

# The Path Forward

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**Candy Garrett**

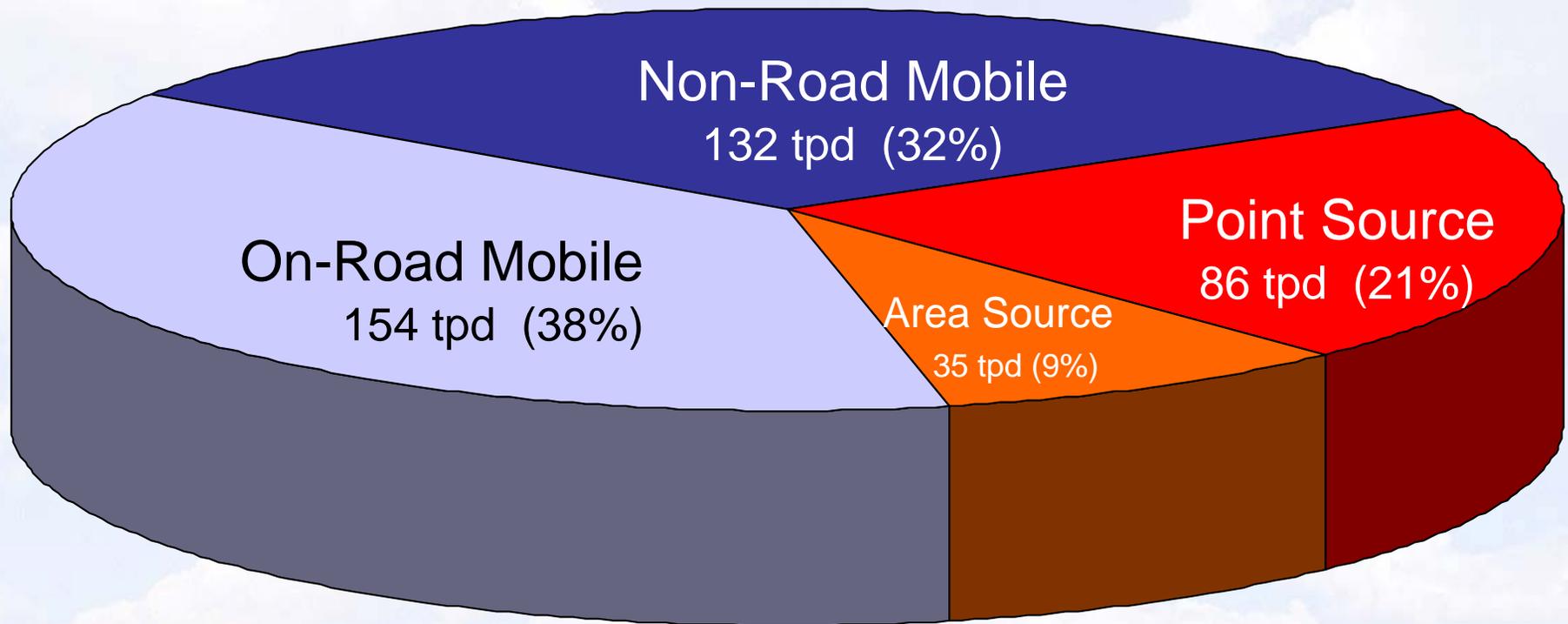
December 14, 2005





# 2010 Emissions Inventory

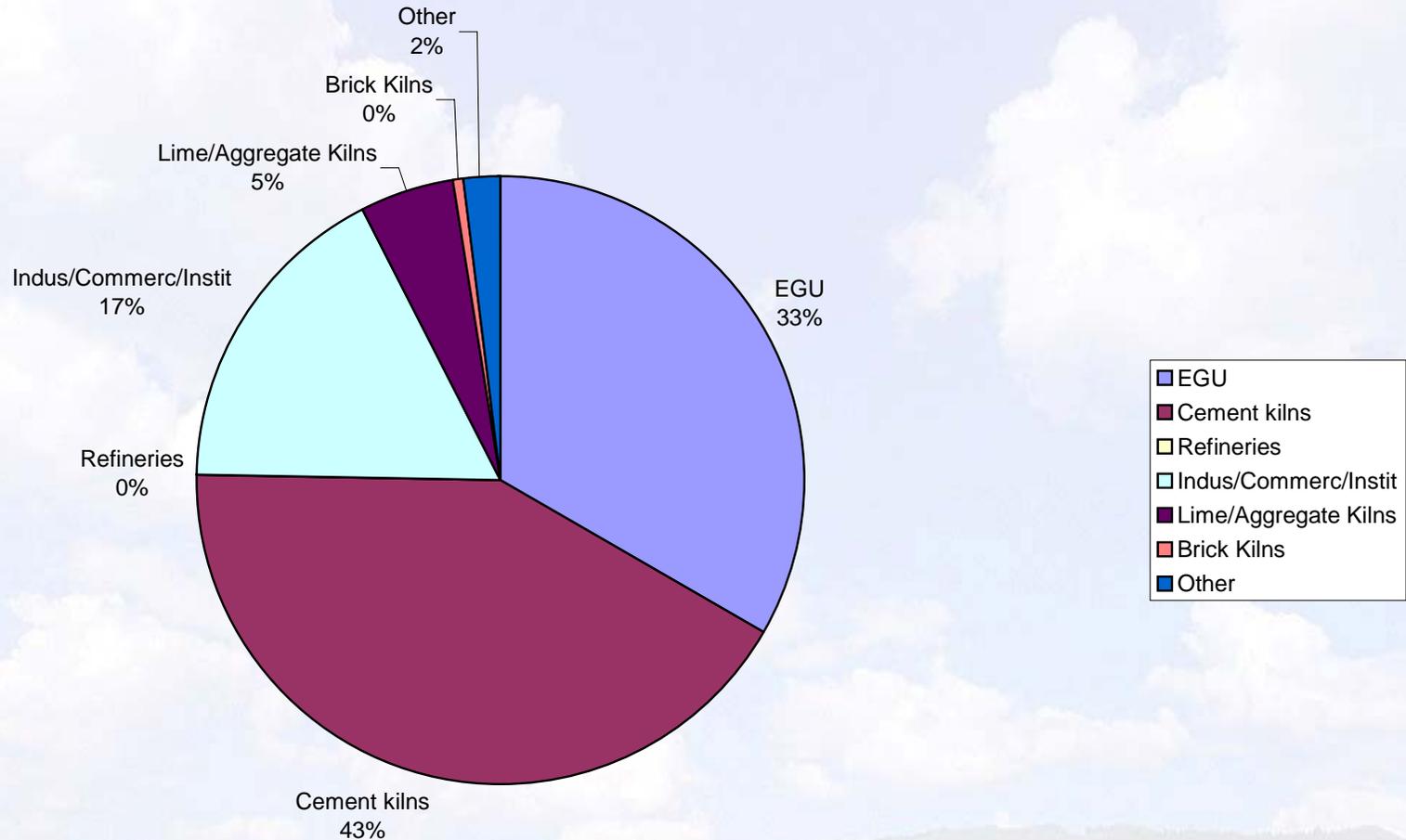
## 9 County Dallas/Fort Worth NO<sub>x</sub>



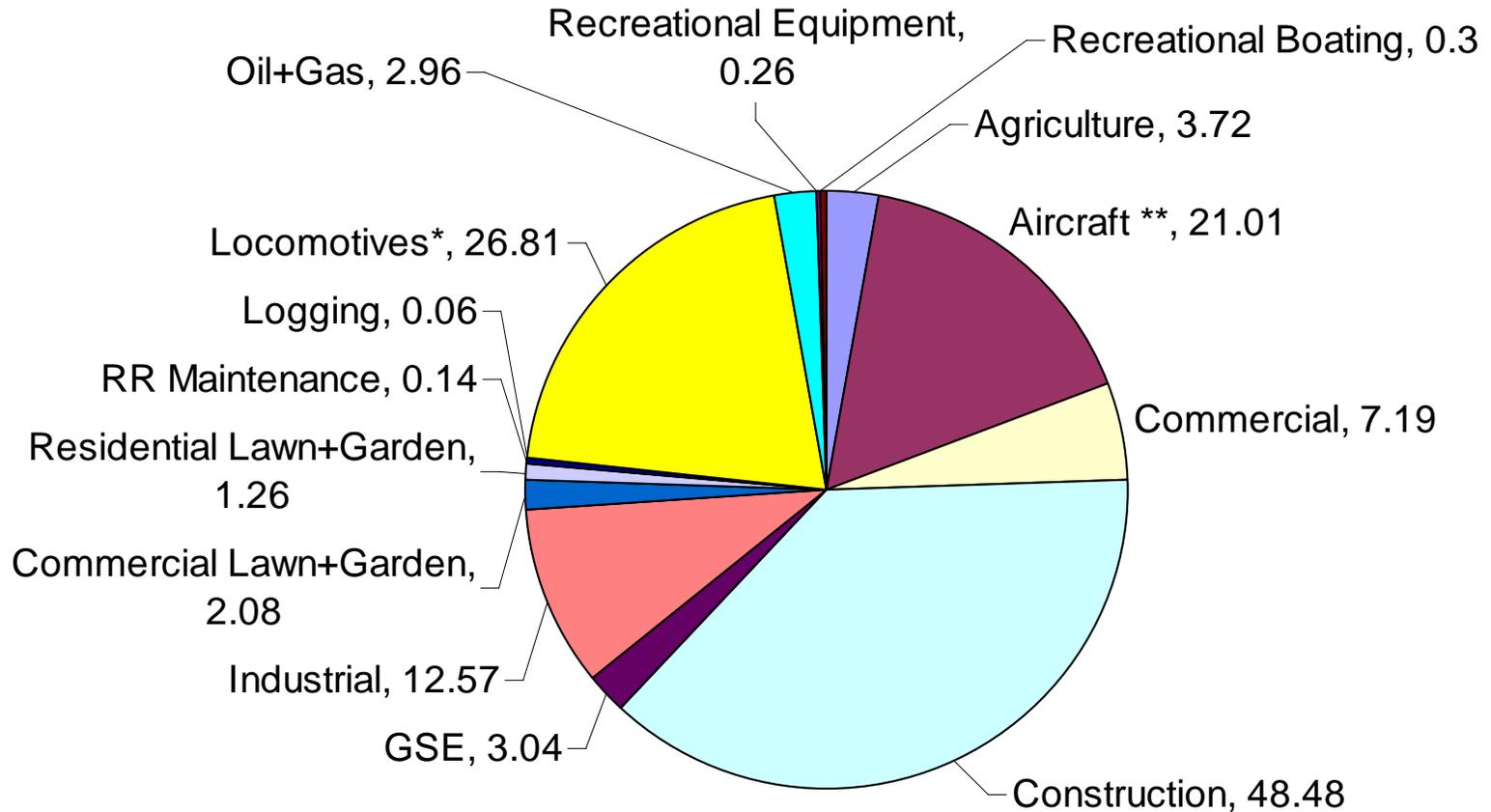


# Point Source NO<sub>x</sub> by Source Type

2003 Point Source NO<sub>x</sub> by Source Type



# 2009 DFW Nine County NOx Non-Road

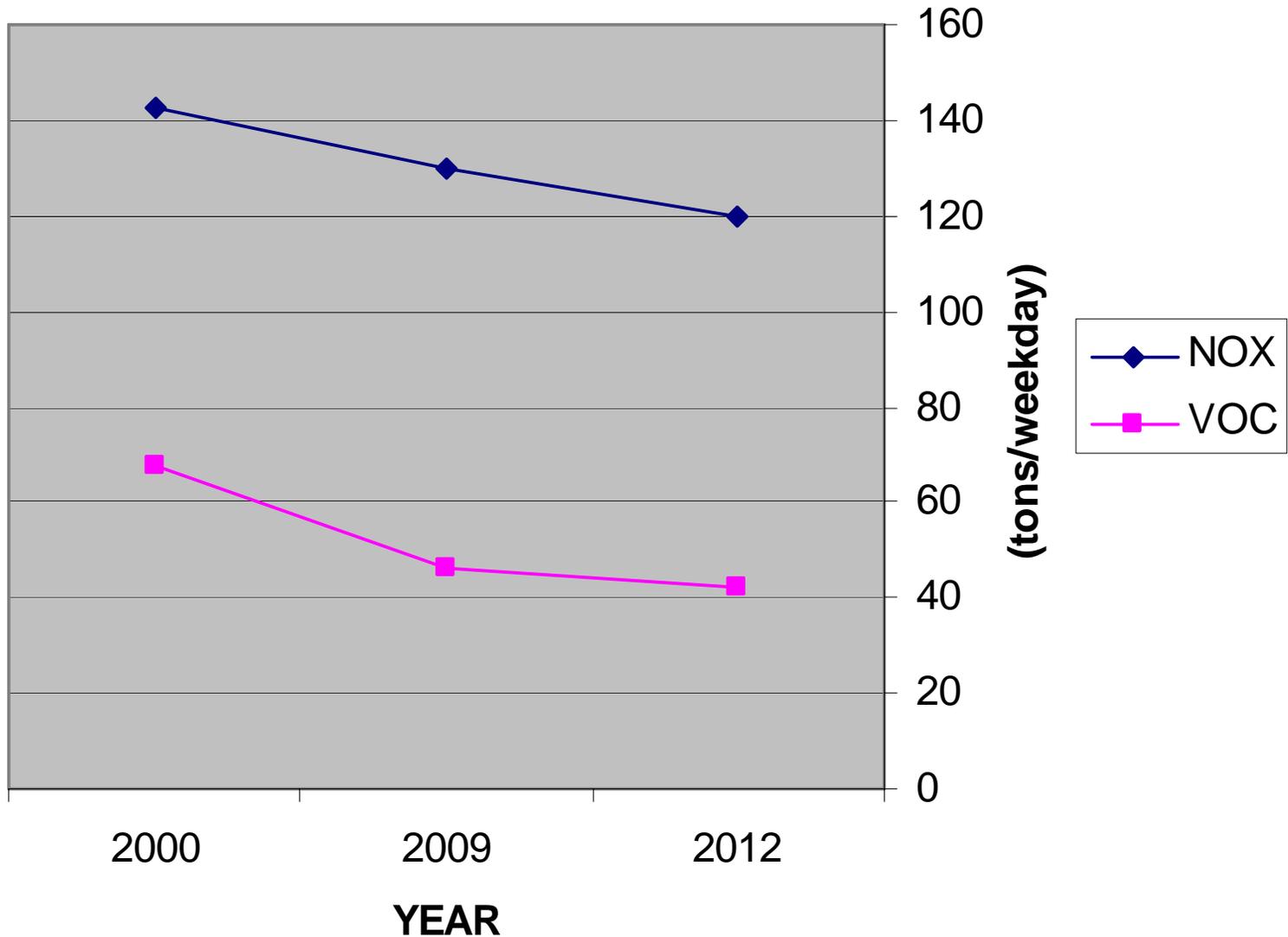


**Total Non-Road NOx: 130 tpd**

\*switchers represent approximately 55% of the NOx

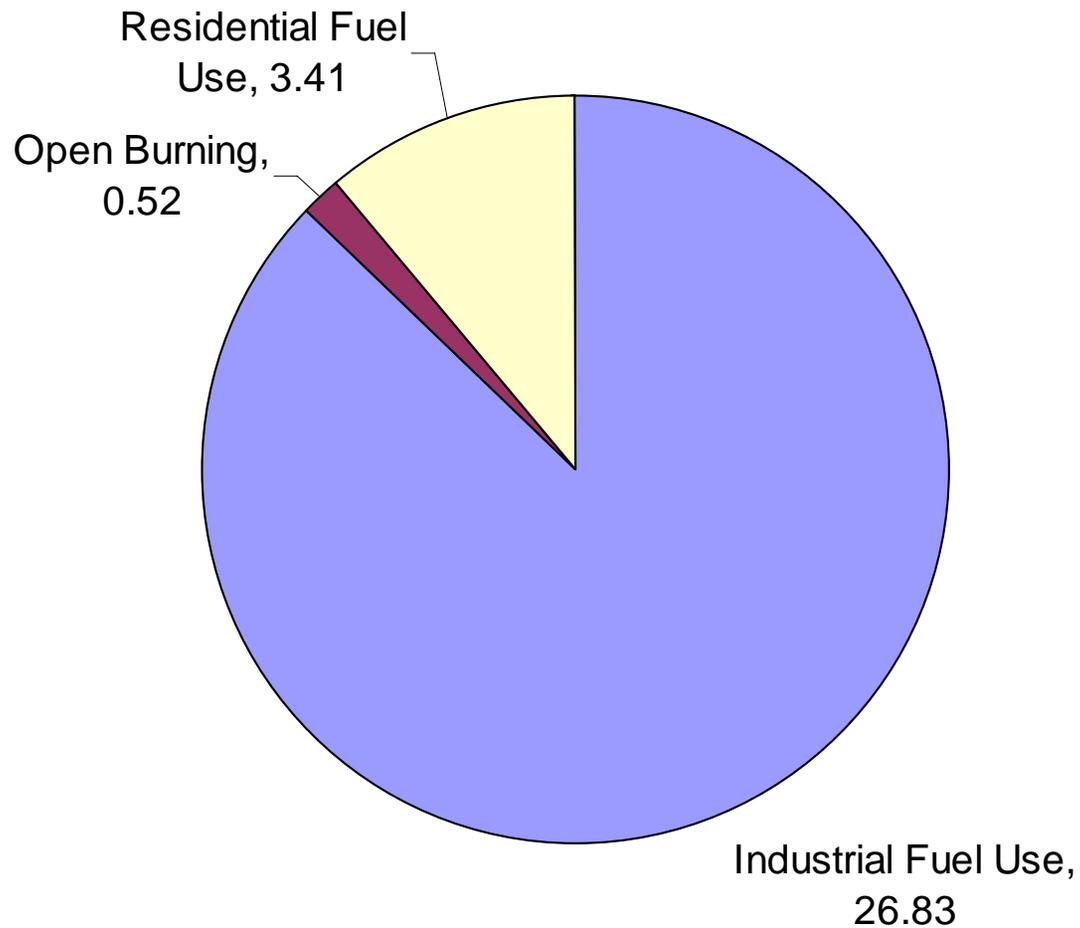
\*\*onroad vehicles represent 1% of the NOx

# DFW Nine County Non-Road EI Trends



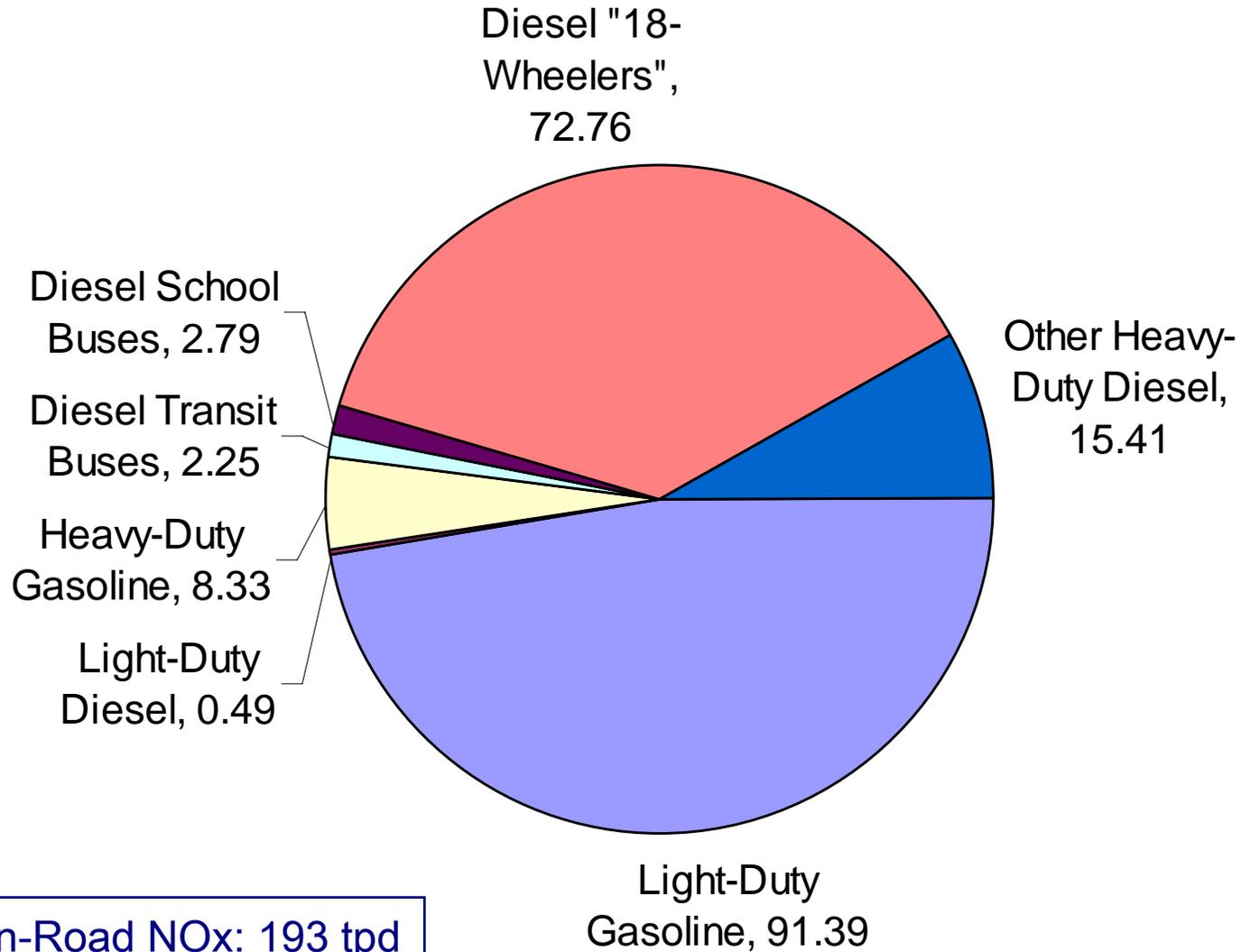
# 2009 DFW Nine County NOx Area Source

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**Total Area Source NOx: 45 tpd**

# 2009 DFW Nine County NOx On-Road



## 2009/2012 On-Road Trend Inventory Ratios Applied to 2009 9-County DFW Emissions (tpd)

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<i><b>Calendar</b></i>	<i><b>Fleet</b></i>	<i><b>Fleet</b></i>	<i><b>Fleet</b></i>	<i><b>Fleet</b></i>
<i><b>Year</b></i>	<i><b>VMT</b></i>	<i><b>NO<sub>x</sub></b></i>	<i><b>VOC</b></i>	<i><b>CO</b></i>
2009	187,988,303	193	100	1,158
2012	199,817,033	125	81	972
Increment	11,828,729	-69	-19	-186
Change	6%	-36%	-19%	-16%

DRAFT

# Federal Mobile/Engine Standards Implementation Schedule

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015

## Motorcycles

2006 ————— Class III: 2010 —————> 2015

## Cars and Light Trucks

2004: 25% —————> 2009 —————> 2015

## Heavy Duty Gas Trucks

2005 —————> 2008: 50% —————> 2009: 100% —————>

## Heavy Duty Diesel

2004 —————> 2013

## Off Road

Less than 11 hp 2000 ————— Tier 1 —————> 2005 ————— Tier 2 —————> 2008 ————— Tier 4 —————> 2013

11 to 24 hp 2000 ————— Tier 1 —————> 2005 ————— Tier 2 —————> 2010 ————— Tier 4 —————> 2018

25-49 hp 1999 ————— Tier 1 —————> 2004 ————— Tier 2 —————> 2009 ————— Tier 4 —————> 2018

50-99 hp 2004 ————— Tier 2 —————> 2008 ————— Tier 3 —————> 2015 ————— Tier 4 —————> 2018

100-174 hp 2003 ————— Tier 2 —————> 2007 ————— Tier 3 —————> 2014 ————— Tier 4 —————> 2020

175 - 299 hp 2003 ————— Tier 2 —————> 2006 ————— Tier 3 —————> 2013<sup>1</sup> ————— Tier 4 —————> 2020

300 - 599 hp 2001 ————— Tier 2 —————> 2006 ————— Tier 3 —————> 2013

600 - 749 hp 2002 ————— Tier 2 —————> 2006 ————— Tier 3 —————> 2013<sup>1</sup> ————— Tier 4 —————> 2020

750 hp or higher 2006 ————— Tier 2 —————> 2013 ————— Tier 2 —————> 2022

## Locomotives

Line Haul 1973 ————— Tier 0 —————> 2001 ————— Tier 1 —————> 2005 ————— Tier 2 —————> 2045

Switch Duty 1973 ————— Tier 0 —————> 2001 ————— Tier 1 —————> 2005 ————— Tier 2 —————> 2045

## Recreational Marine

Category 1 2004<sup>5</sup> ————— Tier 2 —————> 2010 ————— Tier 2 —————> 2017

Category 2 2007<sup>5</sup> ————— Tier 2 —————> 2017

## Handheld Engines (chain saws, leaf blowers)

Class 3 and 4 2005 ————— Commercial —————> 2007 ————— Residential —————> 2009

Class 5 2007 ————— Commercial —————> 2009 ————— Residential —————> 2011

## Non-Handheld Engines

Lawnmowers, tillers, etc. 2005 ————— Commercial —————> 2007 ————— Residential —————> 2011

2007 ————— Commercial —————> 2011 ————— Residential —————> 2013

## Large Spark Engines (pumps, fork lifts)

2004 ————— Tier 1 —————> 2007 ————— Tier 2 —————> 2011

## Aircraft

1999 —————> 2045

<sup>1</sup> between 2012 and 2013    <sup>4</sup> between 2002 and 2004  
<sup>2</sup> between 2011 and 2013    <sup>5</sup> between 2004 and 2007  
<sup>3</sup> between 2011 and 2015

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015