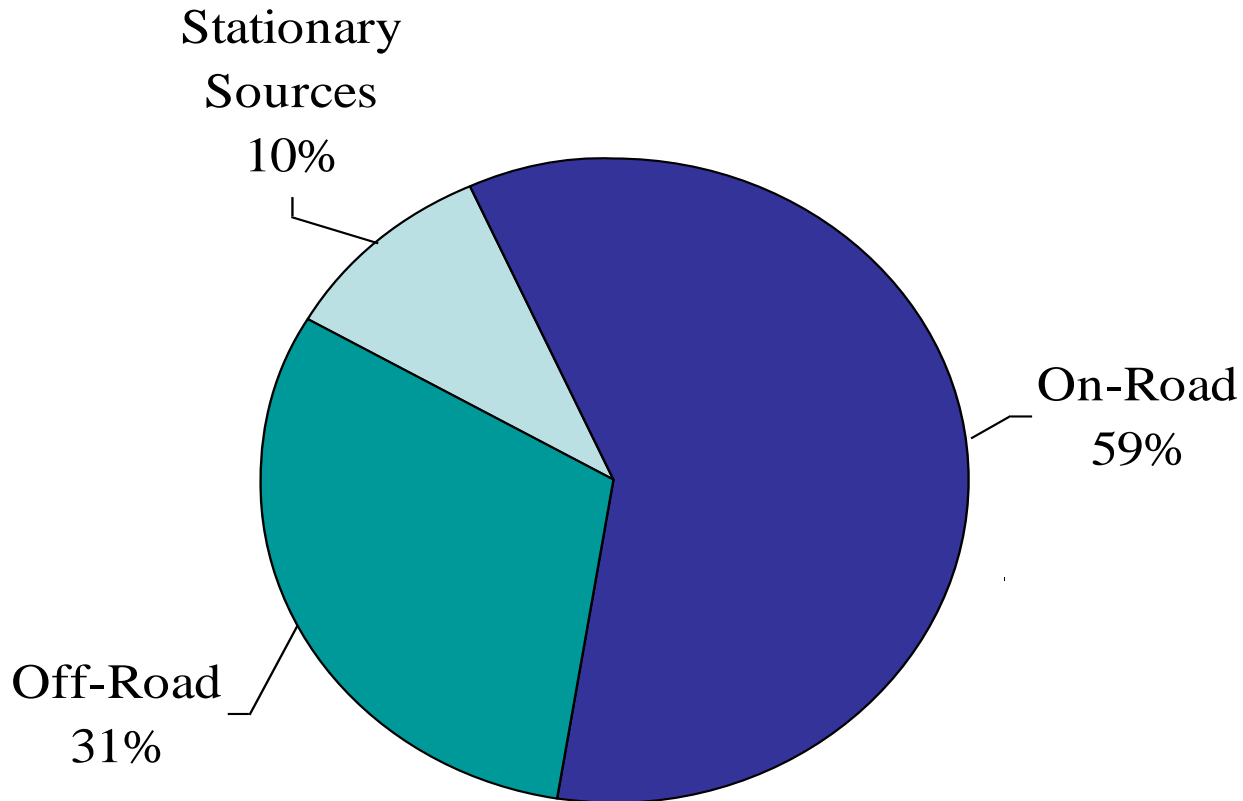
February 3rd, 2010



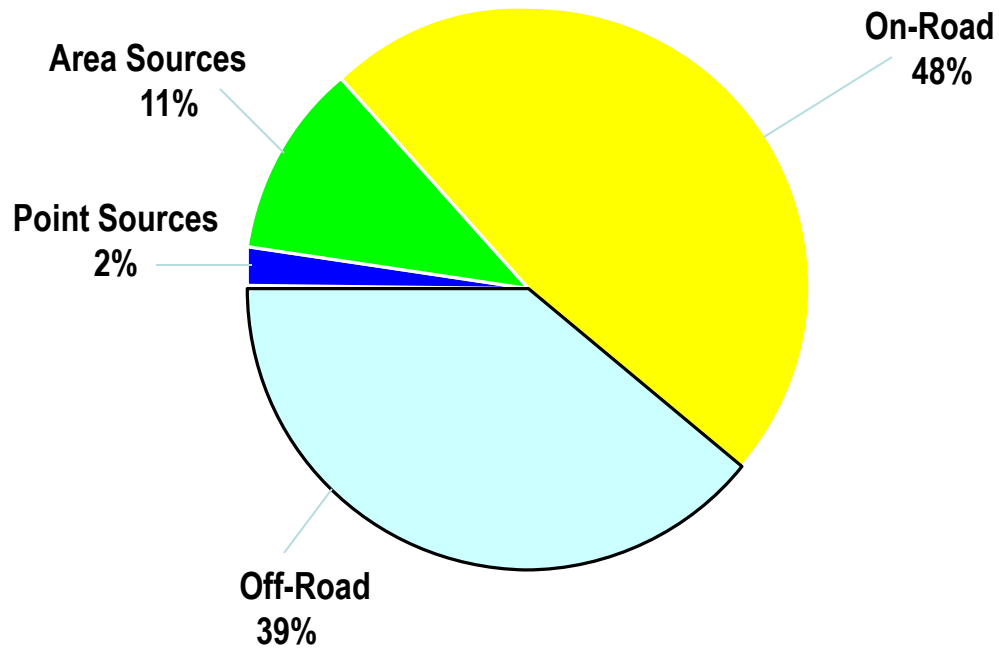
Dipankar Sarkar

Technology Advancement Office

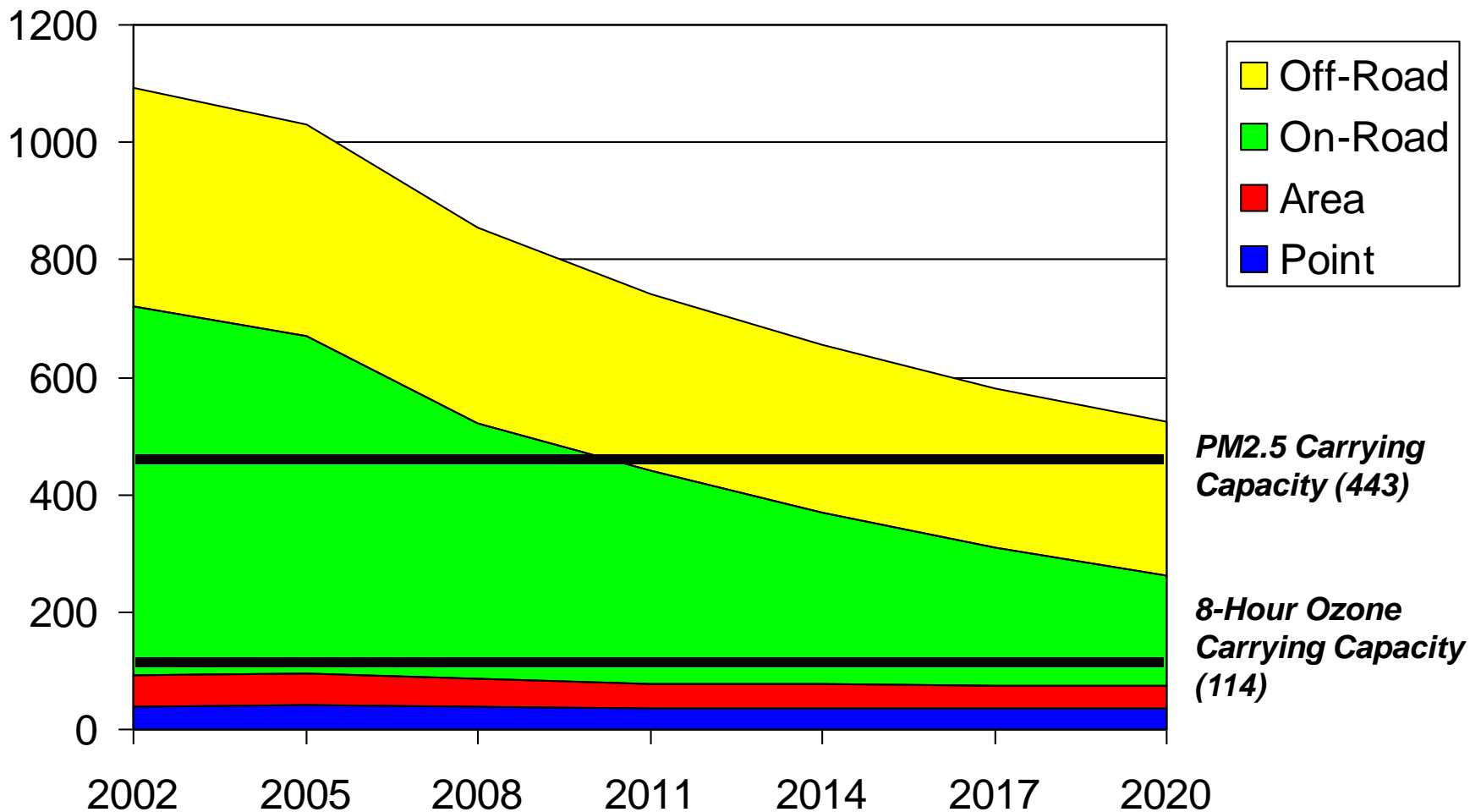
2007 Basin NOx Emissions



2007 Basin PM2.5 Emissions



NOx Emissions Trend by Source Category

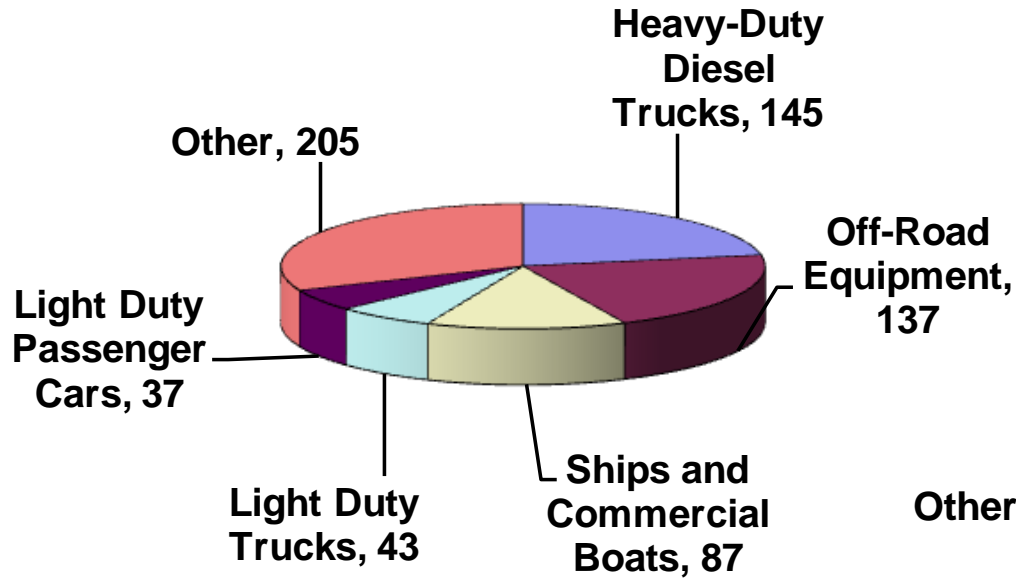


Needed Pollution Reduction (tons per day)

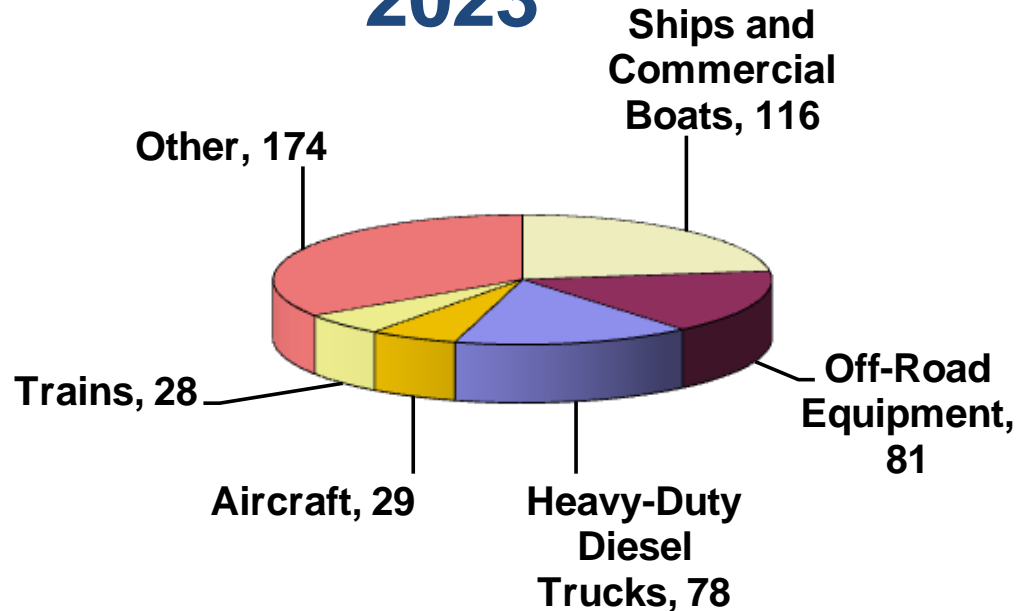
	2014	2023
NOx	203 (31%)	383 (76%)
VOC	59 (11%)	116 (22%)
SOx	24 (56%)	---
PM2.5	14 (14%)	---

Top 5 NOx Sources

2014



2023



Heavy-Duty Emission Controls

- NO_x: EGR, SCR
- PM: DPF, Alternative Fuels
- All: Hybrid (Electric/Hydraulic), Electric Vehicles, Fuel Cells

Presentations

- Adewale Oshinuga: Engines and Aftertreatment
- Joe Impullitti: Transit Bus
- Randall Pasek: Locomotives
- Phil Barroca: Concrete Mixer Truck