



TCEQ Update:

North Texas Clean Air Steering Committee Meeting



TCEQ Update

- **Modeling Update**
- **Controls Already in Place**
- **2010 Emissions Inventory**
- **Control Strategy Development**
- **Examples of Lifestyle Changes**
- **SIP Time Line**
- **Cement Kiln Study Update**



Modeling Update

- Background
 - The 9-county DFW area is classified as Moderate for 8-hour ozone and has an attainment date of June 15, 2010. The attainment demonstration must be based on the 2009 future year.
 - Modeling tests were performed using a 2010 future year to estimate the amount of NO_x and VOC reductions needed for the DFW area to reach attainment. A 2009 future inventory is currently being developed.
 - Analyses for both the original 1999 modeling episode (August 15-22) and a corroborative episode (August 23-September 1, 1999) are being conducted.



Modeling Update (cont.)

- Methodology
 - Starting with the 2010 projected emissions, a series of across the board reductions were applied to anthropogenic emissions of VOC, NO_x, and both in the 9-county DFW area.
 - Model-predicted future 8-hour design values were plotted against the percent reduction to estimate the level of reduction required to demonstrate attainment.

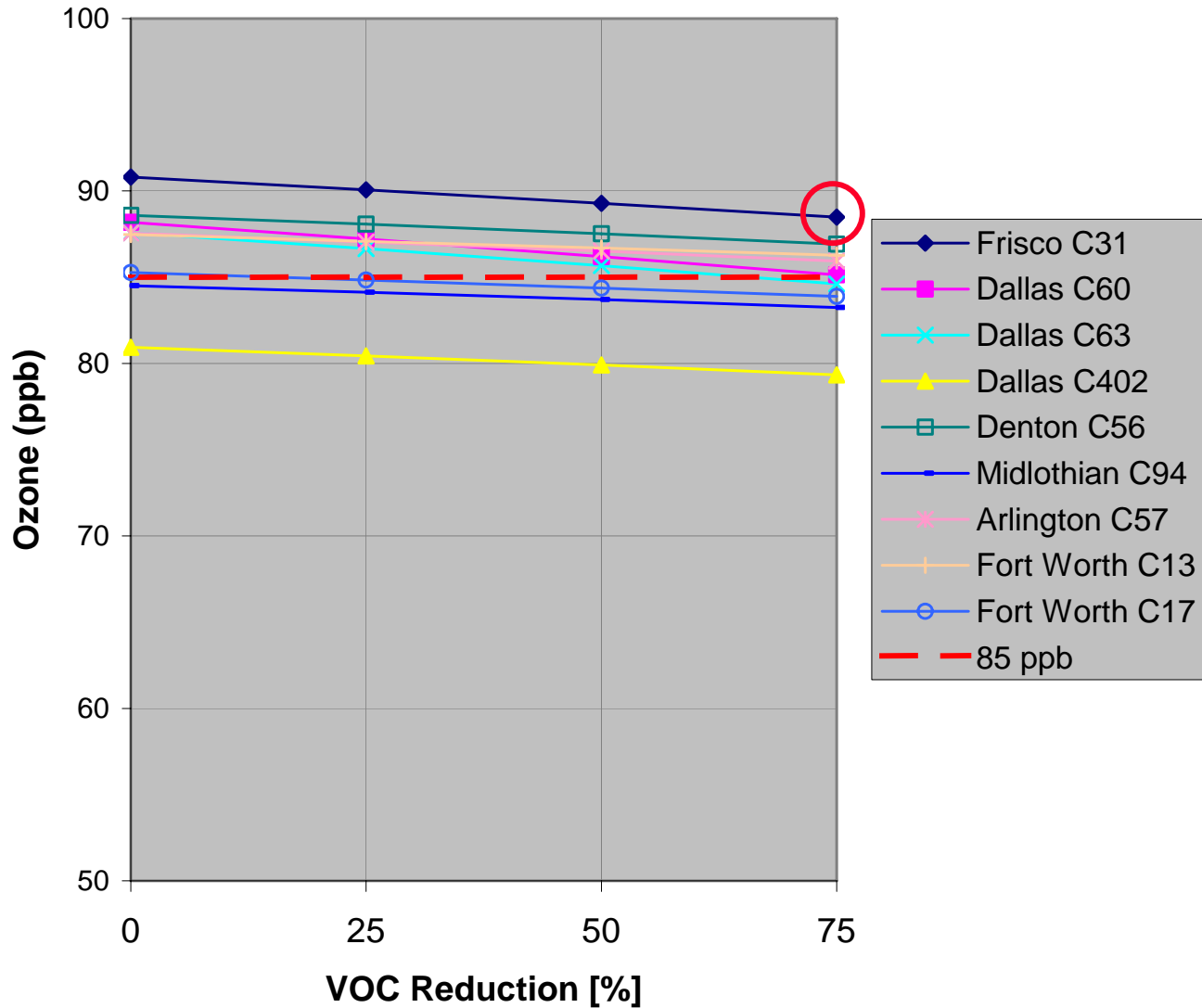


Modeling Update (cont.)

- Results
 - Both original and corroborative episodes show a limited response to reductions of VOC.
 - Both episodes show responsiveness to reductions of NO_x and the model predicts that approximately 45% of NO_x reductions are needed for the area to demonstrate attainment.
 - A combined 40% NO_x and 50% VOC reduction would also show attainment in 2010.

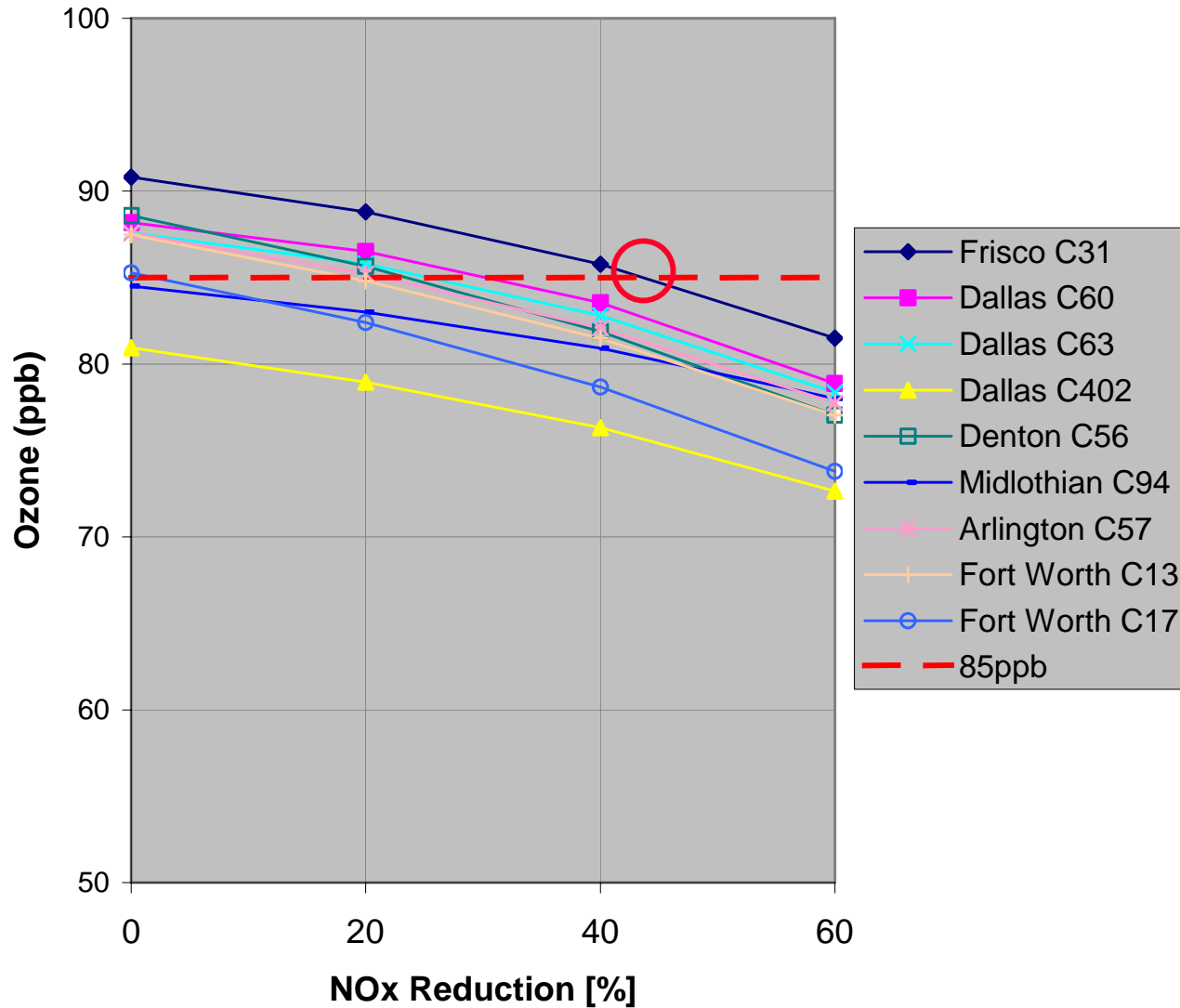


Design Value-Scaled 2010 DFW 8-Hour Ozone VOC Reductions. Aug 13-22, 1999 Core Period.



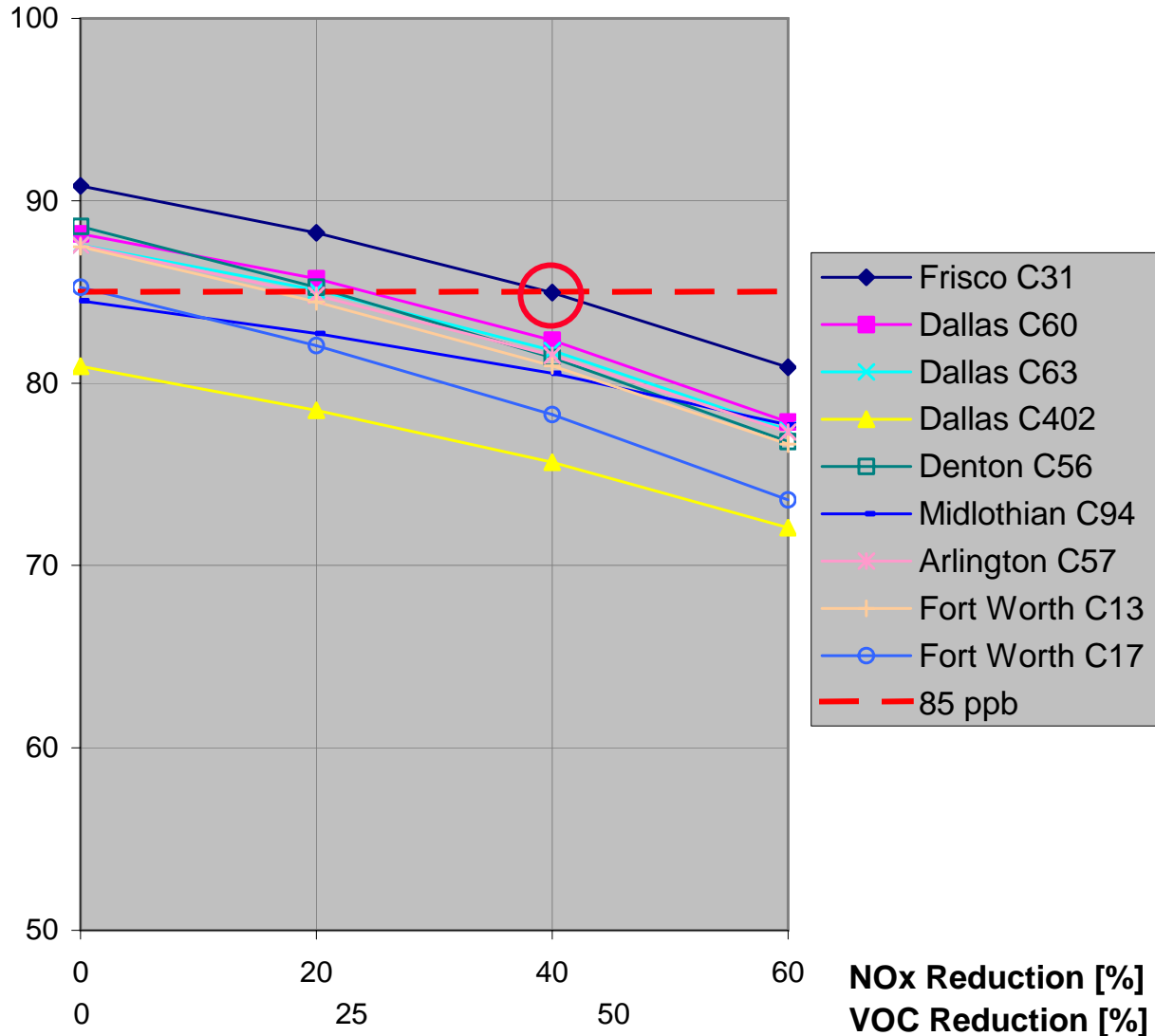


Design Value Scaled 2010 DFW 8-Hour Ozone NOx Reductions. Aug 13-22, 1999 Core Period.





Design Value-Scaled 2010 DFW 8-Hour Ozone NOx and VOC Reductions. Aug 13-22, 1999 Core Period.





Controls Already in Place

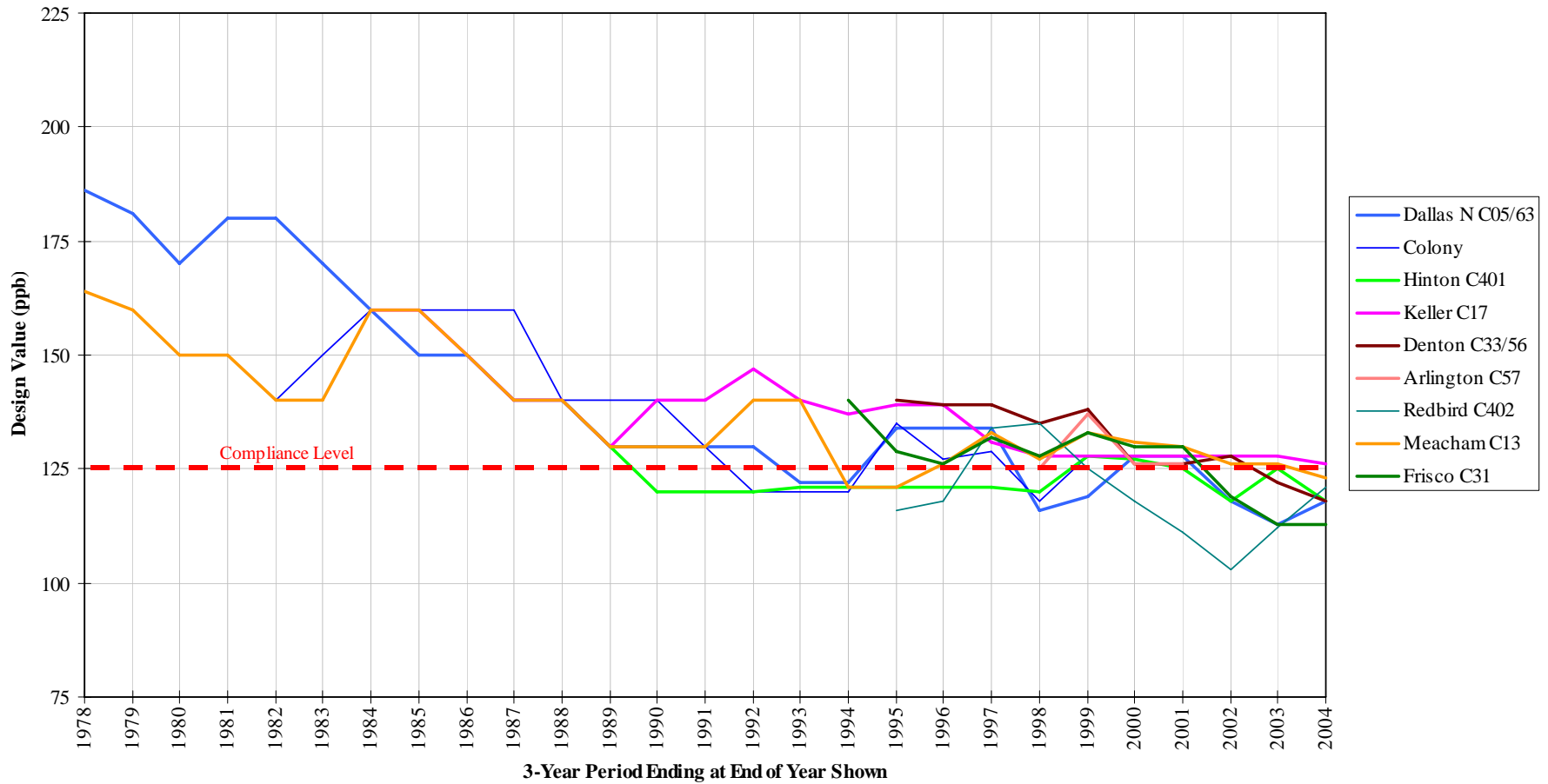
<p>Vehicle Inspection/Maintenance</p> <p>Texas Emissions Reduction Plan</p> <p>Clean Diesel</p> <p>Cement Kiln Emission Limits</p> <p>Clean Gasoline</p> <p>Gas-fired Water Heaters, Small Boilers, and Process Heaters</p> <p>California Spark-Ignition Engines Voluntary</p> <p>Mobile Emissions Reduction Program (VMEP)</p> <p>Transportation Control Measures</p> <p>Speed Limit Reduction</p> <p>Portable Fuel Containers</p> <p>Energy Efficiency</p> <p>Alcoa Reductions</p>	<p>Stage I Vapor Recovery</p> <p>Surface Coating Rules</p> <p>Lean-burn and Rich-burn Engines</p> <p>Utility/Industrial NOx</p> <p>Airport Ground Equipment</p> <p>Texas Clean Fuel Fleet</p> <p>Regional Utility NOx</p> <p>Low Reid Vapor Pressure Gas</p> <p>Tier II Vehicle Standards</p> <p>Federal Low Sulfur Gas</p> <p>National Low Emission Vehicles</p> <p>Locomotive Engines</p> <p>Diesel Engines</p> <p>Spark Ignition Standards</p> <p>Recreational Marine Standards</p> <p>Windshield Washer Fluid</p> <p>Stage II Vapor Recovery</p> <p>Bakeries</p> <p>Municipal Landfills</p> <p>Consumer/Commercial Products</p>	<p>Gasoline Terminals</p> <p>Fugitive Emissions</p> <p>Wood Furniture Manufacture</p> <p>Architectural/Industrial Coatings</p> <p>Traffic Markings</p> <p>High Performance Maintenance Coatings</p> <p>Special Purpose Coatings</p> <p>Aircraft Stage III</p> <p>Industrial Boilers</p> <p>Utility Boilers</p> <p>UST Remediation</p> <p>Signal Improvements</p> <p>Carswell Air Force Base Fire Training Pit Closure</p>
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Controls in Place have helped Reduce Ozone in DFW Area

Dallas - Fort Worth One-Hour Ozone Design Value Trends by Site

Each Design Value Covers a 3-Year Period Ending with the Year Indicated

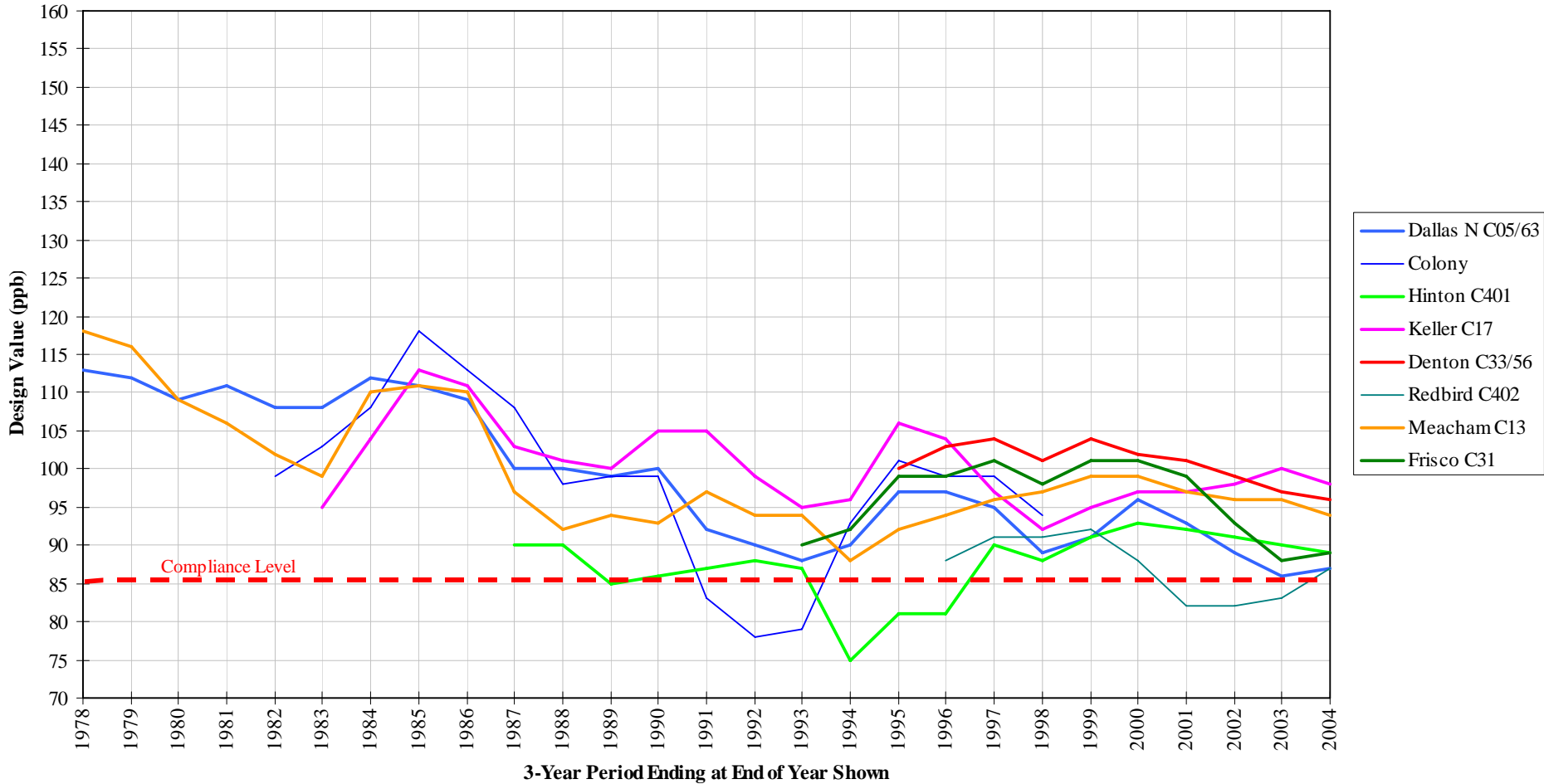




Controls in Place have Reduced 8 Hour Ozone Levels, but the Area does not Meet the Standard

Dallas - Fort Worth Eight-Hour Ozone Design Value Trends by Site

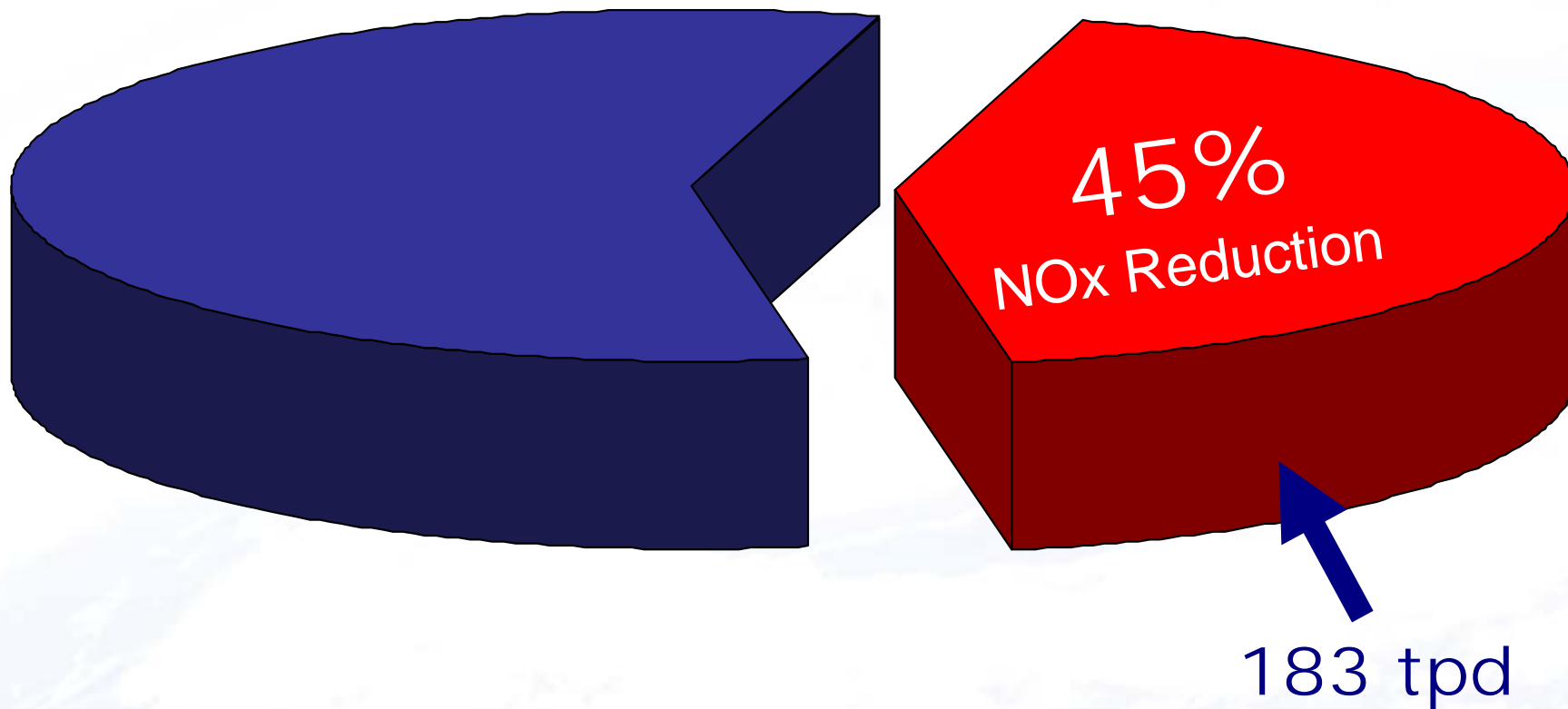
Each Design Value Covers a 3-Year Period Ending with the Year Indicated





2010 Emissions Inventory

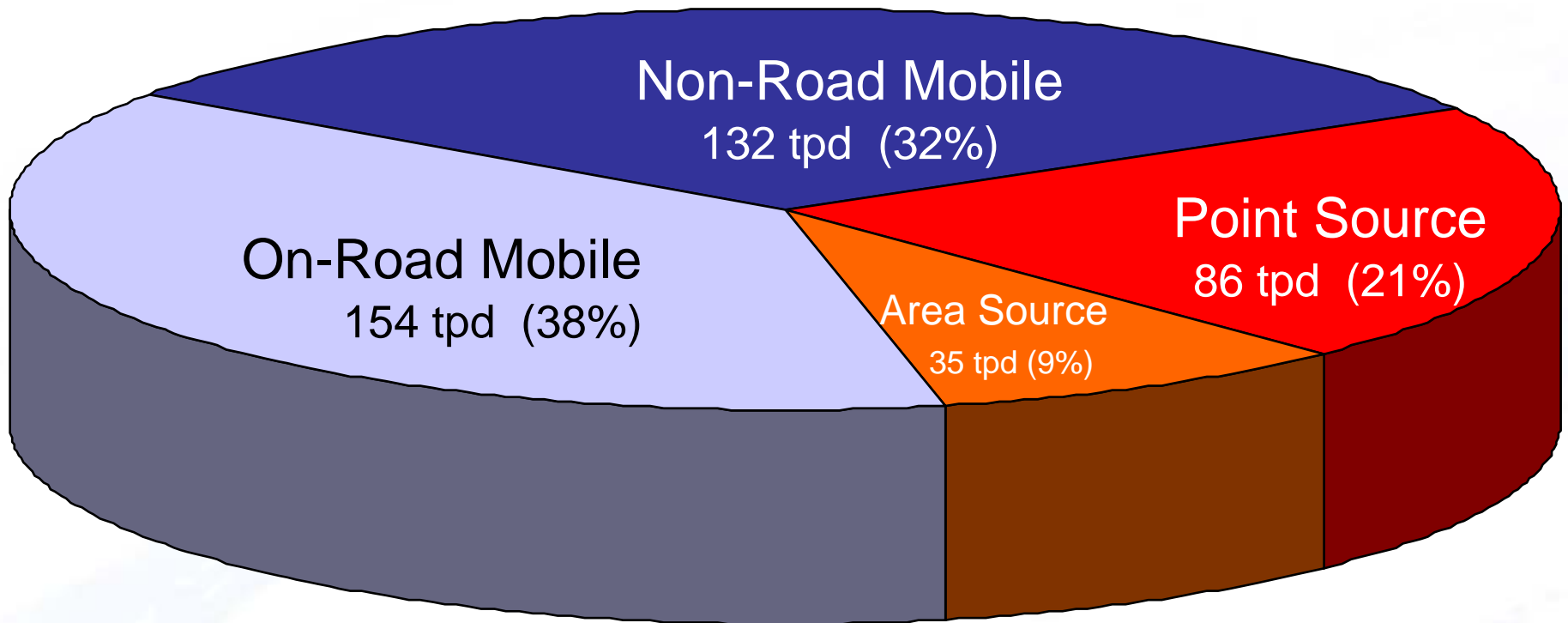
D/FW NOx Reductions Needed





2010 Emissions Inventory

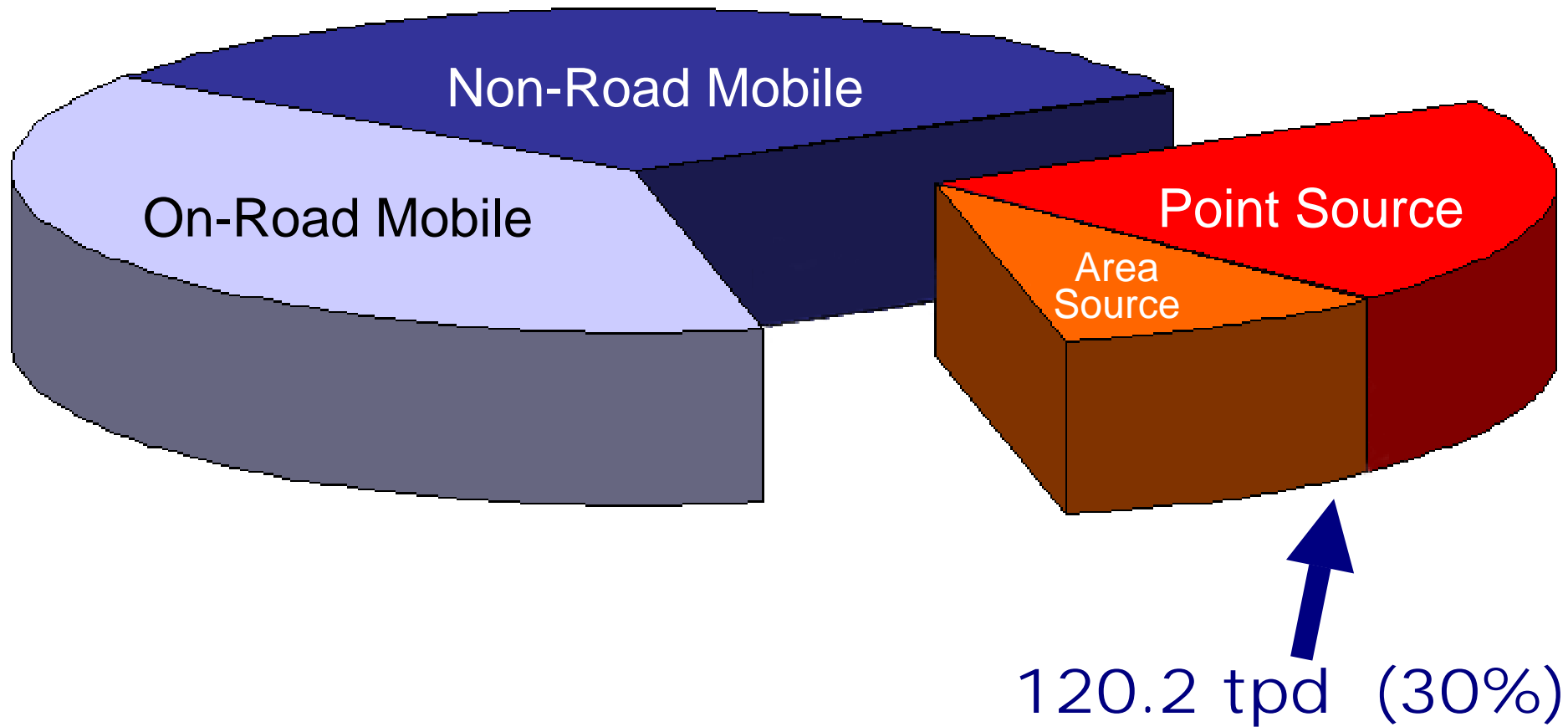
Dallas/Fort Worth NO_x





2010 Emissions Inventory

Sources Directly Regulated by TCEQ





2010 Emissions Inventory

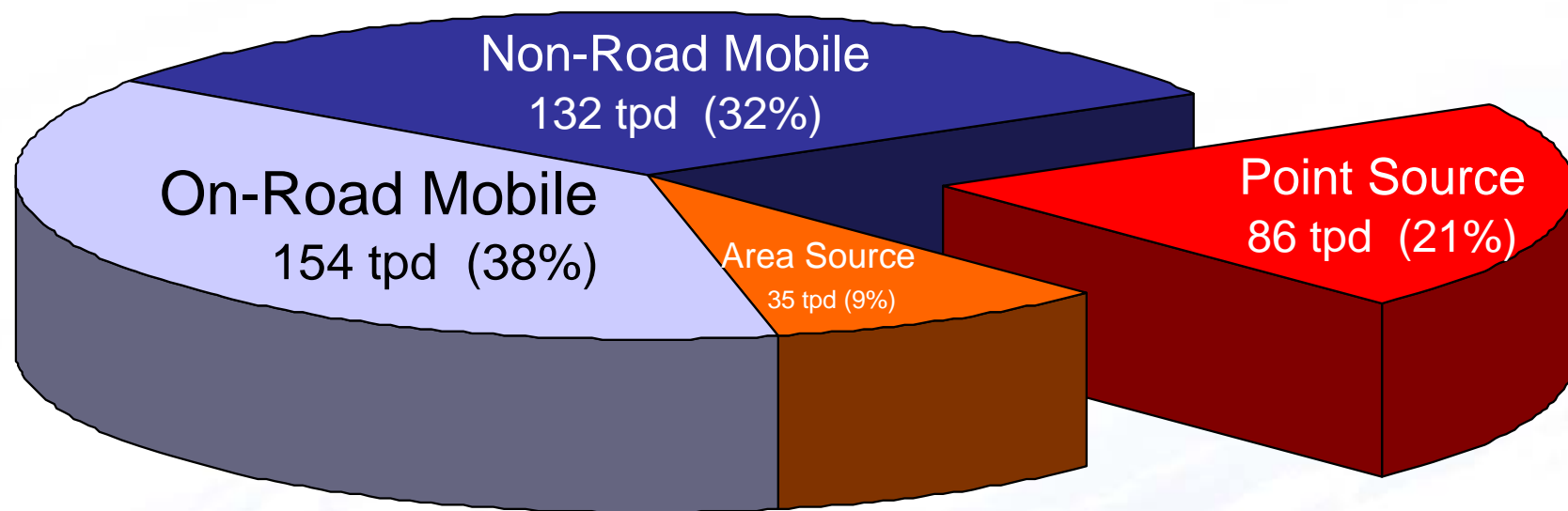
Examples of NO_x Emissions Sources

Point Sources	On-Road Mobile Sources	Non-Road Mobile Sources	Area Sources
Electric Utilities Industrial Utilities Cement Kilns	Cars Trucks	Locomotives Aircraft Construction Equipment Industrial Equipment	Oil and Gas Production Residential Natural Gas Commercial/Industrial Natural Gas



2010 Emissions Inventory

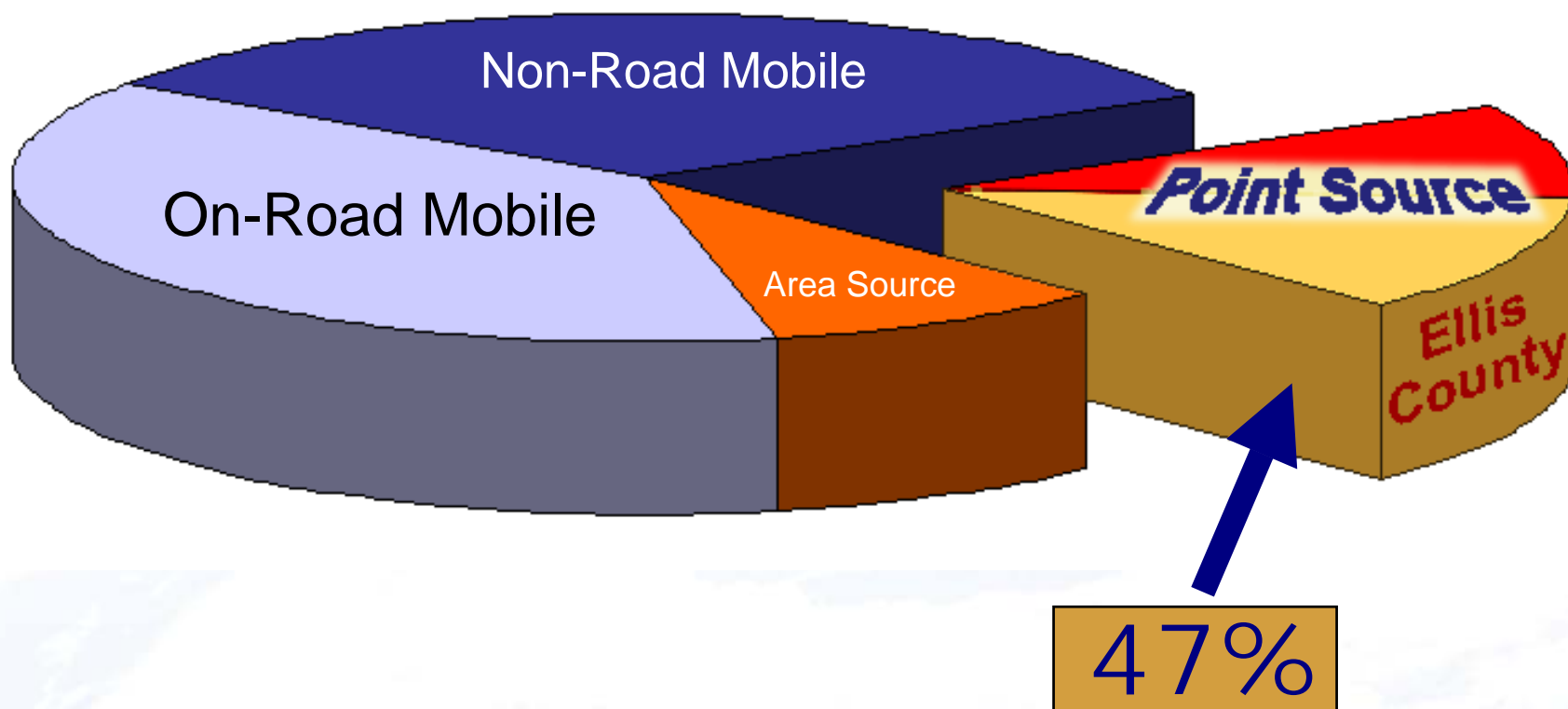
Dallas/Fort Worth Point Source





2010 Emissions Inventory

Point Source Emissions from Ellis County





Control Strategy Development

Potential Control Strategy Studies Recommended to Texas Environmental Research Consortium

– Types of NO_x Sources

- Gas fired engines
- Pipeline engines
- Process heaters and gas turbines
- Back-up Diesel Generators
- Electric Utilities
- Test Cell and Test Stand emission control technology



Control Strategy Development

Potential Control Strategy Studies Recommended to Texas Environmental Research Consortium

- Types of VOC Sources
 - Coal Tar Pavement / Sealers
 - Coatings and Solvent
 - Mobile Refueling
 - Loading and Unloading Operations (railcars)



Control Strategy Development

- Control Measure Catalog
 - TCEQ developing a list of potential control strategies for DFW
 - Living document
 - Draft scheduled for review in August
 - DFW and Houston work groups combined when possible
- Working with NCTCOG to obtain best information available



Examples of Lifestyle Changes

- **Free/Low Cost Transit** (esp. on ozone action days) - Costly.
- **Parking Restrictions** - A program to limit vehicle use in downtown areas or other areas of emission concentration could include: preferential parking for HOV users, public sector pricing, and/or control of parking supply.
- **Drive Thru Windows at Banks, Restaurants and Dry Cleaners** - Ban use during ozone season.



Examples of Lifestyle Changes

- **Heavy-Duty Diesel Vehicle I/M** – will require new testing equipment. Not a large number of vehicles.
- **Automobile Operation Controls** - Reduce air pollution at airports from motor vehicles by restricting idling and controlling access to terminal areas.
- **Truck Traffic** - Divert thru-trucks out of non-attainment area
- **Refueling Ban** - Ban fueling operations between 6 a.m. and 12 p.m.



Examples of Lifestyle Changes

- Require large commercial fleets, including taxis, to be hybrid, if possible
- College/university VMT Reductions – Eliminate internal streets. Only allow service vehicle traffic within campus.
- More stringent graphic arts requirements
- Change airport operations to reduce idling on runways – priority given to order planes to leave the gate
- California Consumer Product Rule – more stringent than EPA rules phased in by 2005 with a three-year sell-through date.



Examples of Lifestyle Changes

- Delayed start of Six Flags, Water Parks, Ranger Games
- Major road construction projects in non-ozone season or at night
- Open most retail operations later (exempt grocery stores, pharmacies)



DFW SIP Revision Time Line

2009 Future Inventory

Task	Start Date	End Date
Base Case Modeling	Fri 03/04/05	Fri 05/06/05
2009 Future Case Emissions Inventory Development, Including Mobile Source Emissions	Mon 03/14/05	Fri 09/30/05
2009 Future Base Case Modeling	Mon 10/03/05	Fri 10/07/05
Control Strategy Development	Mon 03/14/05	Fri 02/03/06
Rule Development	Mon 06/06/05	Fri 02/17/06
Commissioner Backup Materials, Including Publishing on Agency Web Site		Fri 04/28/06
SIP Proposal		Wed 05/17/06
SIP Adoption		Wed 11/15/06
Submit SIP to EPA		Fri 12/15/06

Note: Dates are estimates and are subject to revision. Any revisions will be provided to affected parties.



Cement Kiln Study

- Purpose of Study: to determine if additional controls are feasible
- Work order with ERG