

Development and Evaluation of an Air Toxics Emission Inventory in Jacksonville, Florida

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Regulatory & Environmental Services
Department

Air & Water Quality Division

Jacksonville's Air Toxics Program

- Toxic Release Inventory (TRI)
- Risk Assessments
- Air Toxics Monitoring/Mobile Lab (1997)
- Air Toxics Monitoring/Stationary Sites (1999,2002)
- HAP Emission Inventories

Why Conduct a HAP Inventory?

- Risk Assessment
- Regulation Development
- Local Strategy Development
- Air Pollution Dispersion Modeling
- Tracking Trends
- Origin of Air Toxic Monitoring HAPs

Jacksonville HAP Inventory Sectors

- Point Sources
- Area Sources
- Mobile Sources

HAP Emission Factor References

- EPA's AP-42
- Gasoline Distribution Industry (Stage I) - BID
- 1990 EI of 40 Section 112(k) Pollutants
- 1990 EI Section 112©(6) Pollutants
- FIRE
- SPECIATE
- L&E Documents
- EIIP Reports

Other HAP Emission Estimation References

- Annual Operating Reports (AORs)
- Title V Permit Applications
- MSDS
- Toxic Air Pollutant Emission Factors - A Compilation for Selected Air Toxic Compounds & Sources
- EPA's 1996 NTI Documentation
- Local Data i.e. pesticide application rates

Point Source HAP Inventory

References

Coal Combustion	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Fuel Oil Combustion	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Natural Gas Combustion	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Wood Waste Combustion	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Waste Oil Combustion	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Sewage Sludge Incineration	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Medical Waste Incineration	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Landfills	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Stationary Gas Turbines for Electricity C	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Hot Mix Asphalt Plants	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Asphalt Concrete Production	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Internal Combustion Engines	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Steel Manufacturing	FIRE
Secondary Metal Production	FIRE
Asphalt Roofing Manufacture	FIRE
Glass Manufacture	FIRE
Rubber & Miscellaneous Products	EPA 112 (k) Document

Area Source HAP Inventory

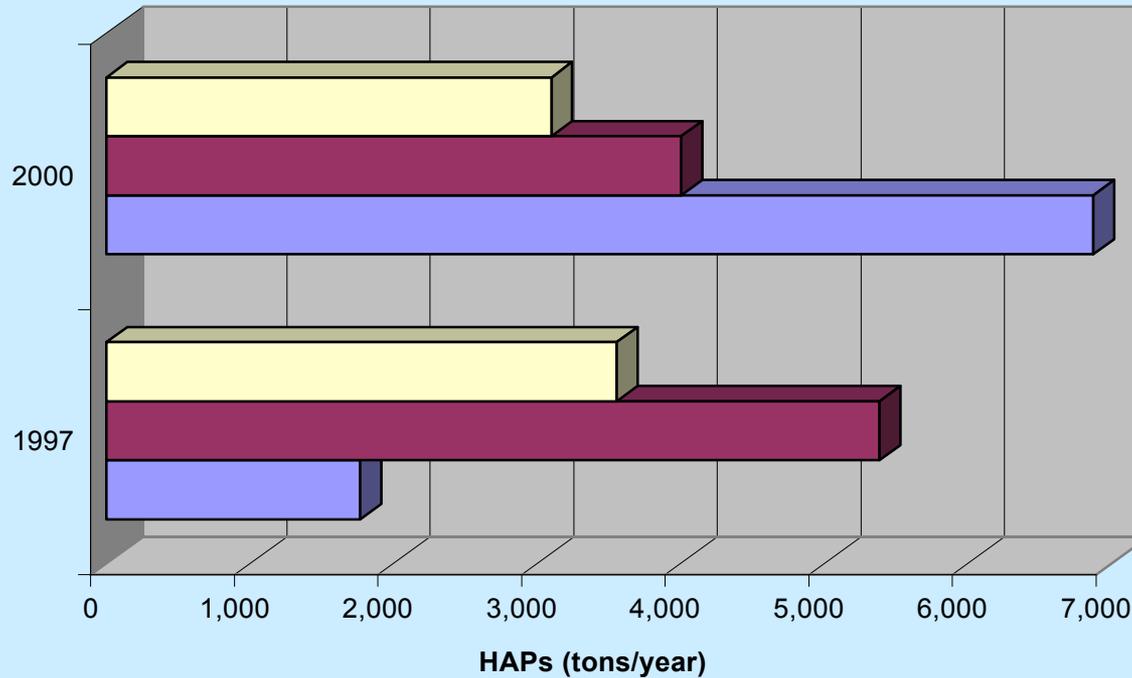
References

Gasoline Marketing & Distribution	EPA Gasoline Distribution MACT BID
Aircraft Refueling	Industry Data
LPG Combustion	Industry Data
Hospitals	EPA 1996 NTI
Surface Coating Architectural	EPA 1996 NTI
Vehicle Fires	EPA 1996 NTI
Wild Fires	EPA 1996 NTI
Prescribed Burning	EPA 1996 NTI
Structure Fires	EPA 1996 NTI
Residential Wood Combustion	EPA 1996 NTI
Residential Distillate Oil Combustion	EPA 1996 NTI
Dry Cleaning	EPA EIIP Document
Consumer/Commercial Solvent Use	EPA EIIP Document
Traffic Markings	EPA EIIP Document
Surface Coating Wood Coating	SPECIATE
Surface Cleaning/Degreasing	SPECIATE
Graphic Arts	SPECIATE
Asphalt Paving	SPECIATE
POTW	FIRE
Animal Crematory	FIRE
Leaking Underground Storage Tanks	State Air Stripper Policy
Human Crematory	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Open Burning	EPA's Compilation of Air Pollutant Emission Factors (AP-42)
Forest Fires	EPA Toxic Air Pollutant Emission Factors – A Compilation Fo
Agricultural Burning	EPA Toxic Air Pollutant Emission Factors – A Compilation Fo

Mobile Source HAP Inventory References

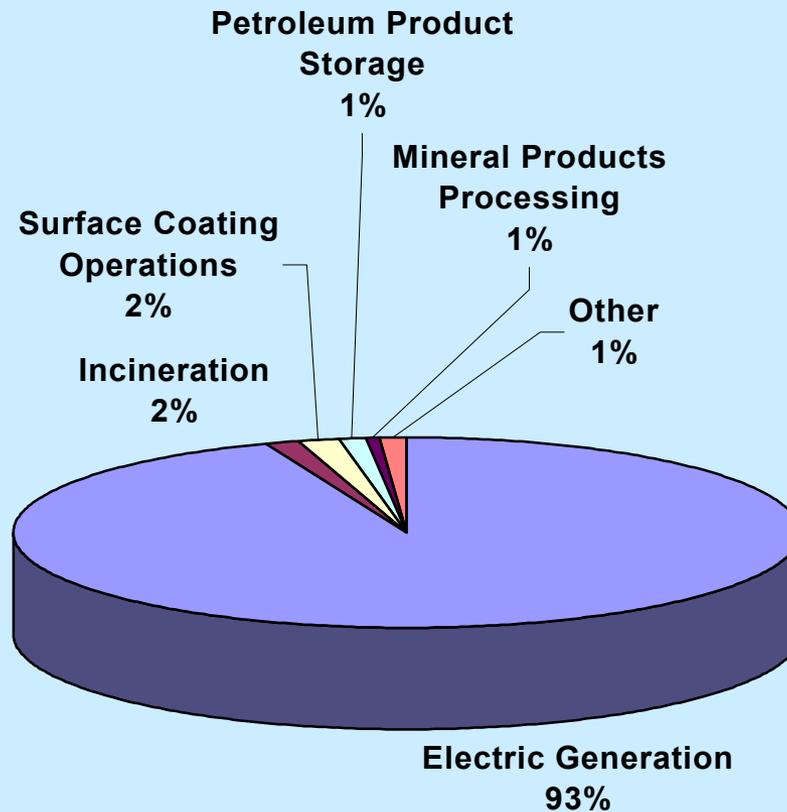
On-Road	EPA 1996 NTI
Non-Road	EPA 1996 NTI
Aircraft	EPA 1996 NTI
Trains	EPA 1996 NTI
Ships	EPA 1996 NTI

1997 vs 2000 HAP Inventory for Jacksonville

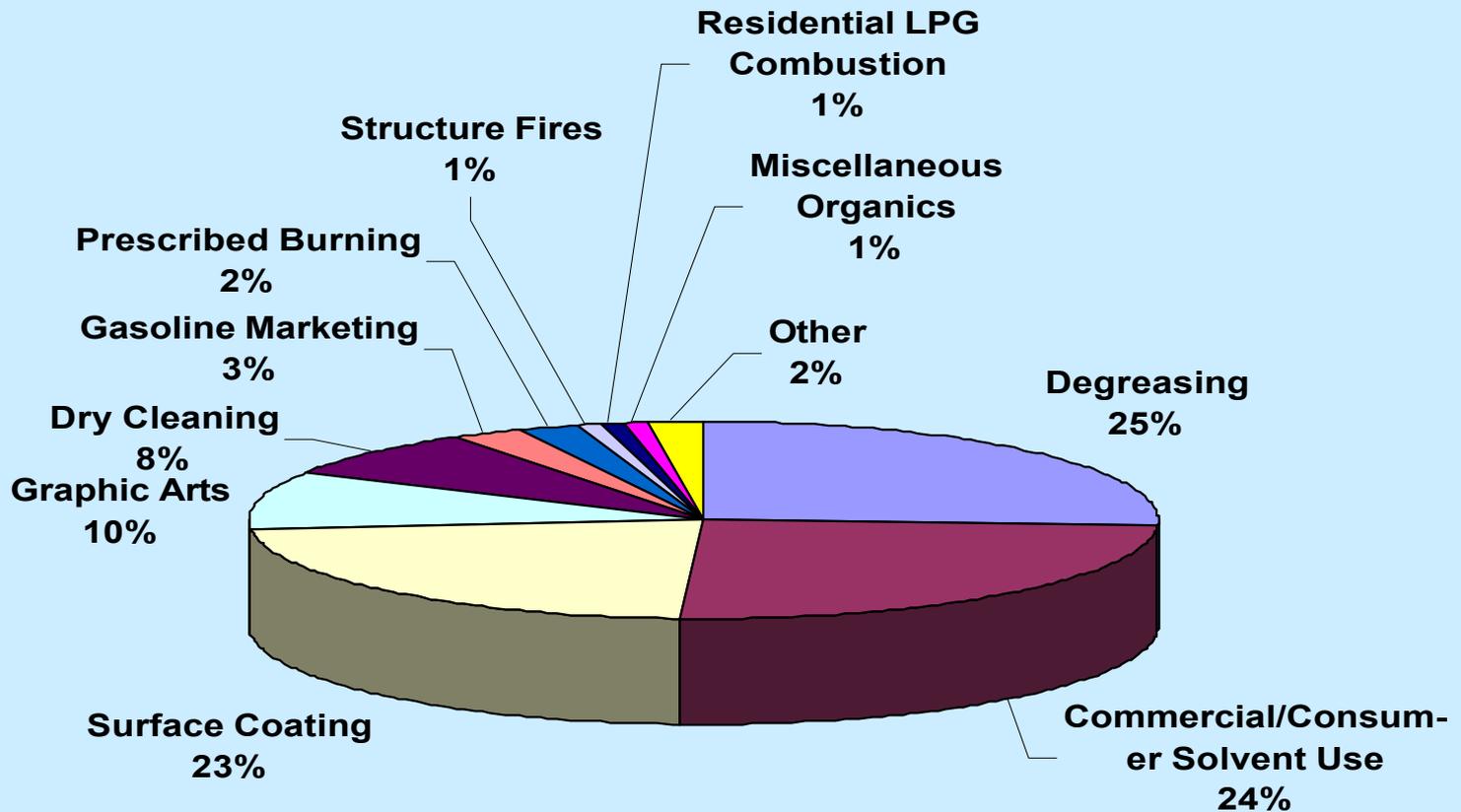


	1997	2000
Point Source	3,556	3,098
Area Source	5,384	4,003
Mobile Source	1,766	6,875

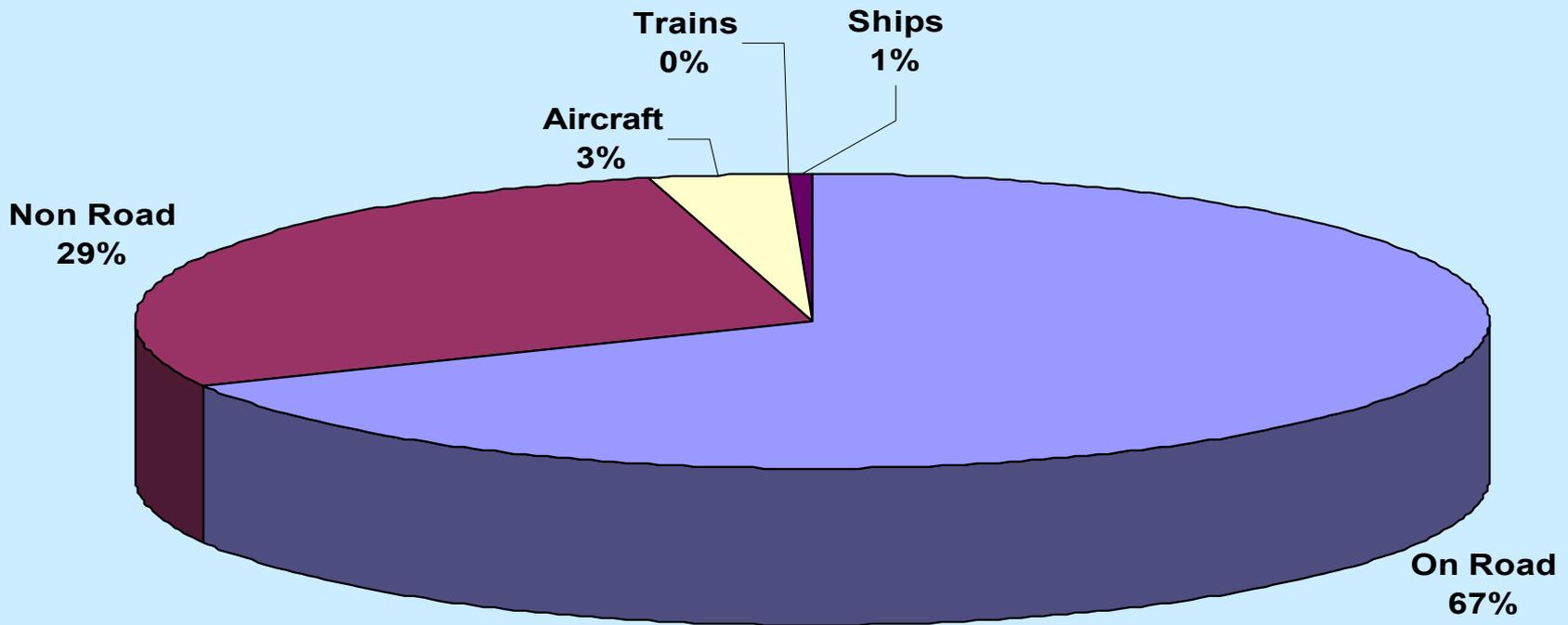
2000 Point Source HAP Emissions for Jacksonville



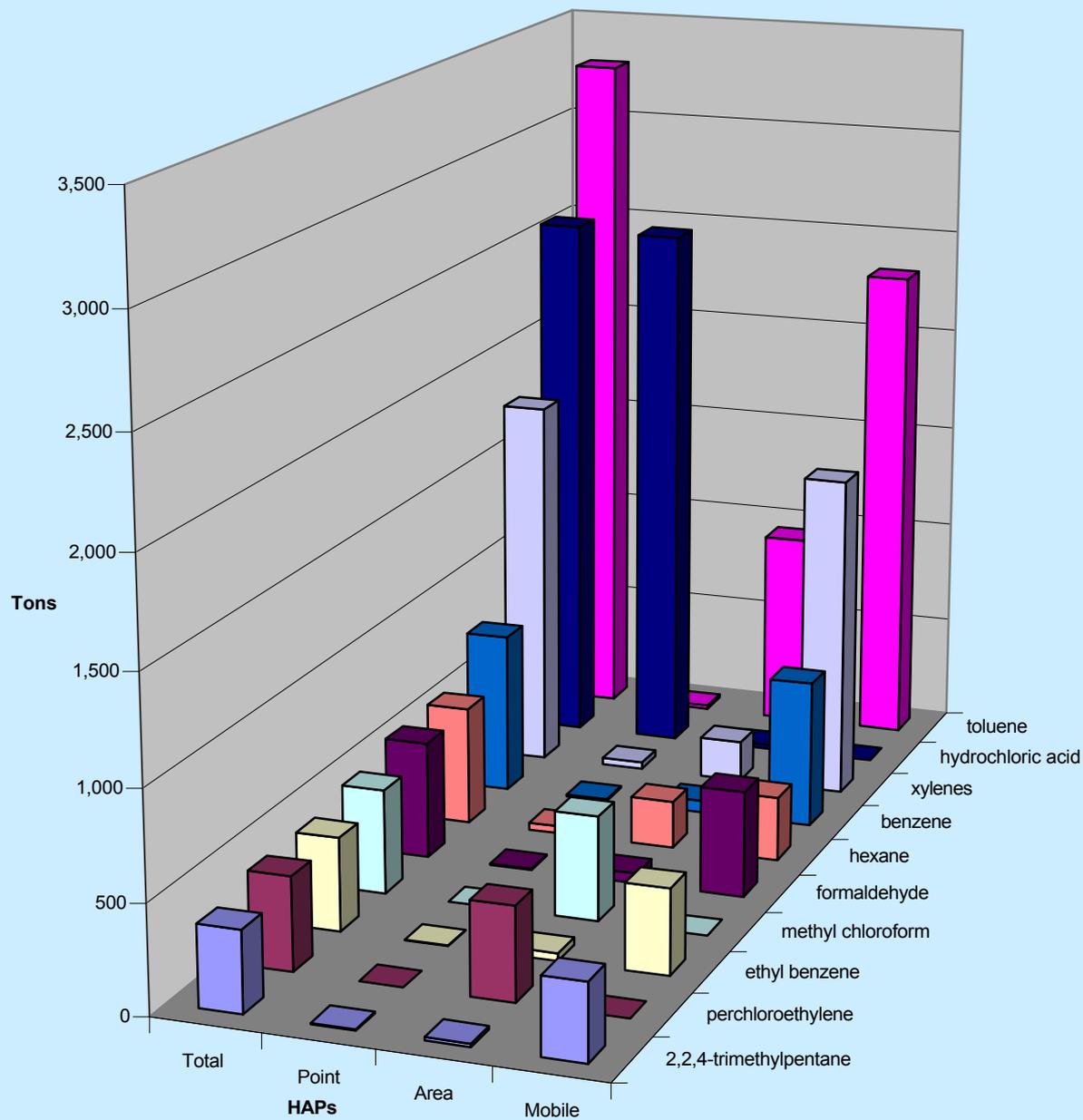
2000 Area Source HAP Emissions for Jacksonville



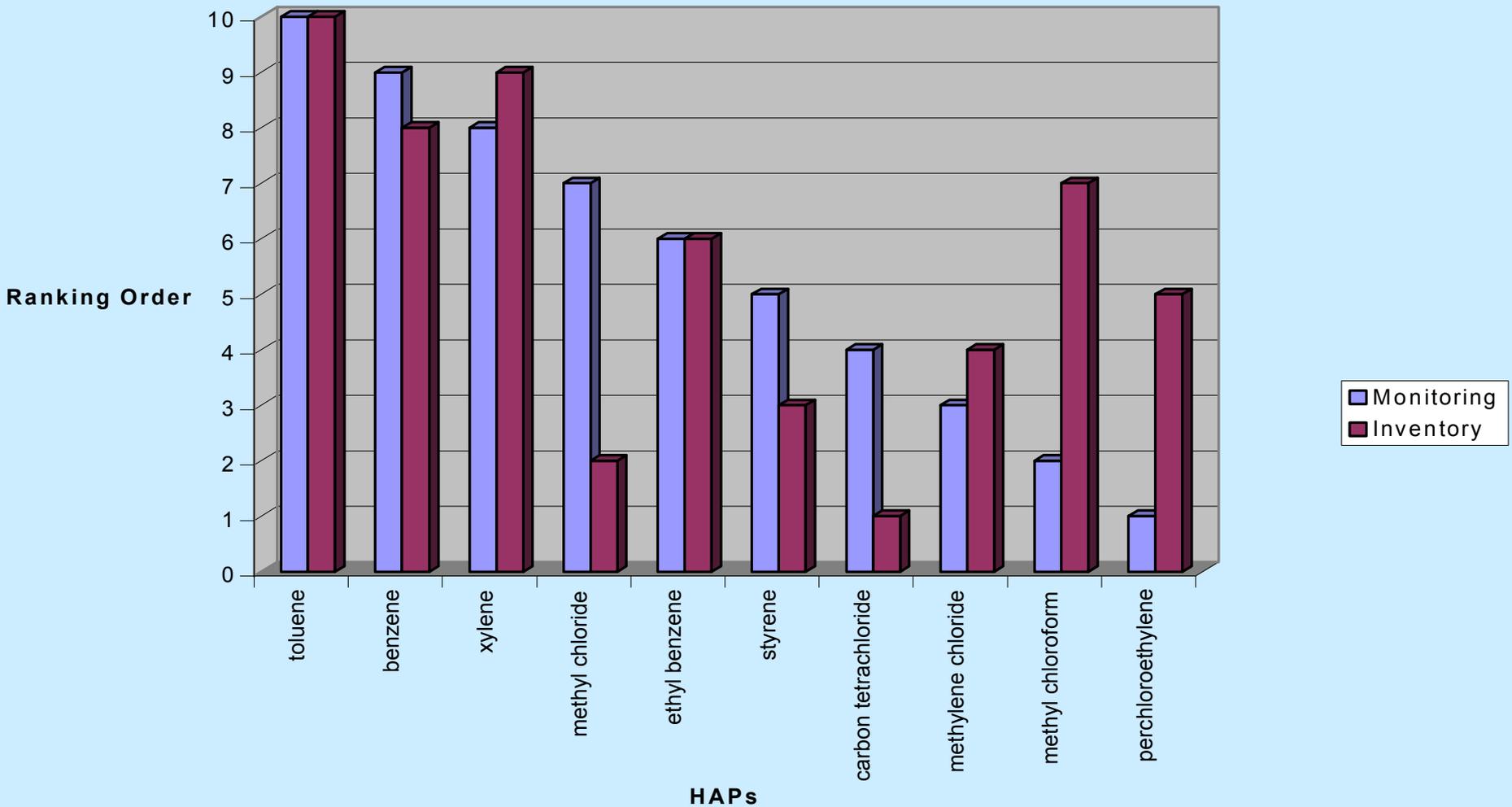
2000 Mobile Source HAP Emissions for Jacksonville



2000 Emission Inventory Top Ten HAPs



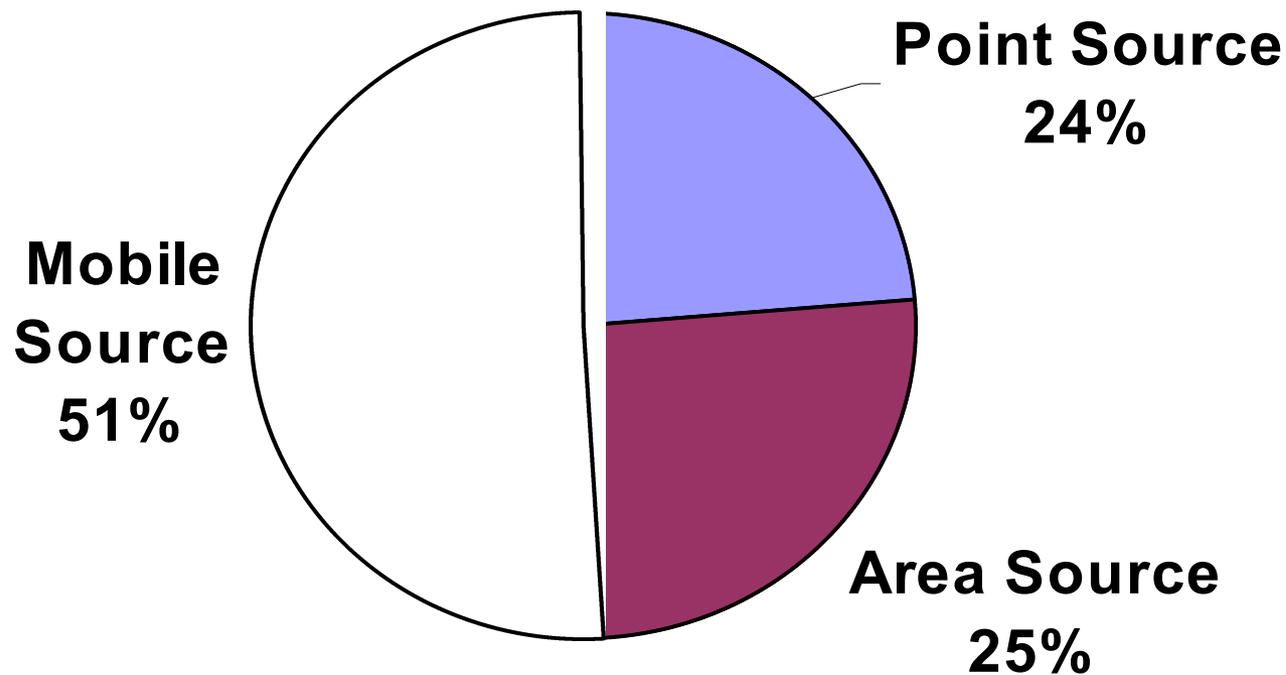
Top Ten Air Monitoring HAPs vs Inventory HAPs



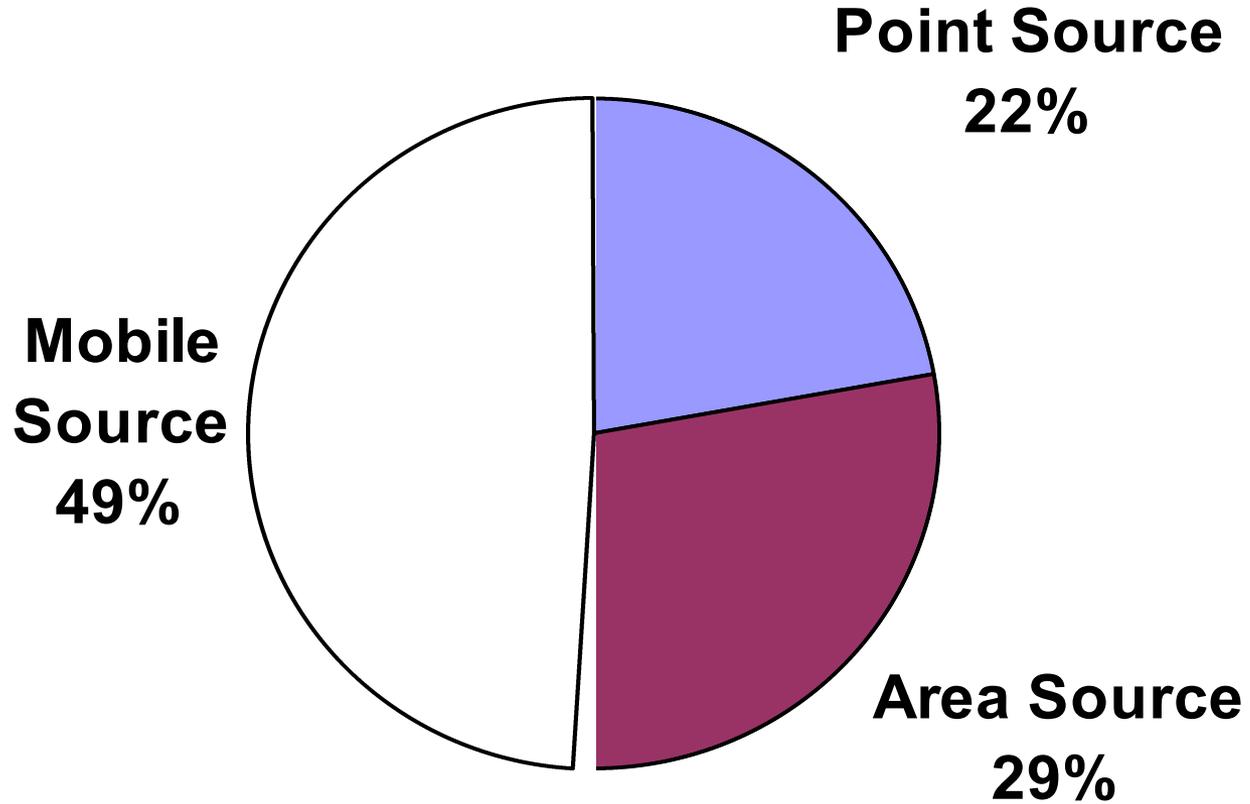
Sources Contributing to Monitored HAPs

- On-Road mobile sources (styrene, xylene, toluene, ethyl benzene, benzene)
- Degreasing (methylene chloride, methyl chloroform, perc)
- Other contributors: surface coating, prescribed burning, coal combustion, commercial/consumer solvent use, POTWs

1996 National Toxic Inventory (NTI)



2000 Jacksonville HAP Inventory



Conclusions - Benefits of HAP Inventory

- Helpful in determining HAPs of concern
- Helpful in determining sources of concern
- Establishing trends
- Identifies source categories contributing to ambient levels
- Pollutants identified for future monitoring

Questions???

