



# Assessing Our (Air Quality) Health - Future of Interstate Transport

2017 Fall Business Meeting

Association of Air Pollution Control Agencies

September 21, 2017

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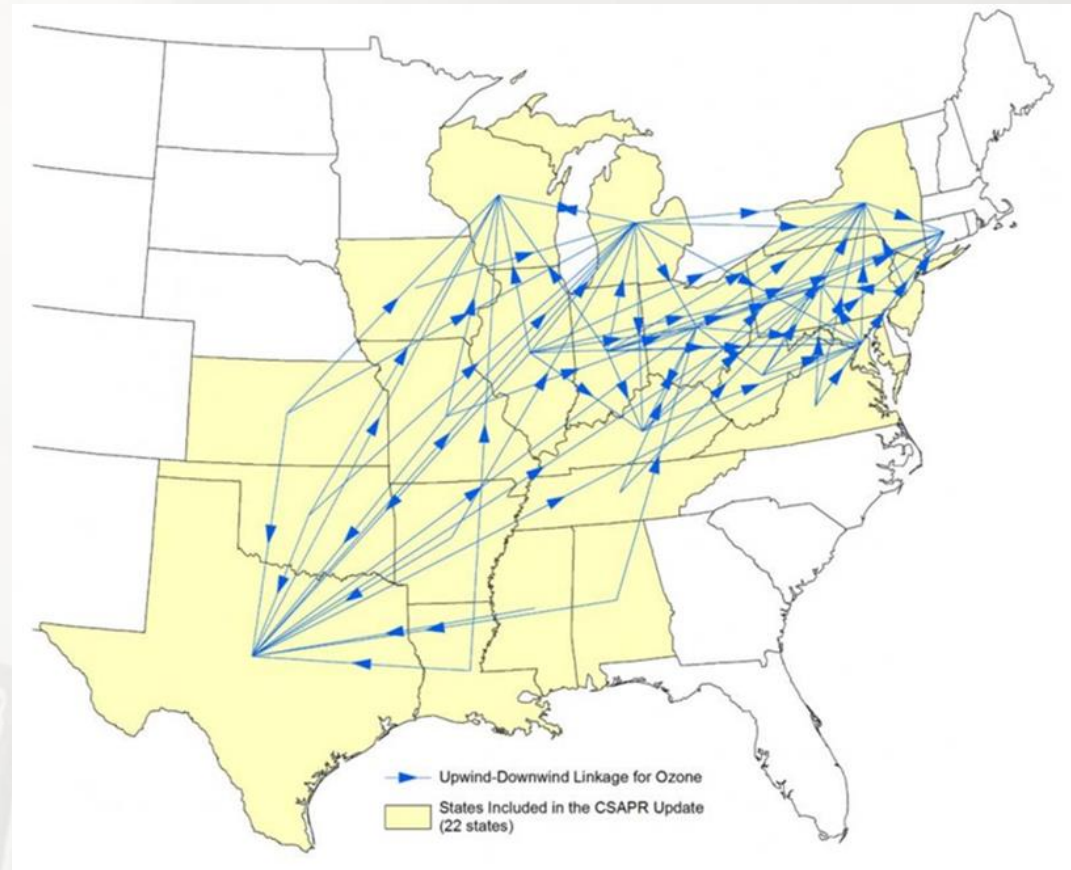
# Am I Healthy?

- Like going to a doctor for a physical, you need more than to have your pulse taken to determine your overall health
- There are many other factors that contribute in understanding your well-being
  - Blood pressure
  - Temperature
  - Reflexes
  - Existing Medications
  - Family history
  - Lifestyle choices



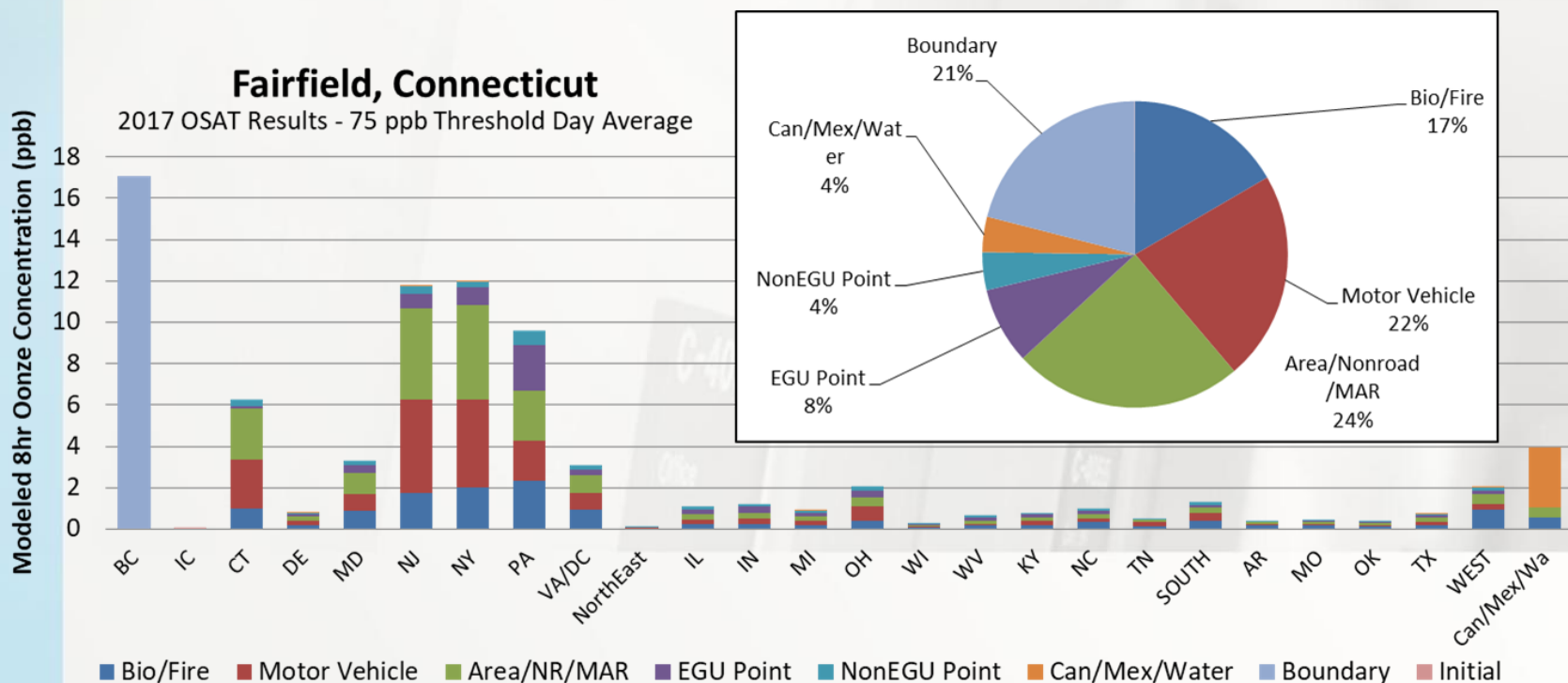
# Current State of Health (Transport Style)

- The current state of interstate transport is often only defined by an upwind state's entire contribution to a downwind monitor's modeled concentration
- But this only tells a part of the story



# Specific Tests

- Category-based source apportionment can help define a finer subset of geographic-only contribution
  - Assist in determining where controls are best applied



# Selecting the Right Instruments

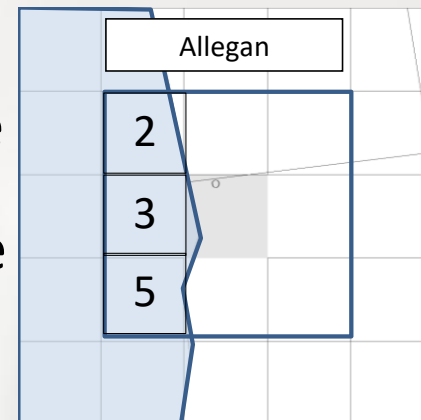
- Sometimes multiple, equally acceptable tools and tests are available – choosing the most appropriate one is important

Monitor	State	County	2023 Base DVf	Contributing States Ozone (ppb)					
				IL		IN		KY	
				APCA	OSAT	APCA	OSAT	APCA	OSAT
260050003	Michigan	Allegan	68.80	21.69	18.11	6.45	3.75	0.39	0.31
90019003	Connecticut	Fairfield	70.50	0.68	0.67	0.93	0.82	0.89	0.61
90013007	Connecticut	Fairfield	69.40	0.79	0.75	1.08	0.88	1.04	0.59
90099002	Connecticut	New Haven	69.80	0.65	0.87	0.80	0.90	0.65	0.51
360850067	New York	Richmond	71.20	0.98	1.02	1.22	1.12	1.31	1.01
551170006	Wisconsin	Sheboygan	71.00	14.92	15.37	7.14	3.62	0.71	0.46
360810124	New York	Queens	69.90	1.00	1.02	0.88	0.77	0.38	0.28
361030002	New York	Suffolk	71.30	0.72	0.91	0.85	1.05	0.68	0.68
240251001	Maryland	Harford	71.30	1.00	1.01	1.69	1.91	2.15	1.82
261630019	Michigan	Wayne	69.60	1.61	1.15	2.31	1.70	1.07	0.64



# What Else Do We Need to Check?

- Are our instruments working?
  - Configuration and model performance evaluations of key monitors and days selected for attainment test or relative and significant contribution



2011 Ozone Model Performance Statistics for 10 Days Selected for MATS RRF Calculations

Monitor	State	County	Simulation	Obs Mean (ppb)	Model Mean (ppb)	Mean Bias (ppb)	Mean Error (ppb)	Normalized Mean Bias (NMB)	Normalized Mean Error (NME)	Fractional Bias	Fractional Error
90013007	Connecticut	Fairfield	3x3 center	78.70	87.46	8.76	12.77	11.13	16.23	10.1	16.6
			3x3 maximum	78.70	102.11	23.41	23.41	29.74	29.74	25.9	30.9
260050003	Michigan	Allegan	3x3 center	77.30	88.26	10.96	14.27	14.17	18.46	13.9	21.4
			3x3 maximum	77.30	104.27	26.97	26.97	34.89	34.89	30.1	40.2
551170006	Wisconsin	Sheboygan	3x3 center	78.60	74.37	-4.23	13.59	-5.39	17.29	-4.6	17.0
			3x3 maximum	78.60	91.12	12.52	15.42	15.93	19.62	16.3	21.7

# Is There Anything Else You Need To Share With Me?

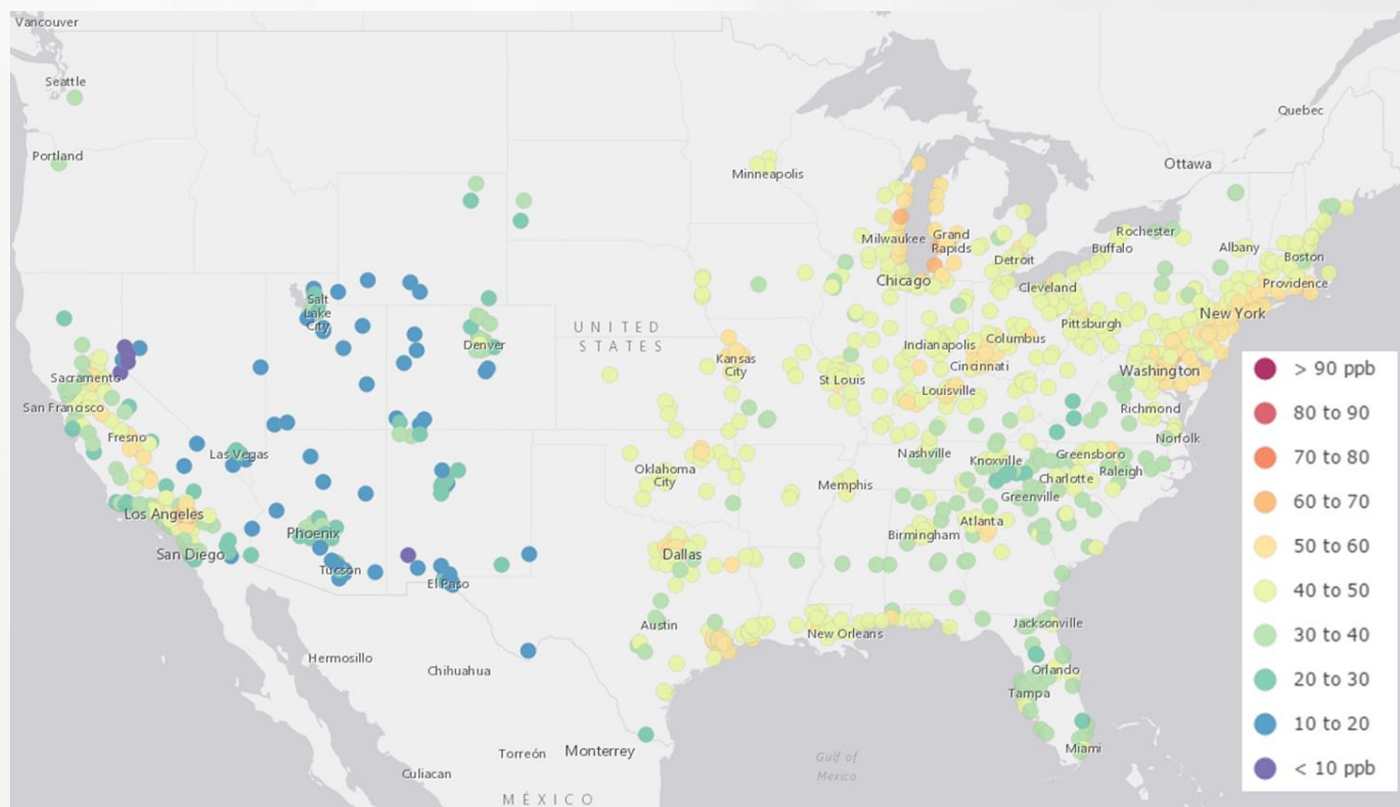
- Emission inventories are a continually moving target that need revision on an ongoing basis
- Sometimes resources prevent everything from being included that should be
  - Regional or local control omission from future base cases can impact attainment or contribution calculations



# Outside Influences on Local Issues

2017 Final  
CSAPR MDA8  
DV<sub>s</sub> (ppb)  
without  
“Boundary”  
Contributions

[BC/IC/Can/Mex]



- International contribution, wildfires, and natural background emissions play an ever increasing role in modeled ozone
- We need a better understanding and quantification of the impact of these sources on regional air quality and better tools and policies to account for their presence





## Does My Insurance Cover That?

- We all want to make sure that our air quality is improving and that we are addressing issues that have the greatest impact on impairing progress
- We also need to ensure that we are looking in the right places for improvements to occur and realize that sometimes the answers are not as simple as using a single metric

# See The Receptionist For Your Bill

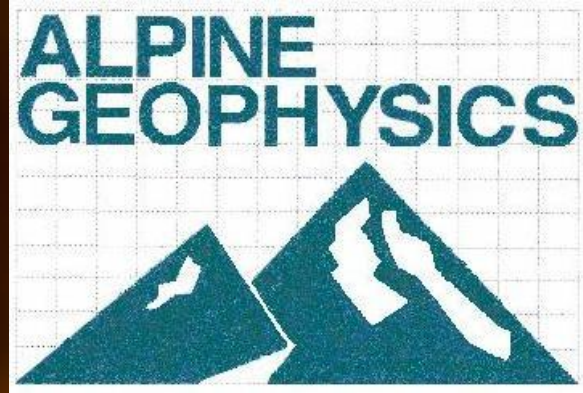
- Navigating interstate (and international) contribution can be difficult and states don't have to do it alone
- Just like understanding all of your critical stats to determine your overall health, it is important that good science is used in addressing the development of state and regional policy on air quality issues
- Collectively, improvements and clarification of methods and models can be shared and lessons learned can benefit all who may/will be in the same situation
- Otherwise, you might get charged for a surgical procedure when all you have done is had your temperature taken



# SKULL

protective case for the brain, smell, hearing, and vision. The upper or superior end of the skull is divided into two main parts: the cranial bones. The base of the skull is larger than the sides and top of the skull. The base of the skull encloses the front of the eyes, blood vessels, and tubes for the eyes and the jawbone is the

10. MAXILLA
11. MANDIBLE
12. TEETH
13. OCCIPITAL BONE
14. HYOID BONE



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