Diesel Modeling in Portland Air Toxics Solutions Project

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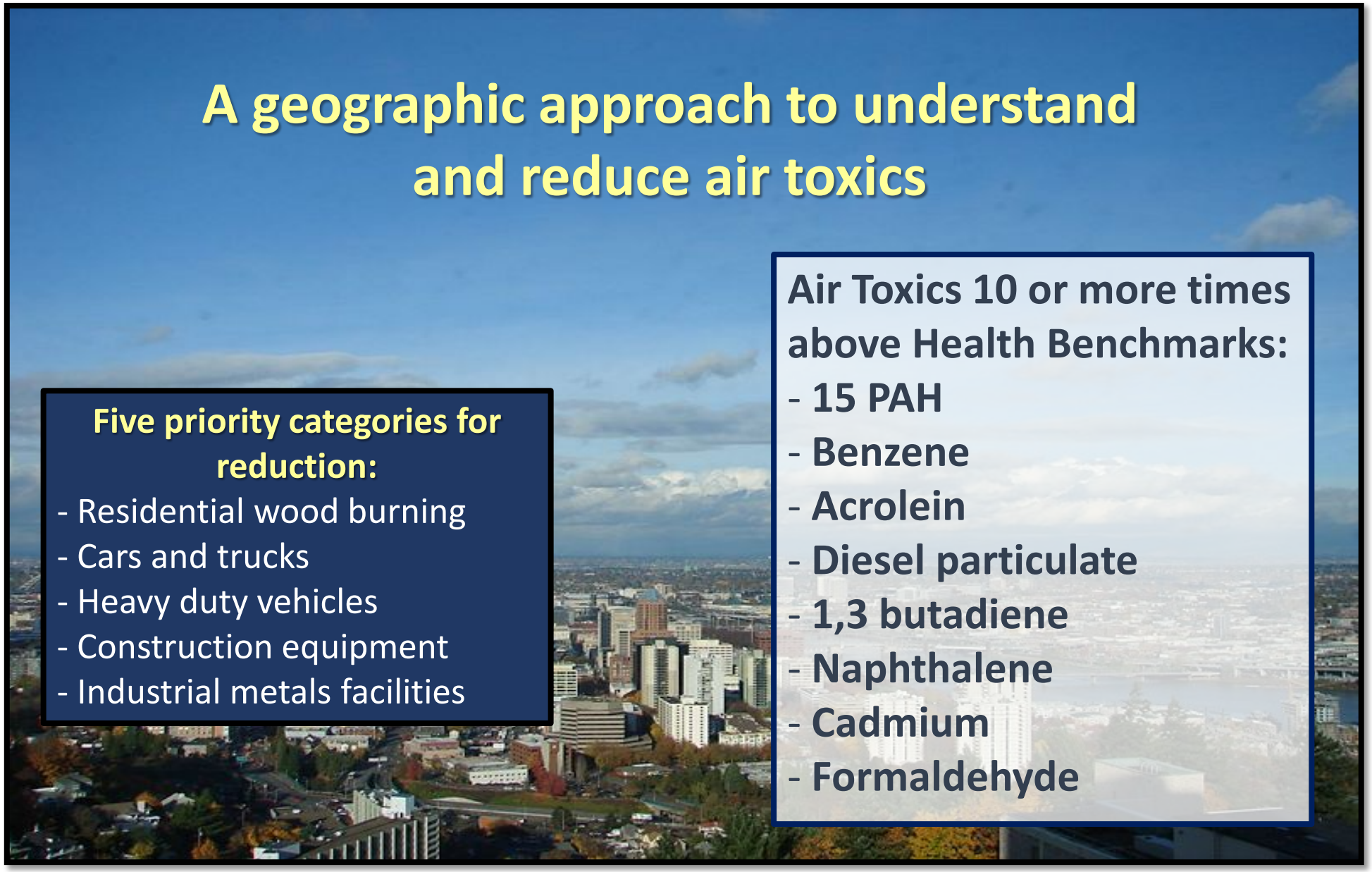


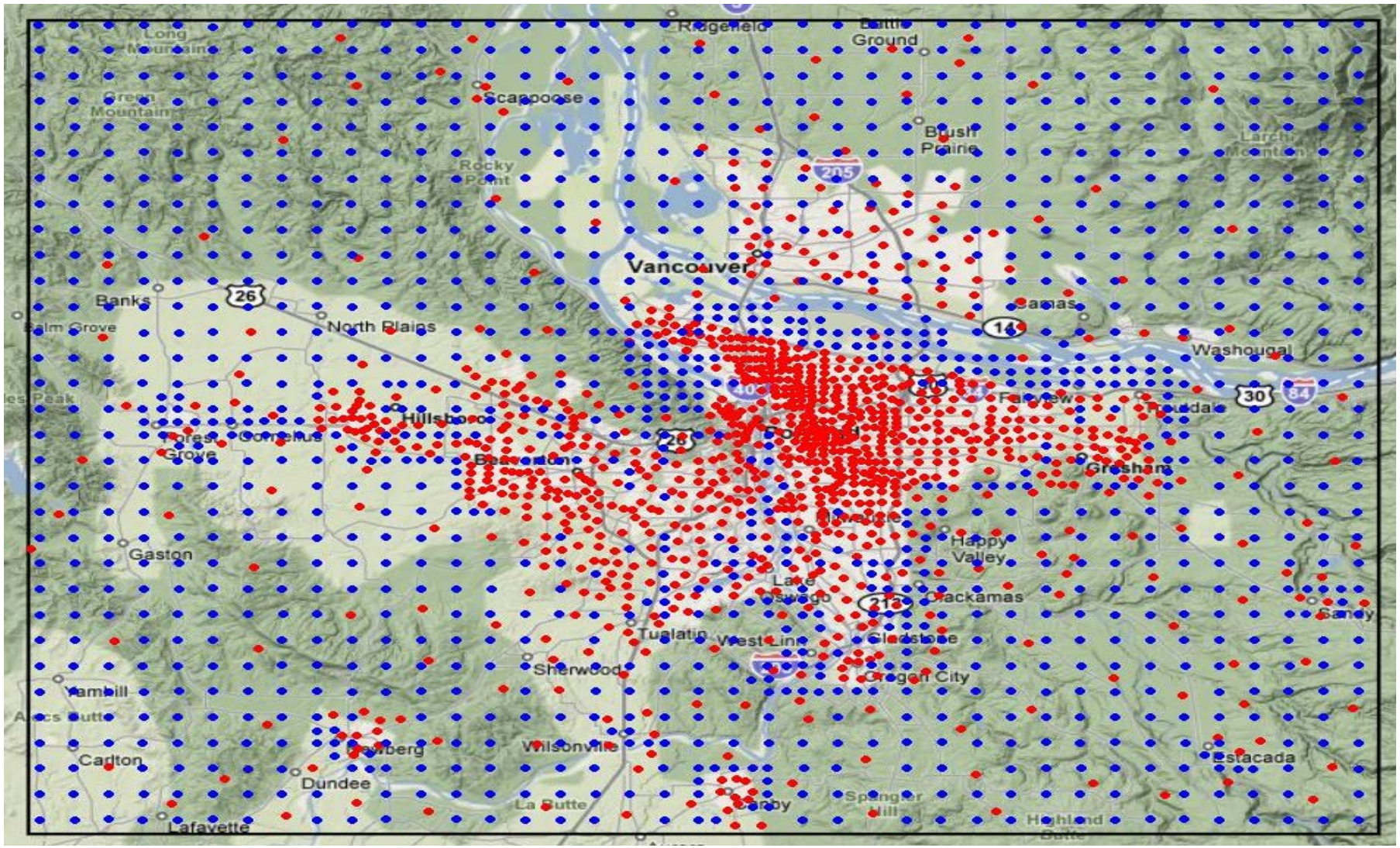
Three Types of Air Quality Data that Work Together

Monitoring	Emission Inventory	Modeling
What's in the air at the monitor location?	What are the pollution sources?	What is the concentration or risk level locally or regionally?
How do levels compare to standards or benchmarks?	How much pollution is released to the air?	What are spatial patterns, trends and predictions?
What should we further investigate or model?	What can be controlled, and how?	What are estimated concentrations in areas without monitoring?

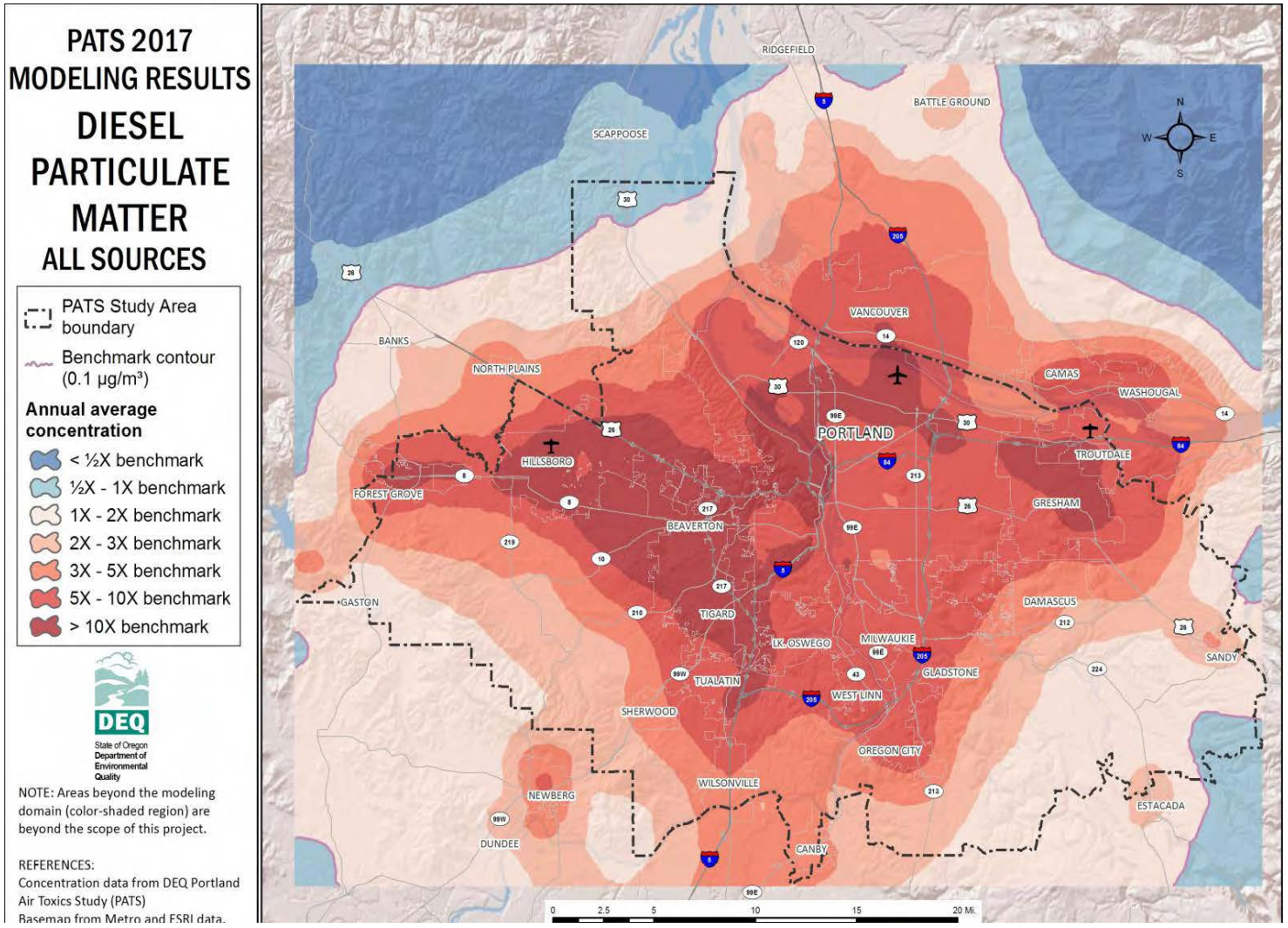
Portland Air Toxics Solutions Modeling Steps

- Determine pollutants of concern
- Select study area, dispersion model and meteorology
- Develop emission inventory
- Select locations for estimating concentrations (receptors)
- Run model and compile modeled concentrations
  - By pollutant
  - By location
  - By source category
- Compare concentrations to air toxics benchmarks
- Identify air toxics and sources causing the most risk

PATS Modeling Receptors



PATS Diesel Map and Reduction Targets



To reach diesel benchmark at top 20% of receptors with highest concentrations:

- **On road reduction target = 91%**
- **Non road reduction target = 93%**
- **Rail reduction target = 92%**

PATS Summary of Statistical Environmental Justice Analysis

Disproportionate impact from all sources:

Higher → Lower

Disproportionate impact by source category: Higher → Lower

Hispanic/Latino	Asian	African American/Black	Below Poverty
Residential Wood Burning	Cars and Trucks	Commercial Solvent and Fuel Use	Cars and Trucks
Construction and Non Road Engines	Construction and Non Road Engines	Construction and Non Road Engines	Commercial Solvent and Fuel Use
Cars and Trucks	Residential Wood Burning		Permitted Industrial Facilities
Commercial Solvent and Fuel Use	Commercial Solvent and Fuel Use		