



METRA

Metropolitan Environmental
TRaining Alliance

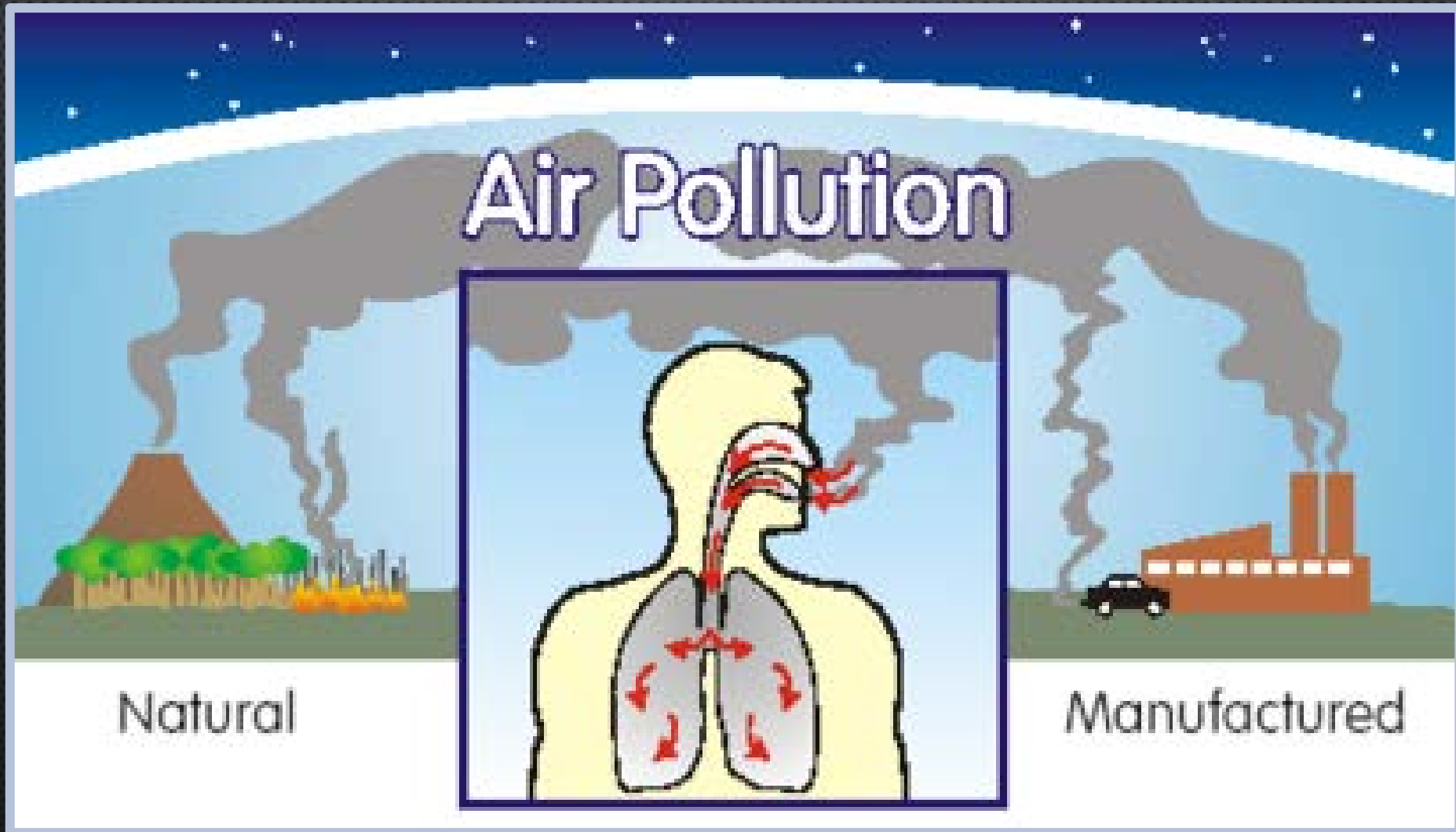
Air Quality Trends in Central Florida

Beth M. Burkard, P.E., Air Permitting Engineer
Robin Katz, Air Monitoring Scientist



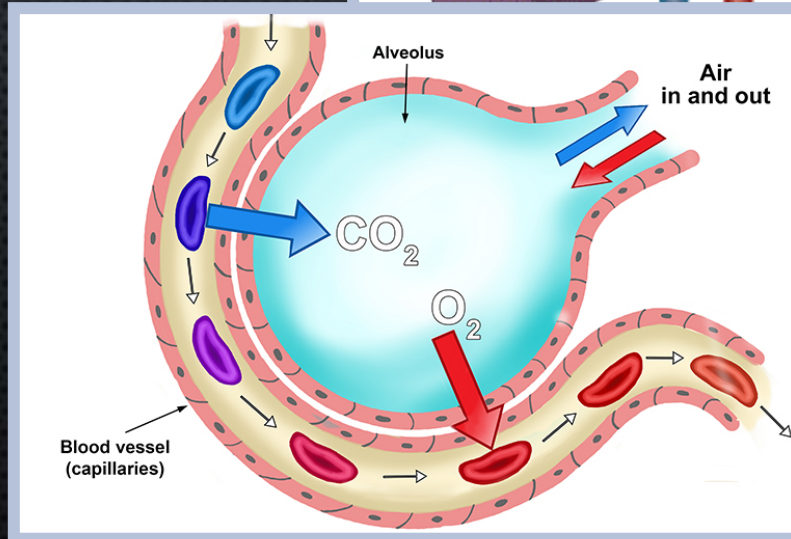
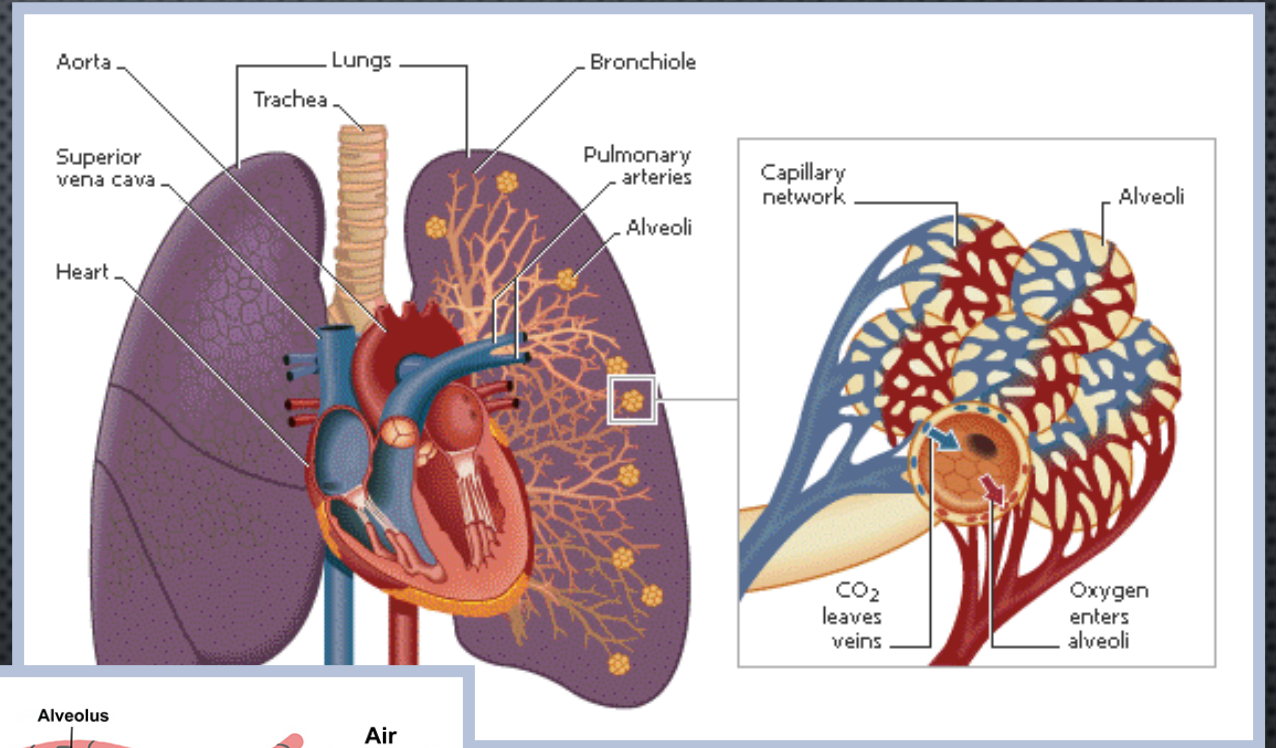
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What is Air Pollution?



Why is Air Pollution a Problem?

- Health impacts
 - Asthma
 - COPD
 - CHF, CAD
 - Carcinogens



Why is Air Pollution a Problem?

- Crop damage
- Reduced visibility
- Water quality impacts
- Damage to built environment

Tolerant bean line



Clean air



Added Ozone

Sensitive bean line



Clean air



Added Ozone

Great Smoky Mountains National Park



Good Visibility Day
Visual Range: 124 miles



Bad Visibility Day
Visual Range: 26 miles

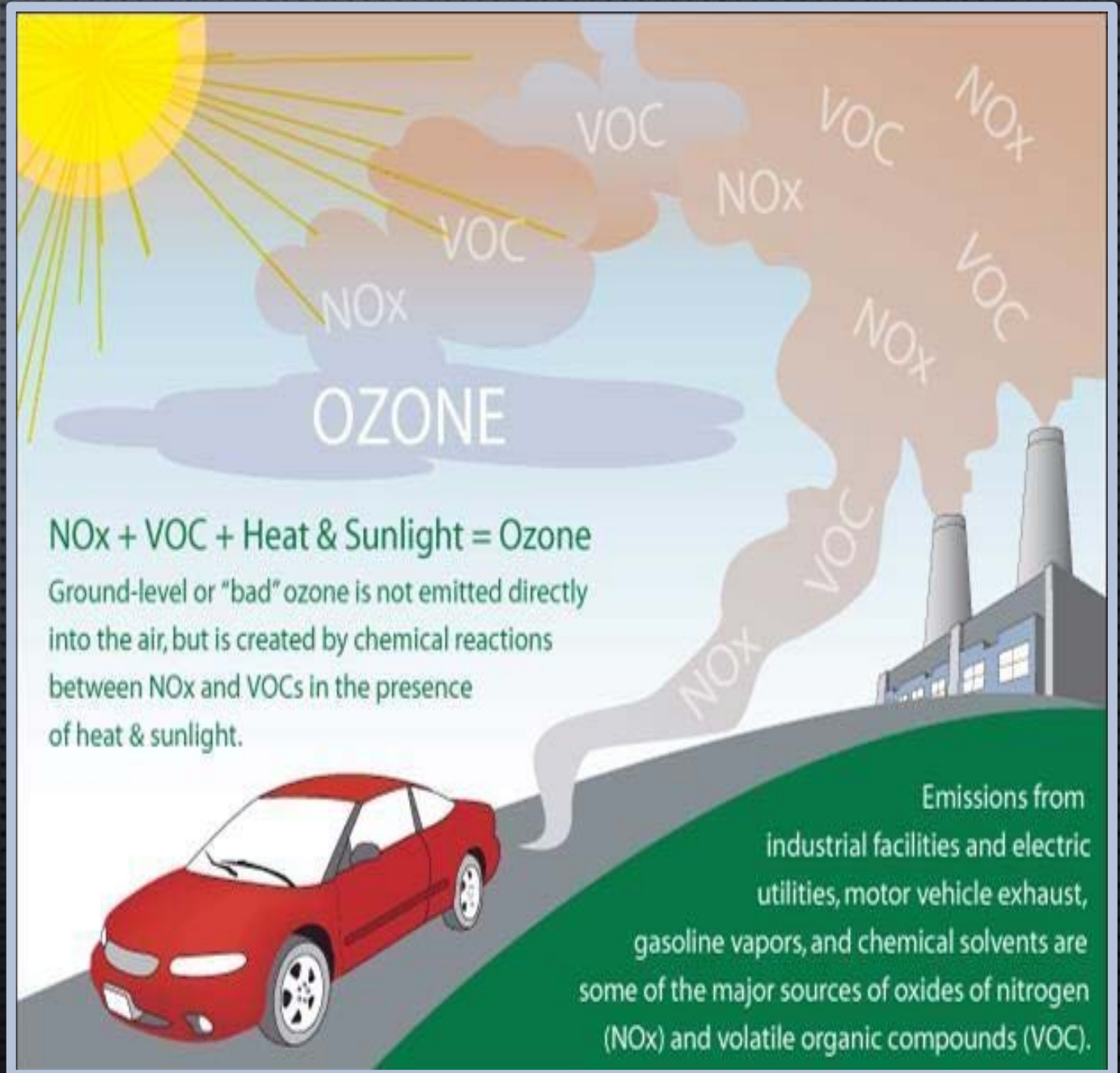


Regulated Air Pollutants

- Carbon monoxide
- Nitrogen oxides (NO_x)
- Particulate matter (PM)
- Sulfur dioxide lead
- Ground level ozone
- Hazardous air pollutants (HAP)
- Volatile organic compounds (VOC)

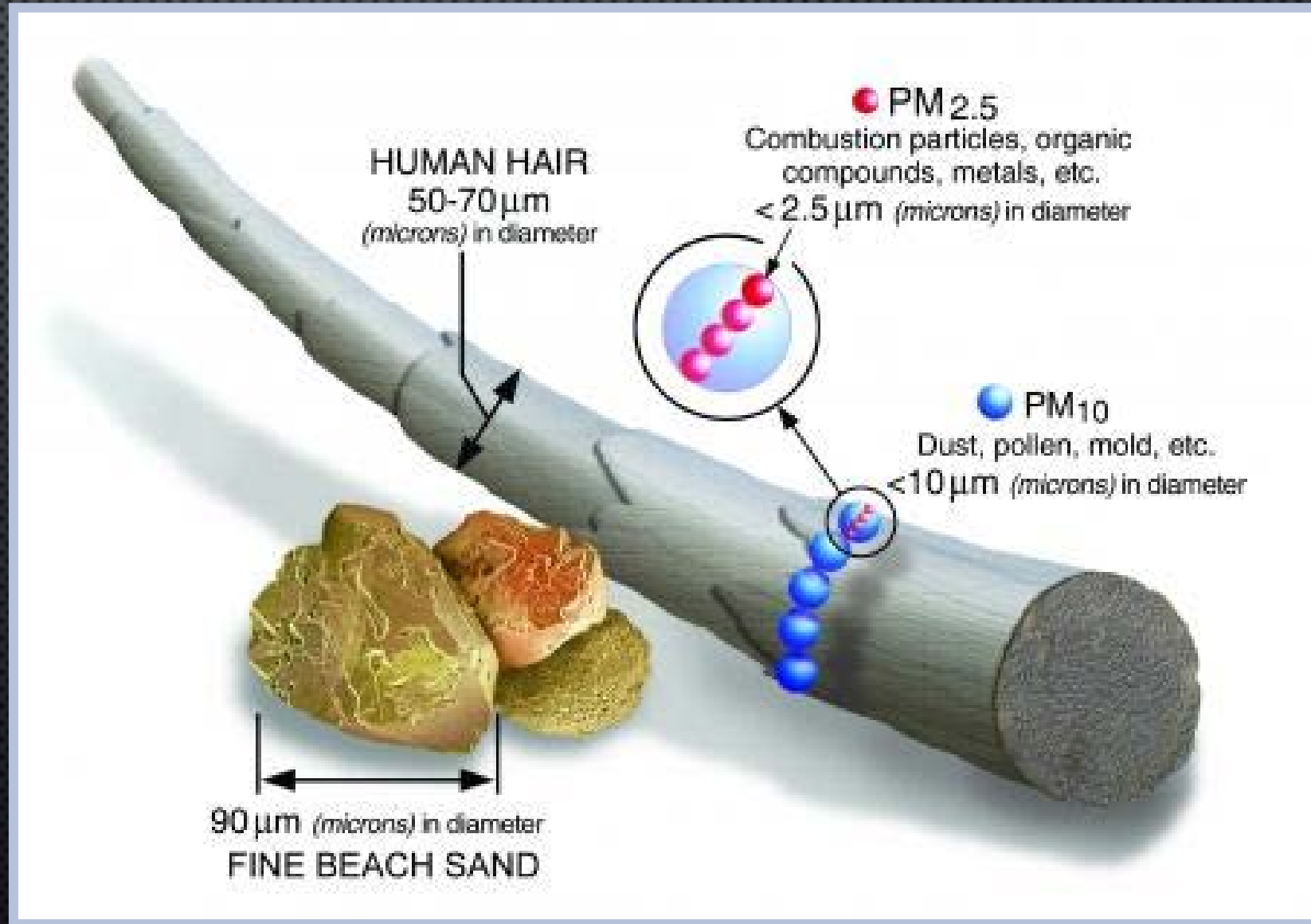


Ground Level Ozone



Particulate Matter

- Natural sources
- Incomplete combustion
- Concrete batch plants, asphalt plants, mining, crushing
- Mass grading



Orange County AQM Program

- Ambient Air Monitoring
- Compliance, Enforcement, and Permitting
- Asbestos Program
- Outreach



Ambient Air Monitoring



Neighborhood Sites



Winter Park



Winegard Elementary



Near Road Sites



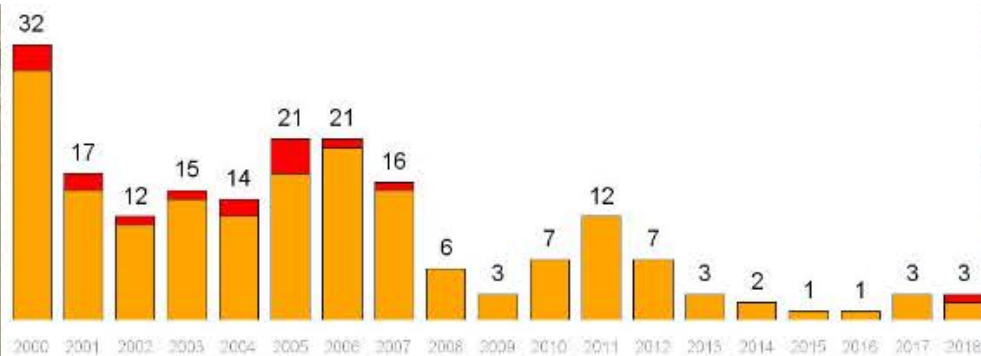
Ambient Air Sampling



Continuous Data Collection

Orlando-Kissimmee-Sanford, FL

Number of Days Reaching Unhealthy for Sensitive Groups or Above on the Air Quality Index (for Ozone Only)



Air Quality Index Category

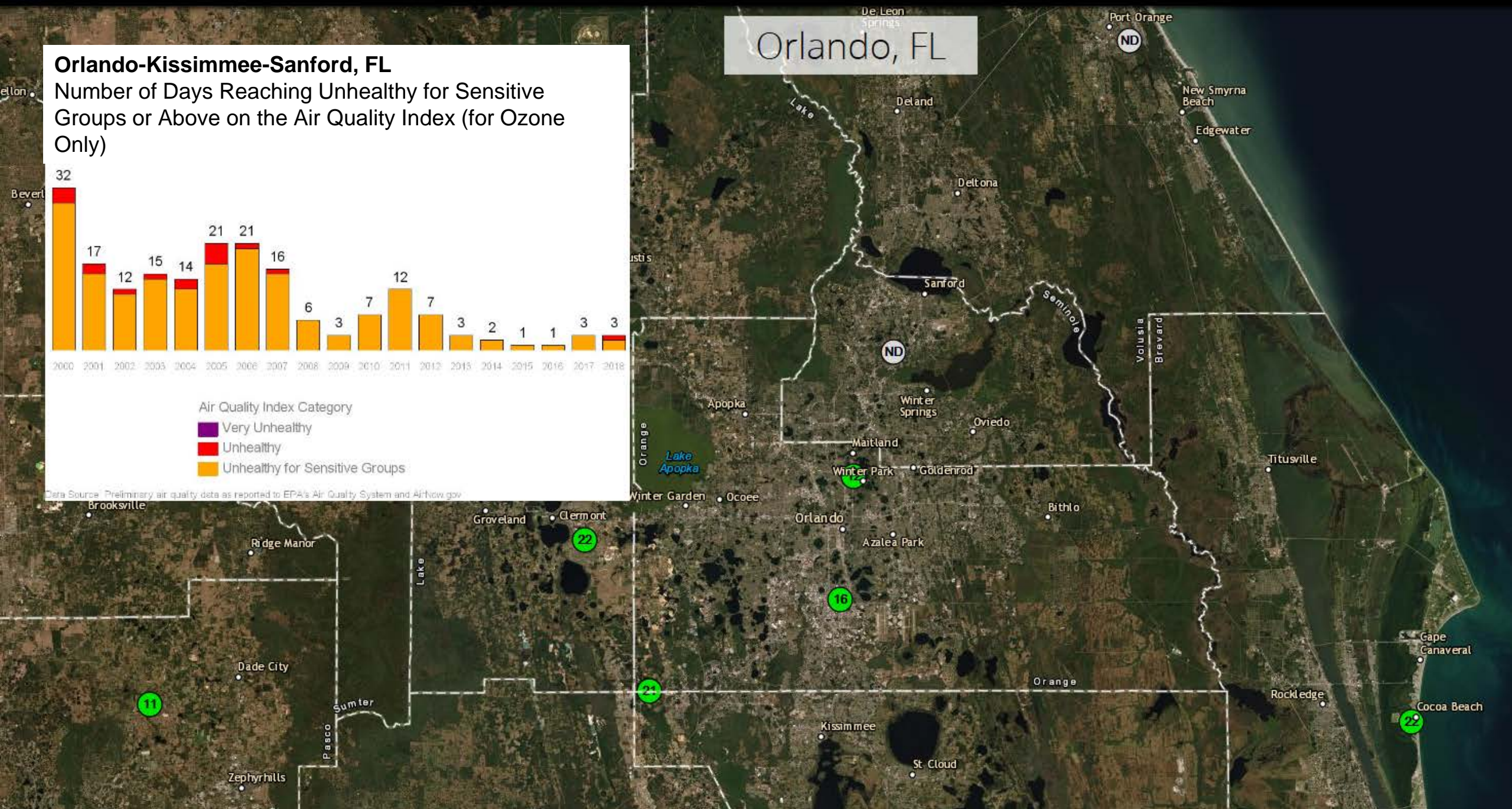
Very Unhealthy

Unhealthy

Unhealthy for Sensitive Groups

Data Source: Preliminary air quality data as reported to EPA's Air Quality System and AirNow.gov

Orlando, FL



National Ambient Air Quality Standards (NAAQS)				
Pollutant	Primary/Secondary	Averaging Time	NAAQS Standard	Orlando Area 2018
Carbon Monoxide (CO)	Primary	8-hour	9 ppm	1 ppm
	Primary	1-hour	35 ppm	1.6
Lead (Pb)	Primary & secondary	3-month	0.15 ug/m3	N/A
Nitrogen Dioxide (NO ₂)	Primary	1-hour	100 ppb	30 ppb
	Primary & secondary	Annual	53 ppb	5 ppb
Ozone (O ₃)	Primary & secondary	8-hour	0.070 ppm	0.067 ppm
Particle Pollution: PM _{2.5}	Primary	Annual	12.0 µg/m³	6.8 µg/m³
	Secondary	Annual	15.0 µg/m³	6.8 µg/m³
	Primary & secondary	24-hour	35 µg/m³	16 µg/m³
PM ₁₀	Primary & secondary	24-hour	150 µg/m³	27 µg/m³
Sulfur Dioxide (SO ₂)	Primary	1-hour	75 ppb	4 ppb
	Secondary	3-hour	0.5 ppm	0 ppm

Why We Monitor: NAAQS Attainment Designation

- **Attainment:** An area that meets or is cleaner than the standard
- **Nonattainment:** An area that does not meet the standard

Designation may have impacts on economic development due to industrial constraints

non·att·ain·ment area

non-uh-teyn-muh nt eyr-ee-uh

noun

1. An unattractive place to do business.
2. A region where manufacturing can't grow.

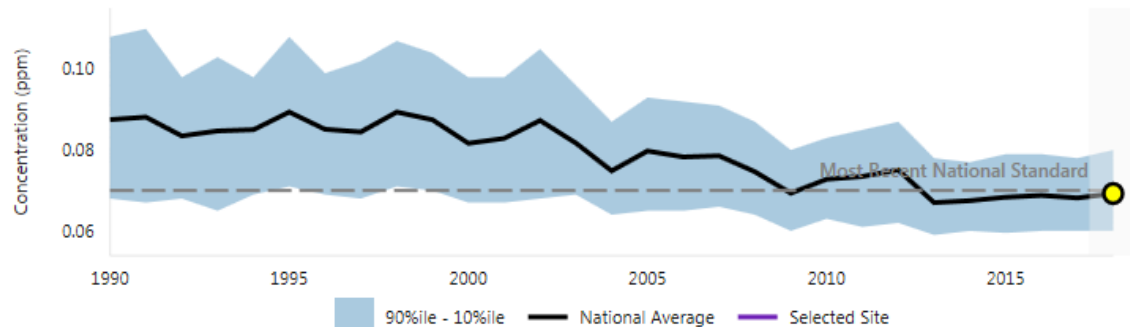


Criteria Pollutant Trends Show Clean Air Progress

Select a [NAAQS](#) to view concentration and emission trends

Ozone (Fourth Daily Max 8-hour)

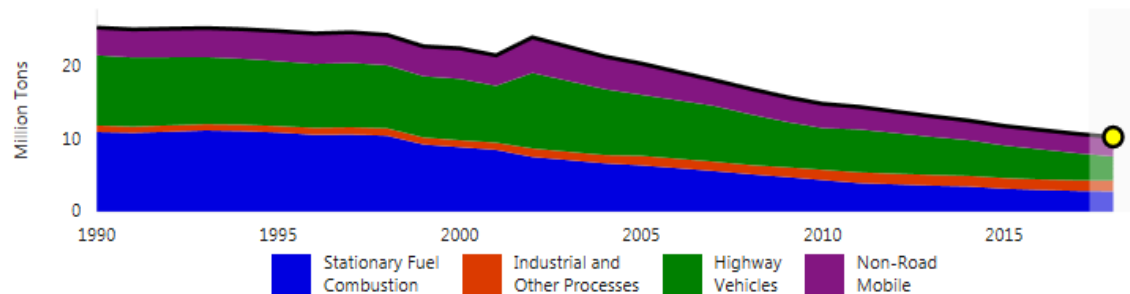
Ozone 8-hour Concentration



NO_x Emissions

VOC Emissions

NO_x Emissions

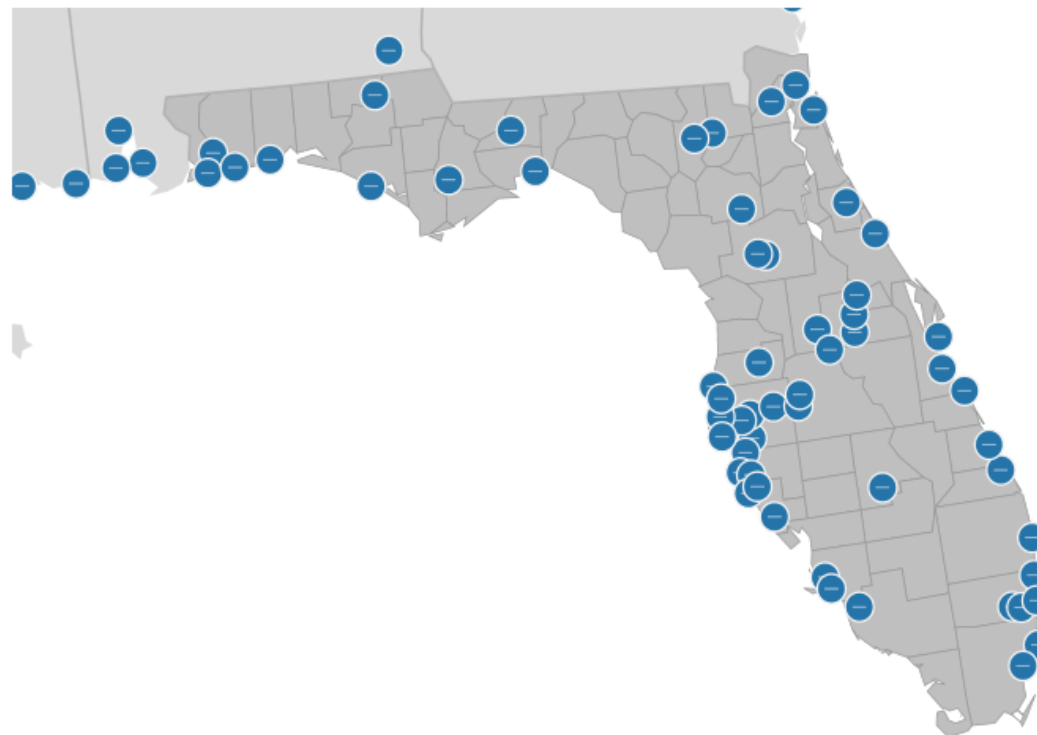


Year: 2018

1990 1995 2000 2005 2010 2015



Ozone 8-hour Concentration



≤ 0.054

0.055 - 0.07

0.071 - 0.085

≥ 0.086

Florida

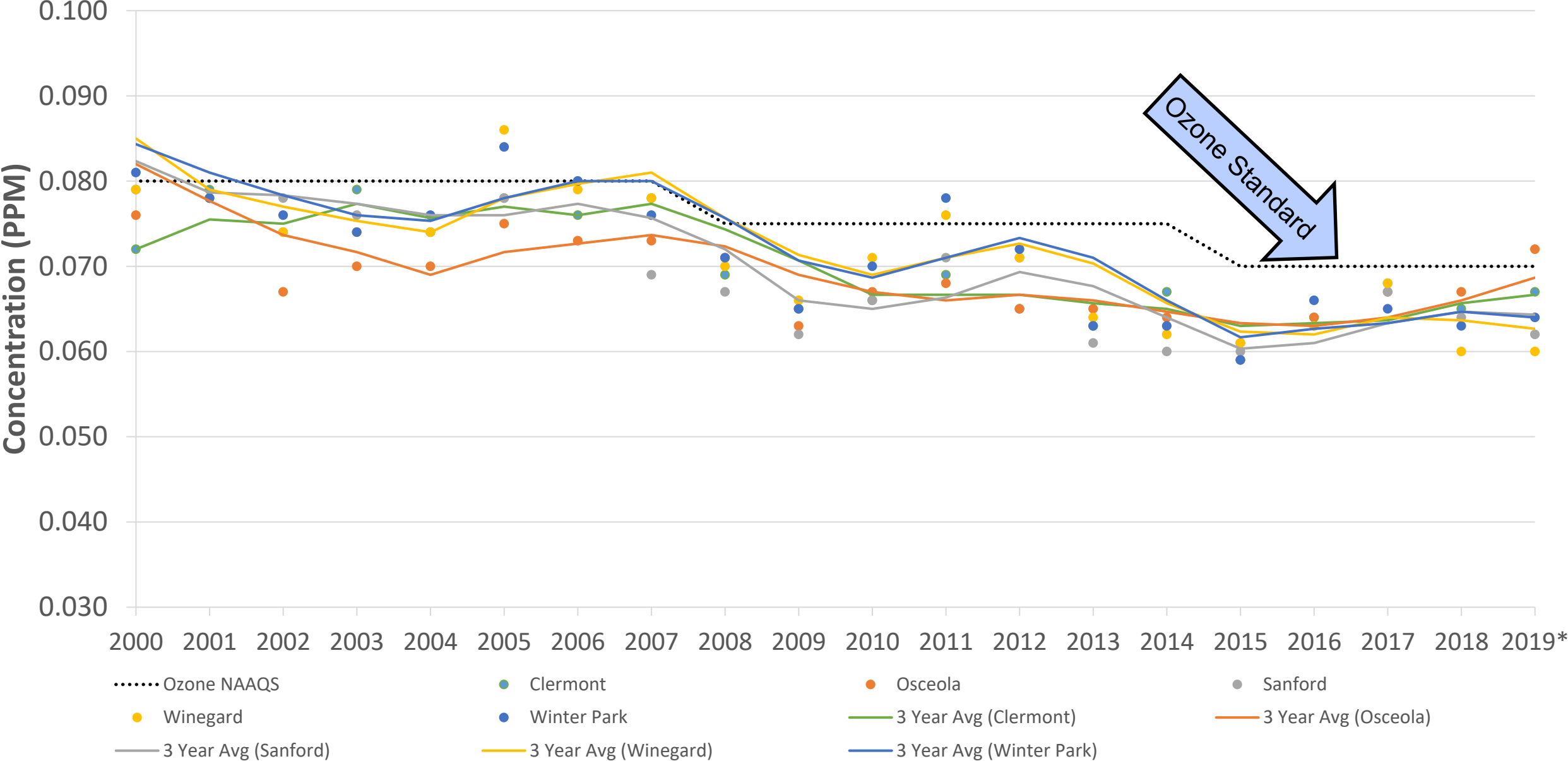
Source: U.S. EPA Air Quality System

Charts Click emission tabs to change the emissions chart. The play/pause button controls animation, or manually change the year by dragging the yellow circle in the chart or the slider's gray square. [Read about weather influences on ozone.](#)

Map Symbols indicate values above or below the most recent standard. Click any point to display annual concentration data. Double click the map to zoom in and click the home button to reset. Please be patient with map exports.

Trends in Ozone Statistics by Monitor

Orlando-Kissimmee-Sanford Core Based Statistical Area



Air Quality Index (AQI)

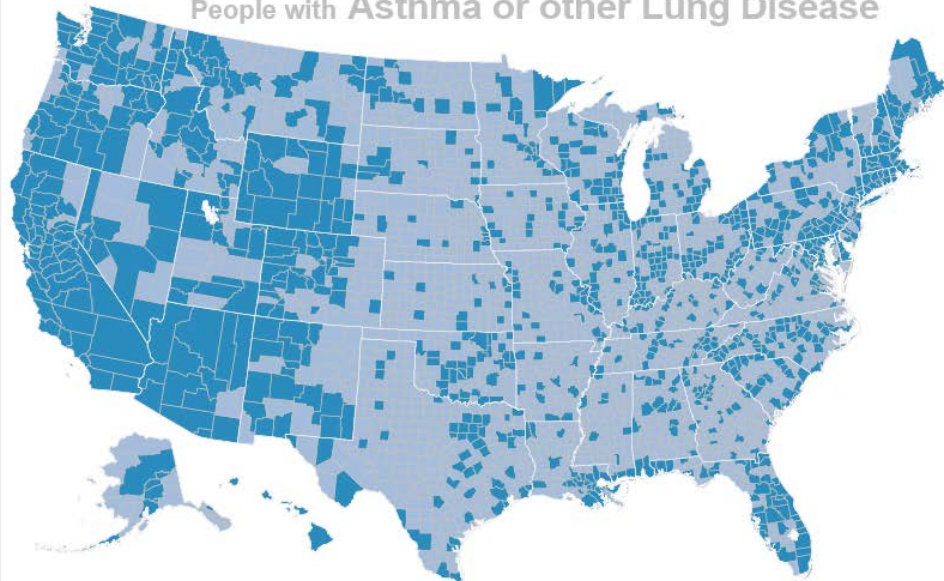
Air Quality	Index	Protect Your Health	Orlando Area	
			2017	2018
Good	0-50	No health impacts are expected when air quality in this range.	268	309
Moderate	51-100	Unusually sensitive people should consider limiting prolonged outdoor exertion.	94	53
Unhealthy for Sensitive Groups	101-150	Active children and adults, and people with respiratory disease, such as asthma, should limit prolonged outdoor exertion.	3	2
Unhealthy	151-200	Active children and adults, and people with respiratory disease, such as asthma, should avoid prolonged outdoor exertion; everyone else, especially children, should limit prolonged outdoor exertion.	0	1
Very Unhealthy	201-300	Active children and adults, and people with respiratory disease, such as asthma, should avoid all prolonged outdoor exertion; everyone else, especially children, should limit outdoor exertion.	0	0
Hazardous	301-500	Health alert: everyone may experience more serious health effects	0	0

How Do We Compare?

How to use this map

[About the maps](#) | [About the charts](#)[Clear All Charts](#)

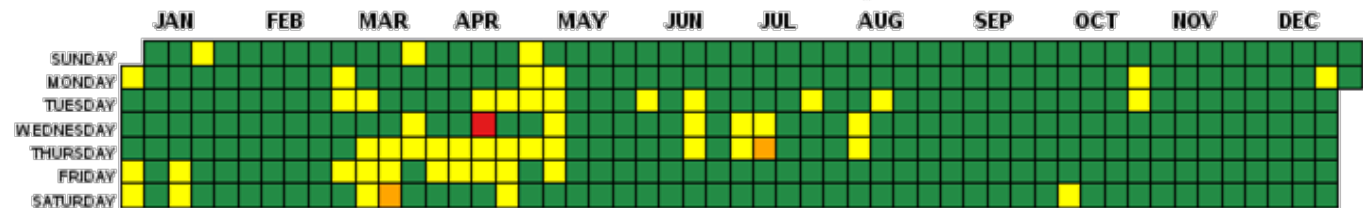
Use this Map to See Trends for Pollutants that Affect
People with **Asthma or other Lung Disease**



epa.gov/aircompare

Daily AQI Values in 2018

Orlando-Kissimmee-Sanford, FL



Los Angeles-Long Beach-Anaheim, CA

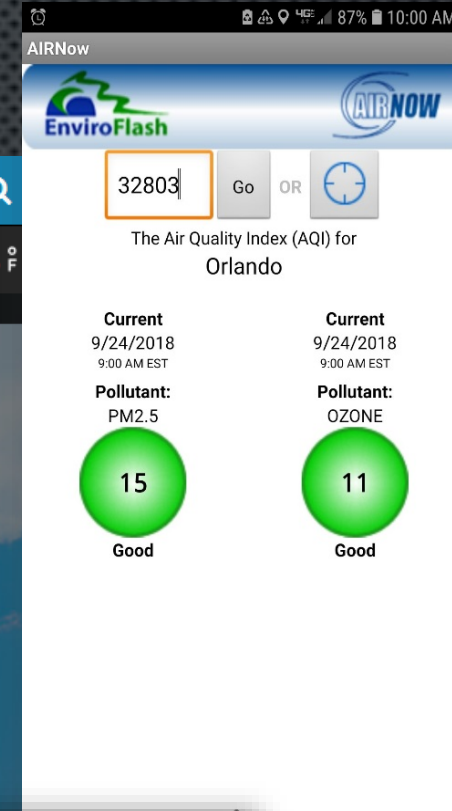
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Bangor, ME

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Current Air Quality Data

- Recent data published on AirNow.gov and apps
- Daily Forecasts sent via email or text
 - Subscribe at Enviroflash.Info





Outreach for Clean Air



What Can We Do?



Money Isn't All You're Saving

