



FLORIDA AIR UPDATES

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Division of Air Resource Management
Florida Department of Environmental Protection

AWMA Coastal Plains FL/AL Conference



AIR RESOURCE MANAGEMENT

“Rolling Coal”



DIPPIN 
SKOAL
& **ROLLIN**
COAL



AIR RESOURCE MANAGEMENT

“Soot Life”

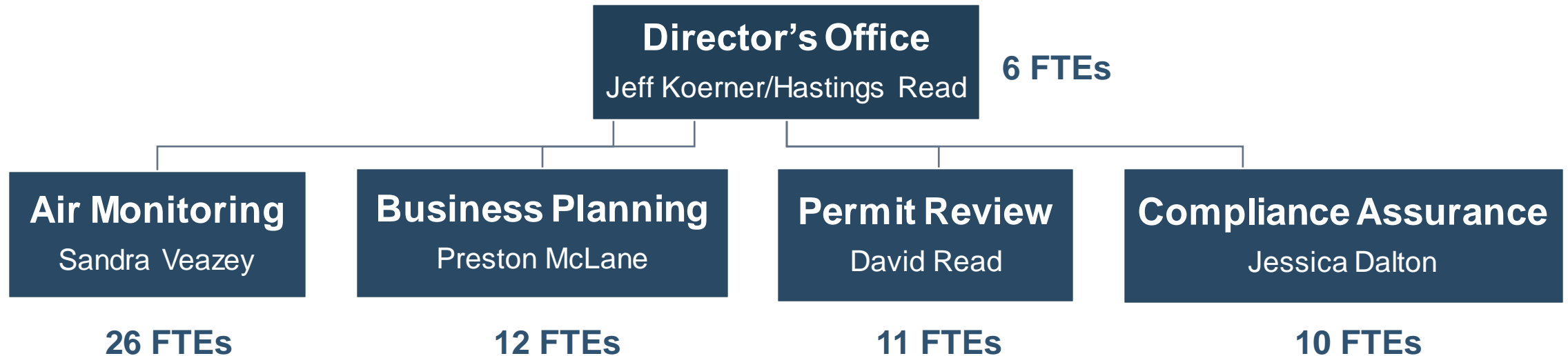
**DIESEL TRUCK IN
TALLAHASSEE**



Soot Life



AIR RESOURCE MANAGEMENT ORGANIZATION



Total FTEs: 65



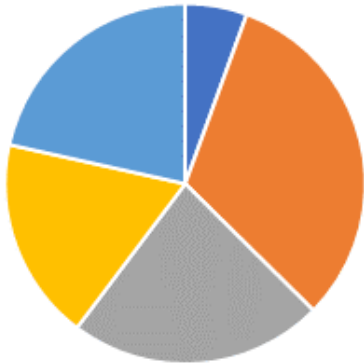
AIR RESOURCE MANAGEMENT REGULATED STATIONARY SOURCES



Florida regulates ~3,433 permitted facilities:

- 2,354 sources with air general permit registrations.
- 732 minor sources.
- 347 Title V major sources.

CO, Nox, SO2 and PM Emissions by Sector 2017



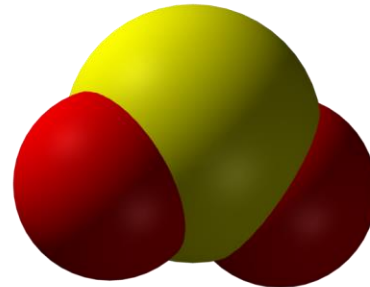
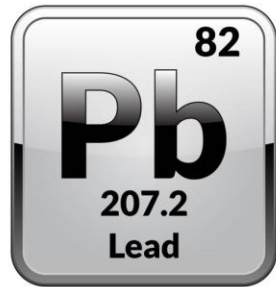
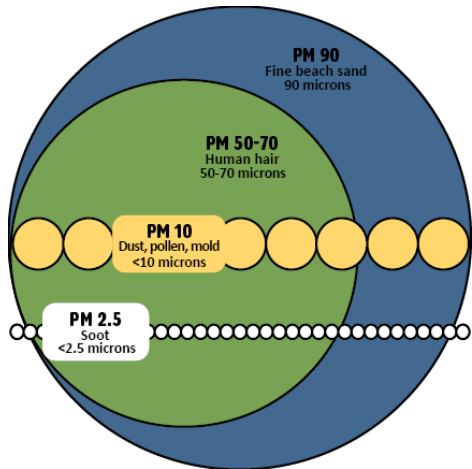
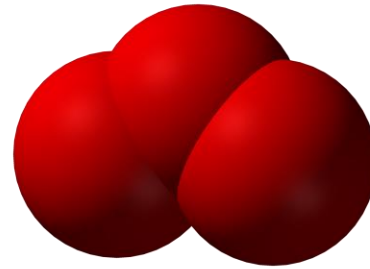
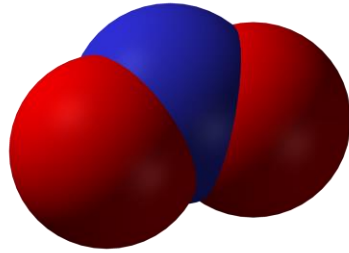
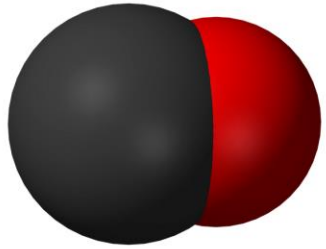
■ Stationary Source ■ Mobile Source ■ Nonroad ■ Nonpoint ■ Event

Nearly 90% of total emissions from stationary sources come from about 20% of major sources in Florida.



AIR RESOURCE MANAGEMENT

Criteria Pollutants



EPA develops acceptable ambient levels based on “health criteria”.

- Carbon Monoxide (CO)
- Nitrogen Dioxide (NO₂)
- Ozone (O³)
- Particles
 - < 2.5 microns (PM_{2.5})
 - < 10 microns (PM₁₀)
- Lead (Pb)
- Sulfur Dioxide SO₂



AIR RESOURCE MANAGEMENT

AMBIENT AIR MONITORING



FLORIDA ATTAINS ALL NAAQS.

- Mission is to implement Clean Air Act
- NAAQS - National Ambient Air Quality Standards
- Six pollutants based on health criteria
- Monitor ambient air for compliance w/NAAQS
- Network - over 177 monitors at 90 sites
- EPA approves annual network plan
- Certified ambient monitoring data uploaded to EPA
- Real-time data uploaded to EPA's AirNow website
- AirNow users get:
 - Current Air Quality Index (AQI)
 - AQI forecasts for tomorrow



AIR RESOURCE MANAGEMENT

National Ambient Air Quality Standards

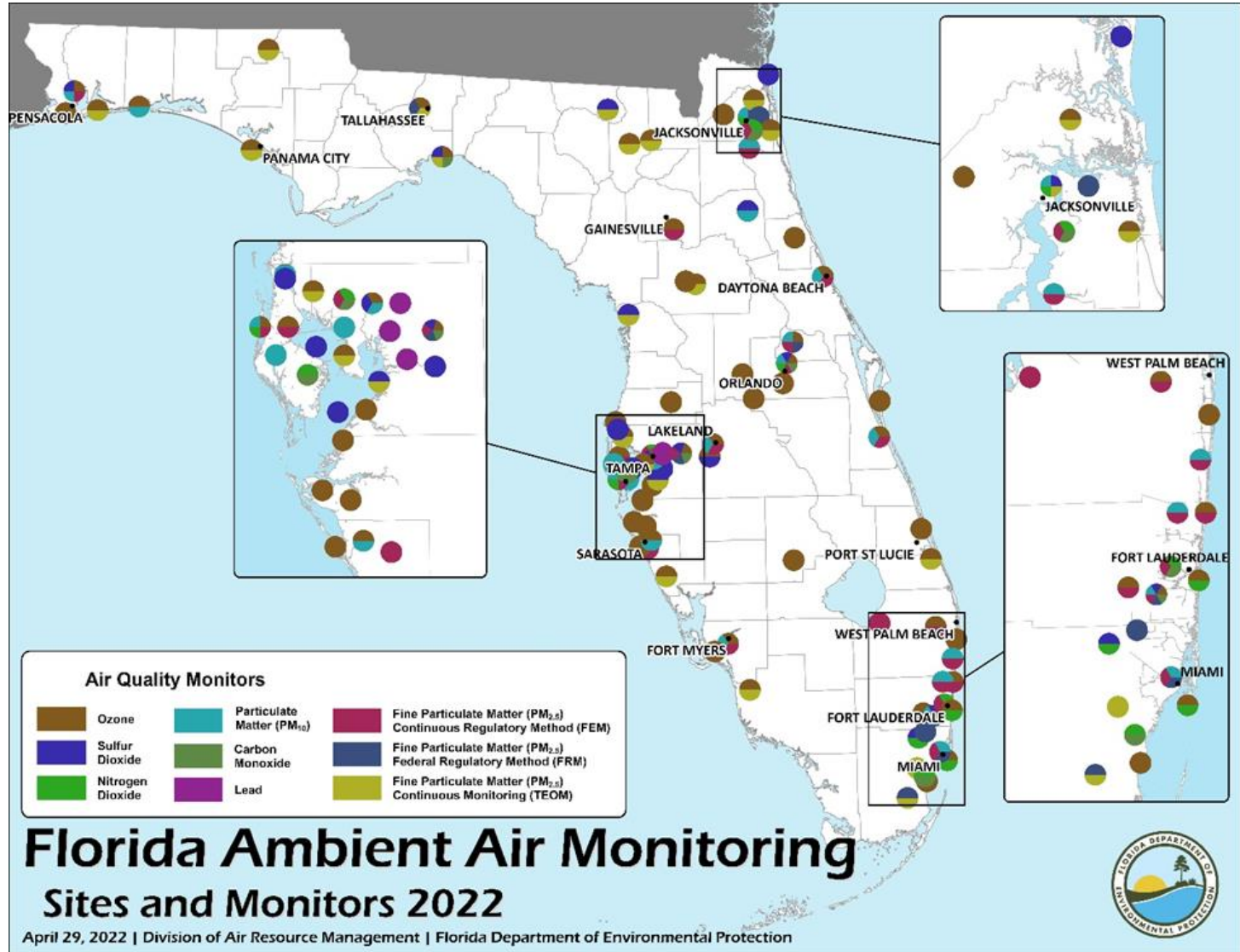
Pollutant [links to historical tables of NAAQS reviews]		Primary/ Secondary	Averaging Time	Level	Form
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m ³ ⁽¹⁾	Not to be exceeded
Nitrogen Dioxide(NO₂)		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb ⁽²⁾	Annual Mean
Ozone (O₃)		primary and secondary	8 hours	0.070 ppm ⁽³⁾	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM _{2.5}	primary	1 year	12.0 µg/m ³	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m ³	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m ³	98th percentile, averaged over 3 years
	PM ₁₀	primary and secondary	24 hours	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide(SO₂)		primary	1 hour	75 ppb ⁽⁴⁾	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year



AIR RESOURCE MANAGEMENT

Florida's Ambient Air Monitoring Network

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AIR RESOURCE MANAGEMENT

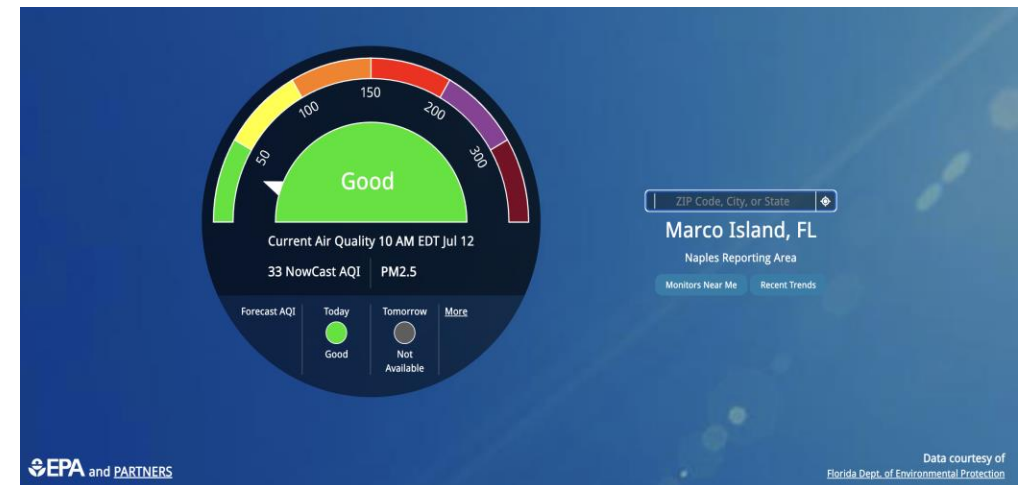
AMBIENT AIR QUALITY

AIR QUALITY INDEX (AQI)

- **GREEN** (good): 0-50, poses little to no risk
- **YELLOW** (moderate): 51-100, some risk for some sensitive individuals
- **RED** (unhealthy): 151-200, some risk to some of general public
- **PURPLE** (very unhealthy): 201-300, health alert
- **MAROON** (hazardous): 301+, health warning

SOME RECENT MODERATE AIR QUALITY

- Saharan dust – elevated PM
- Wildfires/prescribed burning – elevated PM
- Dry, hot, stagnant air – elevated ozone





AIR RESOURCE MANAGEMENT

NAAQS POLLUTANTS UNDER REVIEW

OZONE (Under Reconsideration)

- 0.070 ppm, 8-hour average
- Annual 4th highest daily maximum averaged over three years

PM_{2.5} (Under Reconsideration)

- 12.0 ug/m³, annual mean averaged over three years.
- 35 ug/m³, 24-hour, 98th percentile averaged over three years.

LEAD (Under Residual Risk and Technology Review)

- 0.15 ug/m³, rolling 3-month average.

ppm – parts per million

ug – micrograms

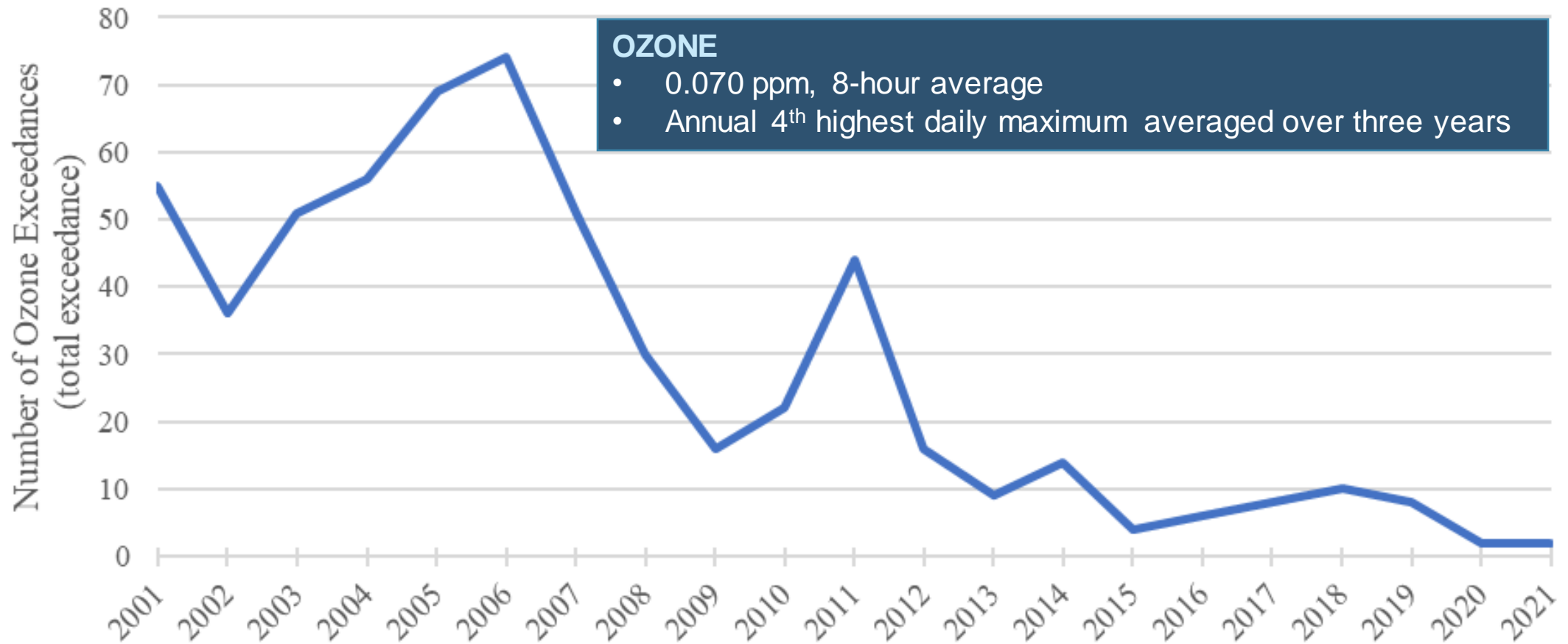
m³ – cubic meters



AIR RESOURCE MANAGEMENT

AMBIENT OZONE TREND

Florida Exceedance Days of the 70 ppb 8-Hour Ozone NAAQS 2001-2021

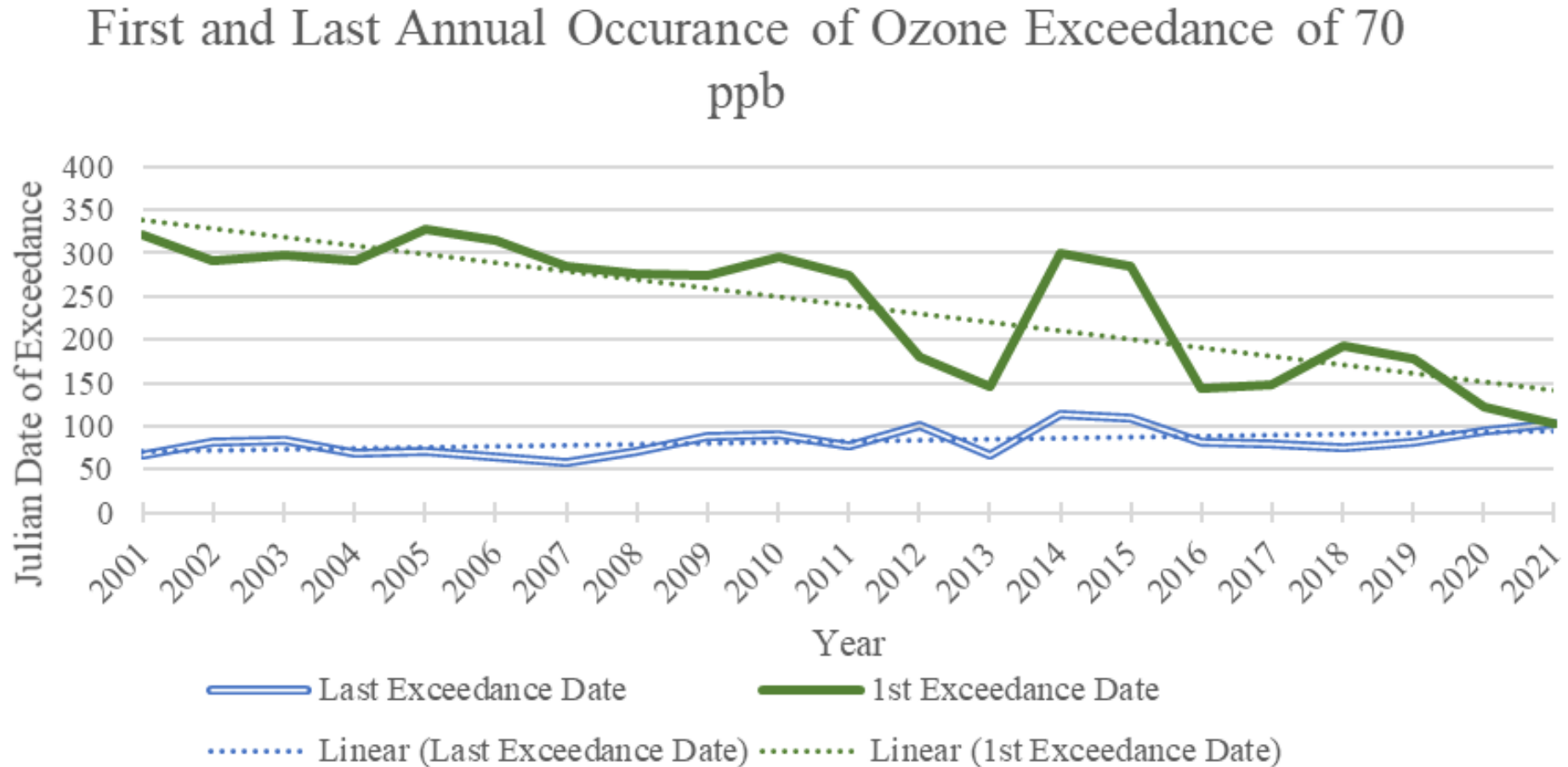


ppm – parts per million



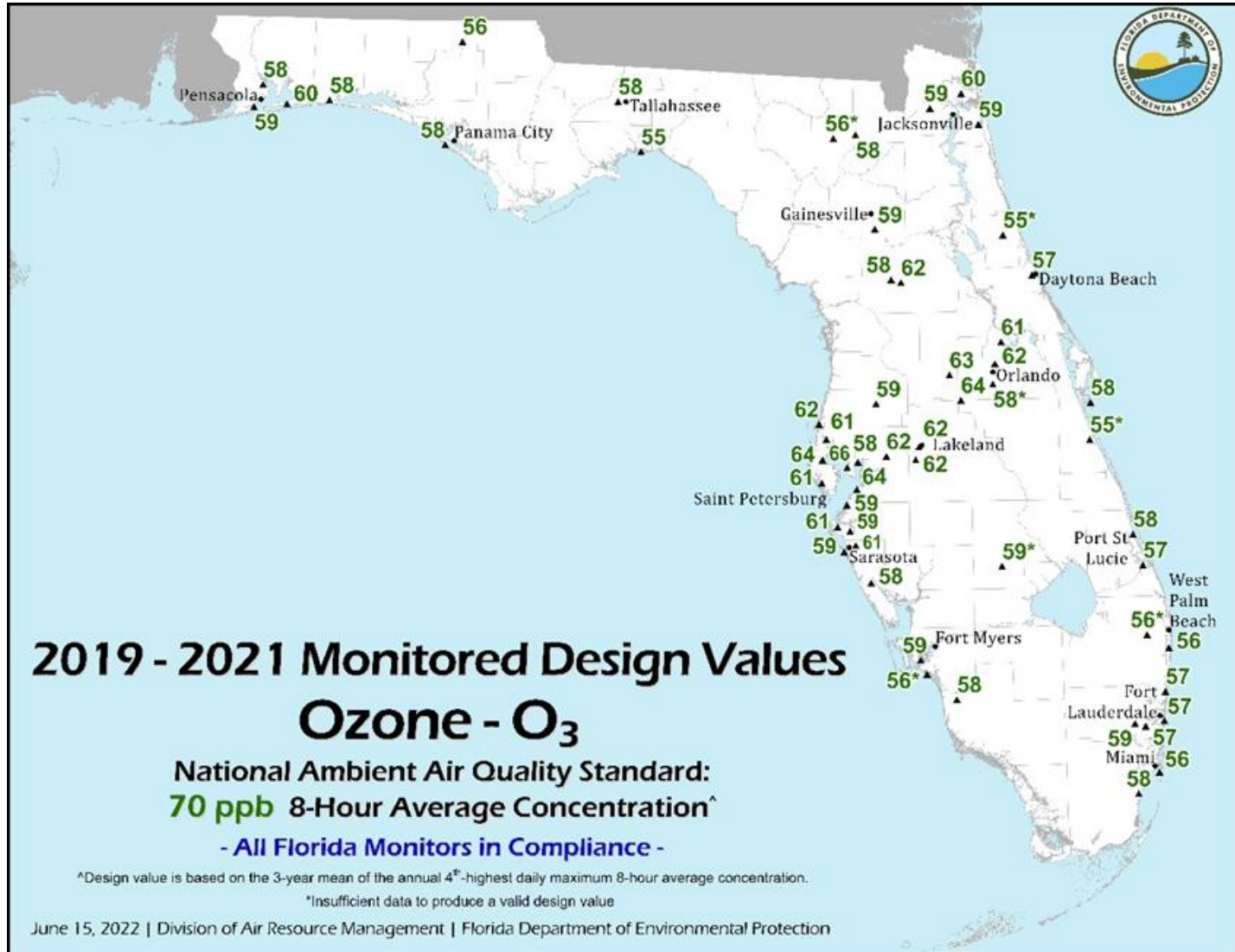
AIR RESOURCE MANAGEMENT

AMBIENT OZONE TREND





AIR RESOURCE MANAGEMENT OZONE – DESIGN VALUES



What if new 8-hour standard was:

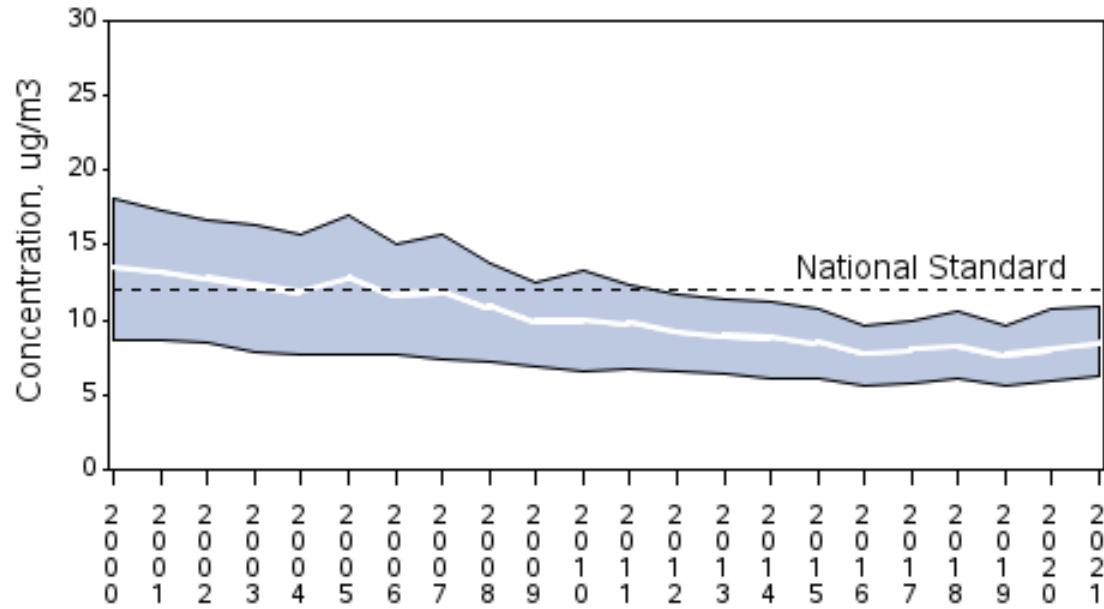
- 65 ppb?
- 60 ppb?



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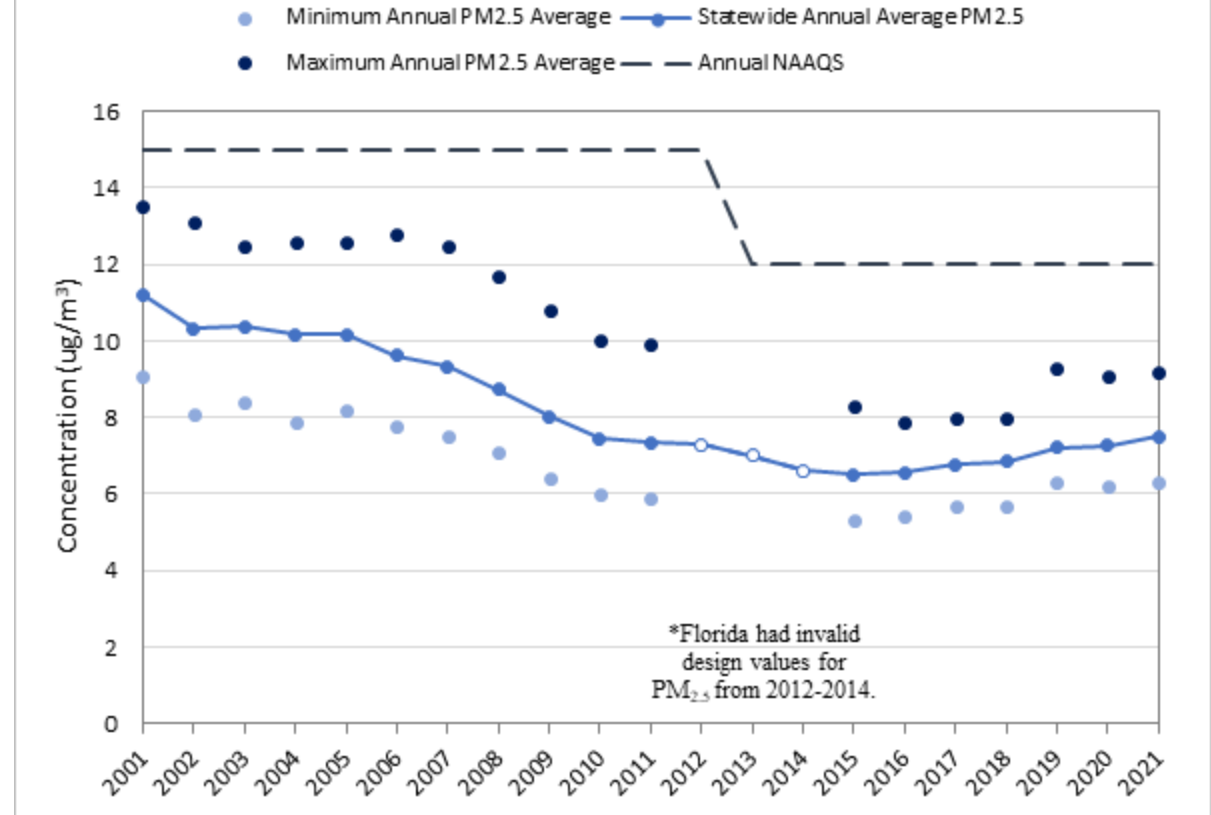
AMBIENT FINE PARTICULATE TRENDS

PM_{2.5} Air Quality, 2000 - 2021
 (Seasonally-Weighted Annual Average)
 National Trend based on 375 Sites



2000 to 2021 : 37% decrease in National Average

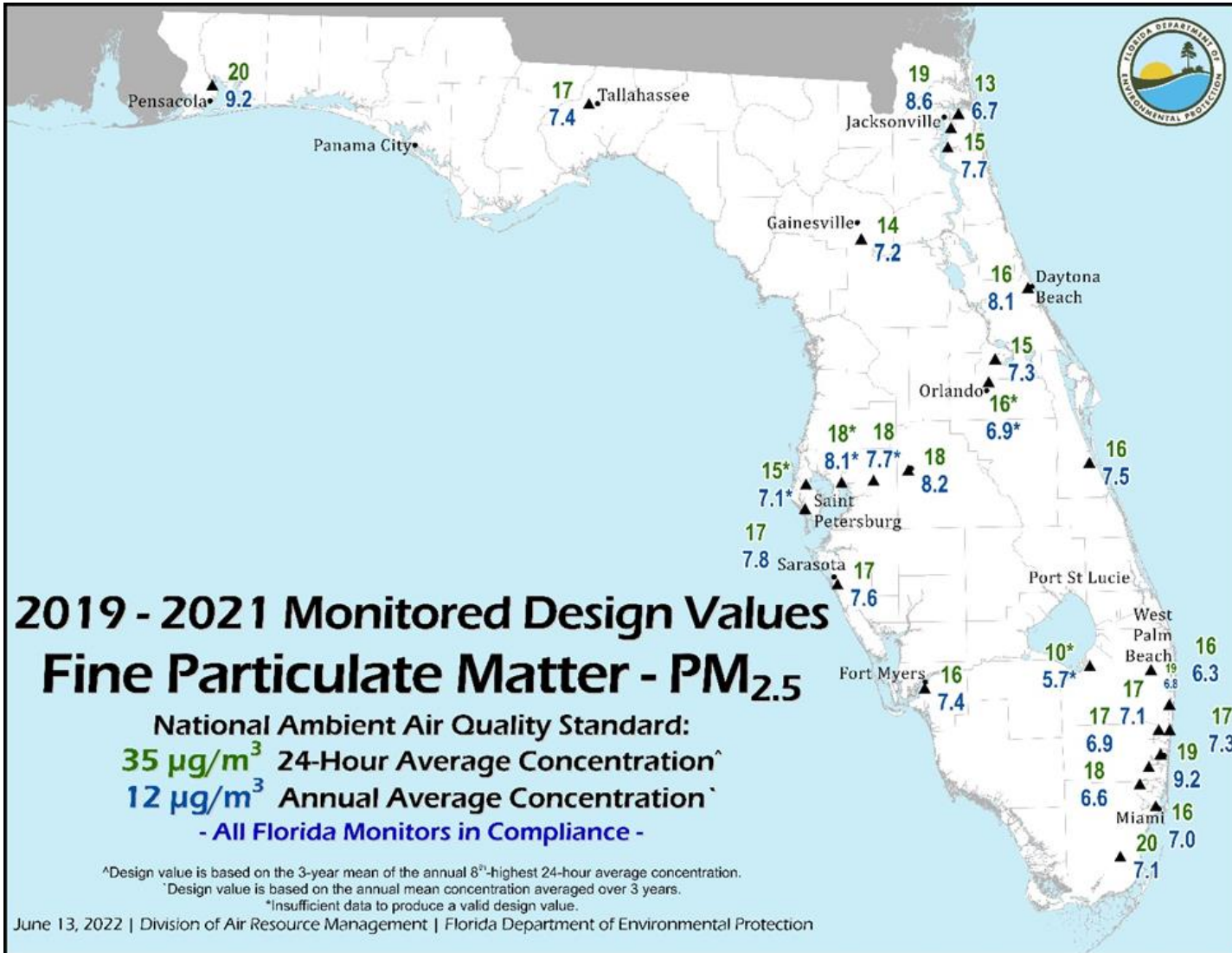
Florida Monitored Annual PM_{2.5} Compliance Values



*Florida had invalid design values for PM_{2.5} from 2012-2014.



AIR RESOURCE MANAGEMENT FINE PARTICULATES – DESIGN VALUES



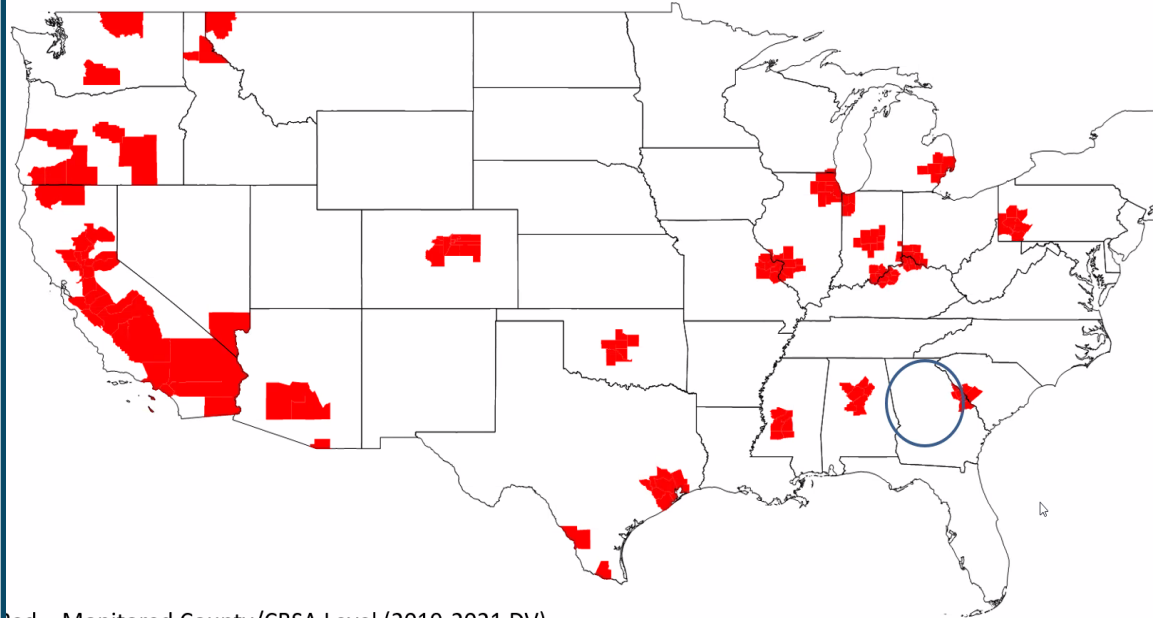
What if new annual limit was:

- 10 µg/m³?
- 8 µg/m³?



AIR RESOURCE MANAGEMENT AMBIENT FINE PARTICULATE TRENDS

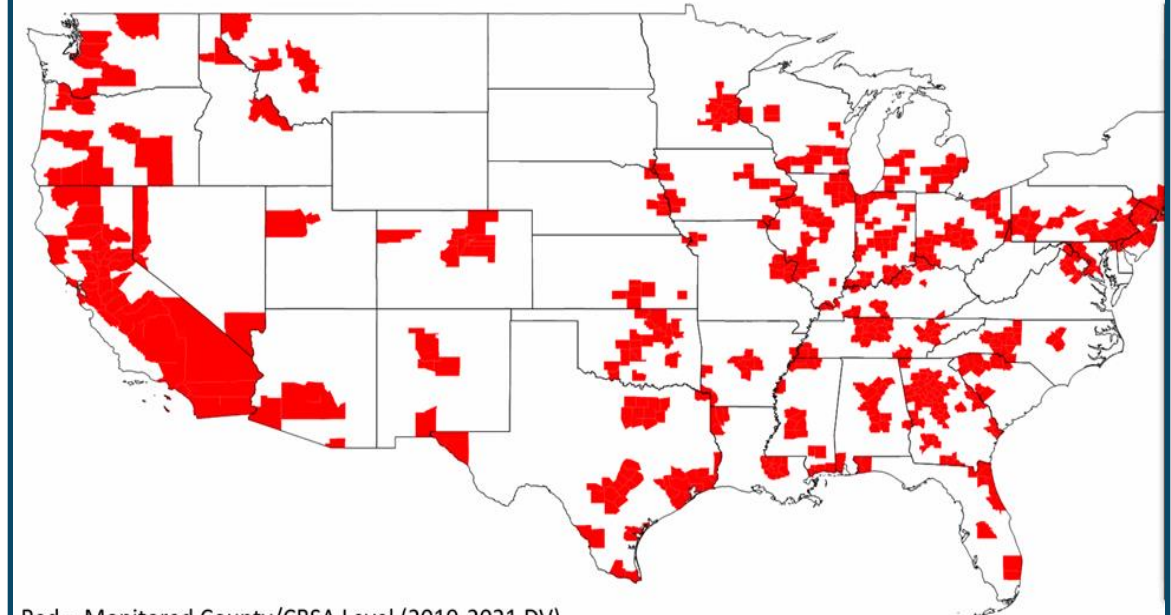
Annual Average PM_{2.5} Design Value $\geq 10 \mu\text{g}/\text{m}^3$



Red = Monitored County/CBSA Level (2019-2021 DV)

AAPCA Member Webinar: Alpine Geophysics Modeling for
PM_{2.5} NAAQS Scenarios: Maps & Sources

Annual Average PM_{2.5} Design Value $\geq 8 \mu\text{g}/\text{m}^3$

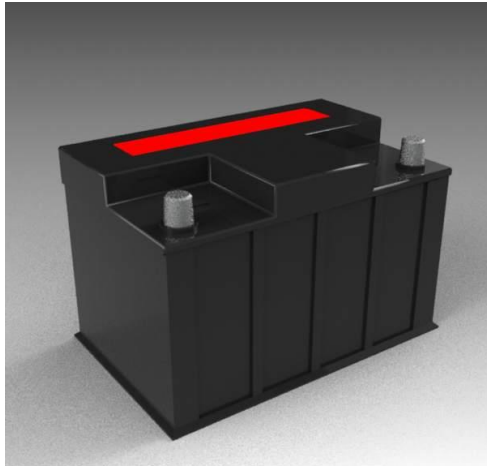


Red = Monitored County/CBSA Level (2019-2021 DV)



AIR RESOURCE MANAGEMENT

Lead NAAQS



- Former non-attainment area
- One facility
- Lead-acid battery recycling plant
- Four monitors

Previous lead NAAQS

1.5 $\mu\text{g}/\text{m}^3$, 3-month block

Current lead NAAQS (2008)

0.15 $\mu\text{g}/\text{m}^3$, 3-month rolling average

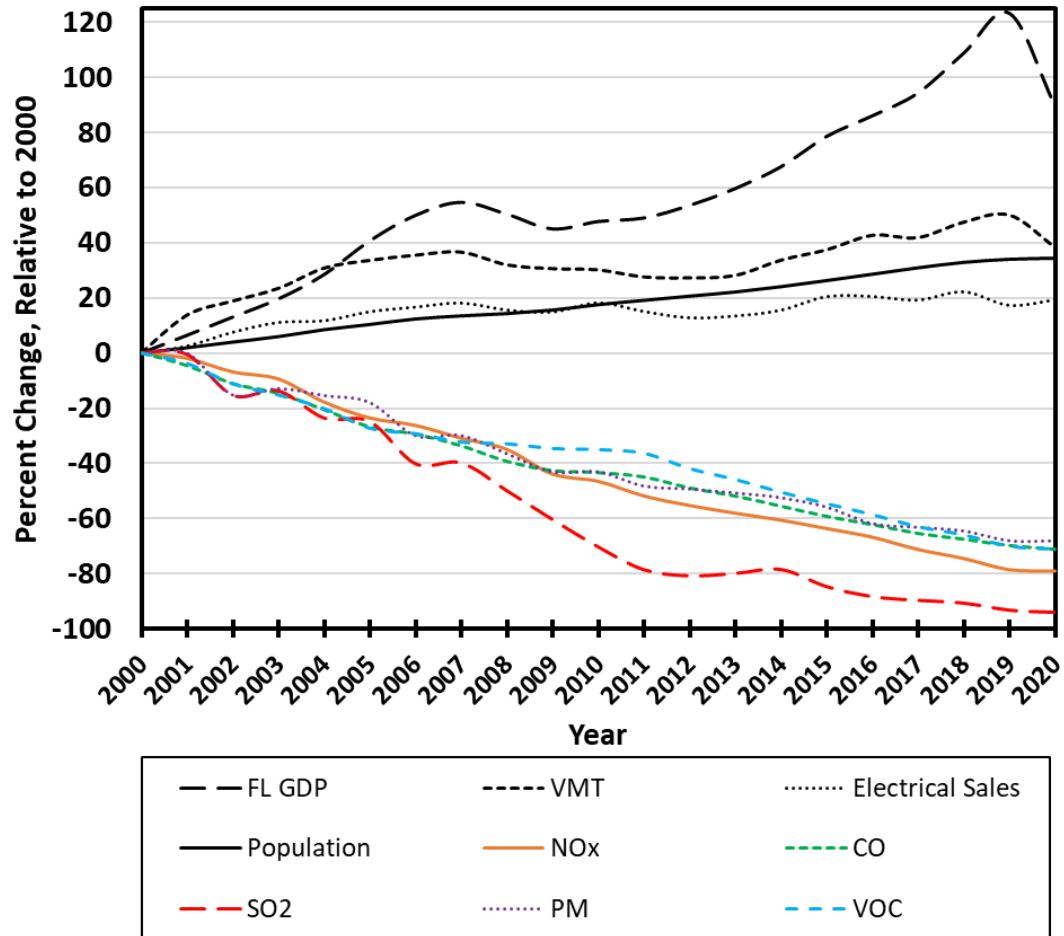




AIR RESOURCE MANAGEMENT

Emissions Trends

Florida Economic Growth and Pollutant Reductions Trends



Mission: Implement CAA and reduce air pollution

Over the last 20 years:

- Every indicator of growth substantially increased (20% to 100%)
- NAAQS air pollutants substantially decreased (65% to 90%)
- Compliance with all NAAQS



THANK YOU

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