

Reducing Diesel Emissions in Kansas City

Doug Watson,
Bureau of Air & Radiation
Constructing Clear Air Workshop
Olathe, Kansas
February 5, 2009



Healthy Kansans living in safe and sustainable environments.

Overview

- Why is it important?
- Idling Reduction Regulation for Kansas City
- Diesel emissions
- EPA regulations on diesel engine emissions
- Voluntary actions



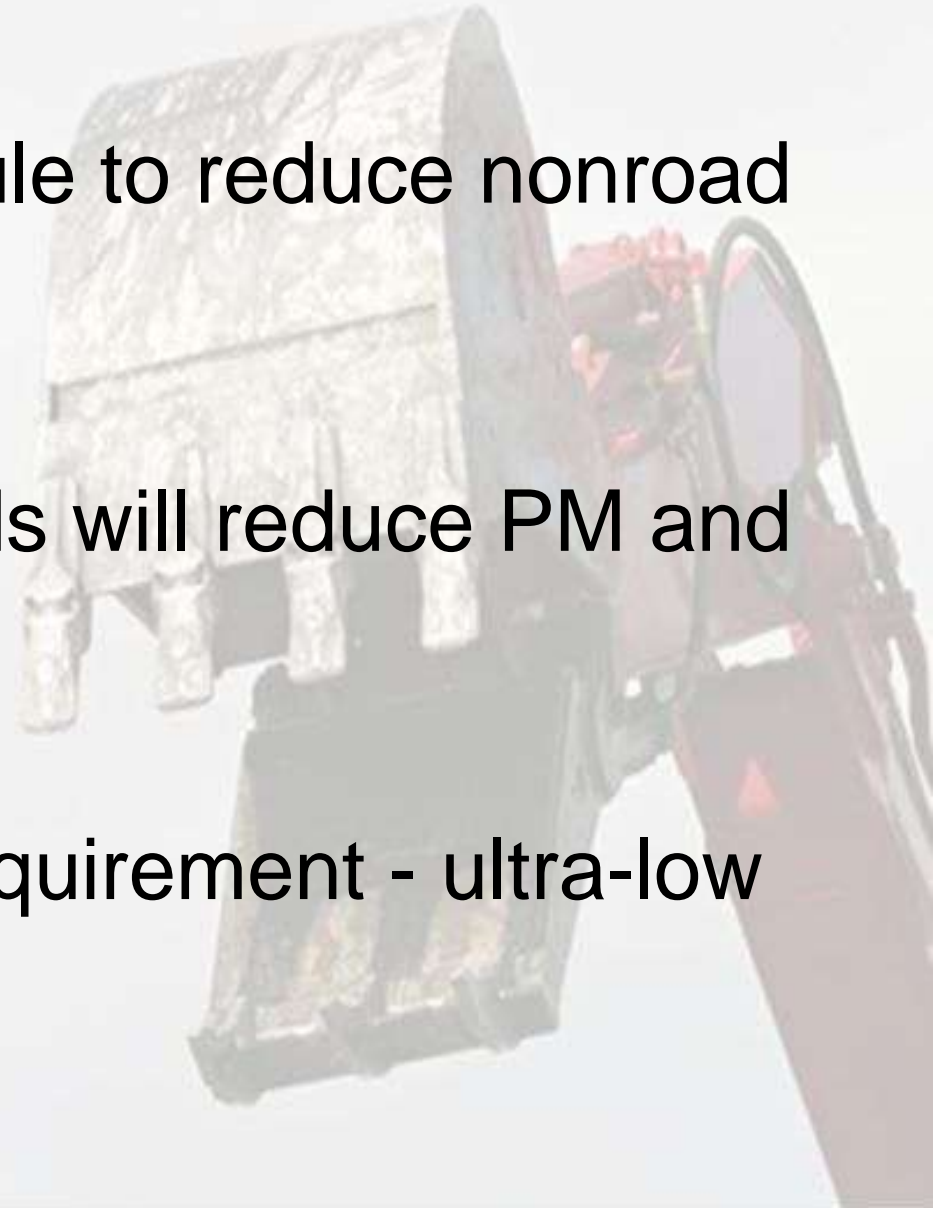
Why is this important? - Health

What's in this stuff???

- *Particulates* (soot or PM) increase respiratory symptoms and can result in premature death
- *Nitrogen oxides (NO_x)* contributes to *ozone (O₃)* formation which aggravates respiratory system
- *All three* can contribute to crop damage, acid rain and reduced visibility at national parks

Clean Diesel for Nonroad - EPA

- May 2004 finalized rule to reduce nonroad diesel emissions
- *New engine standards will reduce PM and NOx by 90%*
- Linked to new fuel requirement - ultra-low sulfur diesel (ULSD)



Why is this important? – Ozone

- Violation of old 8-hour standard occurred June 2007
- Onroad mobile idling restrictions triggered
- KC ozone designation due March 2009 for new standard
- Voluntary actions welcome!



Ground-Level Ozone Formation

Oxygen (O₂)
Volatile Organic Chemicals (VOCs)
Nitrogen Oxides (NO_x)



Ground-level
Ozone
(O₃)



Ozone History

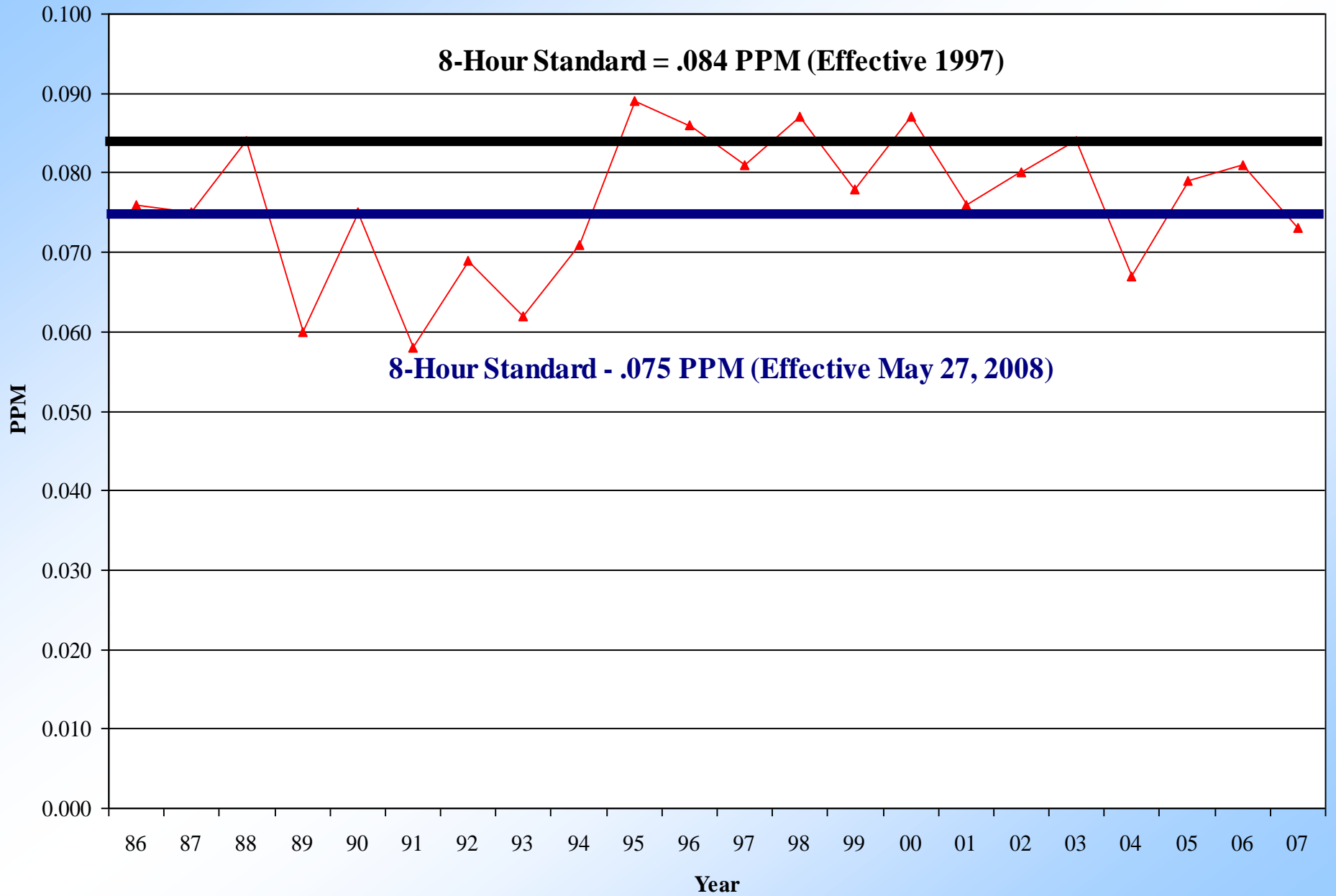


- Health-based standards were set in 1997 at 0.084 ppm*
- 2007, EPA** determined this insufficient to protect health.
- New standard established (2008) at 0.075 ppm*
- New standard is a concern for Kansas City and Wichita

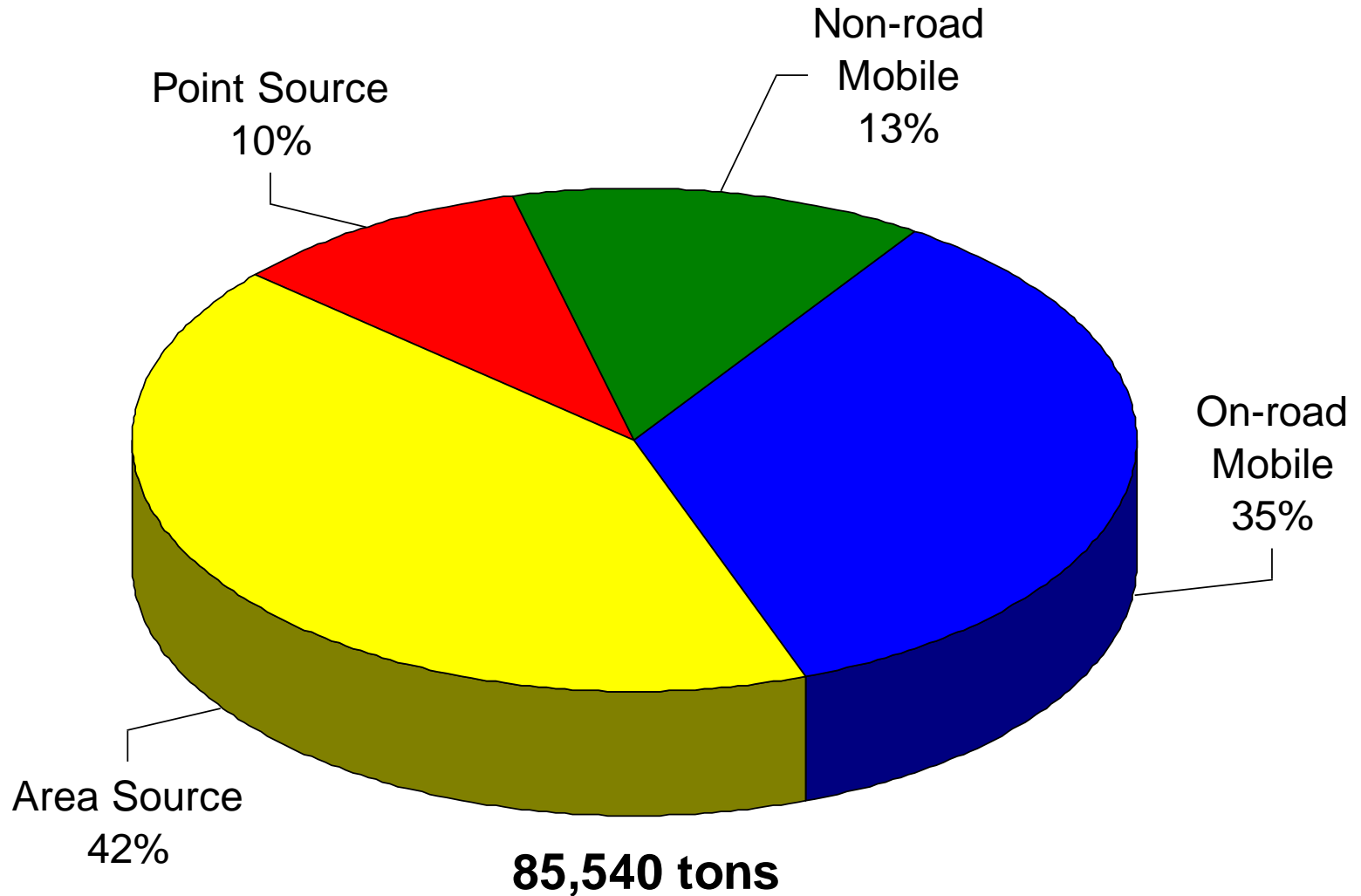
*ppm = parts per million

**EPA = Environmental Protection Agency

Kansas City, KS - Ozone 8-Hour 4th High

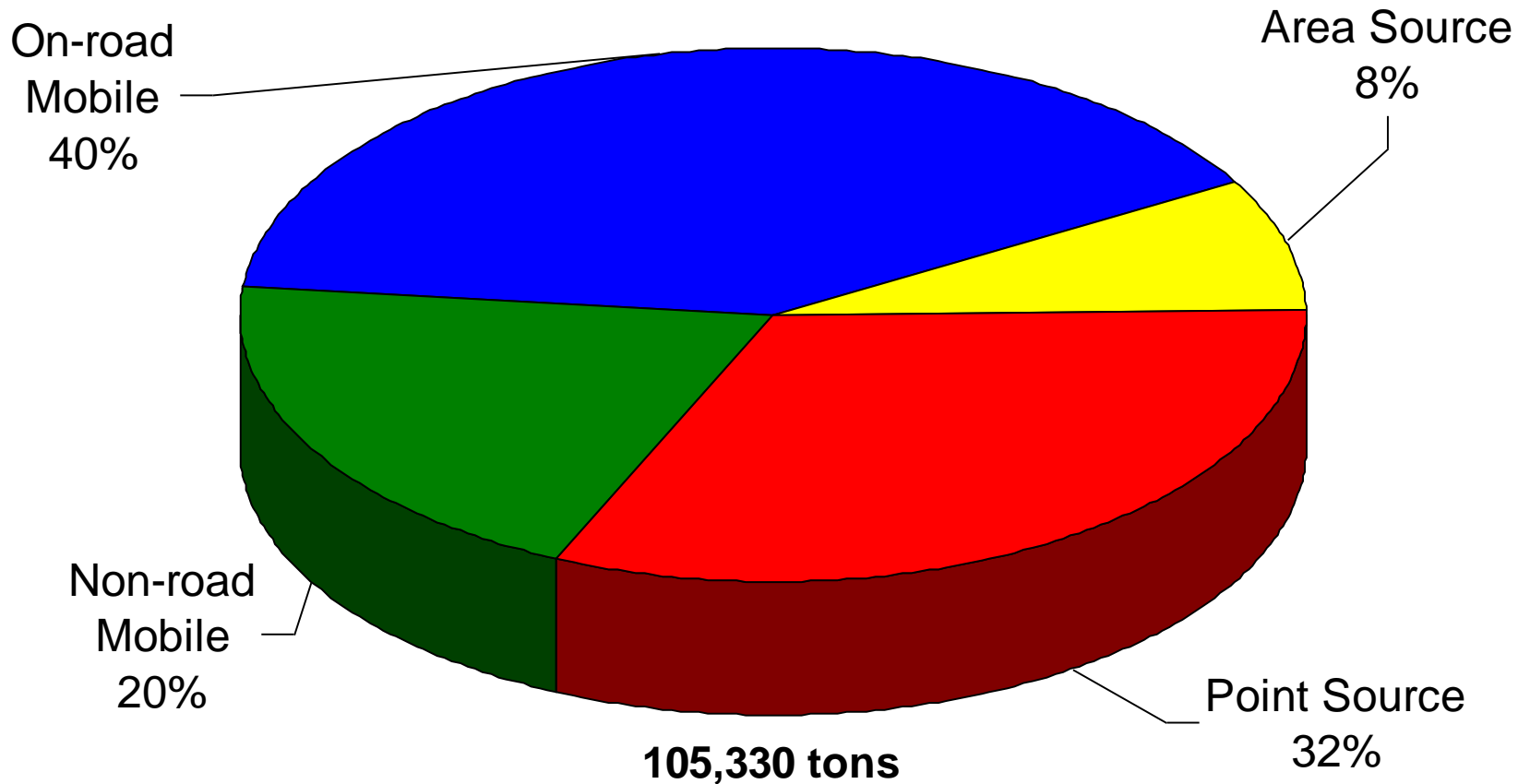


Kansas City Area VOC* Emissions



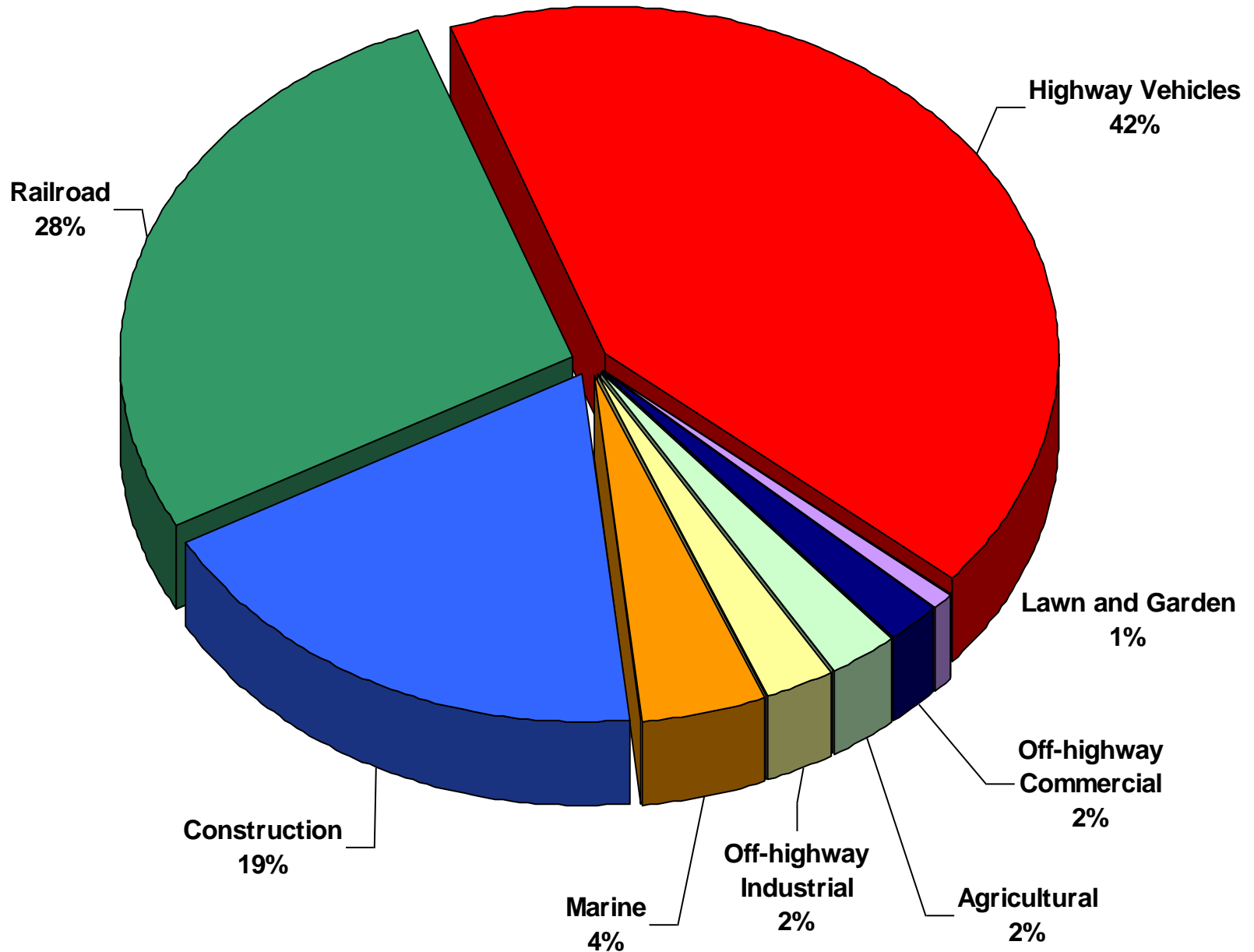
*VOC = Volatile Organic Compounds

Kansas City Area NOx* Emissions



*NOx = Nitrogen Oxide

Kansas City Diesel Emissions (NOx)



Actions taken to reduce emissions

Highway Vehicles

- **Idle Reduction Regulation**
 - 14,001 pounds
 - Diesel engine powered
 - Transport persons or property on a public street or highway
- **KC IDLE FREE**
- **Idle Free School Zones**

Railroads

- **Technologies to reduce idling – APUs**
- **Newer locomotives**



Actions taken to reduce emissions

Construction

- EPA Regulations
- Constructing Clean Air Workshop, Kansas Clean Diesel Grant
- Policies adopted by companies
- Actions taken by companies



Voluntary activities

- Maintain equipment
- Reduce idling
- Retrofit diesel engines with verified technologies
- Replace older equipment
- Use cleaner fuels
- Repower equipment (i.e. replace older engines with newer, cleaner engines)



Questions?

Thank you for coming

Enjoy the rest of the Workshop



Contact Information

Douglas Watson (Clean Diesel Grants)

dwatson@kdheks.gov

785-296-0910

Tom Gross (Section Chief, Monitoring & Planning)

tgross@kdheks.gov

785-296-1692



Healthy Kansans living in safe and sustainable environments.