National Air Toxics Monitoring Network – FY2004 PLANNING

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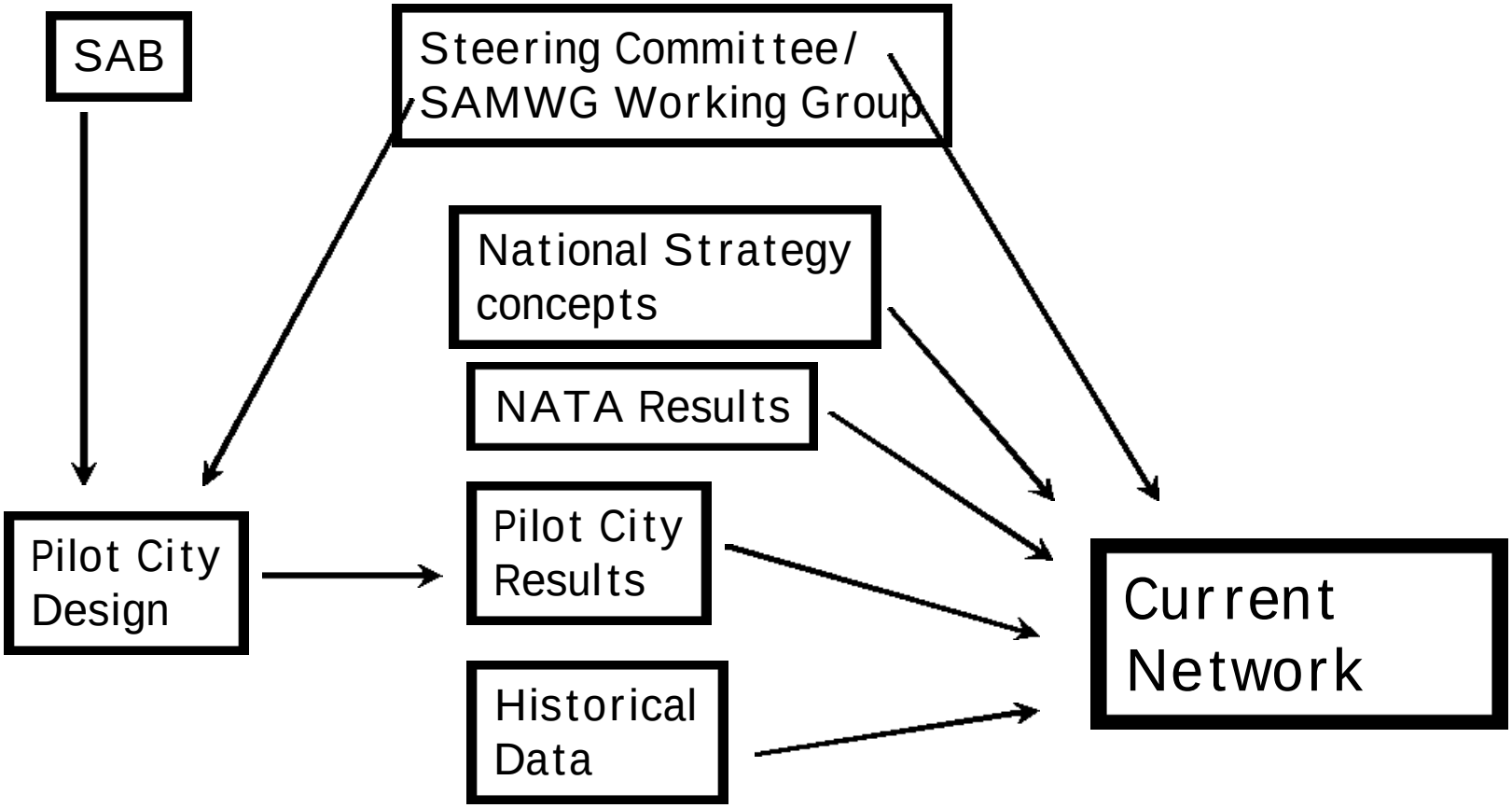
Regional Workshop

Atlanta September 9, 2003

Design approach



Toxics Monitoring Locations

Pilot Sites

38 sites in 10 cities

- Barcelenta/San Juan, PR
- Providence, RI
- Keeney Knob, WV *no data
- Tampa, FL
- Detroit, MI
- Rio Rancho, NM
- Cedar Rapids, IA
- San Jacinto, CA
- Grand Junction, CO
- Seattle, WA

NATTS Sites

22 'areas':

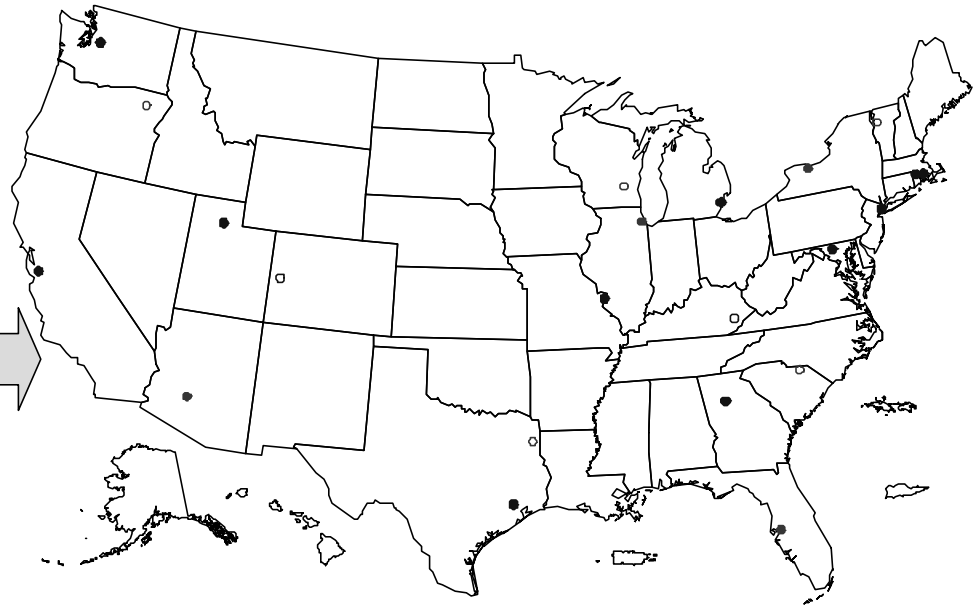
Jan/03 Startup (13)

Providence RI
Roxbury MA
NY, NY
Washington DC
Decatur (Atlanta), GA
Hazard, KY (Rural)
Detroit, MI
Deer Park (Houston), TX
St. Louis MO
Bountiful UT
Grand Junction, CO (Rural)
San Jose CA
Seattle WA

Jan/04 Startup (9)

Chittenden County, VT **(Rural)**
Rochester, NY
Tampa, FL
Chesterfield, SC **(Rural)**
Chicago, IL
Mayville WI
Harrison County TX **(Rural)**
Phoenix AZ
La Grande, OR **(Rural)**

● Urban ○ Rural



Annual Means Compared to Chronic Cancer Benchmarks – All Sites

City	AIRS ID	site	1,3-BUTADIENE	BENZENE	FORMALDEHYDE	ARSENIC TSP	CHROMIUM VII
Barcelenta/San	720170006	BAPR	0.15956	1.25594	2.90960		
	721270006	SJPR	0.33758	1.91608	3.42025		
Cedar Rapids	191130037	C2IA	0.08880	0.91852	2.25534		
	191130039	CRIA	0.16130	1.17635	2.27618		
Detroit	261130001	Houghton L		0.41218	2.02103		
	261250010	LOMI	0.20057	1.98141	2.41434	0.00126	0.00009
	261610008	YPMI		1.31480	2.02641	0.00078	
	261630001	APMI	0.13443	1.49755	2.21677	0.00190	0.00008
	261630005	R2MI					0.00008
	261630005	RRMI	0.22296	2.18440	5.73326	0.00191	
	261630015	S2MI				0.00208	
	261630015	SWMI		2.74775	3.95919		
	261630019	E7MI			2.81602	0.00169	
	261630027	YFMI	0.20434	21.94304	2.97106	0.00336	
	261630033	DEMI	0.15032	1.94954	2.88425	0.00241	0.00007
Grand Junctio	080770003	GJCO	0.24824	2.86934	6.02846	0.00105	
	080770016	G2CO	0.20096	2.11834	7.09325	0.00178	
Providence	440030002	AJ	0.04276	0.41748			
	440070022	UL	0.16804	1.18021	3.37456		
	440070024	JW	0.11433	0.86727	2.66058		
	440070025	WE	0.15281	1.06871	3.67782		
	440070026	VE	0.25477	1.39818	3.40879		
	440071010	EP	0.11904	0.86039	4.04838		
Rio Rancho	350430001	Bernalillo		1.51153	2.56898		
	350431003	Rio Rancho		1.06499	2.95400		
San Jacint	060653011	San Jacint	0.13186	0.98713	1.81368		0.00004
	060653012	South A	0.11057	0.77381	2.15958		0.00004
Seattle	530330010	Lake Samma	0.10520	1.16678	1.04219	0.00086	
	530330020	Sea Tac	0.09714	1.04488	1.33147	0.00097	
	530330024	Lake Fores	0.12229	1.64551	1.09354	0.00163	
	530330032	Georgetown	0.13613	1.80482	1.47847	0.00147	
	530330038	Maple Leaf	0.08137	1.13029	1.26023	0.00087	
	530330080	Beacon Hil	0.07919	1.32269	1.65984	0.00107	
Tampa Bay	120570081	SIFL	0.08941	0.66676	4.36844	0.00225	
	120571065	GAFL	0.10852	0.91130	3.91776	0.00221	
	120571075	LEFL	0.12218	1.05860	2.97834	0.00339	
	121030018	AZFL			4.36896	0.00210	
	121031008	DNFL	0.12107	0.96121	8.65998	0.00180	
	121035002	ELFL	0.11591	0.90240	2.84796	0.00226	

Summary lessons learned from Pilot Projects

- Considerable variability in concentration within cities
  - E.g., gradients determined by distance from major roadways
  - Suggests need for more in depth community assessments
- Mobile source toxics exhibit similar patterns across cities
  - E.g., Benzene, 1-3 butadiene; suggest limited number of NATTS
- Inconsistent relationship between chrome-6 and total chrome
  - Move to Chrome 6 sampling
  - Enhance next round of NATA analyses

Summary lessons learned from Pilot Projects, cont.

- QA is a crucial program element
  - Several sources of uncertainty…(methods, lab protocols)
  - Resources allocated for national and local levels

- Pilot projects fostered quality data bases, communications network and data analysis capability for States/locals

- Considerable methods/instrumentation needs
  - Lack of continuous technology
    - Mostly integrated (e.g. 24 hr. sampling duration followed by lab analysis) approaches
  - Lack of established acrolein method

Solutions:

- Test an acrolein method with ORD – Communicate with methods experts on all methods and share solutions (October methods workshop)
- Encourage advanced technologies in community assessment studies (e.g., DOAS)
- Test continuous formaldehyde and CO (tracker chemical) instruments at 5 to 6 NATTS sites.
- Create about 10-15 community gradient studies every year.
- Expand the QA and data analysis portion of project.

Air Toxics Monitoring National Program: Integration with the National Strategy

Guiding principles:

- Possess flexibility in tackling national and local issues by utilizing 22 Trends Sites (NATTS) and 50-70 community assessment/gradient projects over the next 6 year period.
- Design shift toward multiple pollutant measurements
  [collocation of NATTS at NCORE Level 2 -- PM2.5 speciation sites]
- Program designed to help assess risk and define the best control strategies.
- Accommodate new and continuous technologies
  [needs work, as most methods are time integrated]

FY2004 Budget

- 2.2 million to continue Trends sites
- $870,000 for additional instruments at the NATTS sites – Chrome 6, CO, formaldehyde
- $385,000 expanded Quality Assurance program
- $6.2 million for community gradient studies – open competition closes October 27, 2003
- $345,000 for data analysis of overall network
- TOTAL = $10,000,000
- Community Project Solicitation Notice:

http://www.epa.gov/air/grants_funding.html#oaqps