



Air Toxics Monitoring – National and Regional Program Updates

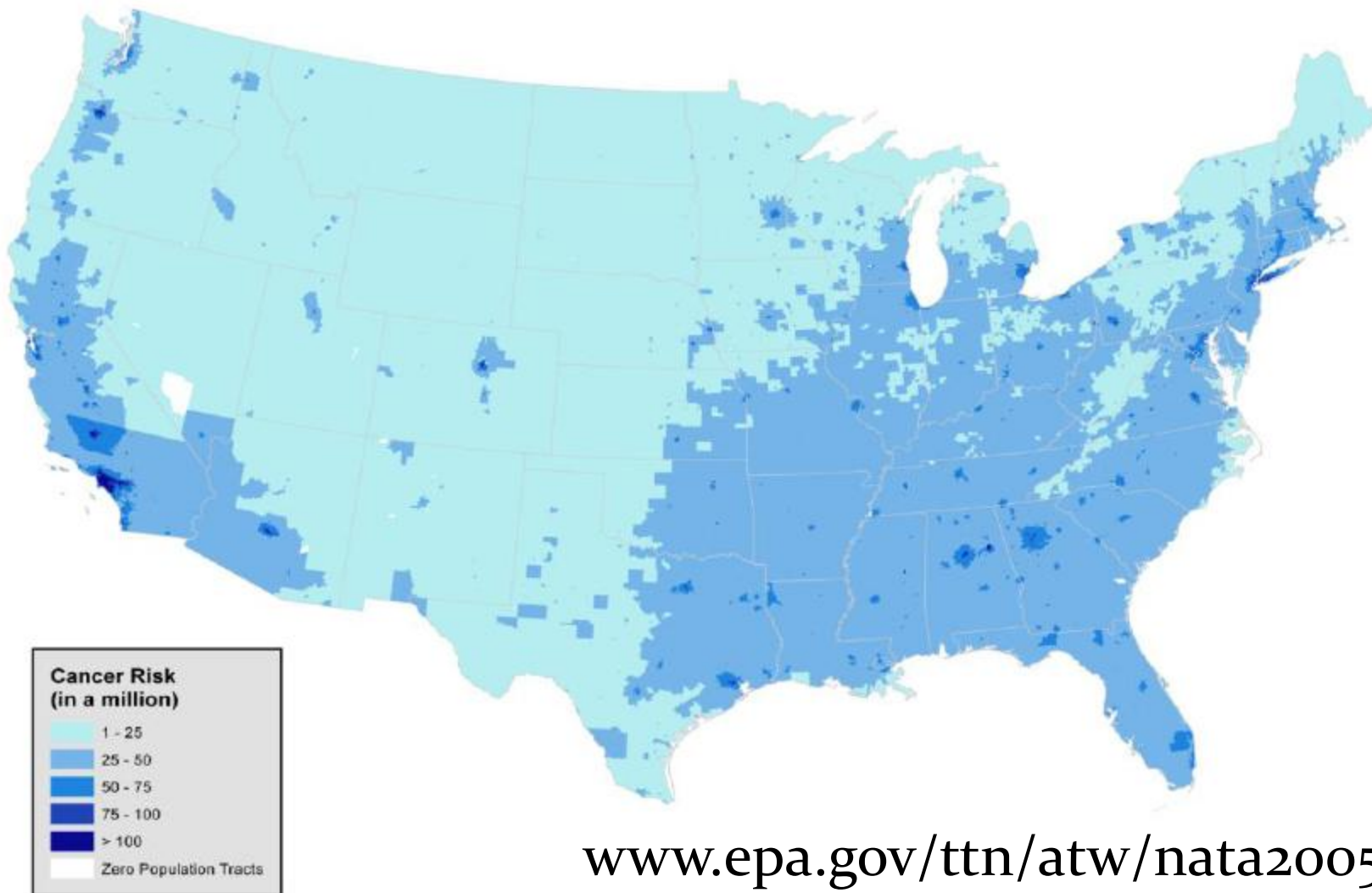
Region 5 State, Local and Tribal Contacts Meeting 2011
Motria Caudill, EPA Region 5

Topics

- National program
 - NATA release
 - NATTS update
 - SAT follow-up
 - CSATAM grants
- Region 5
 - Risk screening
 - Receptor modeling

2005 National Air Toxics Assessment

2005 NATA Estimated Tract Level Total Cancer Risk



NATA summary

- **National cancer risk driver:**
 - Formaldehyde: "likely carcinogenic to humans"
- **Regional cancer risk drivers:**
 - Benzene: "carcinogenic to humans"
 - PAHs: "likely carcinogenic to humans"
 - Naphthalene: "suggestive evidence of carcinogenicity"
- **National cancer risk contributors:**
 - 1,3-Butadiene; Arsenic compounds; Chromium compounds; Coke oven emissions: all "carcinogenic to humans"
 - Acetaldehyde; Acrylonitrile; Carbon tetrachloride; Ethylene Oxide; Tetrachloroethylene: all "likely carcinogenic to humans"
 - 1,4-Dichlorobenzene: "suggestive evidence of carcinogenicity"
 - Ethylbenzene:
- **Regional cancer risk contributors:**
 - Nickel compounds: "carcinogenic to humans"
 - 1,3-Dichloropropene; Methylene chloride : both "likely carcinogenic to humans"
- **National noncancer hazard drivers:**
 - Acrolein
- **Regional noncancer hazard drivers:**
 - 2,4-Toluene diisocyanate; Chlorine; Diesel PM; Hexamethylene diisocyanate; Hydrochloric acid; Manganese compounds

NATTS network

- PAHs at all sites
 - ERG contract lab
 - WDNR doing work in-house
- New codes for acrolein
 - **“Data Quality Evaluation Guidelines for Ambient Air Acrolein Measurements” on AMTIC**
 - New AQS code for 43509 “Acrolein – verified”
- New QA report in the works

School Air Toxics follow-up

School	City, State	Monitoring Site(s)	Analyte Group	Duration	Start Date	End Date
Abraham Lincoln Elementary	E Chicago IN	Abraham Lincoln Elementary	PM 10	6 mos	09/05/10	Mar-11
Jefferson Elementary	Gary IN	EC Water Treatment Plant	PM 10	6 mos	09/05/10	
		Gary Southshore Railcats Stadium	PM 10	6 mos	09/05/10	
Life Skills / Academy of Arts	Warren OH	Life Skills / Academy of Arts	PM 10	2 mos	11/16/10	May-11
			TSP		11/16/10	
			VOC		11/28/10	
			PAH		11/16/10	
East Elementary ^{7, 8}	E Liverpool OH	???	PM 2.5	6 mos	Mar-11	Sep-11
			PM 10			
			TSP			
Warren Elementary ⁸	Marietta OH	???	PM 10	6 mos	Mar-11	Sep-11
			TSP			

Community-Scale Air Toxics Ambient Monitoring – RFP!!

- www.epa.gov/air/grants_funding.html
- Closing Date: May 23, 2011
- Subject areas
 - **Community-Scale Monitoring**
 - **Methods Evaluation**
 - **Analysis of Existing Data**
- \$50,000 to \$750,000
- project periods may be up to 3.5 years

CSATAM – how to get a grant

- Projects should be “the total package” – engage your colleagues in areas of air toxics, dispersion modeling, risk assessment, community involvement, environmental justice, children’s health, enforcement, risk reduction. Partner with community groups and academic institutions. Think ahead to how the data will be used to reduce community exposures to HAPs.
- Take the Evaluation Criteria *very very very* seriously – justify, explain, defend, support your ideas to the hilt and fight for every possible point of the total 100.

2009 Region 5 HAP risk screening

	HAP	Ave. ¹	Site ²	Address	City	Potential Source
IL	Mn (TSP)	0.10	170310022	3535 E. 114th St.	Chicago	(closed LTV Steel)
		0.05	171190010	15th & Madison	Granite City	US Steel Granite City
IN	Butadiene	1.3	180892008	1300 141st St.	Hammond	Exxon-Mobil Terminal
	Benzene	5.1	180890022	201 Mississippi St.	Gary	US Steel Gary Works
		2.1	180892008	1300 141st St.	Hammond	Exxon-Mobil Terminal
	Mn (PM ₁₀)	0.06	180895504-S	601 Jackson St	Gary	US Steel Gary Works
	Mn (TSP)	0.14	180895503-S	2001 E. 135th St.	East Chicago	Mittal Steel
0.06		180896000	1100 W. Columbus Dr.	East Chicago	Mittal Steel	
MI	Mn (TSP)	0.05	261630015	150 Waterman	Detroit	US Steel; Severstal
		0.07	261630027	7701 W. Jefferson	Detroit	US Steel Great Lakes
		0.08	261630033	2842 Wyoming	Dearborn	Severstal Steel
MN	Benzene	3.7	271630438	4th Ave & 2nd St	Newport	Marathon Ashland
	Mn (TSP)	0.07	271230866	1450 Red Rock Rd.	St. Paul	Gerdau Ameristeel
		0.05	271377001	327 First St. S	Virginia	US Steel Minntac
OH	Benzene	2.5	390350069	7300 Superior	Cleveland	(near roadway)
		18.4	390810017	618 Logan St.	Steubenville	Severstal Wheeling
		2.6	391555504-S	458 Franklin St SE	Warren	ArcelorMittal
	Mn (PM ₁₀)	0.09	390290022-S	500 Maryland	East Liverpool	S.H. Bell
		0.11	391670010-S	115 Victory Place	Marietta	Eramet Marietta
		0.15	391675506-S	16855 State Route 550	none	Eramet Marietta
	Mn (TSP)	0.14	390290019	1250 George	East Liverpool	S.H. Bell
		0.83	390290020	2220 Michigan	East Liverpool	S.H. Bell
		0.08	390290022-S	500 Maryland	East Liverpool	S.H. Bell
		0.11	390350049	E. 56th St.	Cleveland	Charter, AK, ISG steel
		0.05	390350050	Grant Rd.	Cleveland	Charter, AK, ISG steel
		0.08	391670008	S.R. 676	Marietta	Eramet Marietta
		0.13	391670010	115 Victory Place	Marietta	Eramet Marietta
		0.15	391675506-S	16855 State Route 550	none	Eramet Marietta
		Naphthalene	3.5	390810017	618 Logan St.	Steubenville
WI	Benzene	2.1	550790010	1337 S. 16th St.	Milwaukee	(near roadway)

2010 version will include 24-hour peak concentrations as compared with acute (short-term) screening values.

Lead NAAQS and Manganese

- New metals data reported with TSP-Pb for NAAQS
- 2010 data show several sites with Pb below the NAAQS (so far) but Mn is higher than health benchmark (0.05 ug/m³) for neurological effects
- This is an issue at steel industry oriented monitors
- EPA may approach high Mn emitters in effort to achieve voluntary PM reductions
- May pursue multi-pollutant strategy in events of Pb nonattainment and Mn issue

Receptor modeling

- PM_{2.5} and VOC combined PMF modeling attempted at several Region 5 locations with limited success
 - PM_{2.5} results comparable to previous studies
 - VOC findings interesting in terms of mobile sources issues and benzene risk attribution, especially at sites with PAMS suite, i.e. ethylene, butane, etc.
 - But PM and VOC don't really mingle well in the model
- Next steps
 - Milwaukee, WDNR-HQ has a nice dataset
 - On the lookout for other potential projects