Region 1
Air Toxics Summary

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Alysha Lynch

OEME – Region 1

What is going on in the Region?

- Regional Monitoring Efforts
- Ongoing Air Toxics Community Assessment Grants
- Region 1 Air Toxics Website
- Superfund/RCRA Vapor Intrusion Studies

Regional Monitoring Efforts

State	City/Location	VOCs (Toxics/PAMS)	Carbonyls (Toxics/PAMS)	PM_{10} Metals	$PM_{2.5}$ Metals IMPROVE	$PM_{2.5}$ Metals STN	Chromium VI	PAHs (PM_{10}/Continuous)	Black Carbon
Connecticut	Cornwall (NCore)				X				X
	New Haven (PAMS, NCore)	X				X		X	X
	E. Hartford (PAMS)	X	X						X
	Westport (PAMS)	X							
	Thomaston							X	
Maine	Lewiston	X							
	Presque Isle	X			X				
	Rumford	X							
	Bangor	X							
	Portland	X							
	Bridgton				X				
	Casco Bay				X				
	Bar Harbor Mcfarland Hill (NCore)				X				X
	Cape Elizabeth (PAMS)	X							
	Bar Harbor Cadillac Mt. (PAMS)	X							
	Calais				X				

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Massachusetts	Lynn (PAMS)	X	X						
	Chicopee (PAMS)	X	X			X			
	Boston/Roxbury (NATTS, NCore)	X	X	X		X	X	X	X
	Truro				X				
	Oak Bluffs				X				
	Ware (PAMS)	X			X				
	Springfield								X
	Newbury (PAMS)	X							
	Milton (PAMS)	X							
	Boston/Long Island (PAMS)	X							
	Boston/North End								X
New Hampshire	Greens Grant				X				
	Nashua (PAMS)	X							
	Peterborough (PAMS, NCore)	X			X				

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Rhode Island	E. Providence (PAMS, NCore)	X	X			X			
	Providence (NATTS)	X	X	X			X	X	
	East Greenwich	X							
	Pawtucket	X							
Vermont	Burlington	X	X	X		X			
	Rutland	X	X	X					X
	Underhill (NATTS, NCore)	X	X	X	X		X	X	
	Manchester				X				

Notes:

IMPROVE = Interagency Monitoring of Protective Visual Environments
STN = Speciation Trends Network
NATTS = National Ambient Toxics Trends Station
PAMS = Photochemical Air Monitoring Station
NCore = National Core Monitoring Network

Ongoing Air Toxics Community Assessment Grants

Project Title: Evaluation of the Impact of Aircraft Emissions on Ambient Levels of Toxic Particulate Matter in Neighborhoods Abutting T.F. Green Airport, Warwick Rhode Island

Background: In early 2004, the RIDOH released a preliminary analysis of lung cancer incidence rates in Warwick, which showed elevated lung cancer rates in several census tracts downwind of the airport, while none of the tracts in upwind areas had elevated rates. The Rhode Island Department of Environmental Management (RIDEM) received a $500,000 Community Assessment Grant in 2004. RIDEM, in cooperation with the Rhode Island Department of Health (RIDOH), City of Warwick, the Rhode Island Airport Corporation (RIAC) and the neighborhood group, Concerned Airport Neighbors (CAN), performed an air monitoring study to determine the levels of toxic air pollutants in neighborhoods near the T. F. Green Airport. From May 2005 through the summer 2006 VOCs, carbonyls, fine particulates and black carbon (indicator of diesel and jet fuel) were measured at five sampling locations. The study found elevated levels of black carbon in neighborhoods surrounding the airport that were linked to airport activities.

The Rhode Island General Assembly passed a law requiring the Rhode Island Airport Corporation (RIAC), a quasi-government agency that operates the airport, to institute a long term air monitoring network around the airport. As a result, RI DEM felt it necessary to be involved with the monitoring project to ensure data collect by RIAC is accurate and the resulting data is interpreted correctly.

Objective:

- RI DEM will use data they collect at four VOC sites, one carbonyl site, five $PM_{2.5}$ (FRM) sites, two black carbon sites and one semi-volatile monitor site, which represent typical urban and rural pollutant levels in the State, to help interpret site specific airport data. For this project RI DEM purchased particle counters and particle-bound PAH monitors to collect data on those pollutants at comparison sites in the State.
- RI DEM conducts periodic audits of the RIAC sites.
- RI DEM developed a database to store the RIAC data, as well as pertinent data from comparison sites, meteorological data and airport activity data and developed templates to be used for data analysis and interpretation.
- RI DEM will prepare a written report at the end of 2011 summarizing and interpreting the RIAC data and making recommendations for future actions. This report will serve as a template for future annual reports on the RIAC data.

Ongoing Air Toxics Community Assessment Grants (continued)

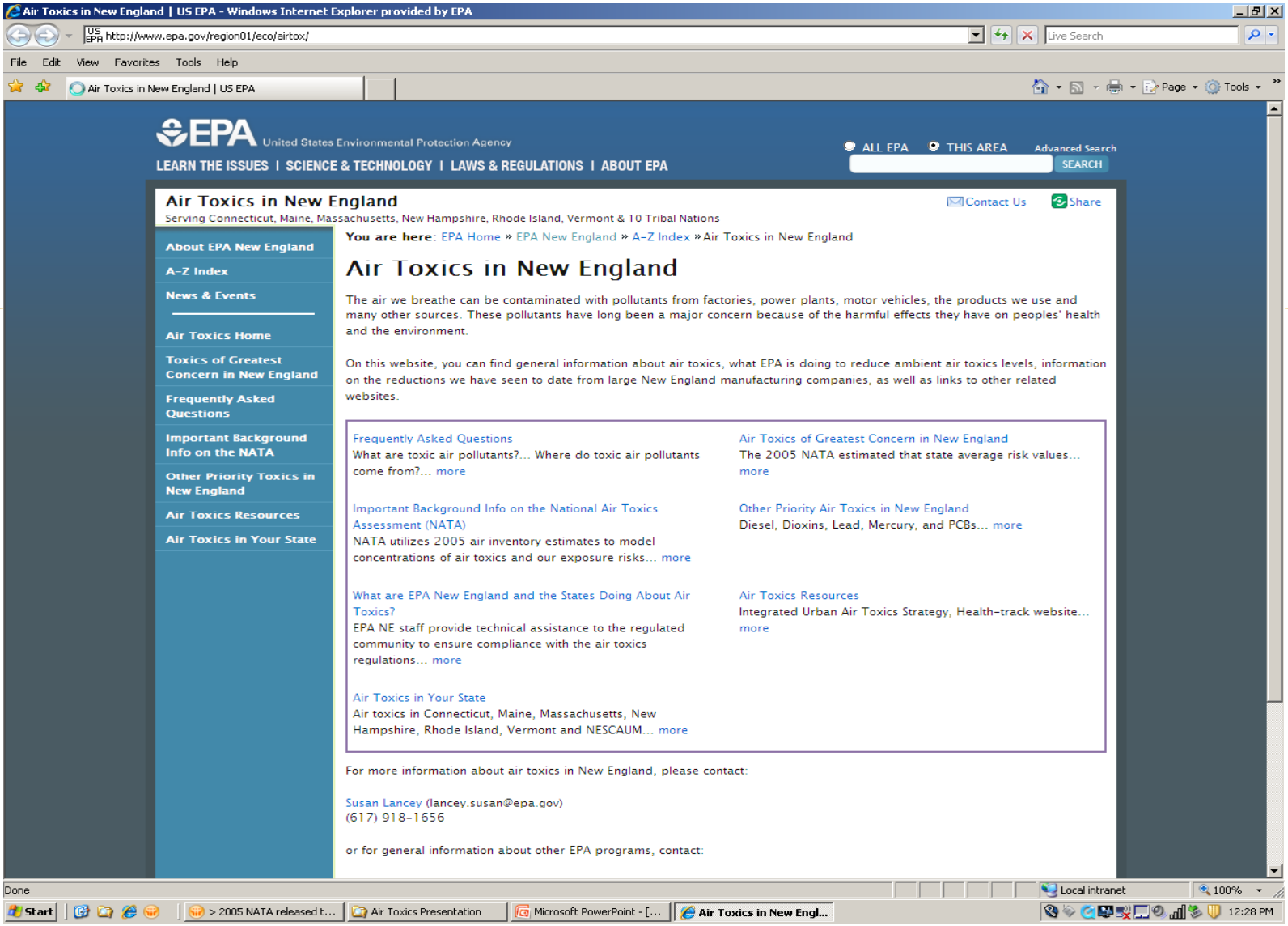
Project Title: Evaluation of Spatial Gradients and Temporal Trends of Black Carbon in Boston, MA

Background: Local mobile sources in large urban areas contribute to elevated levels of a wide range of air toxic pollutants, including particulate matter (PM) from both gasoline and diesel powered vehicles. PM from mobile sources has the potential to be highly toxic and thought to be a major factor in observed PM health effects reported in epidemiological studies. Black carbon (BC) has been shown to be a useful indicator of local mobile source aerosol emissions in urban areas. An improved understanding of both spatial patterns and long-term temporal trends of tailpipe related PM in large urban areas as represented by BC is important both for implementation and assessment of control strategies and aids understanding the exposure dynamics of potential environmental justice-related "hot-spots". Also understanding BC trends and gradients is critical for understanding and improving estimates of exposures used in health effect studies.

Objective:

- Better characterize the spatial gradients of BC as a marker for local source aerosol (primarily diesel) by analyzing BC and PM2.5 data from multiple sites. In addition, determine how representative the 2003 data is of present-day BC gradients given the substantial drop in BC at the Boston/Roxbury site between 2002 and 2004.
- Analyze data from two Mass DEP sites and Harvard School of Public Health site to determine the temporal trend in BC from 2000 to 2008, and to the extent possible determine if the distinct downward trend observed at the Boston/Roxbury site extends to other urban Boston areas. The timing of implementation of various mobile source aerosol reduction strategies in Boston and specifically in Roxbury will be evaluated to see if they are plausible factors in the observed BC downward trend.

Region 1 Air Toxic Website



Region 1 Air Toxic Website (continued)

- http://www.epa.gov/region1/eco/airtox/index.html
- Includes the following information:
  - Background information on National Air Toxics Assessments
  - Air Toxics in your state: links directly to each states air toxic websites
  - Air Toxic Resources
  - What EPA/States are doing about Air Toxics
  - Air Toxics trends data for selected compounds

Superfund/RCRA Vapor Intrusion Studies

- Peter Kahn is the contact person for the On Scene Coordinators and Remedial Project Managers.
- Collect indoor air in 6-liter canisters for VOC analysis performed at our lab. Collection time varies based on the request of the OSCs/RPMs, typically either 8 or 24-hour samples.
- Collect sub-slab soil gas samples for analysis in the our mobile lab and fixed lab.
- Studies can be conducted at either residential or commercial properties.

Questions?

- Alysha Lynch- 617-918-8381
  lynch.alysha@epa.gov