

A photograph of the Portland skyline at dusk or dawn, with buildings and the Astoria-Megler Bridge reflected in the water. The text is overlaid on the image.

Portland Air Toxics Assessment

Sarah Armitage

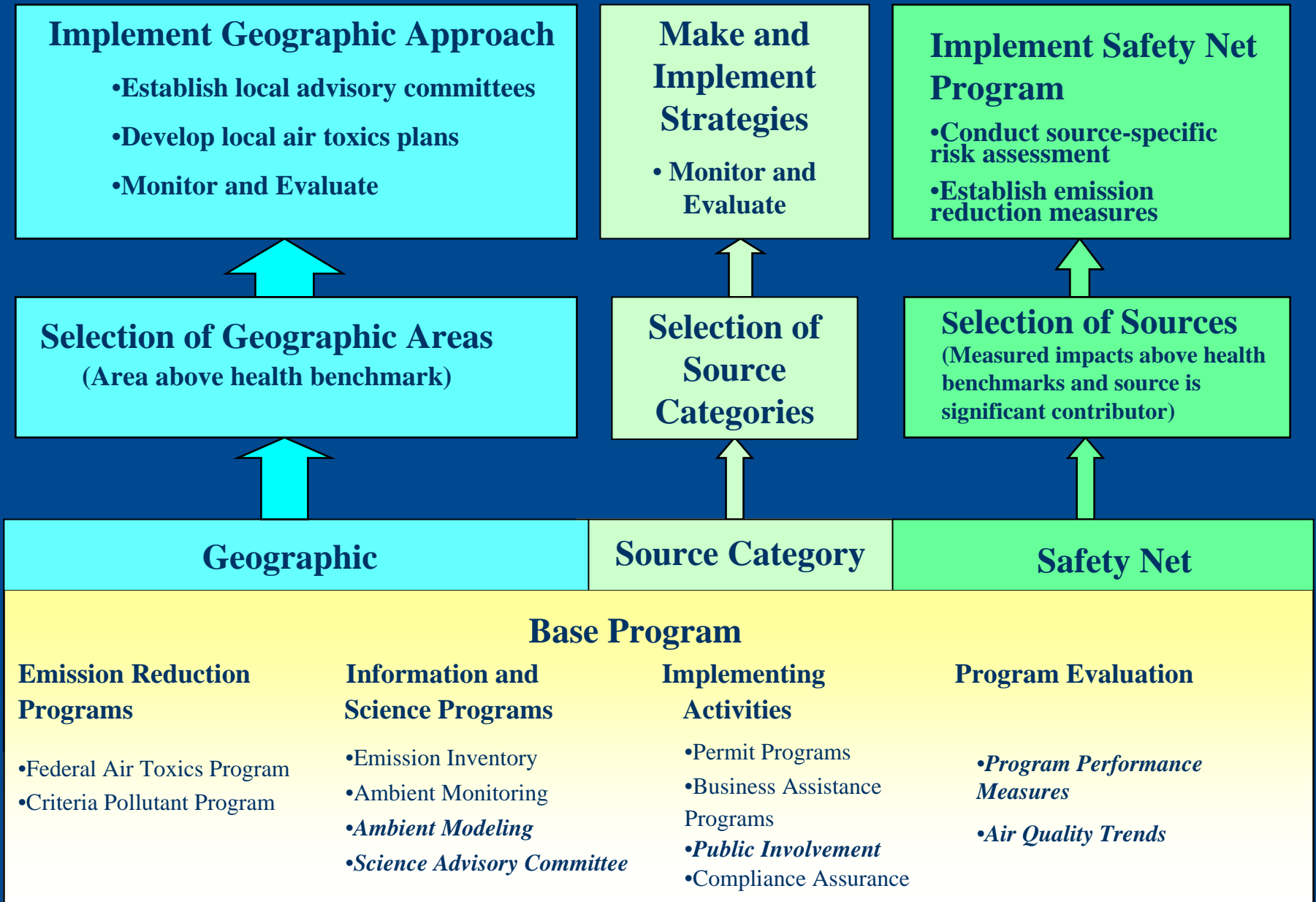
Oregon Department of Environmental Quality

Purpose of PATA

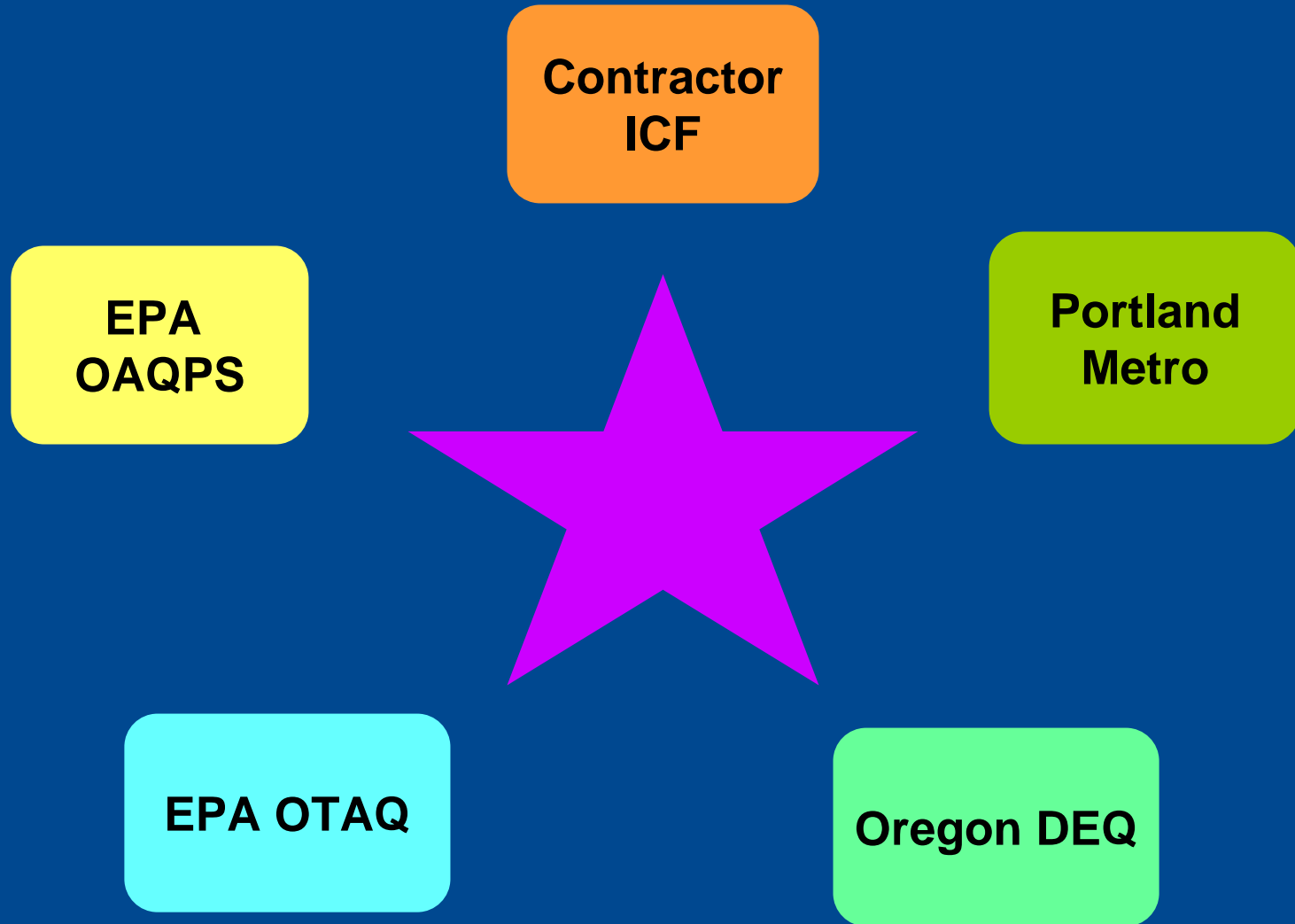
- Refine National Air Toxics Assessment (NATA) Information
- Technical Basis for Portland Geographic Program
 - Evaluate relative contributions from different sources
 - Use local data to assess control strategies
 - Use model to predict and measure program success



Oregon Air Toxics Program Structure



PATA – A Collaboration



PATA Pollutants

- 12 NATA air toxics
 - Primary formaldehyde
 - Primary acetaldehyde
 - Primary acrolein
 - Benzene
 - 1,3 butadiene
 - Chloroform
 - Perchloroethylene
 - Chromium
 - Nickel
 - Arsenic
 - POM (as 16-PAH)
 - Diesel Particulate
- 1999 Emission Inventory

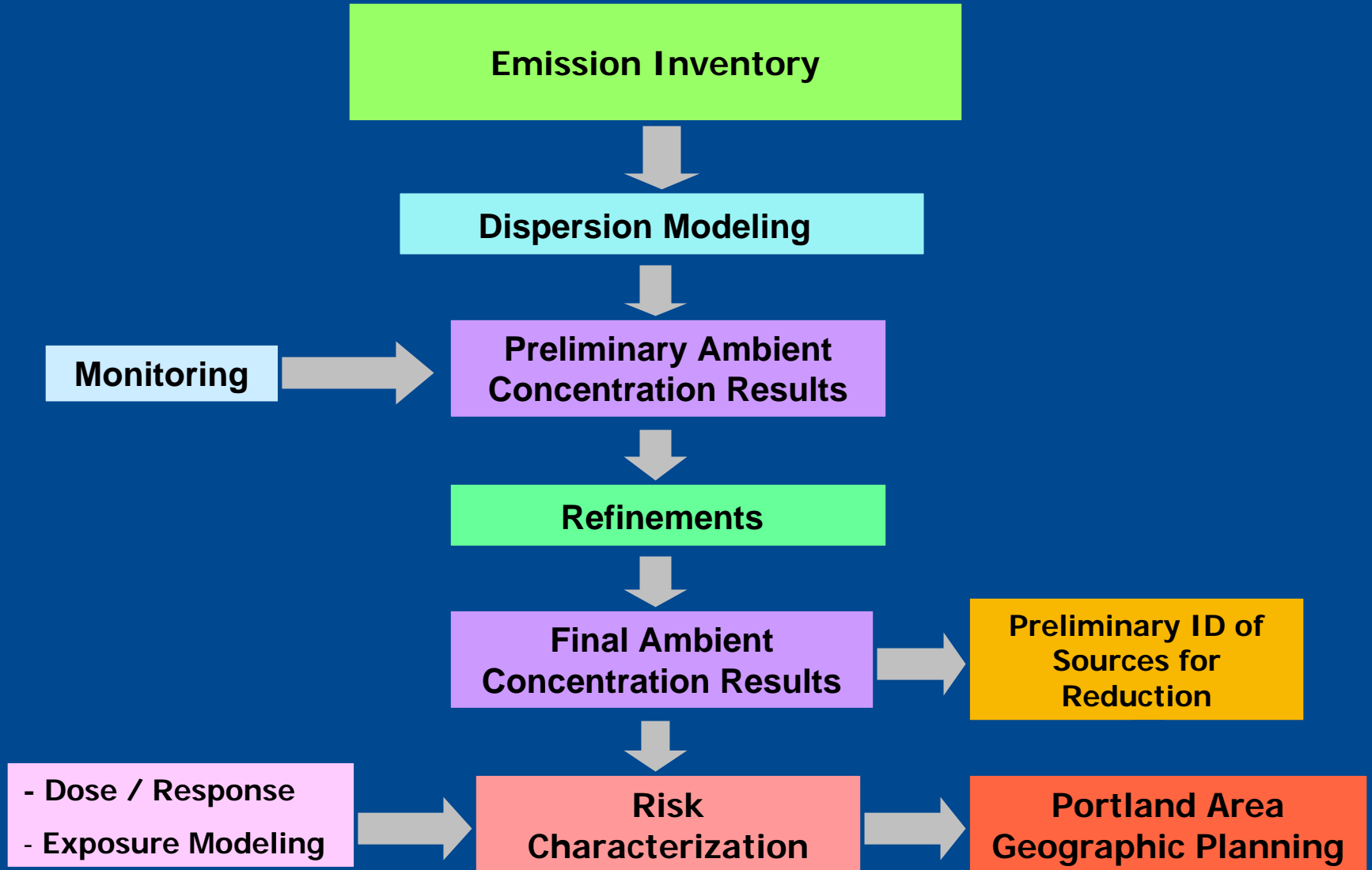


PATA: State of the Science Modeling

- Improvements over NATA
 - Locally developed Emission Inventory
 - On-Road emissions
 - Exact locations for many sources
 - CALPUFF model
 - Local meteorology
 - Receptors at census block level
- Detailed information about spatial patterns of concentrations



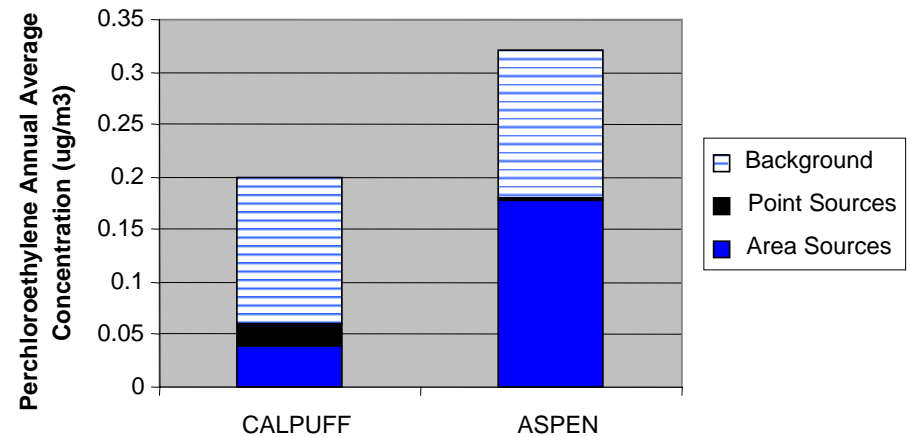
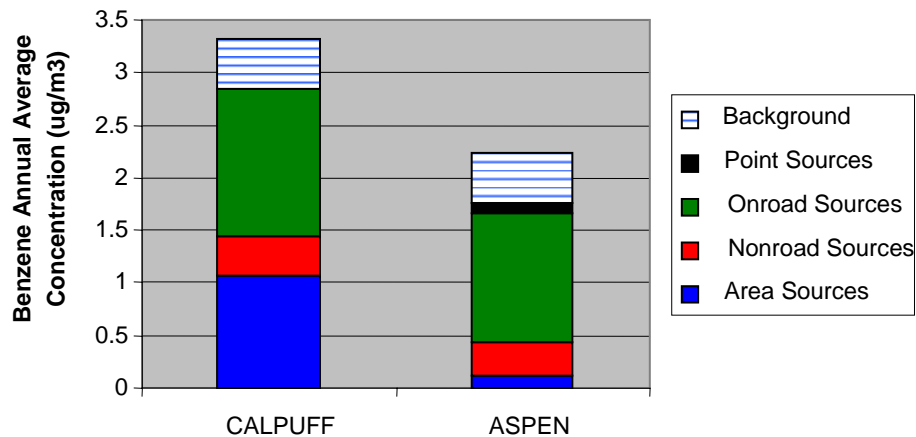
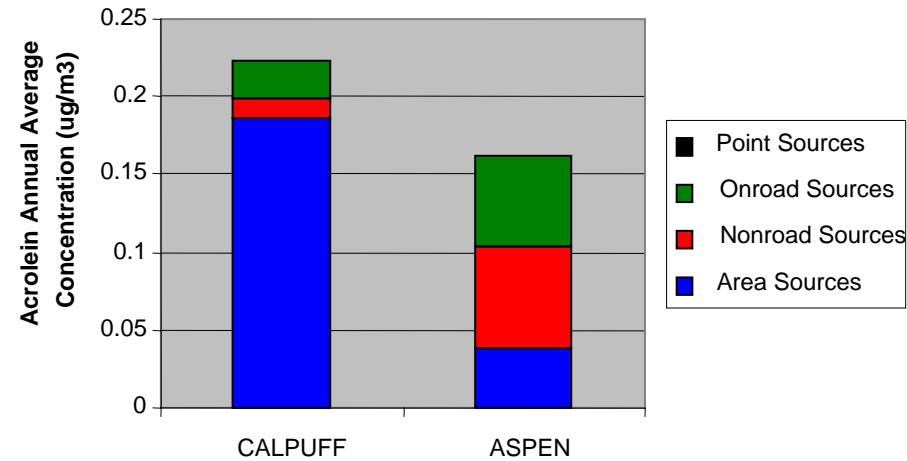
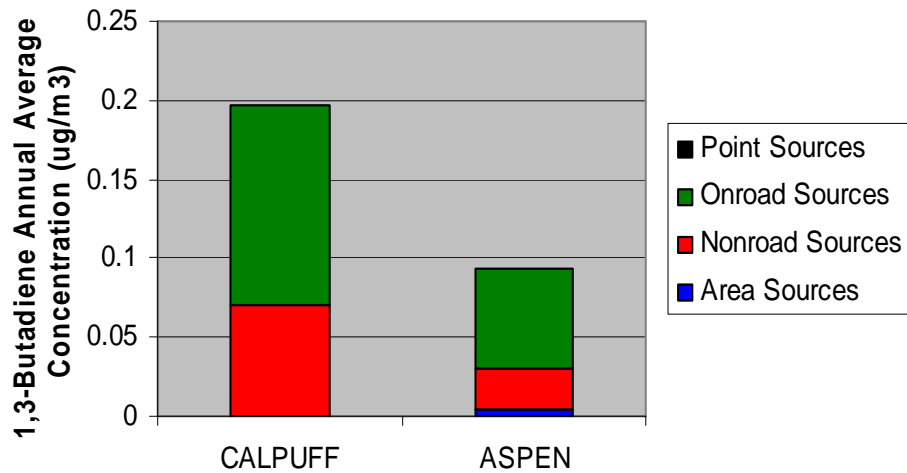
PATA Process



PATA Summary

Pollutant	Times over benchmark	Important Sources
Diesel Particulate	790	Construction equipment, on-road engines, recreational marine vessels
Benzene	27	On-road engines, residential wood combustion
Chromium	25	Metalworking, ceramics, fossil fuels
Formaldehyde	17	On-road engines, construction equipment, railroads, airports
Polycyclic Organic Matter (POM)	16	Residential wood combustion
Acrolein	12	Structural fires, construction equipment
1,3 Butadiene	7	On-road engines, lawn & garden equipment, recreational marine vessels
Chloroform	2	Wastewater treatment facilities
Perchloroethylene	1	Dry cleaners, consumer products
Acetaldehyde	1	On-road engines, construction equipment

PATA versus NATA



Value of PATA

- Technical
 - Advances in modeling, emission inventory
 - Basis for monitor placement
- Program
 - More specific and credible
 - Spatial orientation
 - Hot Spot identification

