U.S. Environmental Protection Agency's PM Supersites Program—A Major Successful Collaborative Air Quality Program Supporting States and Regional Organizations in Their Approaches to Reduce PM Levels in Air on Urban and Regional Scales

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Although this work was reviewed by EPA and approved for publication, it may not necessarily reflect official Agency policy.

PM Supersites Program Objectives **1**

❖ To provide key stakeholders – state, local, tribal, and Federal agencies, regional planning organizations, the private sector, and the general scientific comunity – with:
- Sampling and analysis methods to measure the chemical and physical characteristics of PM and important precursor species,
- Enhanced temporal and compositional characterization that complements routine ambient air monitoring networks, and
- Insights into policy relevant phenomena that corroborate current policies, cause rethinking and modification, and provide direction for future policy formulation.
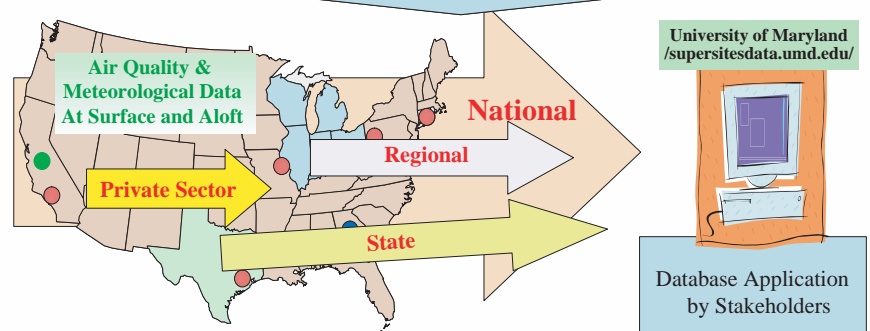
Initial Collaborations

New York –
New York State Energy Research and Development Authority &
New York State Dept. of Environmental Conservation

Baltimore –
John Hopkins and Univ. of Maryland Nursing School Health Studies & Maryland Department of the Environ.

Atlanta –
Aerosol Research Inhalation Epidemiological Study & Southeastern Aerosol Research and Characterization

Pittsburgh – National Energy Technology Laboratory (NETL) Studies in Upper Mid-west

St. Louis –
Lake Michigan Air Quality Studies & EPA/Harvard and NIEHS/Harvard Health Studies

Texas – Texas Air Quality Study 2000 (TEXAQS 2000) & Mickey Leland and University of Texas Houston Health Studies

Fresno – California Regional PM Air Quality Study (CRPAQS), Central California Ozone Study (CCOS) & Fresno Asthmatic Children's Environment Study (FACES)

Los Angeles – Los Angeles PM Health Center & the Children's Health Study

● Phase I
● Phase II
● Both Phases

Supersites Integrated Relational Database (SIRD) **3**

University of Maryland /supersitesdata.umd.edu/

Air Quality & Meteorological Data At Surface and Aloft

Private Sector

National
Regional
State

Database Application by Stakeholders

Used by Stakeholders
State, Regional, Federal Agencies And Private Sector in Support of
SIP Development:
- Model Performance Evaluation
- Model Application
- Data Analysis

Yielding Improved:
Source-Receptor Understanding and SIPs that Are More Cost Effective and Efficient at Reducing Ambient PM Levels and Related Species on Urban and Regional Scales Resulting in Better Protection of Public Health and Welfare

## Eastern Supersites Program (ESP) **2**

Intensive Monitoring Periods
- August 2001 (4.5 weeks)
- January 2002 (4 weeks)
- July 2002 (4 weeks)

Coordinating and Collaborating With Related Air Quality Studies In the Eastern United States (Over 30 Programs & Studies Involved)

- Coordination included State Agencies
- Federal Agencies (e.g., DOE, Federal Highway Administration)
- National Monitoring Networks (EPA Criteria Pollutants, NOAA Upper Air Meteorology)
- Private Sector conduction additional measurements at existing and new sites
- Southeastern Canada via Meteorological Service of Canada

SE Canada
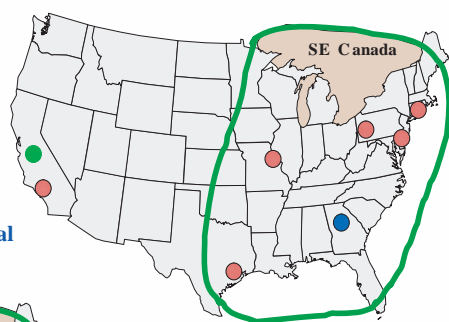
Three (3) Aircraft Coordinated During Summer Intensive Monitoring Periods; Two (2) Fly During January 2002

U MD Plane Flight Path
} LADCO Planes Flight Paths

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PM Supersites Program and Related Studies Synthesis of Key and Policy Relevant Findings **4**

17 Science/Policy Relevant Questions –
Technical Support for Synthesis (Journal Articles)
(General Themes Addressed)
- Methods (Qs 1-3)
- Characterization (Qs 4-8)
- Source Apportionment – Receptor and Emissions
- Based Chemical Transport Models (Qs 9-11)
- Atmospheric Processes (Qs 12 – 15)
- Emissions Estimates (Q 16)
- Conceptual Models
- Integrated Synthesis of Key Atmospheric Sciences Findings[a]
- Policy Relevant Findings Based on Synthesis[a]
- Health Relevant Findings Based on Synthesis[b]
- Executive Summary
- Policy One Page Statements

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Outcomes

Stakeholders –
Policy Makers & Air Quality Managers In The Public And Private Sectors -- Obtain Policy Relevant Information To Support Policy Decisions Related To Approaches To Reduce PM On Urban and Regional Scales, and Thus, To Reduce The Adverse Health And Ecological Effects Of PM Related Air Pollution

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