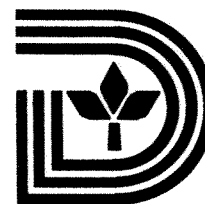


Memorandum



CITY OF DALLAS

DATE September 19, 2008

TO Members of the Transportation and Environment Committee:
Linda Koop (Chair), Sheffie Kadane (Vice Chair), Jerry R. Allen, Carolyn R. Davis, Vonciel Jones Hill, Angela Hunt, Pauline Medrano and Ron Natinsky

SUBJECT Presentation on Air Quality 101

On September 22, 2008 you will be given a presentation on Air Quality 101. Please find attached a copy of the presentation, and feel free to contact me if you need additional information.

A handwritten signature in cursive script that reads "Jill Jordan".

Jill A. Jordan, P.E.
Assistant City Manager

C: Honorable Mayor and Members of the City Council

Mary K. Suhm, City Manager
Deborah A. Watkins, City Secretary
Thomas P. Perkins, City Attorney
Craig Kinton, City Auditor
Judge C. Victor Lander
David K. Cook, Chief Financial Officer
Ryan S. Evans, First Assistant City Manager
David O. Brown, Interim Assistant City Manager
A. C. Gonzalez, Assistant City Manager
Jill A. Jordan, PE, Assistant City Manager
Ramon F. Miguez, PE, Assistant City Manager
Frank Libro, Public Information Office
Helena Stevens-Thompson, Assistant to the City Manager

Air Quality 101

Presentation to the Transportation and
Environment Committee

September 22, 2008



Presentation Overview

- Air Quality Standards
- Ground-Level Ozone
- DFW Non-Attainment Area
- State Implementation Plan
- City of Dallas Initiatives

Air Quality Standards

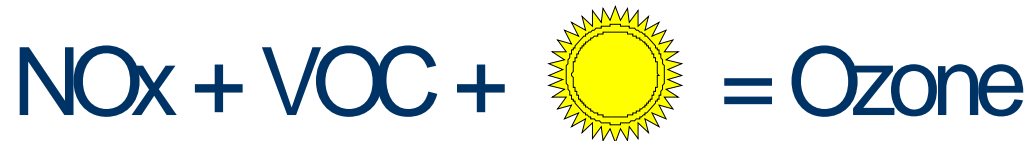
- **Federal Clean Air Act:** Passed in 1970; Amended in 1990

- Requires the Environmental Protection Agency (EPA) to establish health-based standards called National Ambient Air Quality Standards (NAAQS)

- **Six Criteria Pollutants**
 - **Ground Level Ozone/Smog (O₃)**
 - Particulate Matter (PM)
 - Nitrogen Dioxide (NO₂)
 - Sulfur Dioxide (SO₂)
 - Carbon Dioxide (CO)
 - Lead

Ground-Level Ozone

Forms when nitrogen oxides (NO_x) and volatile organic compounds (VOCs) mix in the presence of sunlight.



Ground-Level Ozone

- Health effects can include:

- Shortness of breath
- Coughing or wheezing
- Headaches
- Nausea
- Throat and Lung Irritation

- Particularly impacts:

- Children
- People with lung disease
- Active adults



Ground-Level Ozone

Primary source of NO_x: high-temperature combustion of fossil fuels

- ❑ Cars, trucks, and marine vessels
- ❑ Construction equipment
- ❑ Power generation
- ❑ Industrial processes
- ❑ Natural gas furnaces



Ground-Level Ozone

Sources of VOCs: chemicals that easily vaporize, and incomplete combustion

- Gasoline stations
- Motor vehicles, airplanes, trains, boats
- Petroleum storage tanks
- Oil refineries



Ground-Level Ozone

Eight-Hour Ozone Standard:

- The 8-hour ozone standard is based on averaging air quality measurements over 8-hour blocks of time.
- Current ozone standard set by the EPA is 85 parts per billion (ppb).
- Lower standard of 75 ppb has been proposed.

Violation of Ozone Standard:

- 3-year average of each year's 4th highest reading at any area monitor equals or exceeds 85 ppb
- Results in 'non-attainment' status
- DFW 9-county region is currently a moderate non-attainment area for ozone

Ground-Level Ozone

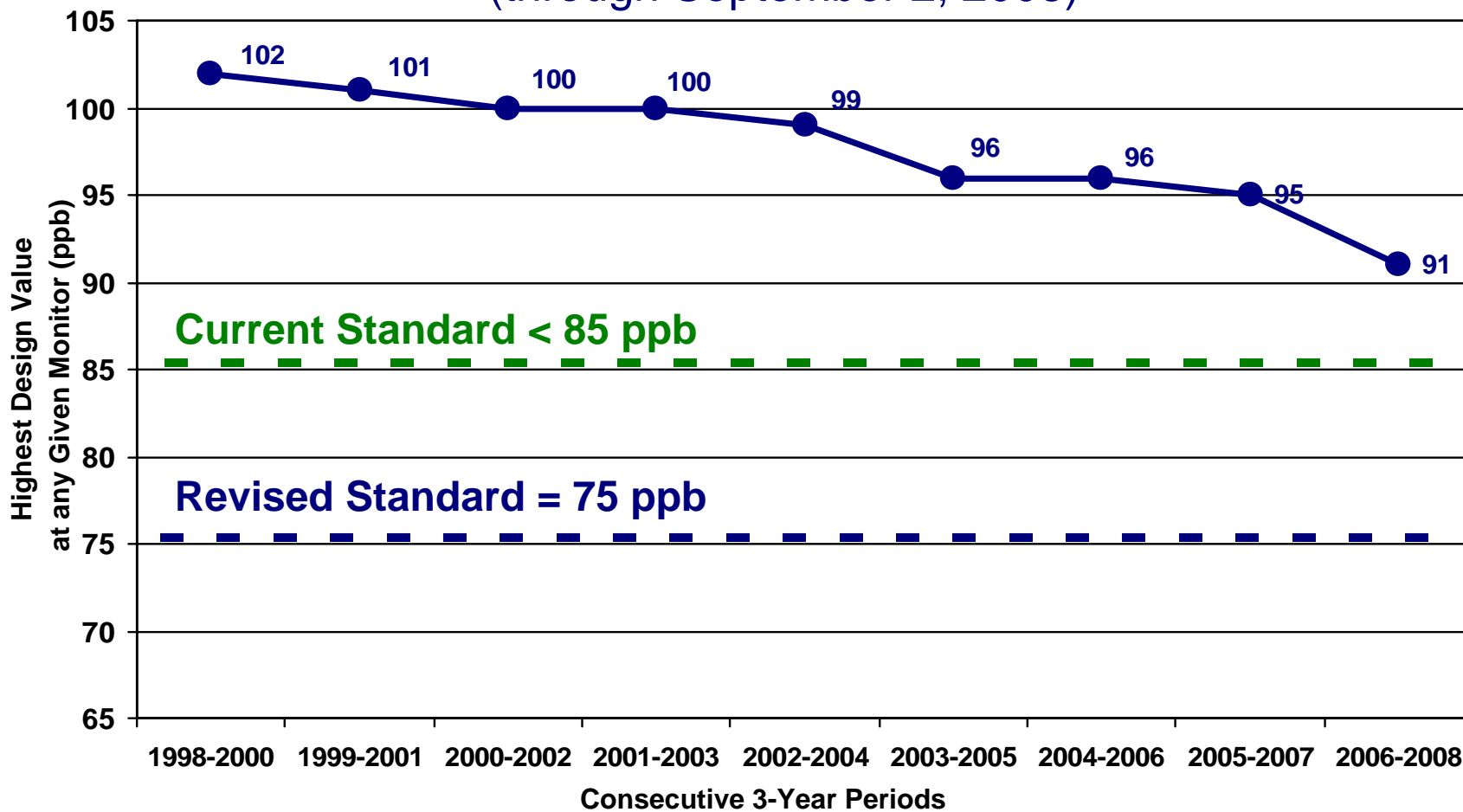
Potential Consequences of Violation

- Loss of highway funds
- Loss of Community Development Block Grant funds
- Stricter permit limits
- Health impacts

DFW Non-Attainment Area

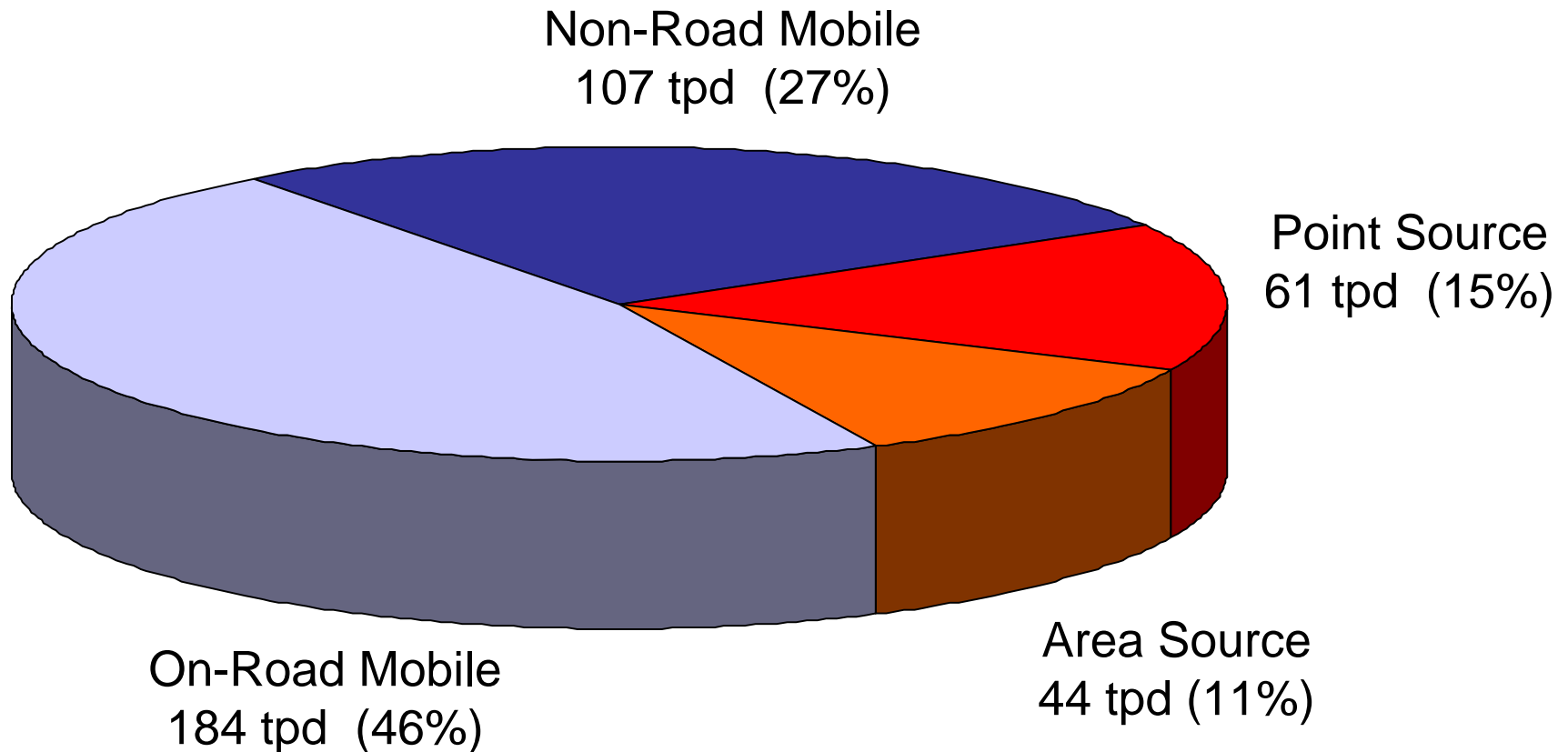
8-HOUR OZONE HISTORICAL TRENDS

(through September 2, 2008)



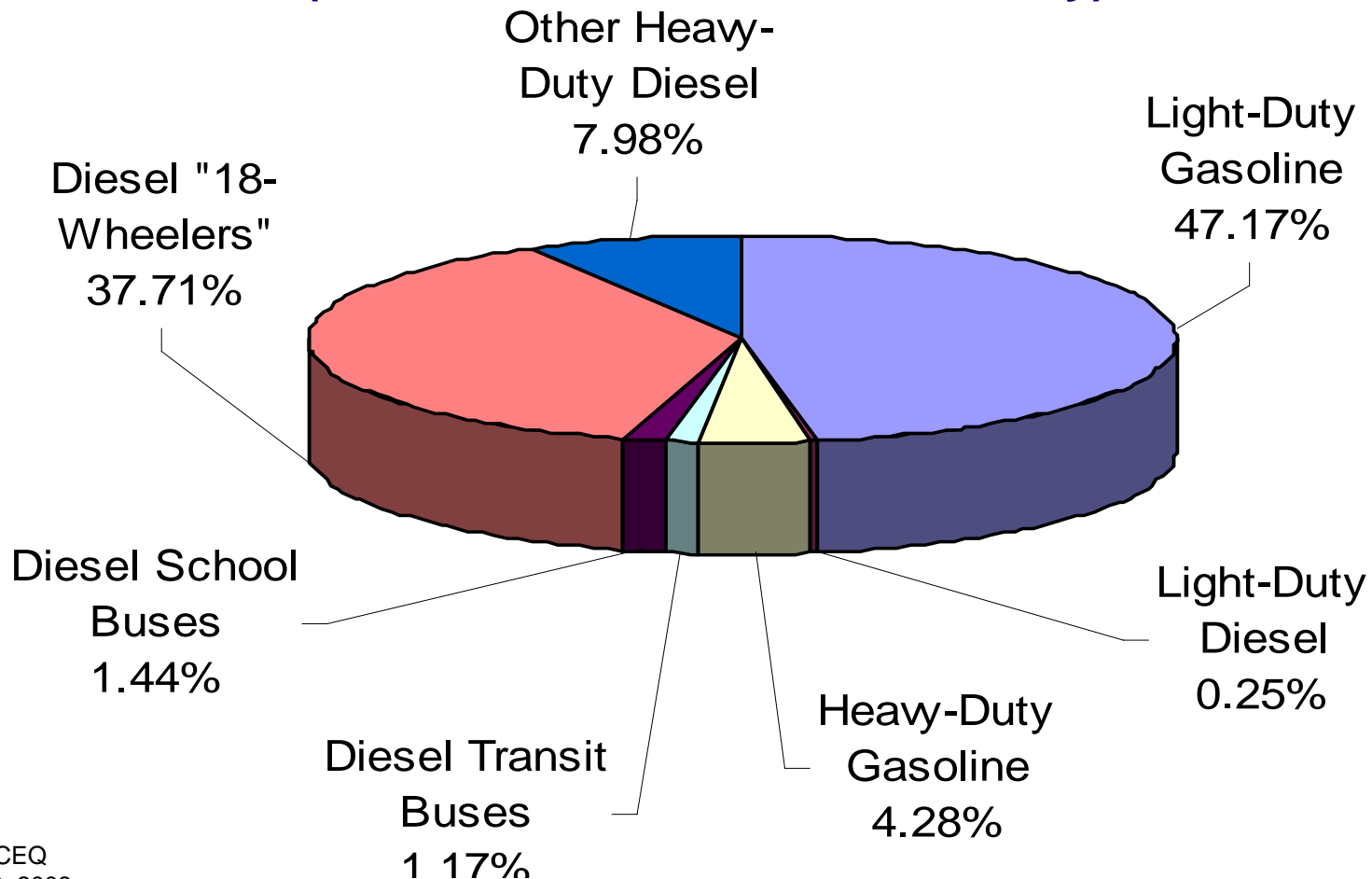
DFW Non-Attainment Area

2009 DFW NOx Emissions Inventory



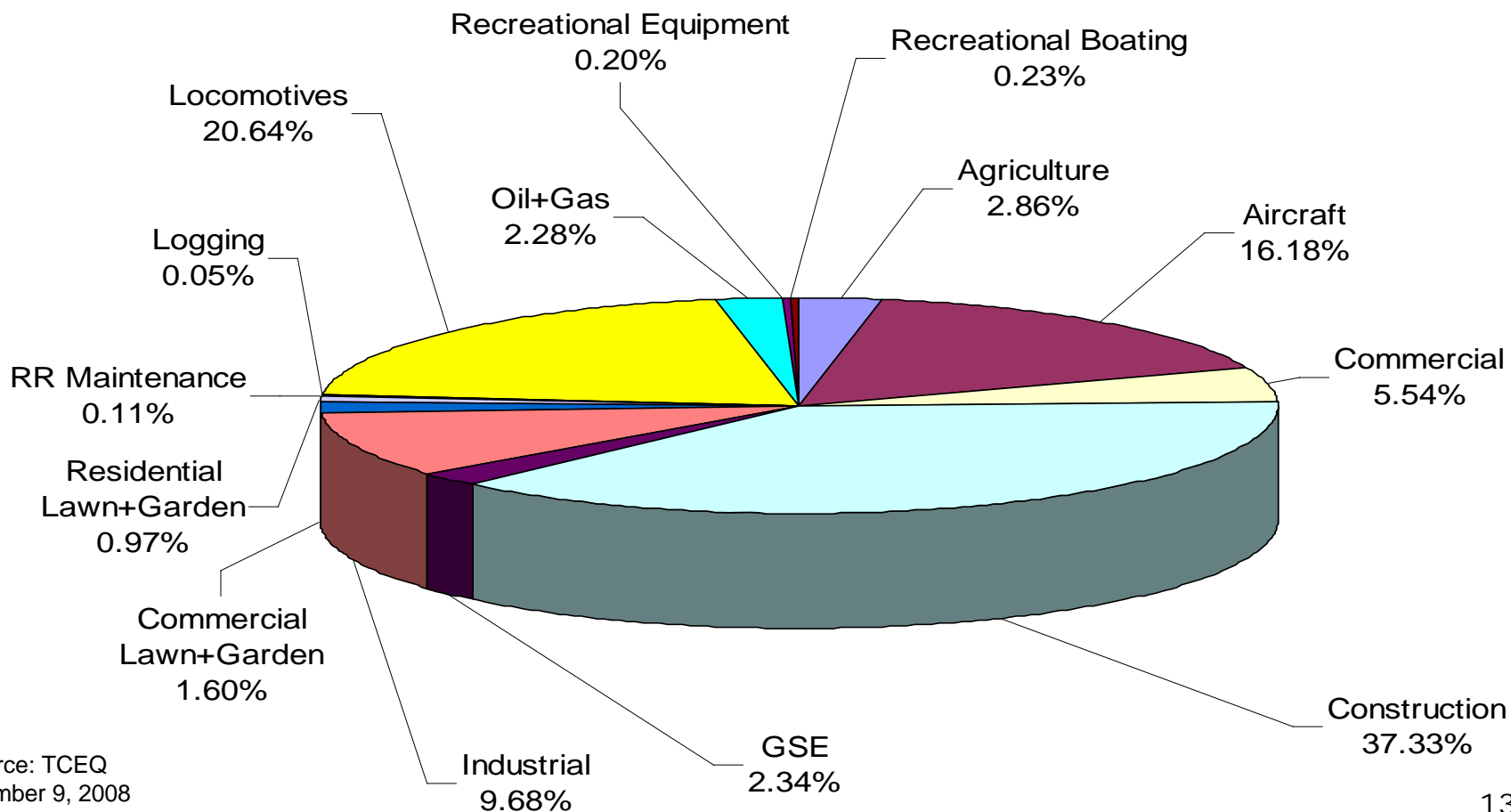
DFW Non-Attainment Area

2009 DFW NOx On-Road Mobile Air Emissions (46% of total emissions inventory)



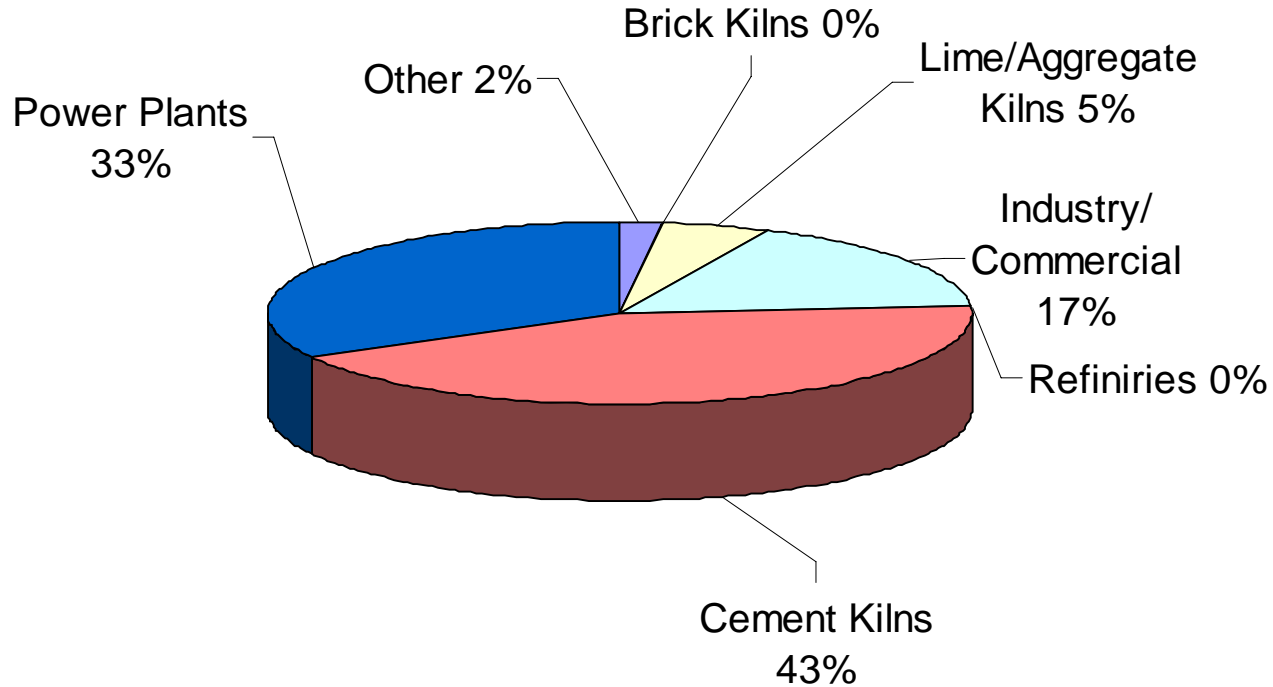
DFW Non-Attainment Area

2009 DFW NO_x Non-Road Mobile Air Emissions (27% of total emissions inventory)



DFW Non-Attainment Area

2003 DFW NO_x Point Source Air Emissions (15% of total emissions inventory)



State Implementation Plan

Purpose:

- Plan to reduce pollution to meet health-based standards
- Sets control strategies for reducing emissions
- Applies to areas not meeting federal air quality standards (ozone)
- Sets technical/regulatory process for demonstrating attainment

State Implementation Plan

Components:

- Monitoring Data
- Emissions Inventory
- Photochemical Modeling
- Control Strategies
 - Area – bakeries, paint shops, dry cleaners
 - Non-Road – construction, aircraft, locomotive, lawn & garden
 - On-Road – cars, trucks, and buses
 - Point – cement and power plants

State Implementation Plan

DFW SIP Status:

- In June 2007, the Texas Commission on Environmental Quality (TCEQ) submitted the DFW SIP to the EPA

- The SIP has measures related to the following:
 - East Texas Combustion Sources
 - Power plants located in the DFW region
 - Cement kilns
 - Mobile sources (mainly in the form of credits for federal standards)

- On July 14, 2008, The EPA conditionally approved the DFW SIP

Recent City Initiatives

Alternative fuels/engines:

- City fleet currently includes 1,100 natural gas vehicles and 150 hybrids (41% of total fleet).
- City operates two public access compressed natural gas (CNG) vehicle fueling facilities.
- City also uses Biodiesel with an additive to reduce emissions of Nitrogen Oxide (NOx)
- Early user of Texas Low Emission Diesel (TxLED) and biodiesel.



Recent City Initiatives

Energy:

- All new City facilities built over 10,000 square feet are LEED silver certified buildings.
- City has met the goal of 5% energy reduction per year for the past five years.
- City Council voted to purchase 40% of the City's power needs renewable sources making Dallas #1 among cities by percentage of total energy purchased .
- City Council passed a new green building policy for residential and commercial construction (beginning October 2009).



Recent City Initiatives

Air Quality:

- Idling Ordinance for vehicles over 14,000 pounds
- Cement Purchasing Policy
- Texas Clean Air Cities Coalition
- US Mayor's Climate Change Agreement Signatory
- TERP/Air Check Texas Staff Member
- Dallas Sustainable Skylines (DSSI) – Partnership with EPA and Council of Governments
 - Green Taxis
 - Green Affordable Homes
 - Renewable Energy
 - Urban Heat Island
- Sue Pope Fund – Over \$500K in grant awards
 - Lawn mower exchange program, green taxis, green homes



2009 State Legislative Initiatives

- Regional Air Quality Management Committee to work on SIP issues
- Cement Kilns
 - Lower Cement Kiln Caps
 - Requirement for control technologies
- Anti-Idling
 - Extend time frame that idling rule is effective to year round
- Appropriate funding for local government enforcement of counterfeit inspection stickers
- Provide incentives to increase use of solar panels and net metering

Future OEQ Initiatives

- Creation of a Citywide Sustainability Plan
- Adoption of a Clean Contractor Plan
- Installation of a demonstration wind turbine or solar panel at a public facility

Next Steps

- Return to Transportation and Environment Committee with briefings on Legislative Initiatives and Future OEQ Initiatives:
 - Climate change and CO2 emissions
 - Texas Clean Air Cities Coalition/Effects of Mercury
 - Particulate Matter