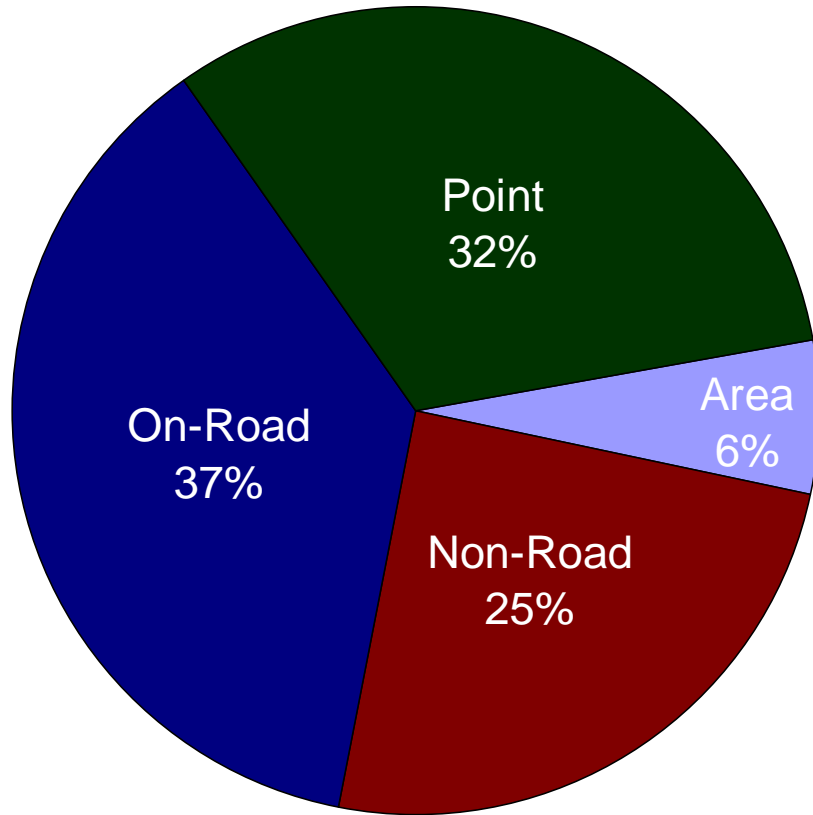


# Overview of SIP Control Strategy Development for On and Off-Road Sources

**Graciela Lubertino, PhD**  
**Houston-Galveston Area Council**

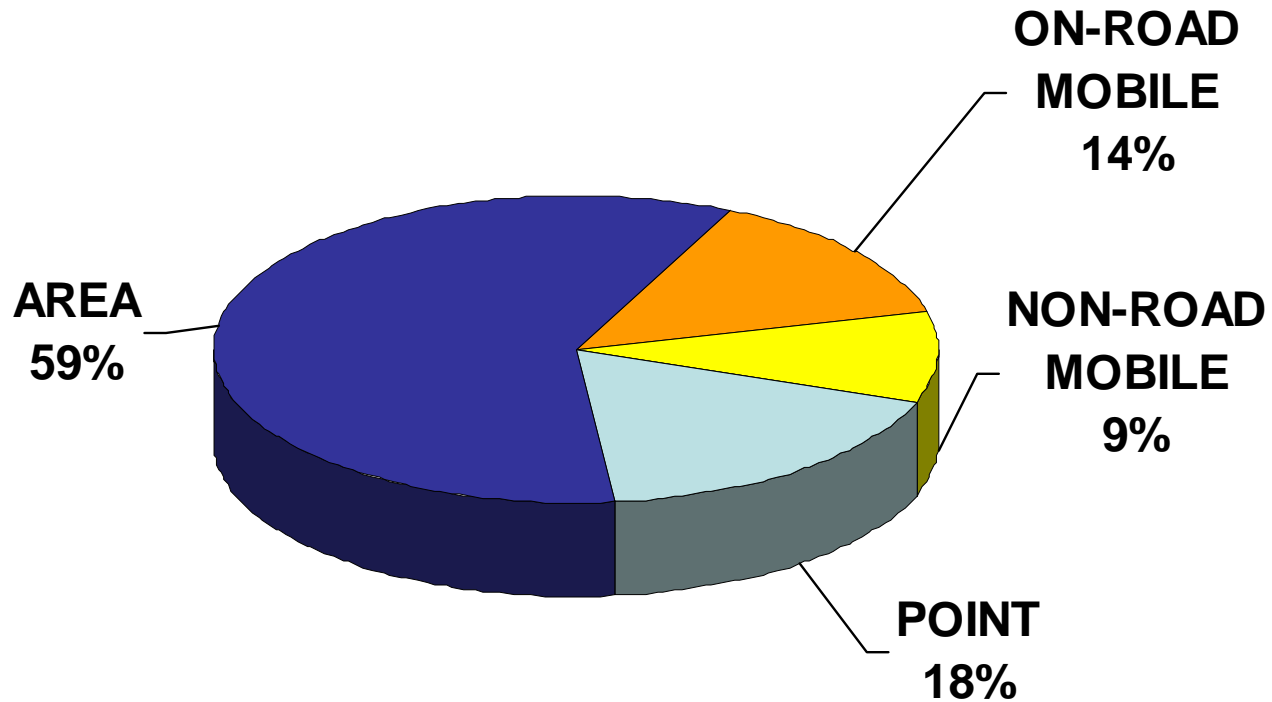


# Preliminary 2005 Houston/Galveston/Brazoria NOx Modeling Inventory

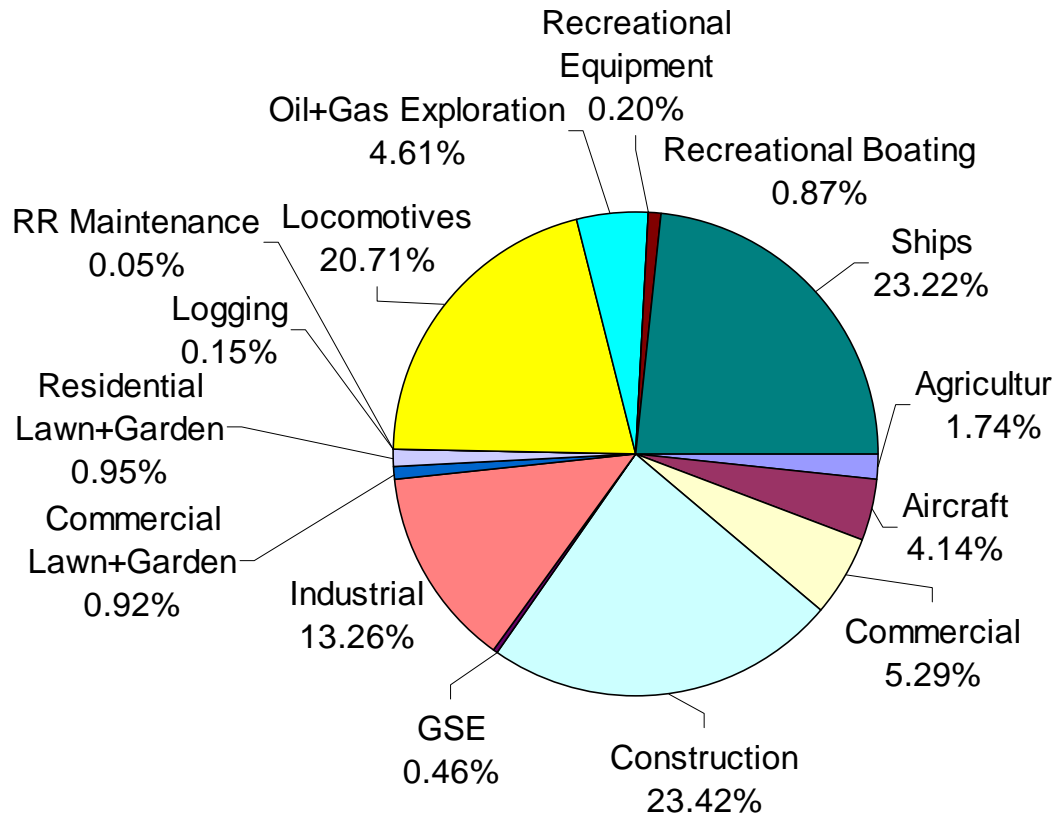


Source Type	NOx (tpd)
Area	36.18
Non-road	148.45
On-Road	221.65
Point	190.55
Total	596.73

# 2005 HOUSTON - GALVESTON - BRAZORIA VOC EMISSIONS INVENTORY



# Preliminary 2005 Houston/Galveston/Brazoria Non-Road NOx Modeling Inventory\*



Category	NOx	VOC
Agriculture	2.59	0.41
Aircraft	6.15	1.42
Commercial	7.85	10.66
Construction	34.77	7.80
GSE	0.68	0.08
Industrial	19.69	4.93
Commercial Lawn+Garden	1.37	6.82
Residential Lawn+Garden	1.41	13.09
RR Maintenance	0.07	0.014
Logging	0.23	0.16
Locomotives	30.75	1.83
Oil+Gas Exploration	6.84	0.25
Recreational Equipment	0.29	6.21
Recreational Boating	1.29	17.71
Ships	34.47	0.97
<b>Total</b>	<b>148.45</b>	<b>72.35</b>

# Creation of Mobile Source Emission Reduction Plan- Master List

- Start with a wide range of strategy ideas
  - Public input
  - Additional measures used elsewhere
- Focus on NOx reduction strategies
- Less focus on implementation
- Qualitative evaluation of control strategies
- Create a cleaner list of most effective control strategies

# HGB Master List

- Old Master List from 2006 plus supplementing additional measures
- Cleaning up based on stakeholder and RAQPC policy subcommittee input
- Specific measures suggested for the greater Houston area have been developed
- Perform qualitative analysis for primary pollutant affected by control strategy.

# Criteria for Inclusion as a Short List Strategy

- EPA minimum criteria for emission reduction strategies to be considered viable (PSQE)
  - Permanent: emission reduction strategy cannot be rescinded
  - Surplus: emission reductions not counted elsewhere in emission control plans
  - Quantifiable: measurable reduction in activity or emission rates
  - Federally enforceable: EPA could administer the program and therefore meets Federal guidance

# Criteria for Inclusion as a Short List Strategy

- Feasibility/practicality: technology or administrative structure available
- Public acceptance: stakeholder burden and general public interest
- Emission reduction potential
- Cost effectiveness

# Criteria for Inclusion as a Short List Strategy

- Voluntary programs such as Clean Vehicle can be included in SIP if defined and funded properly.
- EPA allows only 2.5% of total emission reductions to come from voluntary control strategies

# Creation of Short List

- Measures included will focus on:
  - Highest emission reduction control strategies
  - Strategies with fewer implementation barriers
  - And last consideration of cost or feasibility
  - Quantify effects of selected control strategies

# Information

- Subcontractor: ENVIRON
- Documentation:

<http://www.h-gac.com/taq/airquality/sip>

- Contacts:

Shelley Whitworth, 713-499-6695 [shelley.whitworth@h-gac.com](mailto:shelley.whitworth@h-gac.com)

Graciela Lubertino, 713-993-4582 [Graciela.Lubertino@h-gac.com](mailto:Graciela.Lubertino@h-gac.com)

Andrew DeCandis, 832-681-2549 [Andrew.DeCandis@h-gac.com](mailto:Andrew.DeCandis@h-gac.com)