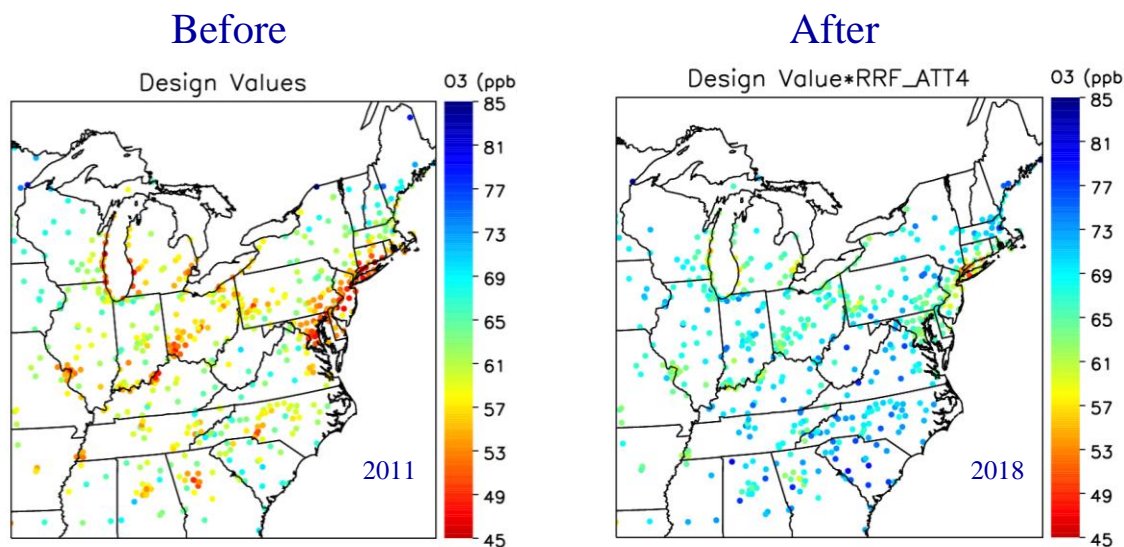


Maryland Analyses of Good Neighbor SIPs

Who Might Owe What ... and ... Will it Work?



Tad Aburn, Air Director, MDE
NACAA Meeting – Providence RI - April 29, 2015

Topics

- The Maryland analyses
- Who contributes to whom?
- What might contributing states need to do?
- Will it work?
- How to contact Maryland



The Maryland Analyses

- Maryland has a significant problem with transport
 - We measure incoming ozone levels that are already above the 75ppb standard
- Significant analyses have been conducted
 - Data analysis of every coal-fired EGU in the East
 - Controls, retirements and how they are run
 - Three packages shared with state Air Directors
 - Analyses of new OTC measures in the 13 OTC states
 - Comprehensive photochemical modeling to analyze how it will all work



Who Contributes to Whom

- EPA has performed preliminary modeling to identify which states may owe Good Neighbor SIPs for selected downwind problem areas ... Future problems for **nonattainment** and **maintenance** both identified. Texas problem areas not included.

Contributing States from Preliminary EPA Analyses																						
Problem Monitors	A L	A R	D E	I A	I L	I N	K S	K Y	L A	M D	M I	M O	N J	N Y	O H	O K	P A	T N	T X	V A	W I	W V
Harford, MD						x		x			x				x		x		x	x		x
Fairfield, CT ★										x	x		x	x	x		x			x		x
Fairfield, CT ★										x			x	x	x		x			x		x
Suffolk, NY ★					x	x				x	x		x		x		x		x	x		x
Fairfield, CT ★					x	x				x			x	x	x		x			x		x
New Haven, CT ★						x				x			x	x	x		x			x		x
Jefferson, KY					x	x					x				x							
Allegan, MI		x		x	x	x	x					x				x			x		x	
St. Charles, MO	x	x			x				x							x			x	x		
Camden, NJ ☆			x		x	x		x			x	x		x	x		x		x			x
Gloucester, NJ ☆			x		x	x		x		x	x			x	x		x		x	x		x
Richmond, NY ★			x			x		x		x			x		x		x			x		x
Philadelphia, PA ☆			x		x	x		x		x			x		x				x	x	x	x
Sheboygan, WI					x	x	x		x		x	x				x				x		

Who Might Owe What?

... What do the MD analyses say about what control measures states may need to include in their Good Neighbor SIPs?

- Very preliminary – Based upon current modeling effort
- For all of the toughest areas: Harford County, MD - NJ/NY/CT nonattainment area – Sheboygan, WI ... all of the other tough areas in the east ... except Texas

Control Programs Needed	CT	DE	IL	IN	KY	MD	MI	MO	NJ	NY	OH	PA	TN	TX	VA	WV
Optimized EGU controls	X	X	X	X	X	+	X	X	X	X	X	X	X	X	X	X
Aftermarket Catalyst	X	X				X			X	X		X			X	
On- and off-road idling	X	X				X			X	X		X			X	
OTC VOC initiatives	X	X				X			X	X		X			X	
SmartWays	X	X				X			X	X		X			X	
Smaller Combustion	?					?			?	?		?			?	

What Are Optimized EGUs?

.. and those other (OTC) measures

- “Optimized” Electric Generating Unit (EGU) reductions include:
 - All coal-fired units in selected eastern states (MD, PA, VA, NC, TN, KY, WV, OH, IN, IL, MI, CT, NJ, NY, WI, LA, MO) running controls in the summertime consistent with emission rates measured in earlier years when controls were being run more efficiently.
 - Retirements and other changes at EGUs reported by states by 2018
- New OTC measures include:
 - Nine new Ozone Transport Commission (OTC) model reduction programs for mobile sources and other sources implemented in just the OTC states
 - Model programs for aftermarket catalysts, onroad and offroad idling, heavy duty I & M, consumer products, AIM, auto coatings and ultra low-NOx burners. ZEV/CALEV and Smartways efforts in some states





Will It Work - Modeling Preliminary Problem Areas

County, State	AQS #	Design Value 2011	2018 Future Projections		
			Measures "on the way"	Add in Optimized EGUs	Add new OTC & local MD measures
Attainment Problems - 2018					
Harford, MD	240251001	90	76.0	74.5 ✓	73.5
Fairfield, CT	090013007	84.3	73.0	72.5	71.5
Fairfield, CT	090019003	83.7	75.5	75.1 ✓	74.1
Suffolk, NY	361030002	83.3	78.2	77.7 🌐	76.7
Maintenance Problems - 2018					
Fairfield, CT	090010017	80.3	76.4	75.9 ✓	74.9
New Haven, CT	090099002	85.7	74.1	73.8	72.8
Jefferson, KY	211110067	82.0	70.6	69.0	69.0
Allegan, MI	260050003	82.7	73.0	72.8	72.8
Saint Charles, MO	291831002	82.3	71.3	69.6	71.1
Camden, NJ	340071001	82.7	70.7	69.6	68.6
Gloucester, NJ	340150002	84.3	72.3	70.9	69.9
Richmond, NY	360850067	81.3	74.7	74.0	73
Philadelphia, PA	421010024	83.3	72.8	71.4	70.4
Sheboygan, WI	551170006	84.3	75.4	75.2 ✓	75.2

Other Difficult Monitors in the East

County, State	AQS #	Design Value 2011	2018 Measures “on the way”	2018 – Add in Optimized EGUs	2018 – Add new OTC and local MD measures
Prince Georges, MD	240338003	82.3	68.6	67.0	66.0
New Castle, DE	100031010	78.0	66.6	65.1	64.1
Bucks, PA	420170012	80.3	69.3	68.0	67
Fairfax, VA	510590030	82.3	69.4	68.1	67.1
Wayne, MI	261630019	78.7	72.9	72.8	72.8
Mecklenburg, NC	371191009	79.7	63.5	63.0	63.0
Fulton, GA	131210055	81.0	70.3	70.1	70.1
Knox, TN	470931020	71.7	61.7	61.2	61.2
Hamilton, OH	390610006	82.0	69.7	67.5	67.5
Franklin, OH	390490029	80.3	69.7	69.2	69.2



All values in parts per billion (ppb)

What Might it Take?

NY/NJ/CT Nonattainment Area

- There are very preliminary analyses started that begin to look at how a strategy that targets smaller combustion sources ... with relatively large peak day NOx emissions ... might help the NY/NJ/CT nonattainment area
- This sensitivity run (10% extra NOx in NY, NJ, CT, PA and MD) was designed to get a very rough idea of how that kind of a strategy might work

County, State	AQS #	Design Value 2011	2018 Future Projections			
			Measures "on the way"	Add in Optimized EGUs	Add new OTC & local MD measures	Add in 10% Extra NOx Reduction in NY, NJ, CT, PA and MD
Fairfield, CT	090013007	84.3	73.0	72.5	71.5	71.0
Fairfield, CT	090019003	83.7	75.5	75.1	74.1	73.6
Suffolk, NY	361030002	83.3	78.2	77.7	76.7	75.7
Fairfield, CT	090010017	80.3	76.4	75.9	74.9	74.5
New Haven, CT	090099002	85.7	74.1	73.8	72.8	71.7



Want More Information?

- Maryland's briefing from the April 8th meeting on transport in RTP is included in the NACCA material
- Maryland anxious to discuss any of our data analyses with other states
 - The EGU data analyses packages (3)
 - The Maryland photochemical modeling
 - The Maryland analyses of OTC model programs
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