# What's Next? Clean Air Act Policy Issues

**Presented To:** 

Association of Air Pollution Control Agencies: 2017 Spring Meeting

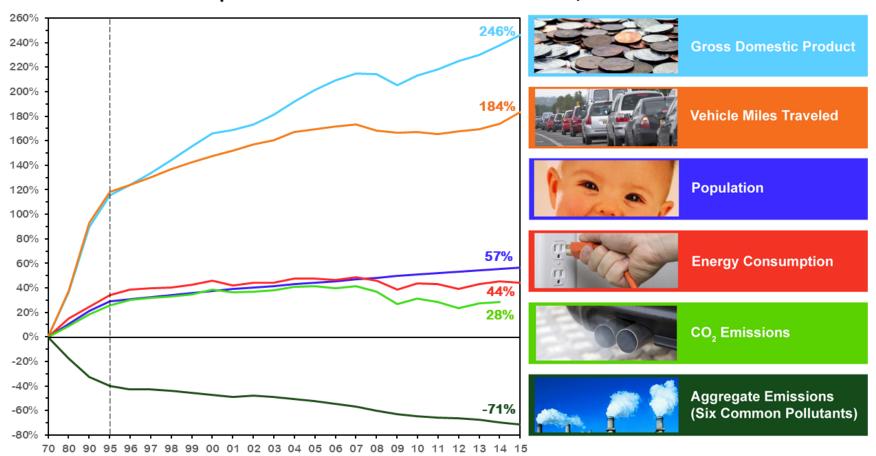
March 28, 2017

Buchanan Davis
Regional Director
U.S. Senator Jeff Flake, Arizona

Amanda A. Reeve
Envtl & Regulatory Policy Advisor
Snell & Wilmer, L.L.P.

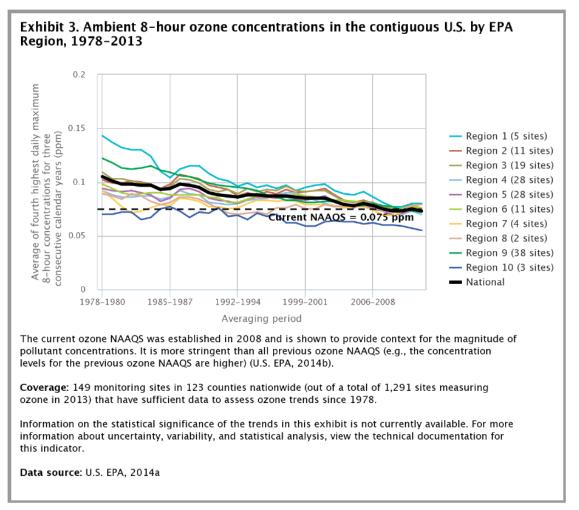
# Clean Air Act, A Success?...Clearly!

#### Comparison of Growth Areas and Emissions, 1970-2015

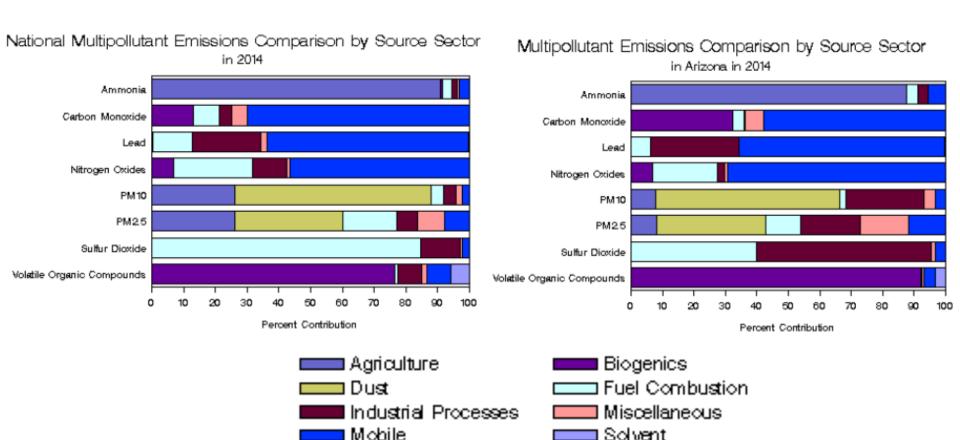


https://www.epa.gov/air-trends/air-quality-national-summary

### U.S. Trend: Ozone Concentrations



### A Closer Look At Pollutant Sources



https://www.epa.gov/air-emissions-inventories/multi-pollutant-comparison

### The Clear Purpose of the Clean Air Act

#### THE CLEAN AIR ACT 1

TITLE I—AIR POLLUTION PREVENTION AND CONTROL

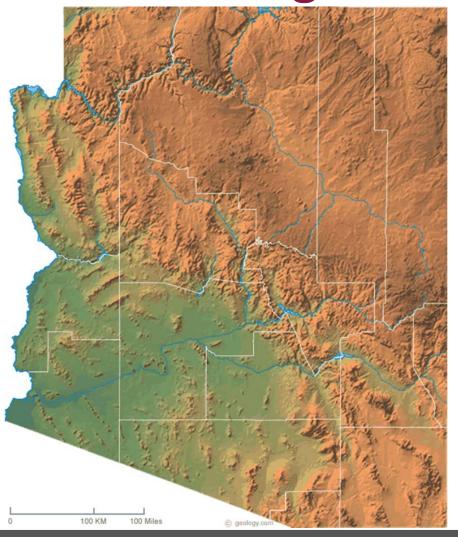
PART A—AIR QUALITY AND EMISSION LIMITATIONS

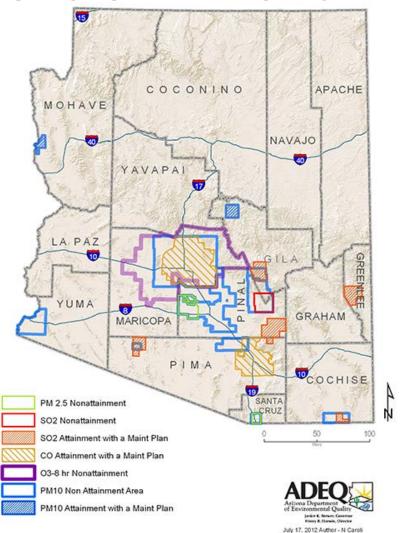
FINDINGS AND PURPOSES

SEC. 101. (a) The Congress finds—

(3) that air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments; and

CAA Through The Lens of Arizona





# Arizona's Unique Challenges

- Distinctive Geography
  - Inter-mountain Western U.S. Region
    - "...generally refers to locations in AZ, CO, NM, NV, UT, WY, and the high-elevation portions of eastern CA."

(U.S. EPA, White Paper for Discussion, Implementation of the 2015 Primary Ozone NAAQS: Issues Associated with Background Ozone, EPA-HQ-OAR-2016-0097-0004)

- International Border
  - Mexico



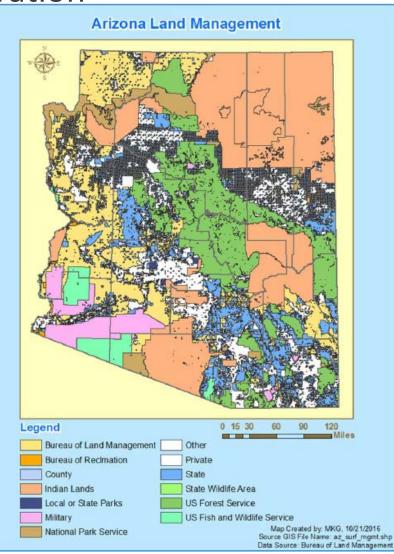
Land Ownership & Administration

Land Ownership and Administration: Acreage & Percent of Total by County 1/

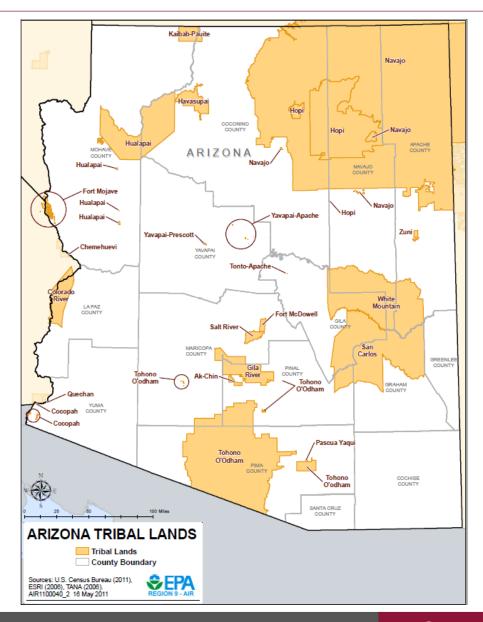
		Bureau of	•		Other			Area	Area of	
County	Forest Service	Land Management	State of Arizona	Indian Reservations	Individual or Corporate 2/	Public Lands 3/	Total Area 4/	Land	Water 5/	
	1,000 Acres									
Apache	493	109	662	4,729	1,024	154	7,171	7,164	7	
Cochise	490	376	1,371	0	1,569	142	3,948	3,948	0	
Coconino	3,269	612	1,137	5,447	688	762	11,915	11,898	17	
Gila	1,705	65	31	1,159	71	20	3,051	3,034	17	
Graham	396	760	497	1,072	235	3	2,963	2,960	3	
Greenlee	751	172	172	0	81	6	1,182	1,182	0	
La Paz	0	1,691	259	226	152	552	2,880	2,873	7	
Maricopa	658	2,431	650	264	1,833	53	5,889	5,867	22	
Mohave	5	5,234	582	544	1,493	662	8,520	8,443	77	
Navajo	488	88	370	3,489	1,907	28	6,370	6,368	2	
Pima	390	363	861	2,491	823	951	5,879	5,879	0	
Pinal	223	290	1,206	774	748	196	3,437	3,434	3	
Santa Cruz	418	4	61	0	298	11	792	792	0	
Yavapai	1,969	567	1,264	8	1,327	64	5,199	5,196	3	
Yuma	0	1,474	189	9	454	1,403	3,529	3,527	2	
Total	11,255	14,236	9,313	20,212	12,703	5,007	72,725	72,565	160	

Source: https://www.nass.usda.gov/Statistics\_by\_State/Arizona/Publications/Annual\_Statistical\_Bulletin/05bul/pdf/pg69.pdf

Source: http://static.azdeq.gov/aqd/aqcode2\_9.pdf

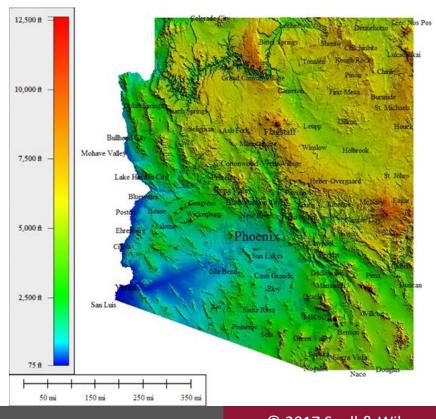


### Tribal Lands



# Arizona's Unique Challenges

- Distinctive Geography
  - Inter-mountain Western Region
  - International Border
  - Tribal Lands
- Varying Topography
  - Deserts
  - Mountains
  - Forests
  - Canyons



# Arizona's Unique Challenges

- Distinctive Geography
  - Inter-mountain Western Region
  - International Border
  - Tribal Lands
- Varying Topography
  - Deserts
  - Mountains
  - Forests
  - Canyons
- Interesting Climate

### Haboobs & Microbursts



Figure 6: July 3, 2014 dust storm approaching and crossing over South Mountain (left) with Downtown Phoenix noted by red arrow. Downtown is quickly consumed by dust within minutes (right).

Images captured by ADEQ's visibility camera network.

Source: http://static.azdeq.gov/aqd/aqcode1\_1.pdf



Source: http://static.azdeq.gov/aqd/aqcode1\_3.pdf



(Source: Chris Birtch )

Source: http://www.azfamily.com/story/29487202/microburst-slams-wittmann-1700-without-power



Spectacular and dangerous weather phenomenon, known as a microburst, spotted over Phoenix, Arizona, Monday, July 18 (Credit Chopperguy Photographer Jerry Ferguson and Pilot Andrew Park)

 $Source: \ www.the weather network.com/us/news/articles/us-weather/science-behind-the-awe-inspiring-microburst-over-phoenix/70377$ 

### Monsoons in the Summer



Lightning and Winds and Hail, Oh my!



Source: http://static.azdeq.gov/aqd/aqcode2\_7.pdf



Source: http://static.azdeq.gov/aqd/aqcode1\_3.pdf



Inversions in the Winter

Classic example of fireplace smoke shrouding downtown Phoenix under a strong inversion on

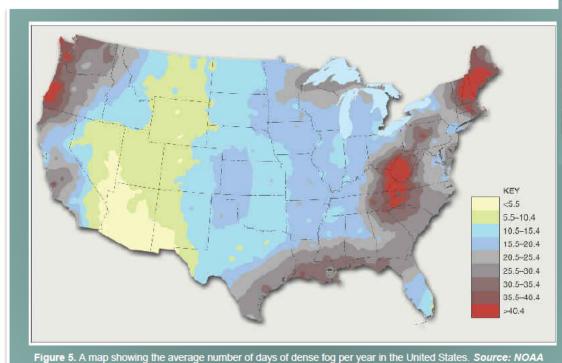
Christmas morning (2006) Source: phoenixvis.net

### – Fog

#### Fog in Arizona

#### Arizona is unique...

Out of all the states in the United States, Arizona has the least amount of dense fog days per year. Most of Arizona averages less than 5.5 dense fog days per year; portions of north-central Arizona and the northeast corner of the state average slightly more (see Figure 5 below). This is due to Arizona's dry climate. Compared to the rest of the country, the conditions for fog formation do not occur very often in Arizona.



Source (all images): http://static.azdeq.gov/aqd/aqcode2\_2.pdf

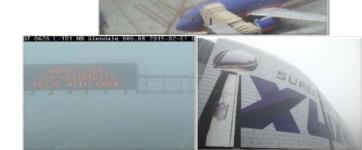




Figure 7: The view of Camelback Mountain from atop ADEQ's parking garage at 10:30AM on Super Bowl Sunday 2015 (left) compared to a typical clear morning (right).

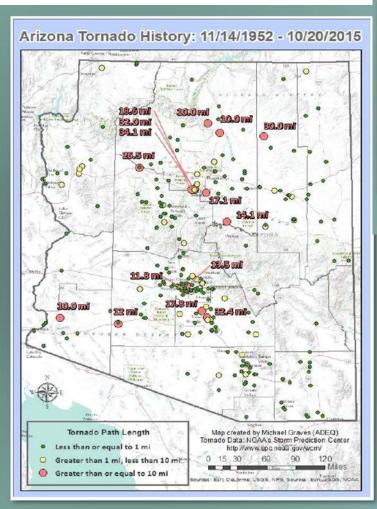


Figure 3. Radiation fog engulfing downtown Phoenix the morning of March 3, 2015. Source: 12 News.

### Tornados & Strong Winds

Figure 2: A map of Arizona showing the touchdown locations for all 242 officially observed tornadoes since November 1952. Each point represents a tomado. Tornadoes are classified by their path length: small green points represent tornados with path lengths less than or equal to 1 mile; yellow, medium-sized points represent tomadoes with path lengths between a mile and 10 miles; large red points represent tornadoes with path lengths 10 miles or greater. Tornadoes 10 miles or greater also have their path length labeled in red.

Source: Tornado data: NOAA Storm Prediction Center, map made in ArcGIS with ESRI basemap



Source (all images): http://static.azdeq.gov/aqd/aqcode2\_8.pdf





Figure 12. A landspout that formed in the afternoon ne Safford, AZ on July 31, 2015. This tornado was confirmed as an EF0 tornado by the National Weather Service.

Source: KPHO/KTVK News

Figure 15. The tomado with the second longest path length in Arizona's tomado record (32.02 miles) derailed a train in the Bellemont, AZ area, 28 rail cars were damaged, it was rated an EF2 tomado.

Course CAR



Figure 16. An aerial photo taken of two tomado scars near Bellemont, AZ. These tomadoes were two of a total of eight tomadoes that occurred on October 6, 2010.

Source: NOAA National Weather Service

### Extraordinary Lightning





A lightning and rainbow photographed during a storm on Saturday, August 8, 2015. (Greg McCown, Saguaro Pictures)





Source (tweet, Marana, Superstition Mountains and Gilbert photos): https://www.washingtonpost.com/news/capital-weather-gang/wp/2015/08/13/three-strikes-epic-lightning-photographs-from-the-arizona-desert/?utm\_term=.9e6066ba874a

ightning over Arizona's Superstitions mountains, 12:50 a.m. local time, July 3, 2015. (Mike Olbinski Photography)

### Raging Wildfires & Controlled Prescribed Burns



Figure 1: Image showing a wildfire progressing through mixed fuel types. Extreme fire behavior is noted by the presence of "torching" of trees (red circle) and a "spot" fire ahead of the main flame front (red arrow).

Source: http://static.azdeq.gov/aqd/aqcode2\_5.pdf



Figure 5: Bird's eye view of early morning smoke trapped in the Verde Valley. Smoke impacts and visibility impairment are greatest for lower elevations. Smoke originated from the 2014 Slide Fire (pictured top left) and flowed down Oak Creek Canyon during the overnight hours to accumulate in and around Sedona.

Figure 5: Visual comparisons between the Government Prairie (top left) and McCraken (top right) prescribed burns carried out in Arizona's Kaibab National Forest versus the 2004 Willow wildfire (bottom left) and 2011 Wallow wildfire (bottom right). Note the difference in fire intensity, fire behavior, and smoke output between prescribed fires and wildfires. Image source: (top left and right). Photos: (bottom left) and (bottom right)

Source: http://static.azdeq.gov/aqd/aqcode2\_9.pdf

Photo taken by Ted Grussing

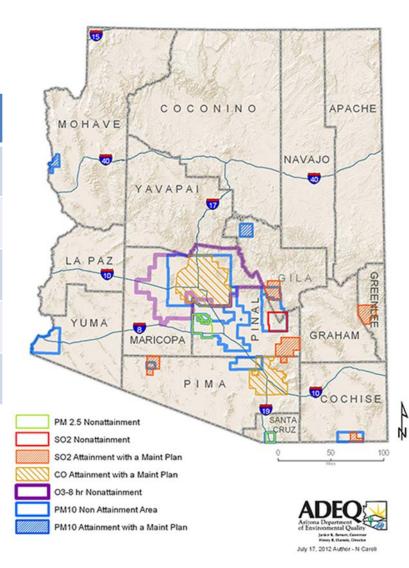
# Arizona's Unique Challenges

- Distinctive Geography
  - Inter-mountain Western Region
  - International Border
  - Tribal Lands
- Varying Topography
  - Deserts
  - Mountains
  - Forests
  - Canyons
- Interesting Climate
  - Haboobs & Microbursts
  - Monsoons
  - Inversions
  - Fog
  - Tornados & Strong Winds
  - Lightning
  - Fires
- Lack of Emission Reduction Credits

## ERCs in AZ

	Greater Phoenix NAA	All Other AZ NAA
СО	14.30 tons	0
NOx	14.14 tons	0
PM <sub>10</sub>	4.79 tons	0
SO <sub>2</sub>	0.16 tons	0
VOC	266.13 tons	0

Source: ADEQ & MCAQD



### The Clean Air Act:

Arizona Perspective via Particulate Matter

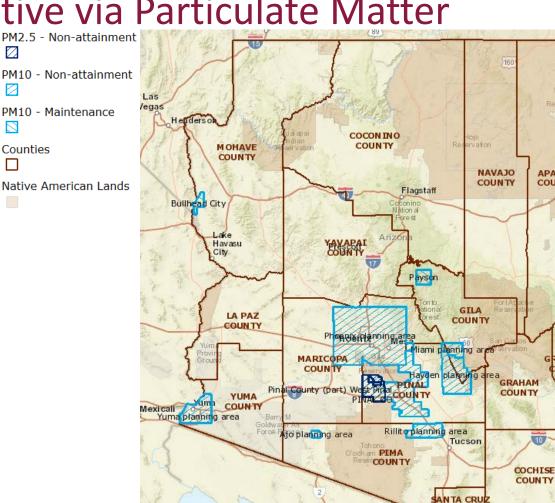
#### PM2.5

- Moderate Nonattainment Areas (NAA)
  - West Central Pinal County
  - Nogales, Santa Cruz County

#### PM10

- Maintenance Areas
  - Payson, Gila County
  - Bullhead City, Mohave County
- Moderate NAA
  - Paul Spur/Douglas, Cochise County
  - Miami, Gila/ Pinal Counties
  - Hayden, Gila/Pinal Counties
  - Ajo, Pima County
  - Rillito, Pima County
  - West Central Pinal County
  - Nogales, Santa Cruz County
  - Yuma, Yuma County
- Serious NAA
  - Greater Phoenix, Maricopa/Pinal Counties

Source: http://gisweb.azdeq.gov/arcgis/emaps/?topic=nonattain



**APACHE** 

COUNTY

Nation

GREENLEE

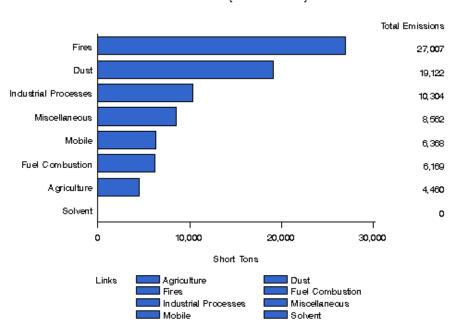
TAUO

10

### Arizona PM Emissions by Source Sector

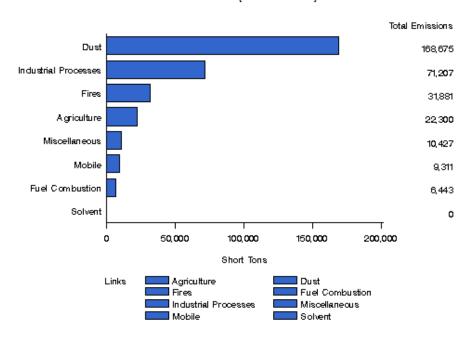
#### PM2.5 Emissions by Source Sector

in Arizona (NEI 2014 VI)



#### PM10 Emissions by Source Sector

in Arizona (NEI 2014 VI)



Source: https://www.epa.gov/air-emissions-inventories/air-emissions-sources

## The Clean Air Act: Arizona Perspective via Particulate Matter

- Greater Phoenix Area
  - Nonattainment for Particulate Matter since 1970's
  - Current designation: Serious Nonattainment
  - High-wind events primary factor
  - Congress amended the CAA in 2005 with Exceptional Events measure
  - The Exceptional Events Rule (EER) should have provided the necessary relief; but from its inception in 2007, the EER proved to be flawed

# Clearly & Unquestionably Exceptional



### ....And Yet.....

State of Arizona Exceptional Event Documentation for the Events of July 2<sup>nd</sup> through July 8<sup>th</sup> 2011, for the Phoenix PM10 Nonattainment Area

Produced by:

Arizona Department of Environmental Quality Maricopa County Air Quality Department Maricopa Association of Governments

> Final Report March 8, 2012



- Report = 214 pages
- Expenses associated with preparing of report
  - Total of staff (ADEQ, MCAQD & MAG) hours:
    - 615 hours total staff time
  - Total of contractor hours:
    - Unknown
  - Subtotal estimated overall costs:
    - \$100,000.00



#### UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION IX

75 Hawthorne Street San Francisco, CA 94105-3901

SEP 0 6 2812

OFFICE OF THE REGIONAL ADMINISTRATOR

Mr. Eric Massey Director, Air Division Arizona Department of Environmental Quality 1110 W. Washington St. Phoenix, Arizona 85007

Dear Mr. Massey:

This letter responds to Arizona Department of Environmental Quality's (ADEQ) March 14, 2012 submittal justifying that emissions generated by monsocoal thunderstorm outflow winds caused exceedances of the PM<sub>10</sub> NAAQS in the Phoenix PM<sub>20</sub> nonattainment area at numerous monitoring locations from July 3 – July 8, 2011.

EPA has reviewed the documentation provided by ADEQ to demonstrate that these exceedances on July 3 – July 8, 2011 meet the criteria for an exceptional event in the Exceptional Events Rule (EER). We note that the information and analyses presented in ADEQ's submittal do not represent all possible evidence for exceptional event packages, and additional or alternate evidence may be necessary to make an exceptional event determination in other instances or for other types of events. In the submitted demonstration for the dates of July 3 – July 8, 2011, EPA concurs based on the weight of the evidence that ADEQ has successfully made the demonstrations referred to in 40 CFR §50.14 to EPA's satisfaction. In addition, ADEQ has met the schedule and procedural requirements in section 50.14(c) with respect to the same data. A more detailed assessment of ADEQ's demonstration is enclosed. My staff has or shortly will enter "concurrence flags" for these data into EPA's AQS data system.

Based on these determinations, EPA will exclude these data from the following types of calculations and

- EPA's Air Quality Data system (AQS) will not count these days as exceedances when generating user reports, or include them in design values estimates, unless the AQS user specifically indicates that they should be included.
- EPA will accept the exclusion of these data for the purposes of selecting appropriate background concentrations for New Source Review air quality analyses.
- EPA will accept the exclusion of these data for the purposes of selecting appropriate background concentrations for transportation conformity hot spot analyses.<sup>7</sup>

Printed on Recycled Paper

- July 2<sup>nd</sup>-8<sup>th</sup>, 2011 EE demonstration package
  - Submitted to the EPA by
     ADEQ on March 14, 2012
  - The EPA involved with its development
  - Finally, 176 days later on
     September 6, 2012, the EPA approves the event as being Exceptional in a 9-page letter

If we are the permitting authority, we will propose permits on this basis. If we are commenting on another permitting authority's proposed action, our comments will be consistent with the determinations in this letter.

Applicable only to PM<sub>10</sub> and PM<sub>25</sub>.

### Exceptional Event Challenges

EPA's involvement has been critical to the success of Arizona's Exceptional Event Documentation:

- EPA Region IX has had early and frequent involvement during development of AZ demonstrations;
- EPA has changed the Exceptional Events Guidance based upon comments;
- Note: ADEQ and EPA have only been working on the easiest demonstrations ("low hanging fruit");
- EPA has worked with Arizona to streamline the documentation for the "easy" demonstrations:

Phoenix Event	Total Staff Hours/Event	Staff Cost Estimate/Event	Contractor Cost Estimate/Event	Subtotal Cost Estimate	
July 2-8, 2011	615	\$31,000	\$75,000	\$100,000	
17 Additional Events	175	\$8,800	\$25,000	\$575,000	
Total Estimated C	\$675,000				

Note: "Total staff hours/event" include time estimates from ADEQ, MCAQD and MAG

Source: ADEQ 2013 Fact Sheet prepared for U.S. Senator Flake

# The Clean Air Act: Arizona Perspective via 2015 Ozone NAAQS

County	Concentrations 3-yr avg (ppb)				
County	2011-2013	2012-2014			
Cochise	73	71			
Coconino	72	71			
Gila	75	74			
La Paz	72	72			
Maricopa	81	80			
Navajo	70	70			
Pima	73	71			
Pinal	76	73			
Yavapai*	69	71			
Yuma	76	77			

Source: ADEQ (October 2, 2015) Ozone Briefing Paper, http://legacy.azdeq.gov/environ/air/plan/download/2015 brief ozonestndrd.pdf

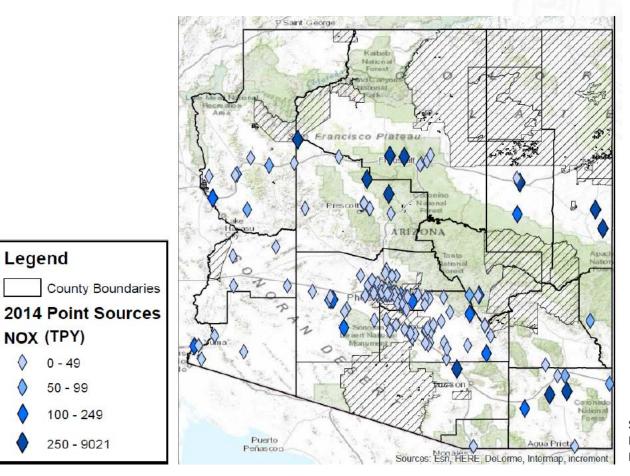


Site ID*	County	Colloquial Name	3-Year Design Value (ppm)		
04-003-		Chiricahua Nat'l			
3001	Cochise	Monument	0.068		
04-005- 1008	Coconino	Flagstaff Middle School	0.07		
04-005- 3001	Coconino	Grand Canyon NP	0.069		
04-007- 0010	Gila	Tonto NM	0.072		
04-012- 8000	La Paz	Alamo Lake	0.07		
04-013- 0019	Maricopa	West Phoenix	0.075		
04-013- 1003	Maricopa	Mesa	0.078		
04-017- 0119	Navajo	Petrified Forest	0.066		
04-019- 0021	Pima	Saguaro	0.069		
04-021- 3001	Pinal	AJ Maintenance Yard	0.069		
04-021- 3001	Pinal	Queen Valley	0.071		
04-025- 3033	Yavapai	Prescott College AQD	0.069		
04-027- 3011	Yuma	Yuma Supersite	0.076		

<sup>\*</sup> Not all monitors are listed above. At least the highest DV site from each monitored county is listed as well as other borderline sites.

Source: ADEQ (April 14, 2016) 2015 Ozone Boundary Designation Recommendation Stakeholder Meeting Presentation

# Arizona 2014 Point Sources (NOx)



Source: ADEQ (April 14, 2014) 2015 Ozone Boundary **Designation Recommendation Stakeholder Meeting** Presentation

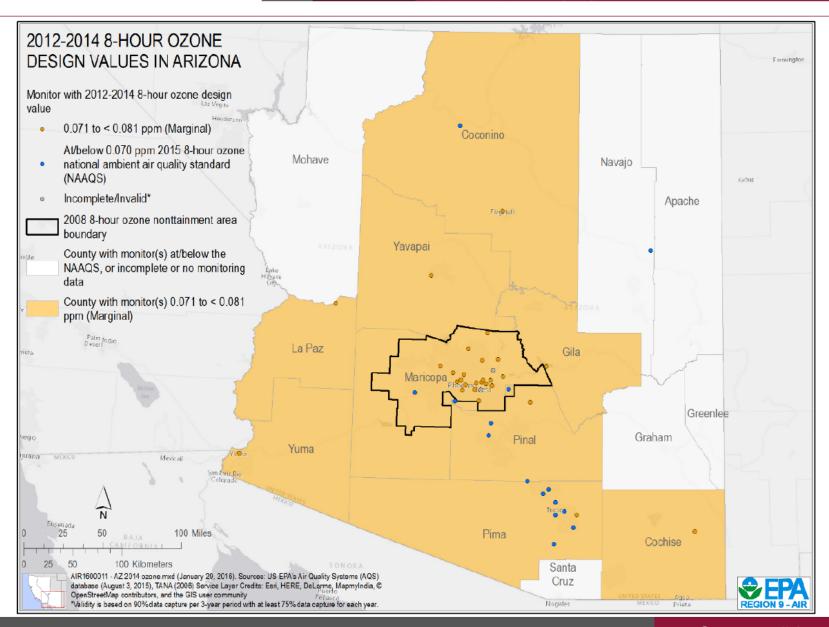
Legend

NOX (TPY)

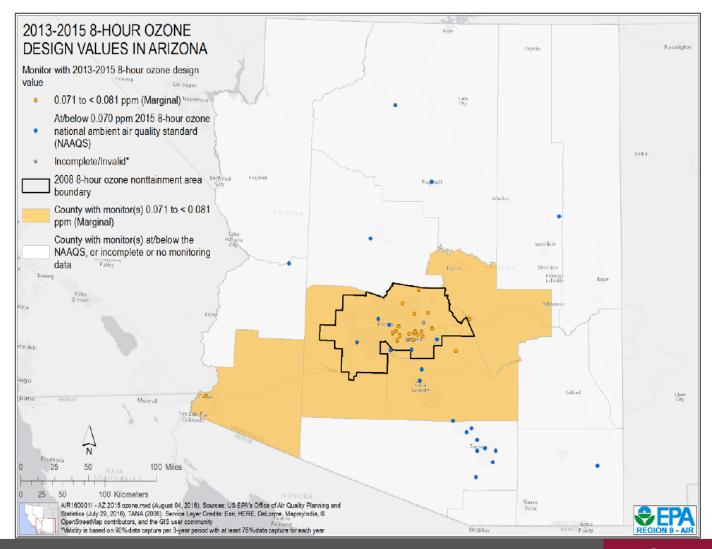
50 - 99

100 - 249

250 - 9021

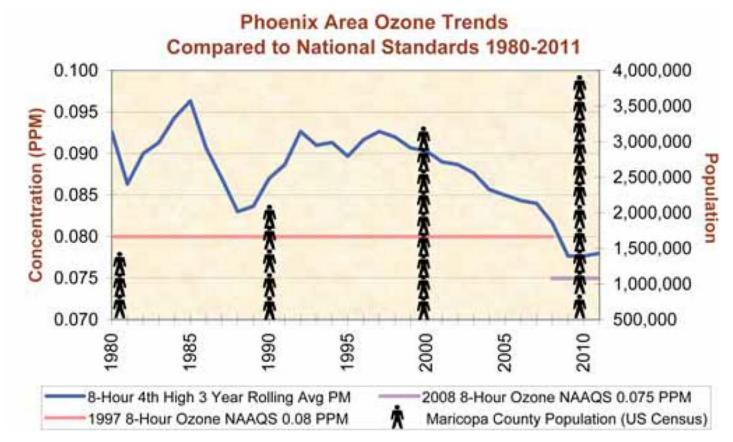


### Favorable Weather Pattern = Less Distress



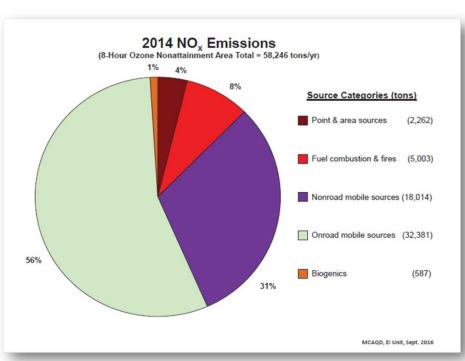
### **Greater Phoenix Area**

Nonattainment area for ozone since 2004

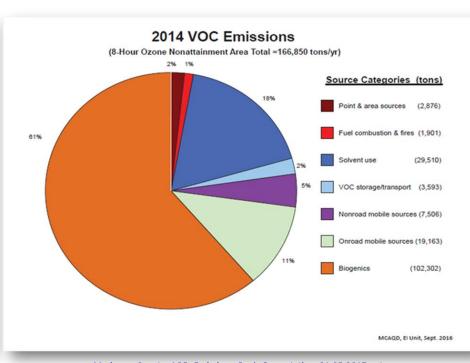


http://legacy.azdeq.gov/function/about/download/25th\_anniversary\_book-web.pdf

# Maricopa County 2014 El

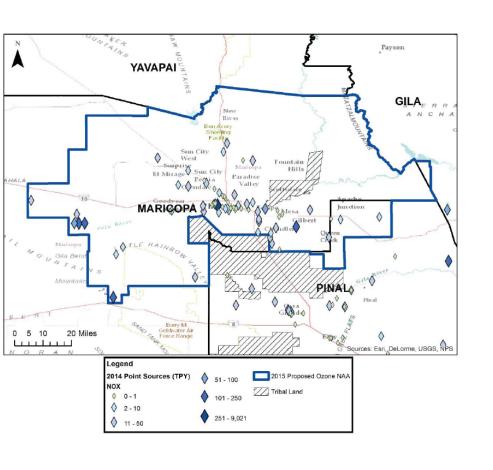


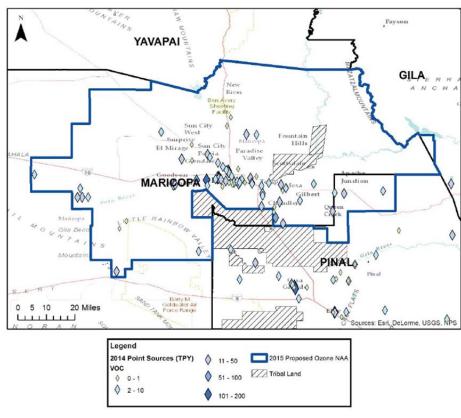
Source: Maricopa County AQD Emissions Bank Presentation 01-05-2017.pptx



Maricopa County AQD Emissions Bank Presentation 01-05-2017.pptx

### **Greater Phoenix Area Point Sources**



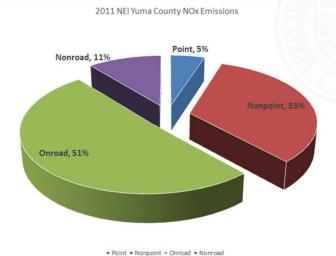


Source: http://static.azdeq.gov/aqd/gov\_ozone\_boundary\_rec.pdf

# Yuma County 2011 El

2011 NOx Emissions in Yuma County





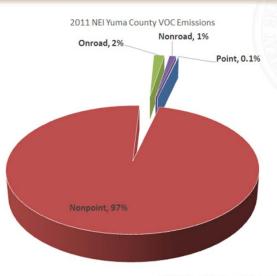
Total NOx Emissions ~ 8,318 TPY

Table 4-1 Yuma County NOx Emissions

NOx Emissions						
Source Type	Emissions (TPY)	Percent of Total				
Point Source	418	5.3%				
Nonroad	898	10.8%				
Onroad	4,234	50.9%				
Nonpoint	2,768	33%				
Total	8,318	100%				

#### 2011 VOC Emissions in Yuma County





Point Nonpoint Onroad Nonroad

Total VOC Emissions ~ 147,135 TPY

Table 4-2 Yuma County VOC Emissions

VOC Emissions						
Source Type	Emissions (TPY)	Percent of Total				
Point Source	109	.2%				
Nonroad	1,586	1.1%				
Onroad	2,561	1.7%				
Nonpoint	142,879	97 %				
Total	147,135	100%				

Tables 4-1 & 4-2 Source: http://static.azdeq.gov/aqd/gov\_ozone\_boundary\_rec.pdf

### Yuma 2014 Point Sources

Figure 4-4 Permitted NOx Point Sources

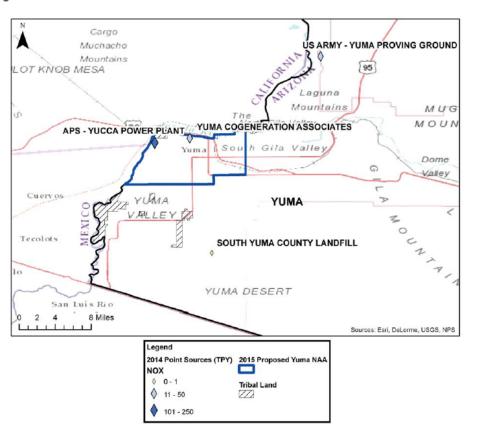
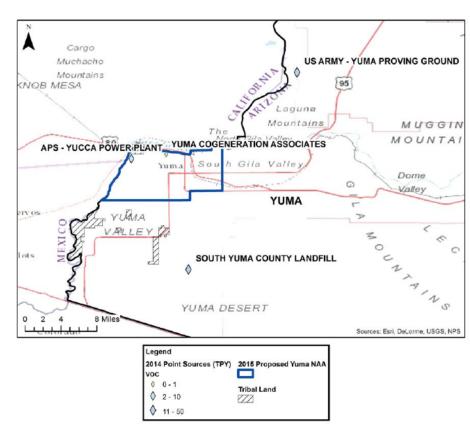


Figure 4-5 Permitted VOC Point Sources



Source: http://static.azdeq.gov/aqd/gov\_ozone\_boundary\_rec.pdf

### Yuma's Predominant Sources of O3

Figure 4-11 Yuma Supersite - 10 Highest Ozone Days HYSPLIT Back Trajectories



Figure 4-12 Yuma Supersite - 10 Highest Ozone Days HYSPLIT Back Trajectories Broad View



Source: http://static.azdeq.gov/aqd/gov\_ozone\_boundary\_rec.pdf

Table 2A-6. Monitors with Limited Response to Regional NOx and National VOC Emissions Reductions in the 2025 and Post-2025 Baselines

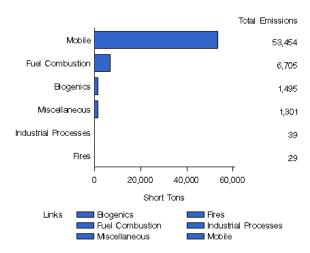
Name	Site ID	State	County	Altitude (m)	Monitor Type	Predominant O3 Sources	2009- 2013 DV	Baseline DV
Chiricahua NM	40038001	Arizona	Cochise	1570	CASTNET	Mexican border	72	67
Grand Canyon NP	40058001	Arizona	Coconino	2152	CASTNET	California + Other sources	71	66
Yuma Supersite	40278011	Arizona	Yuma	51	SLAMS	Mexican border + California	75	66

Source: EPA, Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone, September 2015, EPA-452/R-15-007

#### **Maricopa County**

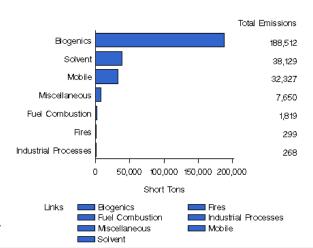
Nitrogen Oxides Emissions by Source Sector in Maricopa County, Arizona (NEI 2014 vf)

### NOx Emissions by Source Sector



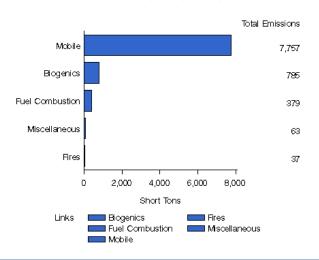
Volatile Organic Compounds Emissions by Source Sector in Maricopa County, Arizona (NEI 2014 v1)

## VOC Emissions by Source Sector

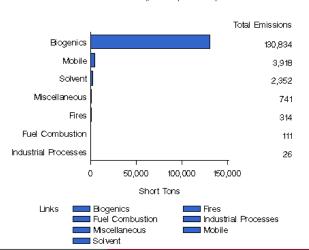


#### **Yuma County**

Nitrogen Oxides Emissions by Source Sector in Yuma County, Arizona (NEI 2014 v1)



Volatile Organic Compounds Emissions by Source Sector in Yuma County, Arizona (NEI 2014 v1)



Source: https://www.epa.gov/air-emissions-inventories/air-emissions-sources

### Predominant Ozone Sources In AZ

- According to the EPA's 2014 NEI
  - Mobile Sources (anthropogenic)
    - Regulated by the federal government
  - Biogenic Sources (natural)
    - Vegetation & soil
- What is missing from the EPA's NEI
  - Background Ozone
  - International Transport
  - Interstate Transport

# Background Ozone

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#### Emission reductions and urban ozone responses under more stringent US standards



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#### ARTICLE INFO

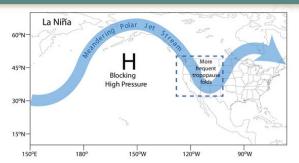
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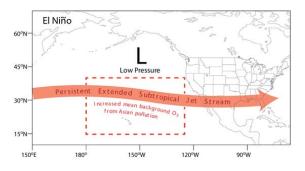
#### HIGHLIGHTS

- Emission reductions of 60–92% required to reduce 4th highest MDA8 to 75 ppb.
- Emission reductions of 80–97% required to reduce 4th highest MDA8 to 60 ppb.
- Emission reductions lead to frequency distributions tending toward background O<sub>3</sub>.
- ullet Significant integrated  $O_3$  remains after elimination of domestic precursor emissions.

#### Meteorological Influence on Ozone







Slide 22

#### 1. Introduction

Tropospheric ozone (O<sub>3</sub>) is regulated by the US Environmental Protection Agency (EPA) as a criteria pollutant (EPA, 2006). O<sub>3</sub> is unique among criteria pollutants because it is formed in the atmosphere rather than directly emitted and because surface O<sub>3</sub> concentrations include a relatively large contribution from a

combination of natural precursors and international transport (US background  $O_3$ ) (Warneck, 2000; Lefohn et al., 2001; Fiore et al., 2002; Cooper et al., 2011; Zhang et al., 2011; Emery et al., 2012; Lin et al., 2012). Tropospheric  $O_3$  is produced by photochemical reactions among a multitude of directly emitted precursor compounds including nitrogen oxides ( $NO_x = NO + NO_2$ ), volatile organic compounds (VOC), carbon monoxide (CO), and methane

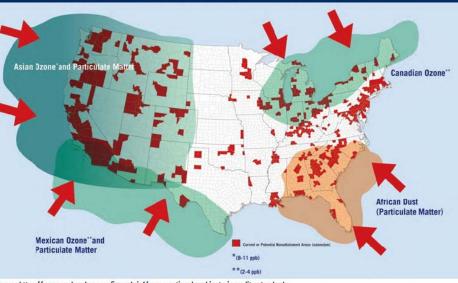
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a Earth System Sciences, LLC, P.O. Box 7565, Houston, TX 77270, USA

ENVIRON International Corporation, 775 San Marin Dr., Novato, CA 94945, USA

## International Transport

#### **Impact of Foreign Air Pollutants**



Source: https://www.uschamber.com/issue-brief/ozone-national-ambient-air-quality-standards

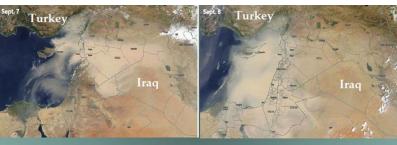


Figure 12: Satellite photos showing the overall westward expansion of the dust that was lifted by storms in northern lraq, on September 7, 2015 (left) and on the 8<sup>th</sup> (right). Dust can be seen reaching Egypt on September 8th.

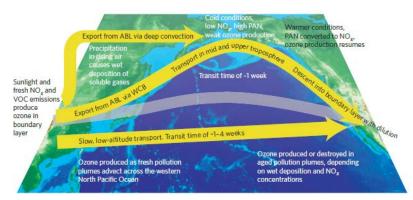
Source: http://static.azdeq.gov/aqd/aqcode2\_6.pdf

TMOSPHEDIC CHEMISTRY

#### Ozone pollution from near and far

Tropospheric ozone is generated from precursor pollutants, but can be blown far afield. Satellite observations show rising ozone levels over China — and almost stable levels over western North America despite stricter regulations.

Ruth M. Doherty



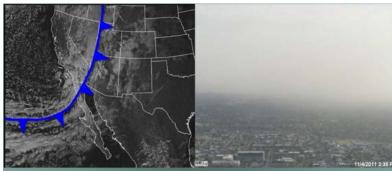


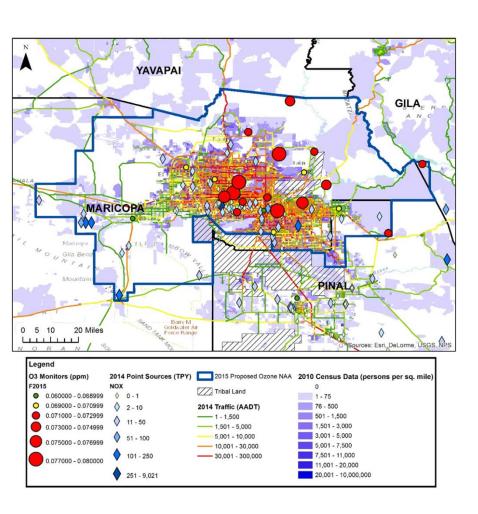
Figure 3: GOES visible satellite image (left) of low-pressure trough and associated cold front (blue line) that brought widespread gusty winds over 35 mph and blowing dust to the Desert Southwest on November 4, 2011. ADEQ camera image captures the suspended dust blanketing Metro Phoenix (right) during the afternoon hours. Numerous PMie monitors throughout the Valley exceeded EPA's National Ambient Air Quality Standard (NAAQS) that day.

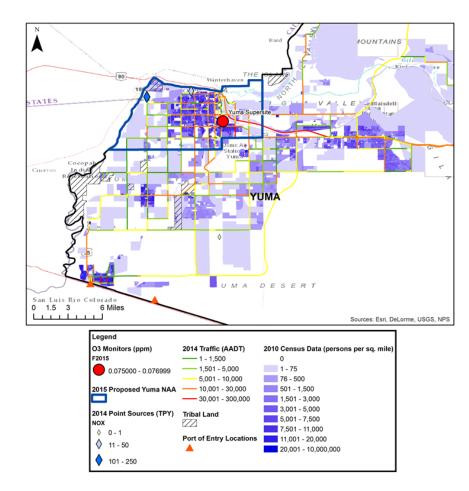
surce: NOAA Image from ADEO camera monitoring network

## The Clean Air Act: Arizona Perspective via Relief Mechanisms

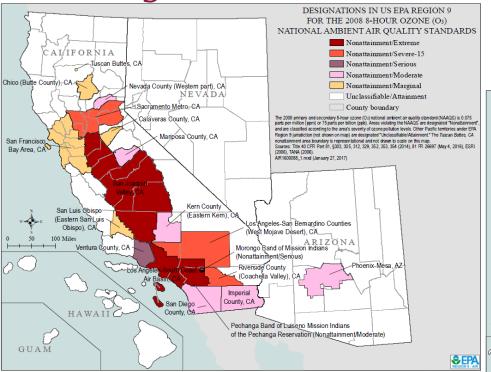
- CAA §107(d):
  - Small NAA Boundaries for Sites Minimally Impacted by Nearby Sources
- CAA §110(a)(2)(D)
  - Good Neighbor Provision
- CAA §126
  - Interstate Pollution Abatement
- CAA §179B
  - International Transport
- CAA §182(h)
  - Rerual Transport
- CAA §319
  - Exceptional Events Exclusion

# CAA §107(d): Small NAA Boundaries

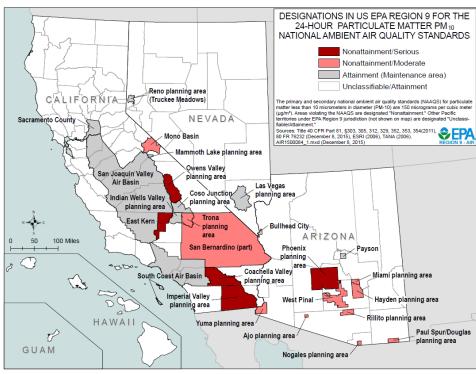




CAA §110(a)(2)(D): Good Neighbor CAA §126: Interstate Pollution Abatement



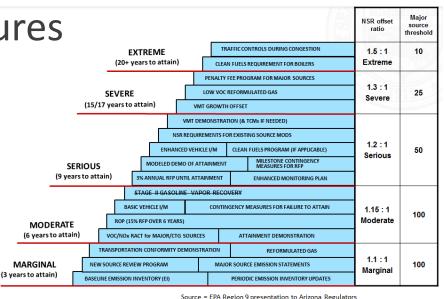
Source: https://www3.epa.gov/region9/air/maps/pdfs/air1100018-7.pdf



Source: https://www3.epa.gov/region9/air/maps/pdfs/air1300053-1-reg9-pm10-naaqs-desigs.pdf

# CAA §179B: International Transport

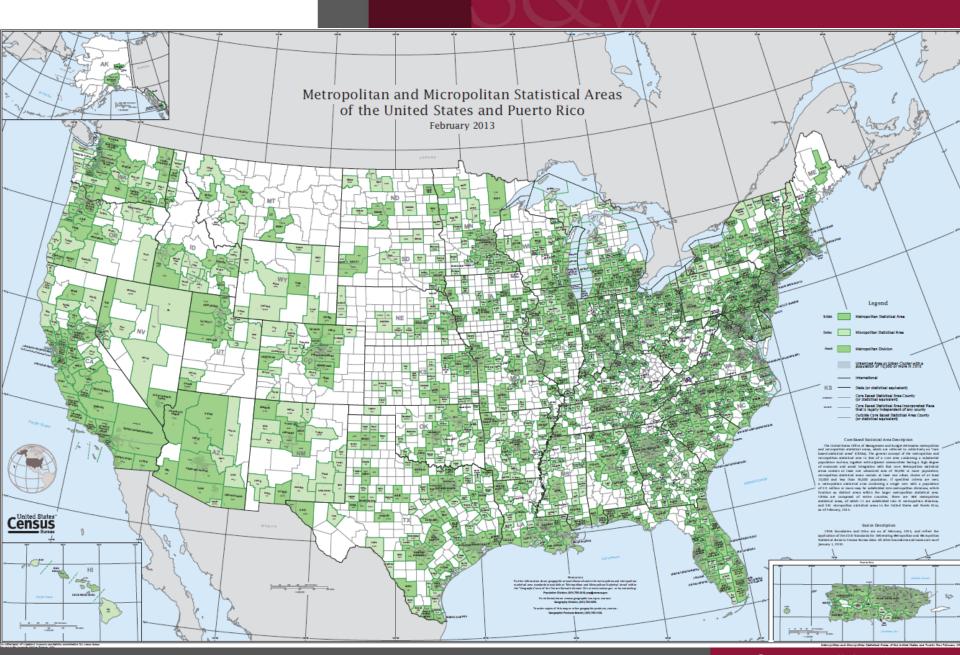
- Costly "But For" demonstration
  - Yuma (Mexico > CA or Mexico < CA?)</p>
- Designated NAA
- Subject to control measures
- No real relief



Source = EPA Region 9 presentation to Arizona Regulators

# CAA §182(h) – Rural Transport

- Designated NAA
- Subject to control measures
- No real relief
- Designation only granted to an ozone NAA that "does not include, and is not adjacent to," a Metropolitan Statistical Area



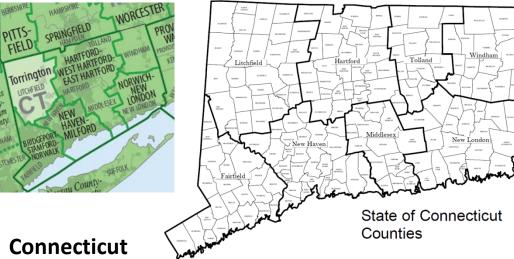


#### Yuma County, AZ

Population (July 1, 2016): 205,631

Total Area: 5,514 Sq. Mi.

Source: https://www.census.gov/quickfacts/table/PST045215/04027



Population (July 1, 2016): 3,576,452

Total Area: 5,543 Sq. Mi.

Source: https://www.census.gov/quickfacts/table/PST045215/09

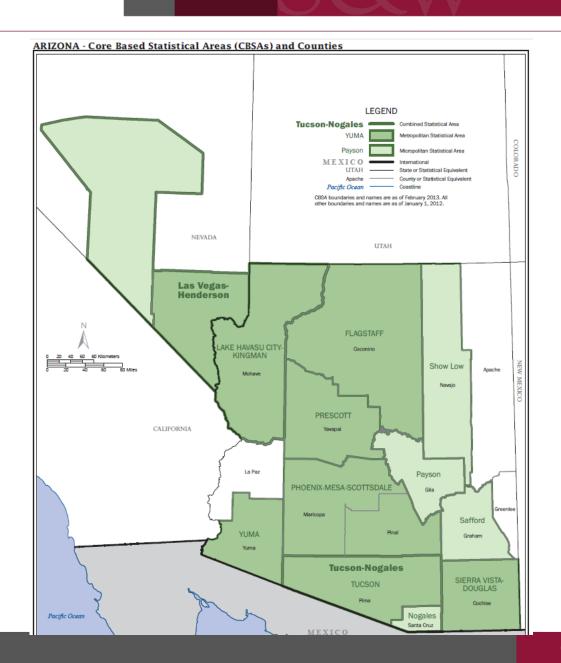


#### **Puerto Rico**

Population (July 1, 2016): 3,411,307

Total Area: 5,325 Sq. Mi.

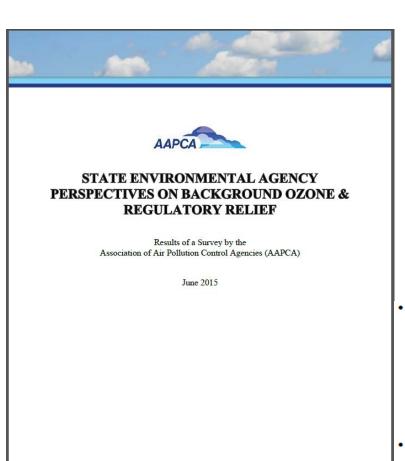
Source: https://www.census.gov/quickfacts/table/PST045215/72



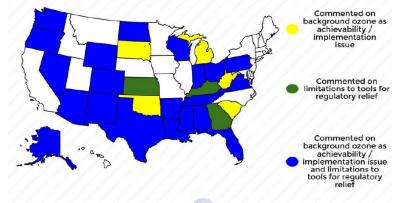
# CAA §319 Exceptional Events Exclusion

- October 2016: EPA Finalized Revisions to EER
  - Significant Improvements; but
  - Further Revisions Needed to EER
- Some relief provided
- However, EEE doesn't address the underlying problem

### Other State's Frustrations

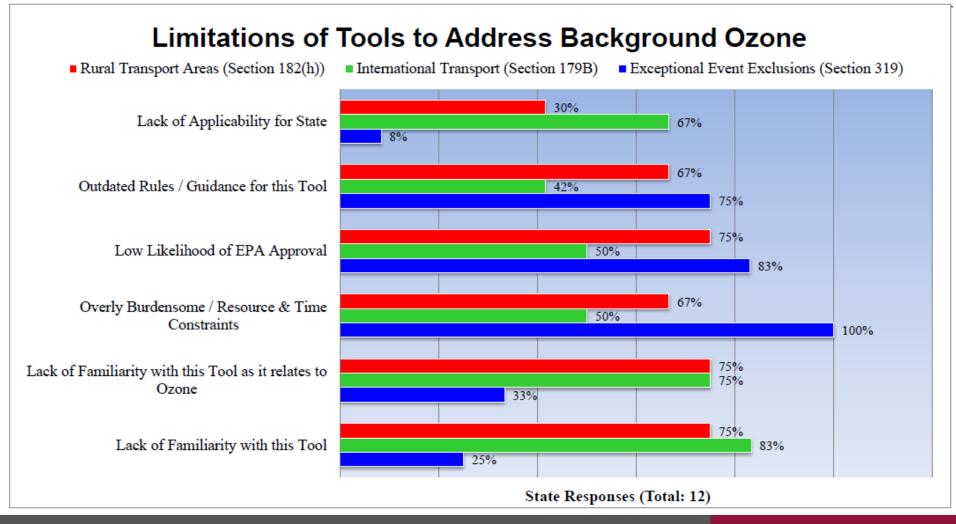


#### State Environmental Agency Comments on Background Ozone & Limitations of Current Tools for Regulatory Relief



- 44 state environmental agencies filed individual or joint comments on EPA's proposed revision to ozone NAAQS.<sup>16</sup>
  - Comments from 26 state agencies raised background ozone as an achievability or implementation challenge.
  - Comments from 24 states identified limitations to the tools identified by EPA for regulatory relief
  - Comments from 21 states raised both background ozone as an achievability or implementation challenge and identified limitations to the tools identified by EPA for regulatory relief.
- · Among states that identified limitations to tools for regulatory relief:
  - 22 states commented on limitations to the use of CAA section 319 for excluding "exceptional event" data.
  - 16 states commented on limitations to the use of CAA section 179B for demonstrating attainment "but for" international emissions.
  - 17 states commented on limitations to the use of CAA section 182(h) for rural transport area determinations.

## AAPCA June 2015 Report



### Arizona Challenges – 2015 O₃ NAAQS

- Emissions Reductions from Federal Programs
  - Vehicles, Boilers, Airplanes, Mercury/Toxics
- Interstate & International Transport
- Large Metropolitan Statistical Areas (MSA)
- Scarcity of Ozone Offsets for New & Modified Major Sources

## The Clear Purpose of the Clean Air Act

#### THE CLEAN AIR ACT 1

TITLE I—AIR POLLUTION PREVENTION AND CONTROL

PART A—AIR QUALITY AND EMISSION LIMITATIONS

FINDINGS AND PURPOSES

SEC. 101. (a) The Congress finds—

(3) that air pollution prevention (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary responsibility of States and local governments; and

### Questions?

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