

# **Texas Challenges in Meeting the 8-Hour Ozone Standard**

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**National Association of Regional Council Conference**



# Challenges

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- Resources constraints
- EPA deadlines
  - SIP submittal
  - attainment dates
  - compliance dates
- Lack of readily available control strategies



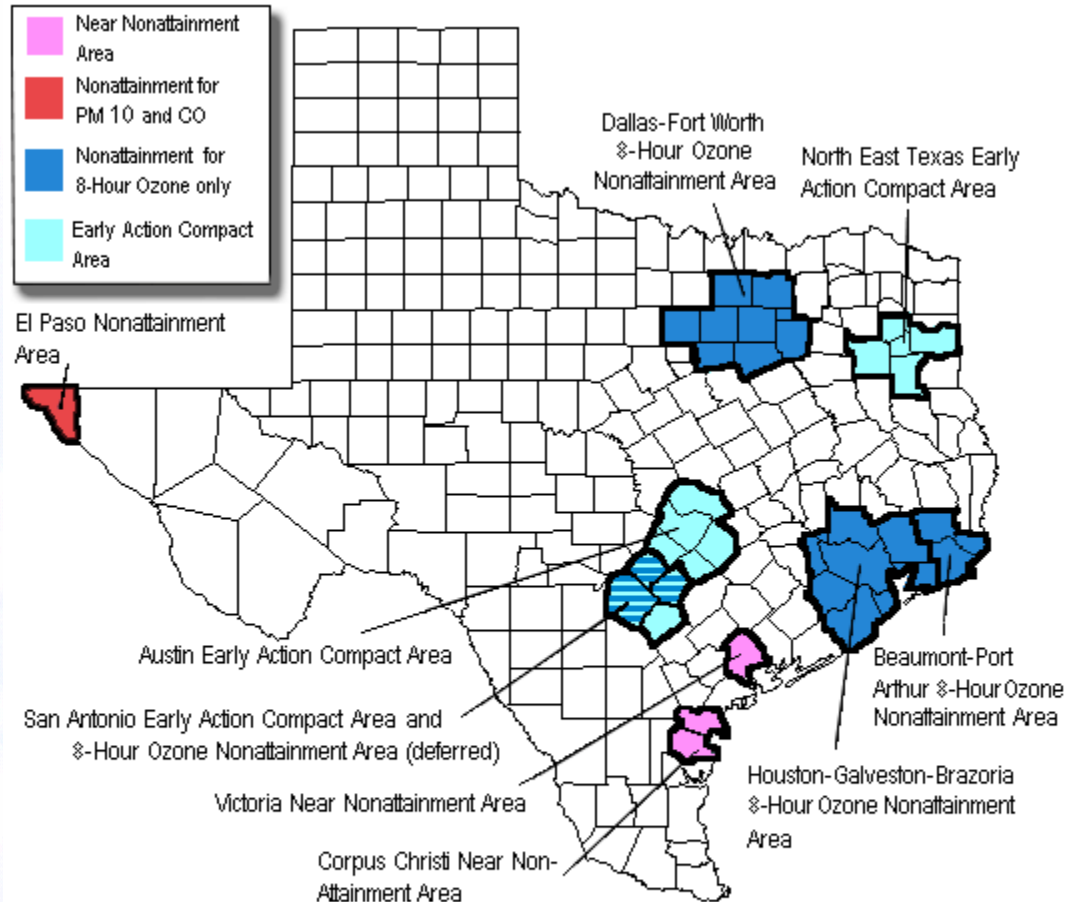
# Challenges

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- Magnitude of reductions needed
- For DFW and HGB, the reductions needed are greater than the amount of emissions that TCEQ directly regulates.
- Difficulty synchronizing control strategies with potential requirements under CAIR, CAMR, and Regional Haze.



# Texas' Nonattainment and Near Nonattainment Areas

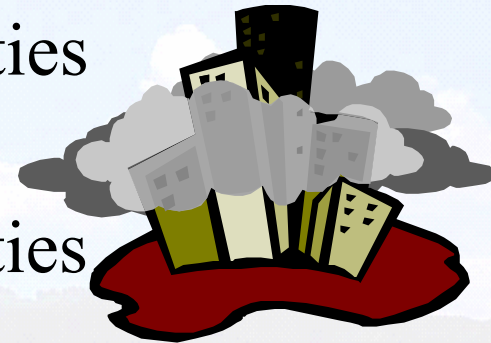




# 8-Hour Ozone Nonattainment Areas

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- **Houston-Galveston-Brazoria (HGB)**
  - Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties
- **Dallas-Fort Worth (DFW)**
  - Collin, Dallas, Denton, Tarrant, Ellis, Johnson, Kaufman, Parker, and Rockwall Counties
- **Beaumont-Port Arthur (BPA)**
  - Hardin, Jefferson, and Orange Counties
- **San Antonio (deferred until 2007)**
  - Bexar, Comal, and Guadalupe Counties





# Timing

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- June 15, 2004: EPA 8-Hour Ozone Designations and Phase I of the Implementation Rule effective
- November 29, 2005: Phase II of the Implementation Rule effective
- June 15, 2007: Attainment Demonstration SIPs due to EPA
- Other EPA requirements prior to 2007



# Timing

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- Technical aspects of SIP development take ~18 months
- TCEQ process of proposing and adopting rules ~14 months.



# Lack of Readily Available Control Strategies

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- Numerous control strategies were implemented under the 1-hour ozone standard (See handout).
- Existing control strategies at the state level focus on stationary sources.
- The state is dependent on the federal government to address emissions from federally pre-empted sources.



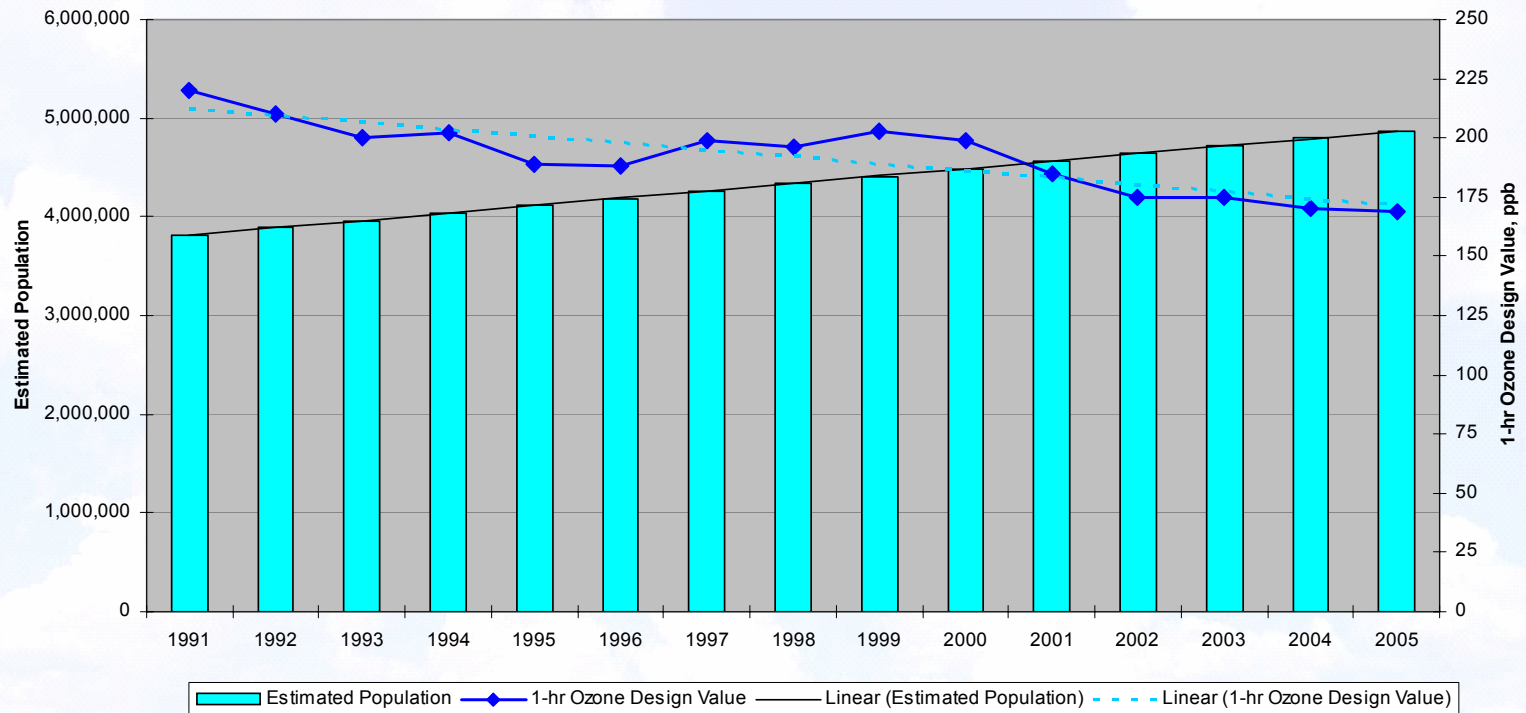
# Houston-Galveston-Brazoria

- 8-hour Ozone Standard Designation:  
**Moderate**
- Attainment Deadline:  
**June 15, 2010**
- Attainment demonstration: **ozone season 2009**
- Compliance dates: **prior to ozone season 2009**
- 20 months from rule adoption to compliance



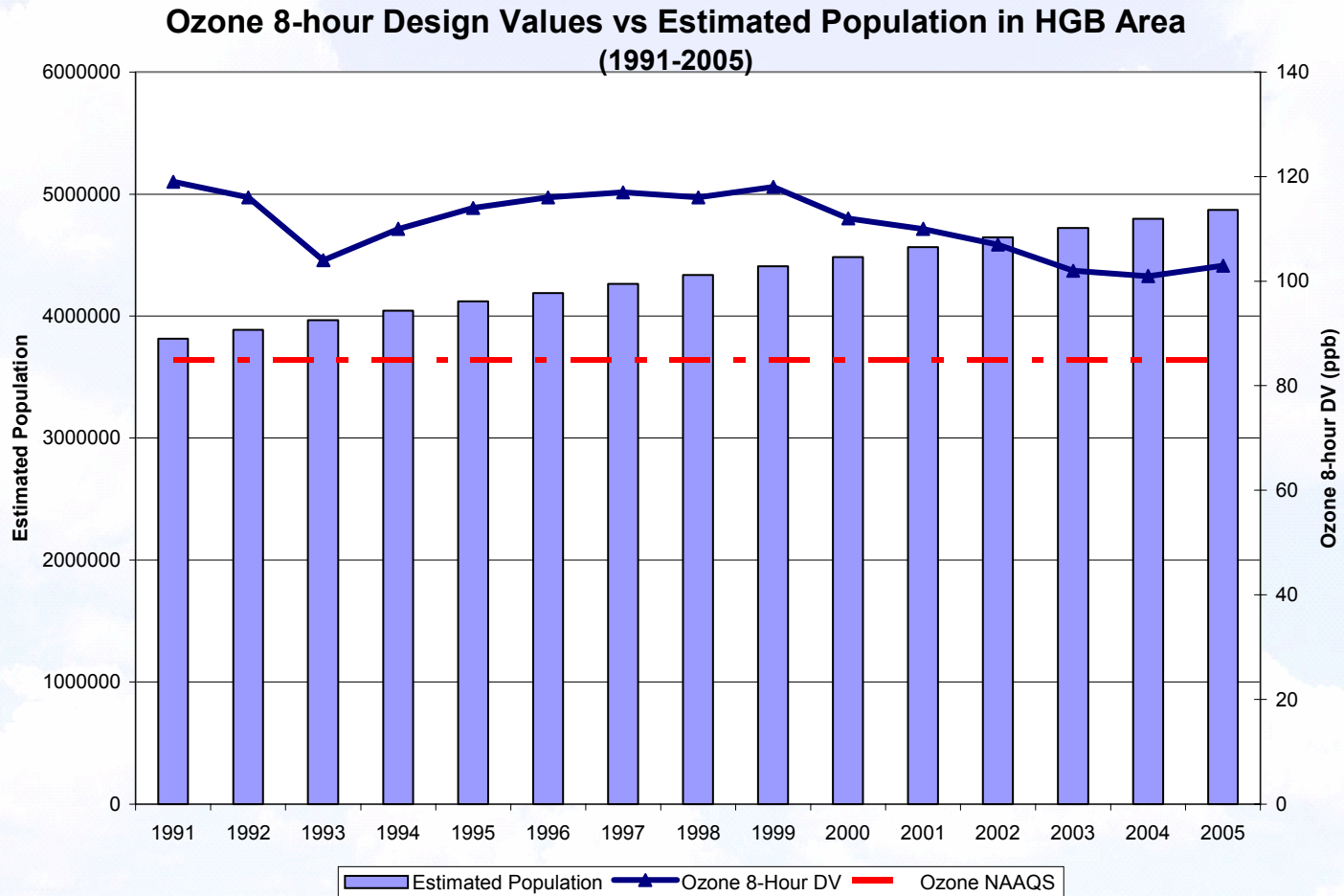
# Houston Area 1-Hour Ozone Trends

Ozone 1-hr Design Values in HGB Area  
vs.  
Estimated Population  
(1991-2005)





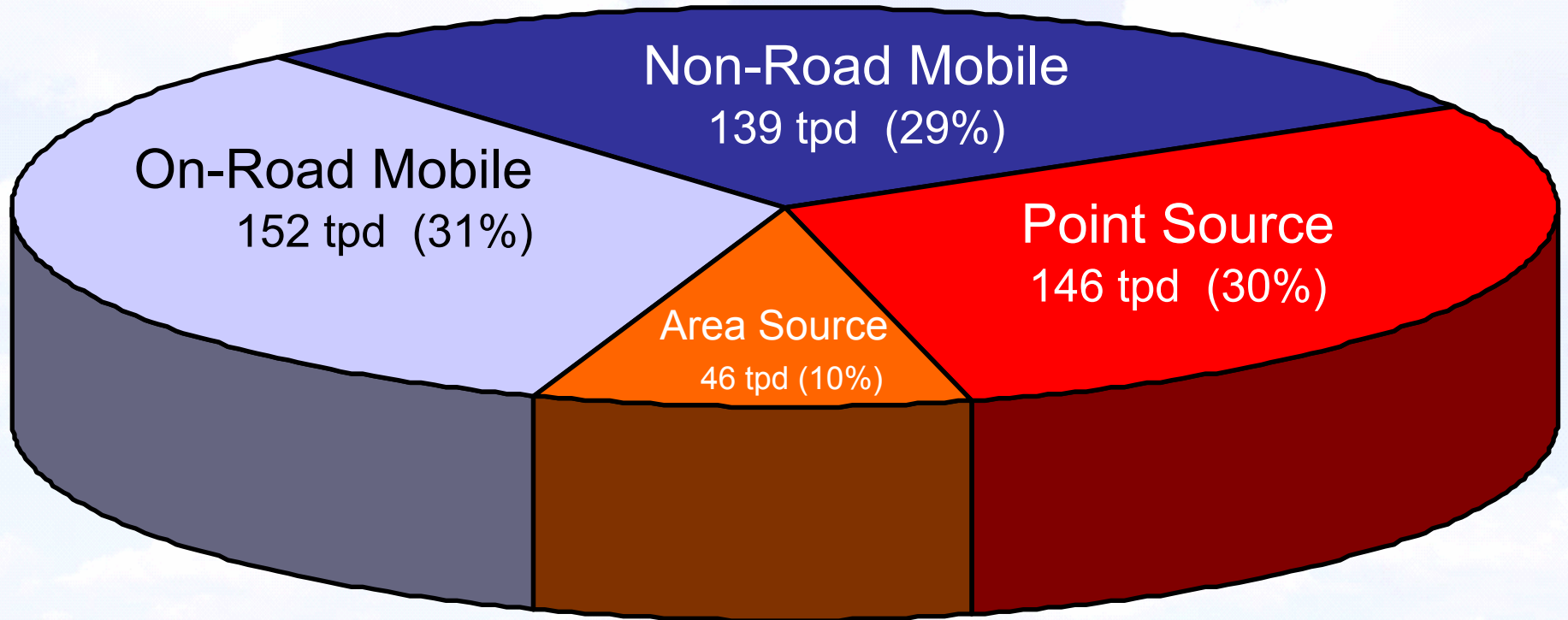
# Houston Area 8-Hour Ozone Trends





# HGB 2009 Emissions Inventory

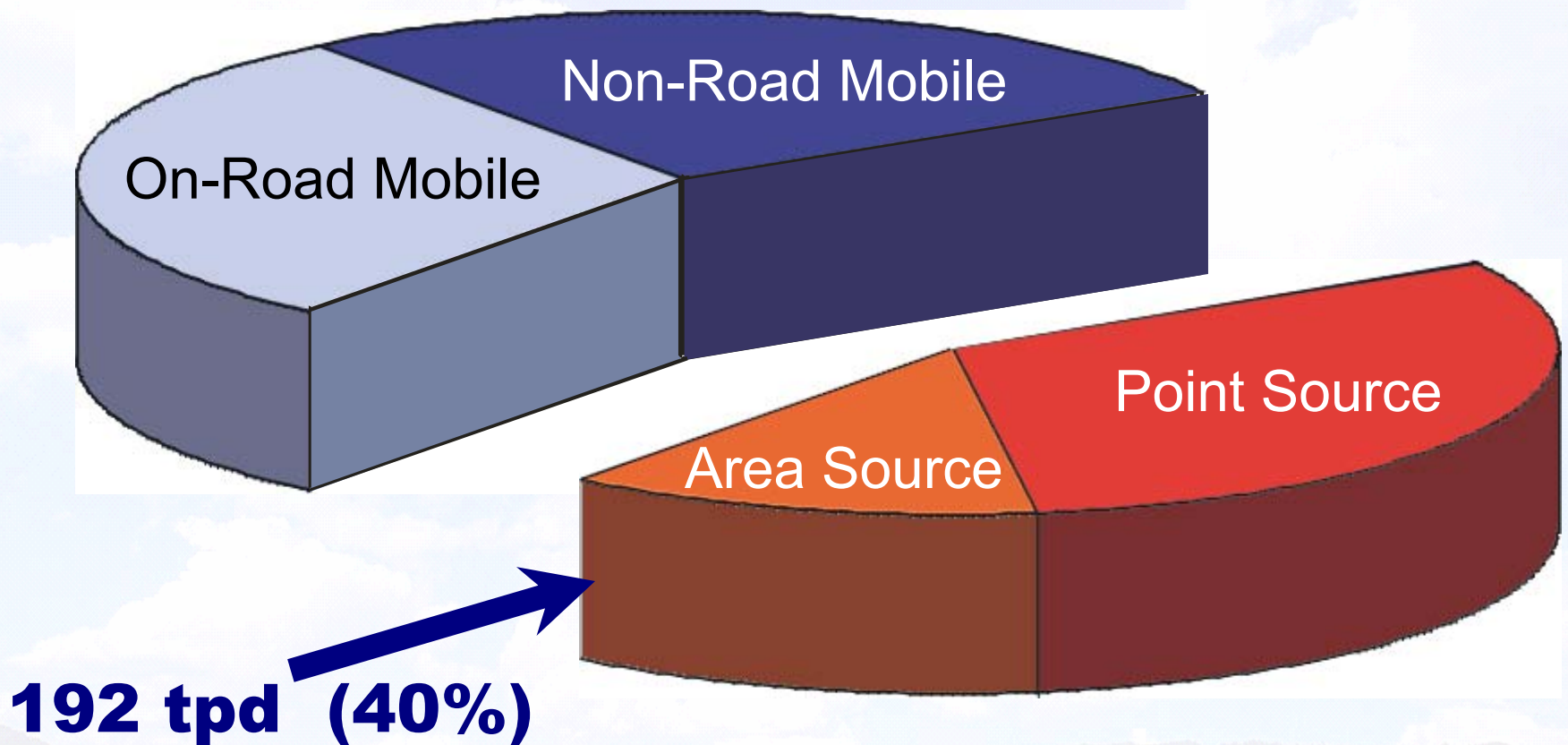
## NO<sub>x</sub>: Source Category Estimates





# HGB 2009 Emissions Inventory

HGB NO<sub>x</sub> Sources Directly Regulated by TCEQ





# HGB Concepts Under Consideration

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- Major Source NO<sub>x</sub> reduced an additional 50%
  - Area-wide cap currently reduces 80% from 2000
- Texas Low Emission Diesel for marine fuel the 8-county area
- Additional Highly Reactive VOC (HRVOC) requirements
  - 4 compounds currently capped
- Industrial Wastewater & Fugitive requirements (VOC)
- Storage and Transfer Operations requirements (VOC)



# Dallas-Fort-Worth

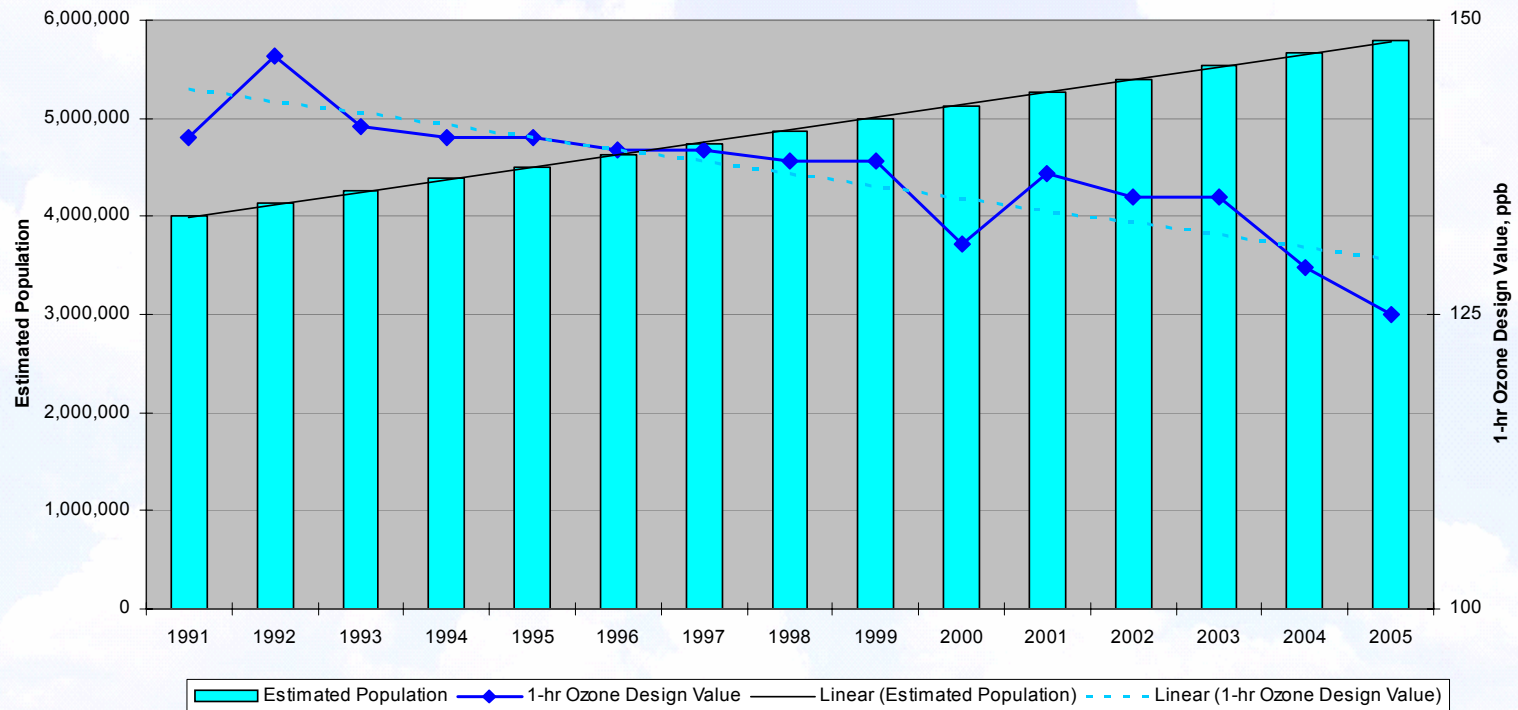
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- 8-hour Ozone Standard Designation:  
**Moderate**
- Attainment Deadline:  
**June 15, 2010**
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# Dallas-Fort Worth 1-Hour Ozone Trends

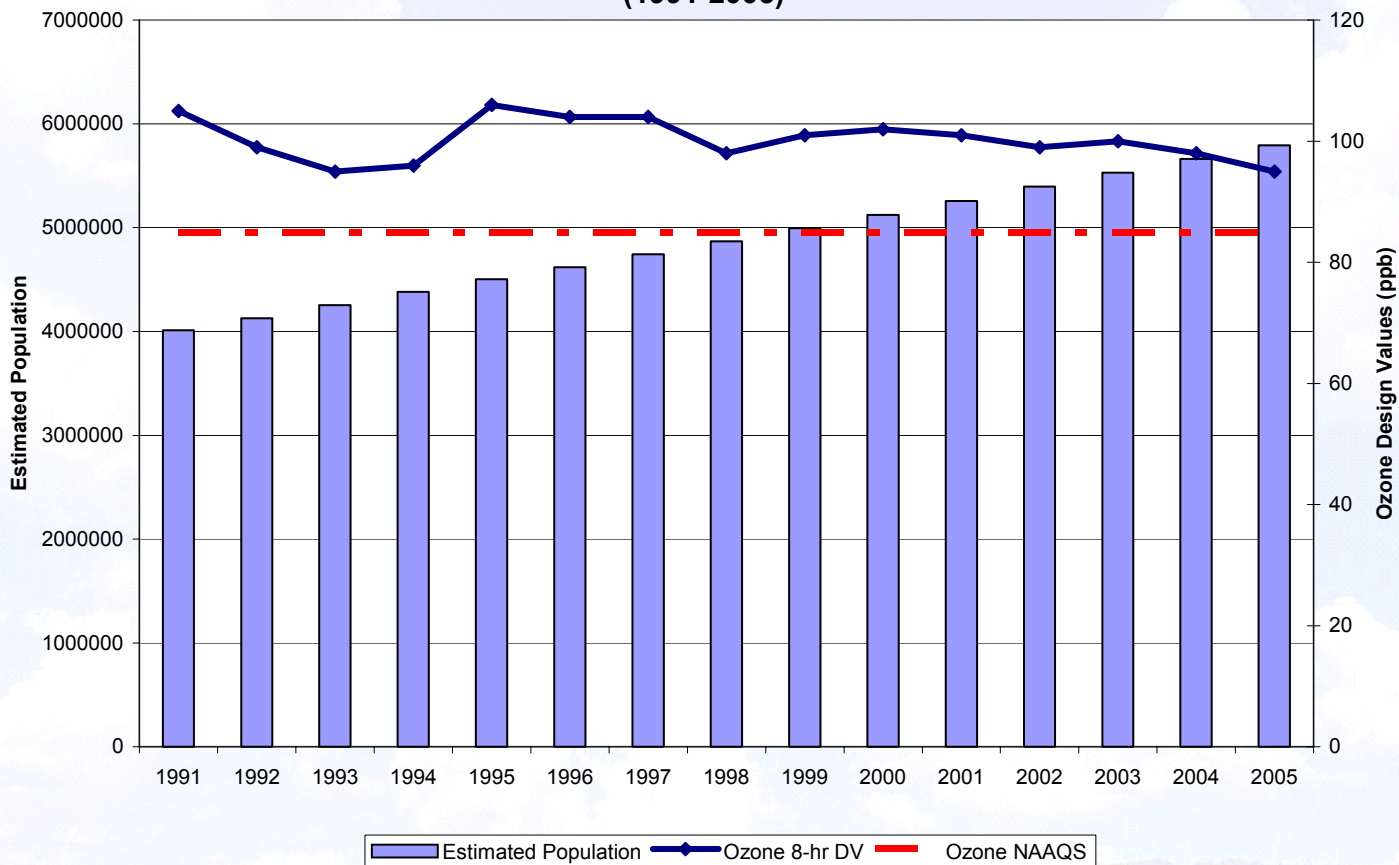
Ozone 1-hr Design Values in Dallas/Ft. Worth Area  
vs.  
Estimated Population  
(1991-2005)





# Dallas-Fort Worth 8-Hour Ozone Trends

Ozone 8-hour Design Values vs Estimated Population in DFW Area  
(1991-2005)





# DFW 2009 Modeling Inventory

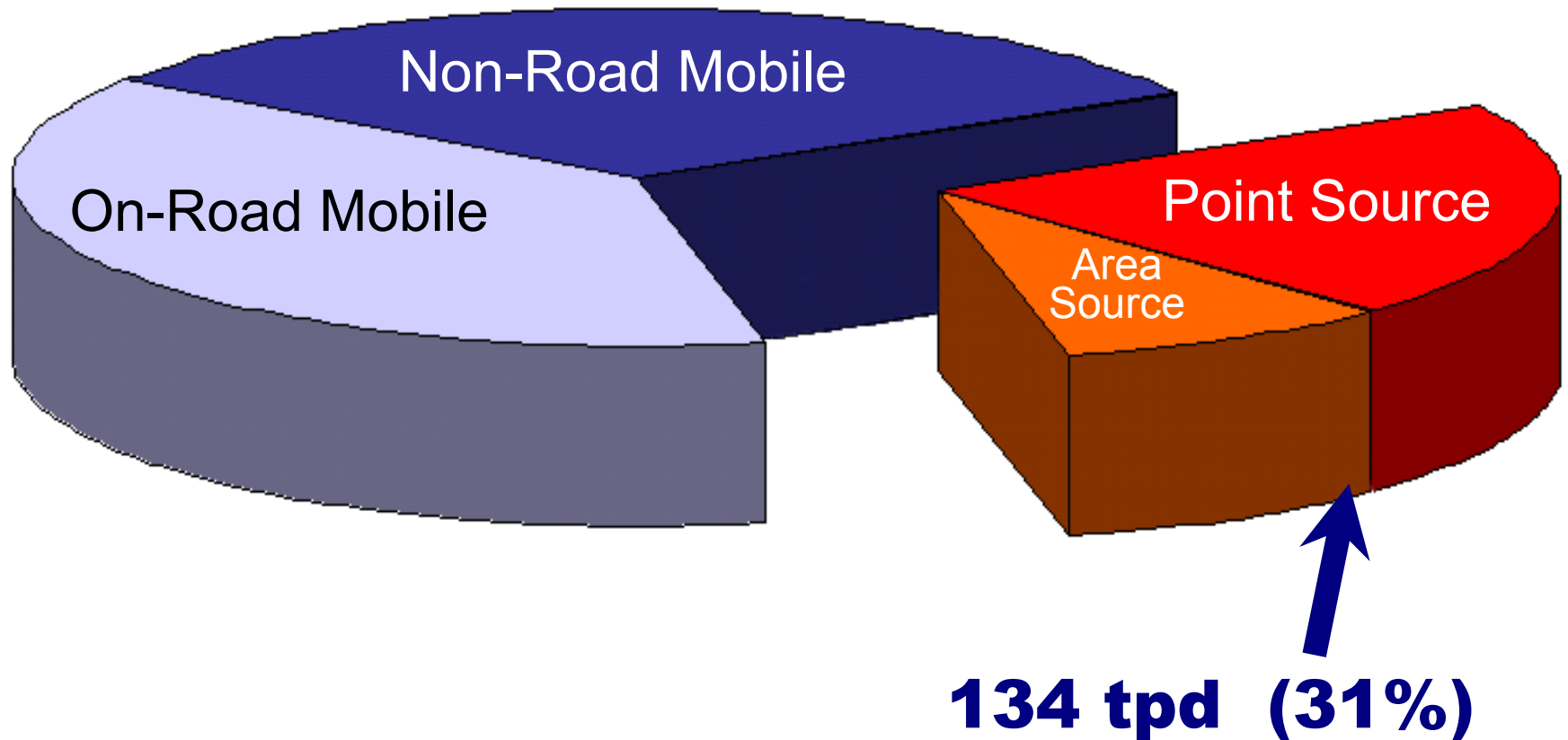
## 9 County NO<sub>x</sub>: Source Category Estimates





# DFW 2009 Modeling Inventory

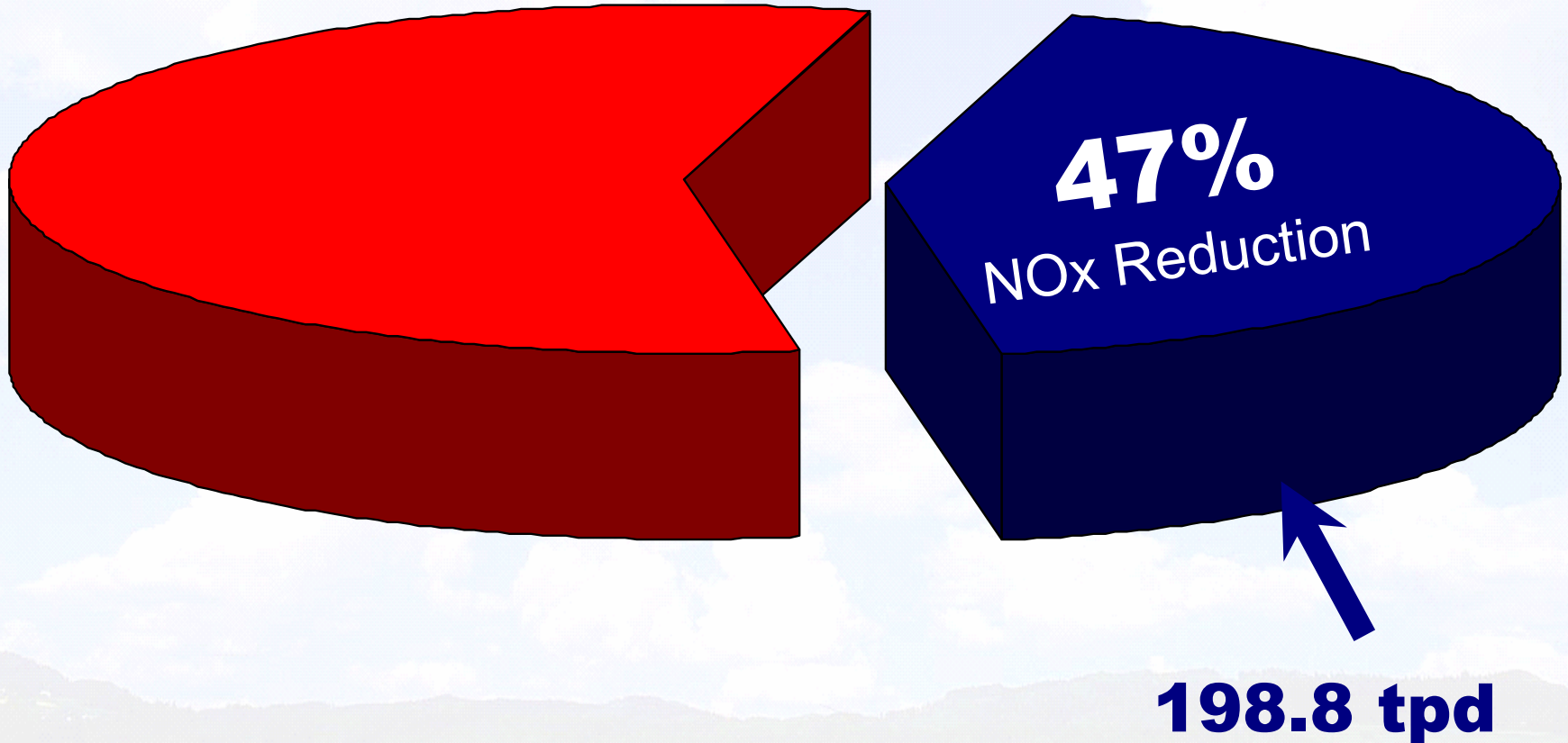
NOx Sources Directly Regulated by TCEQ





# DFW 2009 Modeling Inventory

Estimate of NOx Reductions Needed





# **DFW Concepts Under Consideration**

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- Cement Kiln control strategies
- Major Source NO<sub>x</sub> controls in DFW area
- VOC Reasonable Available Control Technology (RACT) rules
- Locally implemented control strategies



# Beaumont-Port Arthur

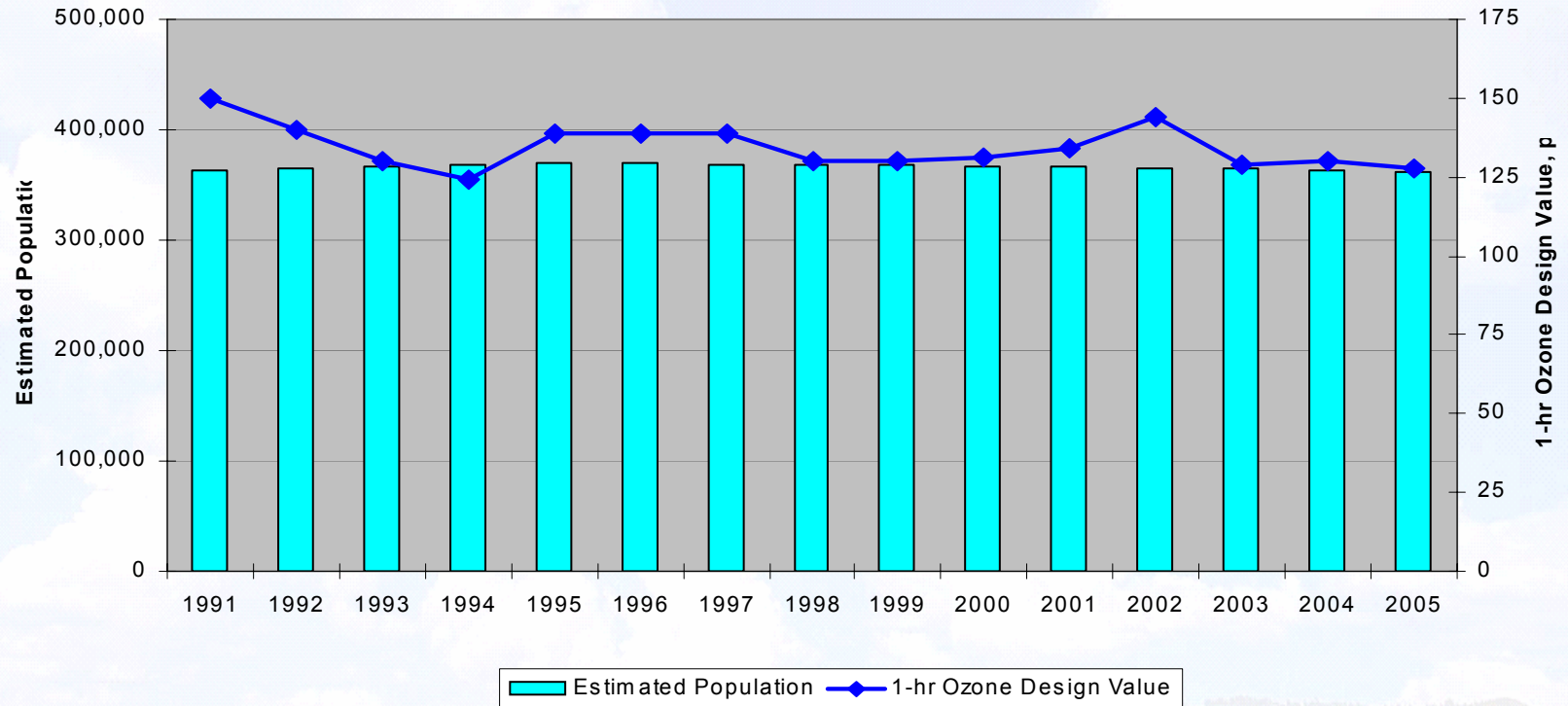
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- 8-hour Ozone Standard Designation:  
*Marginal*
- Attainment Deadline:  
*June 15, 2007*
- TCEQ submitted a BPA 1-hour and an 8-Hour Ozone Attainment Demonstration SIP in 2004 and a revision in 2005.



# Beaumont-Port Arthur 1-Hour Ozone Trends

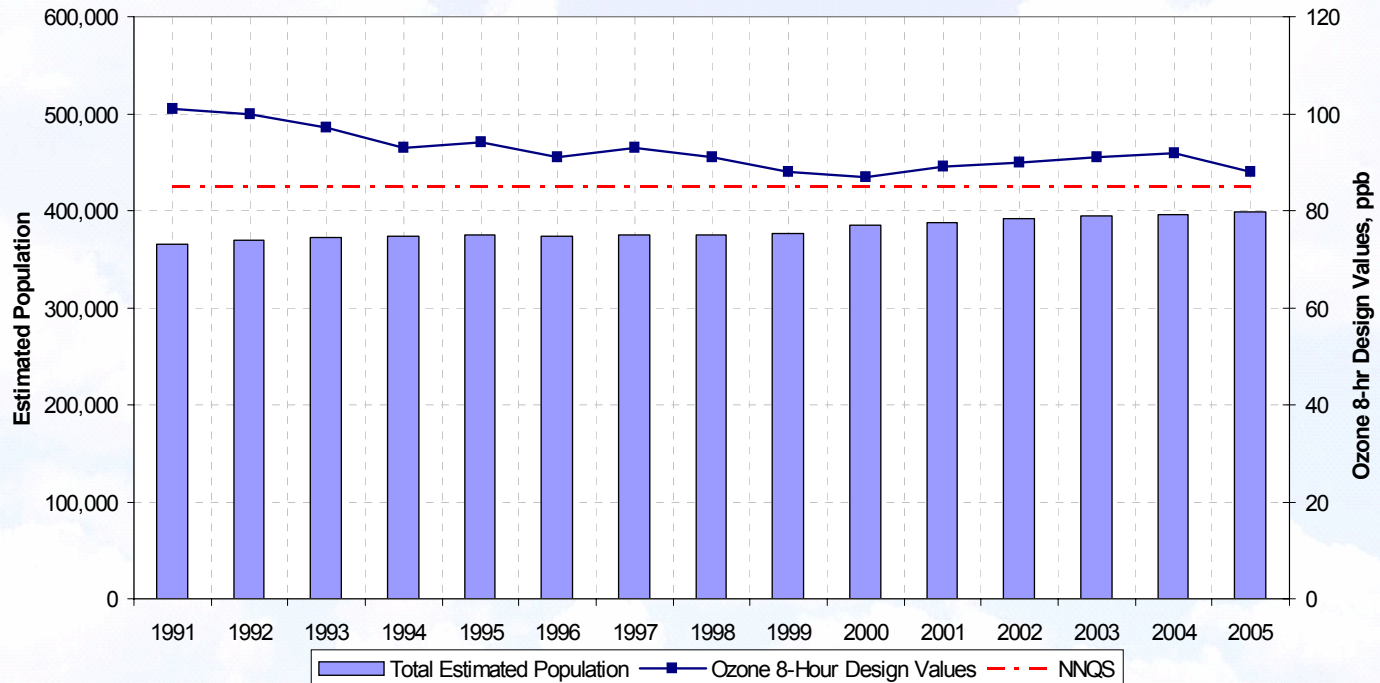
Ozone 1-hr Design Values in BPA Area  
vs.  
Estimated Population  
(1991-2005)





# Beaumont-Port Arthur 8-Hour Ozone Trends

Ozone 8-hr Design Values in BPA Area vs. Estimated Population  
(1991-2005)



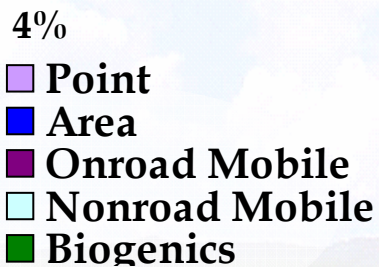
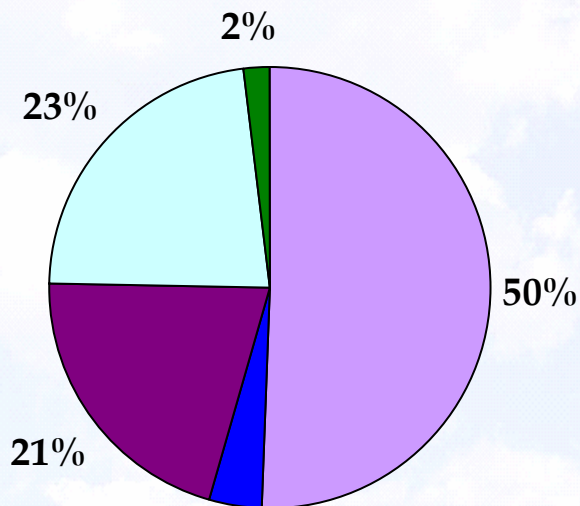
\*1991-1999 population data (Tx State Library) \*2000-2005 population data (US Census Bureau)



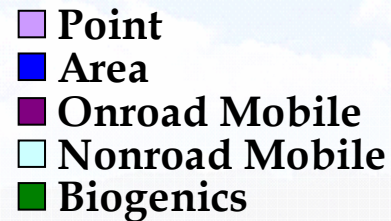
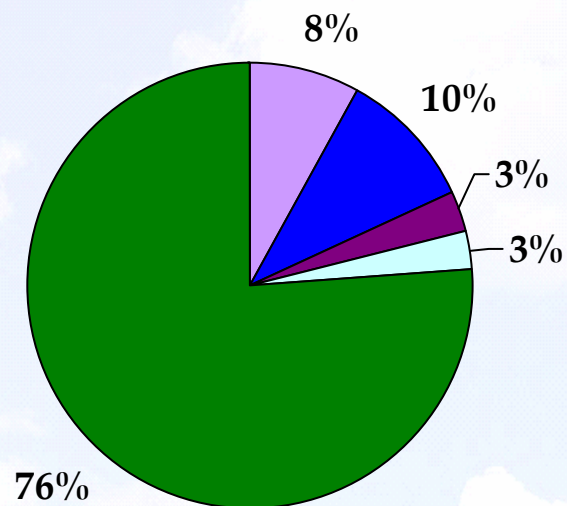
# Beaumont-Port Arthur Area Emissions

2002 Emissions Inventory

**NO<sub>x</sub>**



**VOC**





# **Early Action Compact (EAC) Areas**

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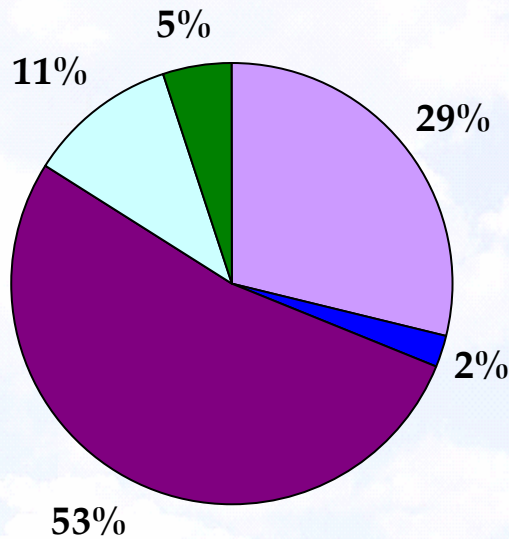
- San Antonio, Austin, Northeast Texas
- Early planning, implementation, & emission reductions for expeditious attainment & maintenance
- TCEQ submitted EAC SIPs in 2004.
- EPA deferred the effective date of nonattainment designation until December 31, 2007 for San Antonio.



# San Antonio Area Emissions

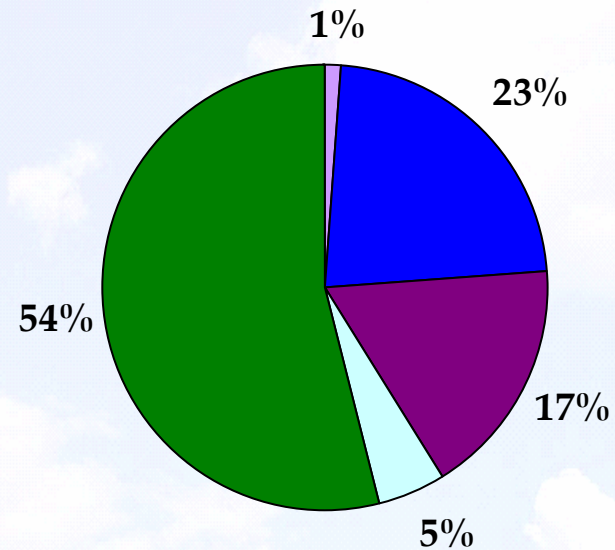
2002 Emissions Inventory

**NO<sub>x</sub>**



- Point
- Area
- Onroad Mobile
- Nonroad Mobile
- Biogenics

**VOC**



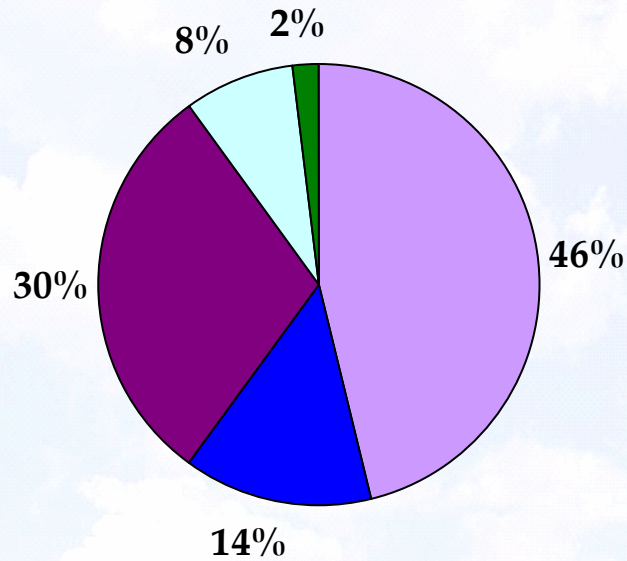
- Point
- Area
- Onroad Mobile
- Nonroad Mobile
- Biogenic



# Northeast Texas Area Emissions

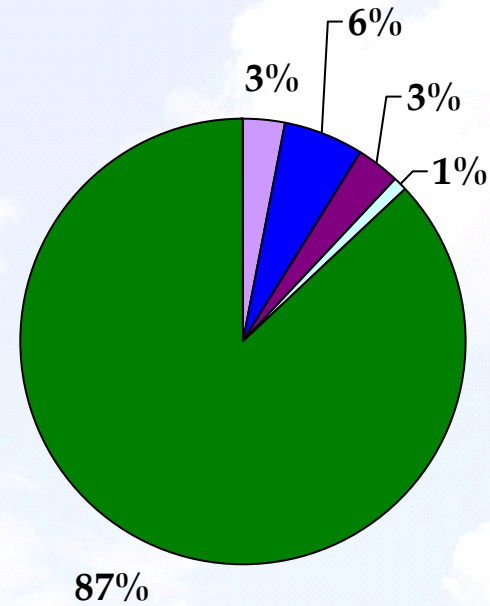
2002 Emissions Inventory

**NO<sub>x</sub>**



- Point
- Area
- Onroad Mobile
- Nonroad Mobile
- Biogenic

**VOC**



- Point
- Area
- Onroad Mobile
- Nonroad Mobile
- Biogenic



# Contact Information

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For information about SIP activities  
visit our website at:

<http://www.tceq.state.tx.us/nav/eq/sip.html>



# Contact Information

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