

Air Quality Modeling and Ohio Ozone Status

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What and Why of Modeling

- Impact of atmospheric emissions on air quality
- Supports the permitting process
- Develop control strategies for various pollutants
- Comply with Federal Regulations
- Meet clean air goals for citizens

Pollutants

- Criteria Pollutants
 - PM10
 - SO₂
 - NO_x
 - CO
 - Lead
- Toxics
 - Greater than 1 ton per year

Source Types

- Point
- Area
- Volume
- Open Pit
- AreaPoly Source
- AreaCircle Source

Types of Air Quality Modeling

- Screening
 - SCREEN3
 - AERSCREEN
- Long Range Transport
 - CALPUFF
 - CAMx
- Short Range Transport
 - ISC
 - AERMOD

Engineering Guide #69

- Q & A Format
- Offers information about basic modeling
- Being updated
 - No release date yet
- Suggestions/Clarifications always requested!

Updates to EG 69

- Include Toxic Rule information and list of toxics to be modeled
- Clarification on Urban vs Rural land use classification
- AERMOD, AERMET, and AERSCREEN implementation guidance

'Table 3'

- Found in the back of EG69

POLLUTANT	AVERAGING PERIOD	National Ambient Air Quality Standards (NAAQS) (ug/m ³)										
				PSD			PSD		PSD		OHIO	OHIO
				CLASS II	SIGNIFICANT	SIGNIFICANT	MONITORING	SIGNIFICANT	SIGNIFICANT	MODELING	SIGNIFICANT	OHIO
				PSD	EMISSION	IMPACT	DE MINIMIS	EMISSION	EMISSION	EMISSION	IMPACTS	ACCEPTABLE
				INCREMENTS	RATES	INCREMENTS	CONC	RATES	RATES	RATES	3745-31-01(vv)	INCREMENTAL
	PRIMARY	SECONDARY	(ug/m ³)	(tons/year)	(ug/m ³)	(ug/m ³)	(tons/year)	(ug/m ³)	(ug/m ³)			
PM10	Annual	50 a	c	17 a	15	1 h	-	10		8.5 a		
	24-Hour	150 b	c	30 b	--	5 h	10 h	--	10 (24-hr TSP) i	15 b		
Sulfur Dioxide	Annual	80 a	c	20 a	40	1 h	--	25		10 a		
	24 Hour	365 b	c	91 b	--	5 h	13 h	--	15 i	45.5 b		
	3-Hour	--	1300 b	512 b	--	25 h	--	--		256 b		
Nitrogen Dioxide	Annual	100 a	c	25 a	40	1 h	14 h	25	15 (24-hr) i	12.5 a		
Ozone	1-Hour	244 d	c	--	40 e	--	--					
Carbon Monoxide	8-Hour	10,000 b	c	--	100	500 h	575 h	100	575ia	2500 b		
	1-Hour	40,000 b	c	--	--	2000 h		--		10000 b		
Lead	Calendar Quarter	1.5 a	c	--	0.6	--	0.1 h	0.6	0.1 i	0.375 a		
Toxics Listed by ACGIH f	1-Hour	--	--	--	--	--	--	1		g, a		

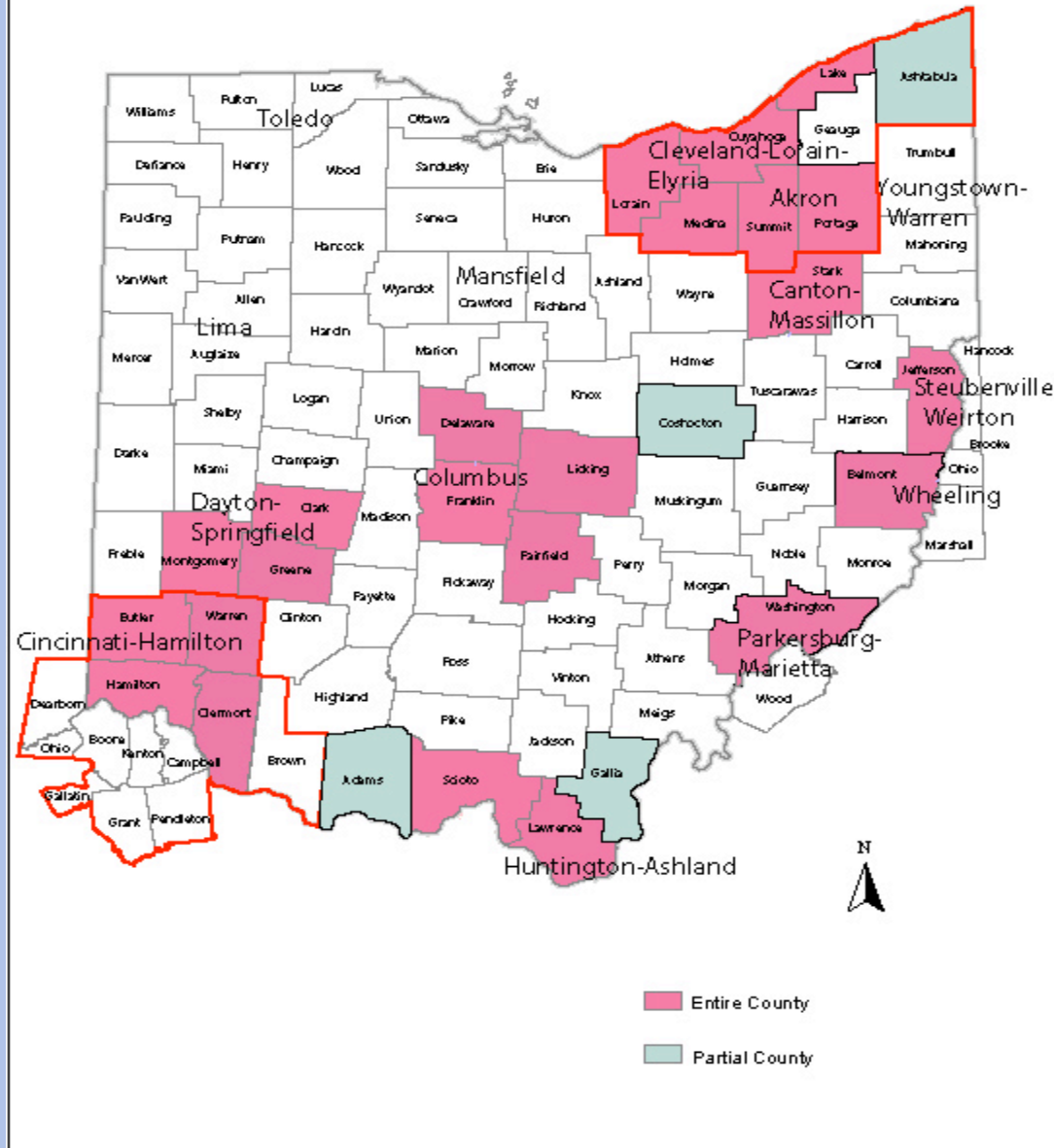
a Concentration not to be exceeded
 b Concentration not to be exceeded more than once per year
 c Same as primary NAAQS.
 d Not to be exceeded on more than one day per year, three year average.
 e Emissions of volatile organic compounds.
 f Any toxics included in the latest handbook of The American Conference of Governmental Industrial Hygienists.
 g Value calculated by procedure outlined in current version of the Ohio EPA Division of Air Pollution Control document entitled "Review of New Sources of Air Toxic Emission"
 h Peak concentration.
 i Concentration that initiates PTI requirements

What Modeling Can Tell Us

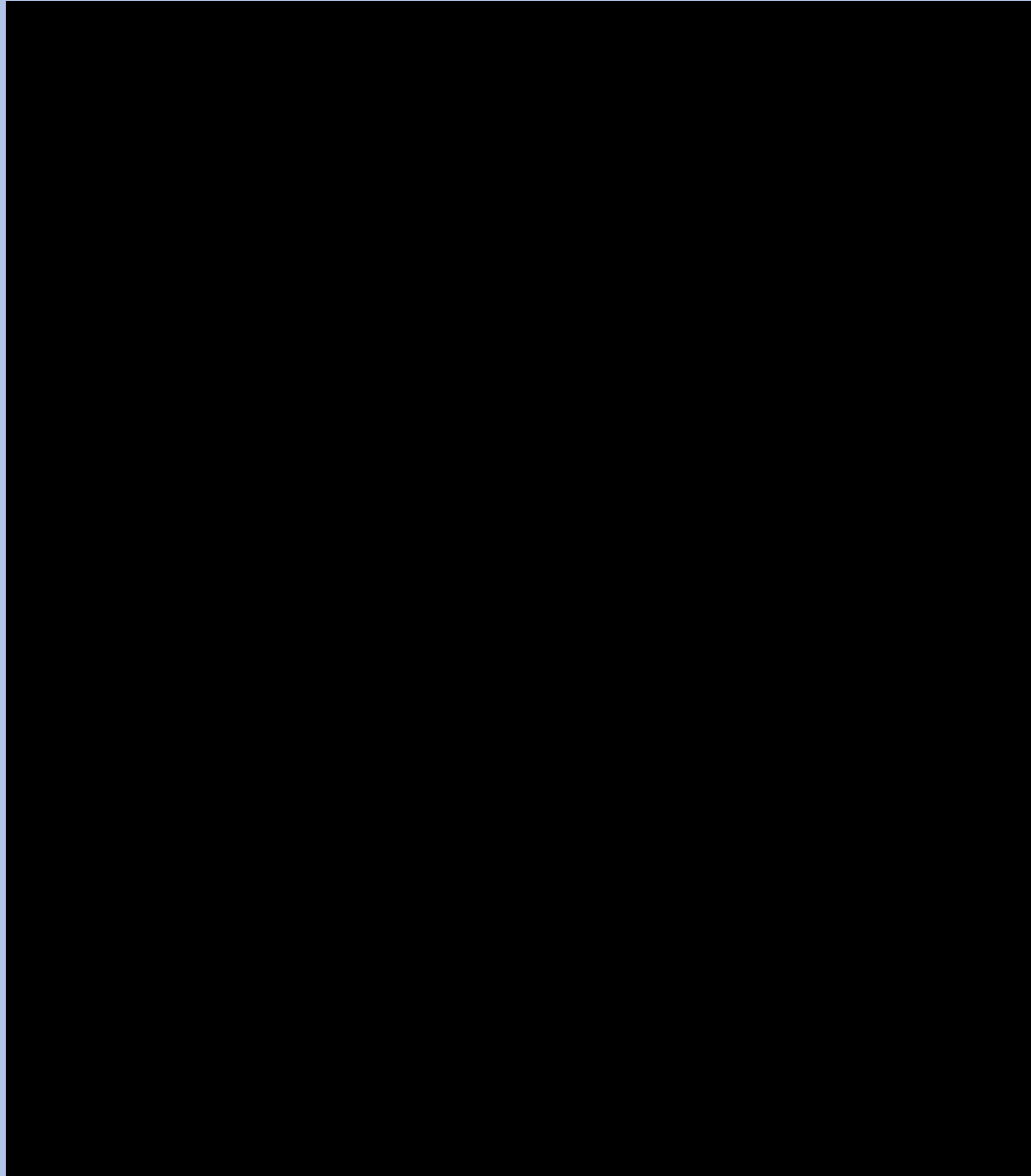
- Impacts from individual sources
- Impacts from individual facilities
- Violations of the National Ambient Air Quality Standards
- Prevention of Significant Deterioration consumption
- Non-Attainment Areas

PM 2.5 Nonattainment

04/12/05



8 hr. Ozone Non-Attainment Areas



What it means to be Non-Attainment

- More rules
 - E-check
- Non-Attainment NSR or PSD
 - Tighter controls on equipment
- Must find offsets for your projects

Future of the Ozone SIP

- New Standard was announced in March 2008
- Ohio EPA must submit designation requests by March 2009
- USEPA will review those request and respond by March 2010
- Ohio EPA will have until March 2013 to develop a SIP for the Non-Attainment Counties

Ohio Ozone

2007

- 110 total days old standard (.08 ppm)
- 541 total days new standard (.075 ppm)

2008

- 32 total days old standard (.08 ppm)
- 172 total days new standard (.075 ppm)

* Not all data is certified

Contact Information

Thank you!

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