

# Particulate Matter

MEDIA PACKAGE



**BROWARD**  
COUNTY  
FLORIDA  
Environmental Protection Department  
Air Quality Division

## Agency Overview:

The Environmental Protection Department (EPD) is Broward County's regulatory and resource management agency charged with sustaining and enhancing the quality of life in Broward County by promoting effective and efficient uses of environmental resources through management and regulation. EPD currently employs about 153 environmental professionals with a staff comprised of engineers, biologists, chemists and support staff with expertise in a number of areas including air toxics, laboratory analysis, hazardous materials, ecology and planning.

The EPD administers two basic types of programs:

- Regulatory – mandated and enforced through laws, rules and ordinances
- Resource Management Programs – typically involve enhancement and restoration

The Air Quality Division is responsible for regulatory and planning aspects of the County's issues relating to air quality.

### ***Our Mission:***

*"To safeguard human health and the natural environment, and enhance the quality of life in Broward County by maintaining, protecting and improving overall air quality."*

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### Additional Reference Materials

- *Ozone Awareness* Brochure
- EPA's *Particle Pollution and Your Health* Brochure

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Please see the website for additional information: [www.broward.org/air](http://www.broward.org/air)

## *Did You Know?*

**Fact: We have clean air in Broward County that meets all federal standards.**

The Environmental Protection Agency (EPA) sets national health standards for air quality that must be met. Broward County has done what was necessary to meet those standards and has been maintaining good air quality for the past ten (10) years. In fact, the air quality has improved here, as well as in other cities in the United States, during the past decade.

**Fact: The standards just got tougher.**

In July of 1997 the EPA revised the set of standards for air quality, ozone and particulate matter in particular. On February 27, 2006, the U.S. Supreme Court upheld the constitutionality of the Clean Air Act, and reaffirmed EPA's stance that the standards must be based solely on public health considerations. While these new standards are expected to have great benefits on our air quality, the way we manage and preserve air quality today will affect whether or not we continue to meet the new standards

**Fact: We may have difficulty meeting the new air standards.**

Based on air quality data from years past, we may not meet the new standards. It is not that our air has gotten dirtier but rather the standards have gotten tougher, and the Broward County population continues to grow.

**Fact: Much of the air pollution doesn't come from where you may think.**

More than half of the air pollution in Broward County comes from cars, trucks and other fuel burning machines, like lawn mowers, that we use around the home.

**Fact: The penalties for not meeting the federal air standards can be severe.**

If Broward County does not meet the new air quality standards, businesses and consumers could end up paying for stricter air pollution controls. This could have a negative impact on the local economy, including expensive pollution reduction requirements for the industry and restrictions on federally funded projects.

**Fact: In Broward County, the air quality is unhealthy only a few days out of the year.**

Most of the time our air is healthy to breathe; only on some days, under hot, dry and windless weather conditions does air become polluted enough to be of concern. You may recall during May 1998, that stagnant weather patterns prompted the Florida Department of Environmental Protection to issue a first ever statewide air pollution advisory.

**Fact: You can help Broward County avoid those unhealthy air quality days.**

All you have to do is follow these easy suggestions: use public transportation; refuel your car's gas tank in the evening when it's cool and avoid topping off; postpone some activities such as lawn mowing, charcoal grilling and using oil-based paints until the air quality improves; and SPREAD THE WORD.



## Criteria Air Pollutants

Pollutant	Symbol	Major Man-Made Sources	Human Health & Welfare Effects	Control Methods
<p><b>Particulate Matter</b> Airborne solid particles and liquid droplets.</p> <p>Grouped into two categories:</p> <p>“Coarse particles” from 2.5 to 10 microns in diameter</p> <p>“Fine particles” smaller than 2.5 microns in diameter</p>	<p>PM</p> <p>PM<sub>10</sub></p> <p>PM<sub>2.5</sub></p>	<p>Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.</p>	<p>Can get deep into your lungs, or even enter your blood stream, and cause serious health problems: Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; decreased lung function; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).</p>	<p>Pollution control equipment and reduction of fuel combustion</p>
<p><b>Ozone</b> (Smog) A colorless or bluish gas</p>	<p>O<sub>3</sub></p>	<p>Formed by a chemical reaction between volatile organic compounds (VOC) and nitrous oxides (NO<sub>x</sub>) in the presence of sunlight. Motor vehicle exhaust industrial emissions, gasoline storage and transport, solvents, paints and landfills</p>	<p>Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems.</p> <p>Damages plants; reduces crop yield.</p> <p>Damages rubber, some textiles and dyes.</p>	<p>Pollution control equipment; reducing NO<sub>x</sub> emissions from power plants and industrial combustion sources; introducing low-emission cars and trucks; using “cleaner” gasoline; use of low-VOC solvents</p>



Pollutant	Symbol	Major Man-Made Sources	Human Health & Welfare Effects	Control Methods
<b>Sulfur Dioxide</b> A colorless, nonflammable gas	SO <sub>2</sub>	Formed when fuel containing sulfur, such as coal and oil, is burned; when gasoline is extracted from oil; or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, large ships, and fuel combustion in diesel engines.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron and steel; damage crops and natural vegetation. Impairs visibility. Precursor to acid rain.	Use of low-sulfur fuels, energy conservation (reduces power plant emissions), and pollution control equipment. Ultra Low Sulfur Diesel is being phased in during 2006 and will be mandatory in 2007.
<b>Carbon Monoxide</b> An odorless, colorless gas	CO	Formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.	Transportation planning, vehicle emission testing and reduction, efficient combustion techniques, and energy conservation.
<b>Nitrogen Dioxide</b> A reddish-brown gas	NO <sub>x</sub>	Fuel combustion in motor vehicles and industrial sources. Motor vehicles; electric utilities, and other sources that burn fuel	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to global warming, and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.	Exhaust gas recirculation in motor vehicles; reduction of combustion temperatures in industrial sources; energy conservation; pollution control equipment



# AIR QUALITY INDEX

Broward County Air Quality Index: 954-519-1280

Air Quality Email Alert: [www.broward.org/air/airqualityalert.htm](http://www.broward.org/air/airqualityalert.htm)

	HEALTH CATEGORIES	OZONE	FINE PARTICLES
300	<b>VERY UNHEALTHY</b>	Active children and adults, and people with respiratory disease such as asthma, should avoid all outdoor exertion; everyone else, especially children, should limit outdoor exertion.	People with respiratory or heart disease, the elderly and children should avoid any outdoor activity; everyone else should avoid prolonged exertion.
200	<b>UNHEALTHY</b>	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.	People with respiratory or heart disease, the elderly and children should avoid prolonged exertion; everyone else should limit prolonged exertion.
150	<b>UNHEALTHY FOR SENSITIVE GROUPS</b>	Active children and adults, and people with respiratory disease such as asthma, should limit prolonged outdoor exertion.	People with respiratory or heart disease, the elderly and children should limit prolonged exertion.
100	<b>MODERATE</b>	Unusually sensitive people should consider limiting prolonged outdoor exertion.	None
50	<b>GOOD</b>	None	None

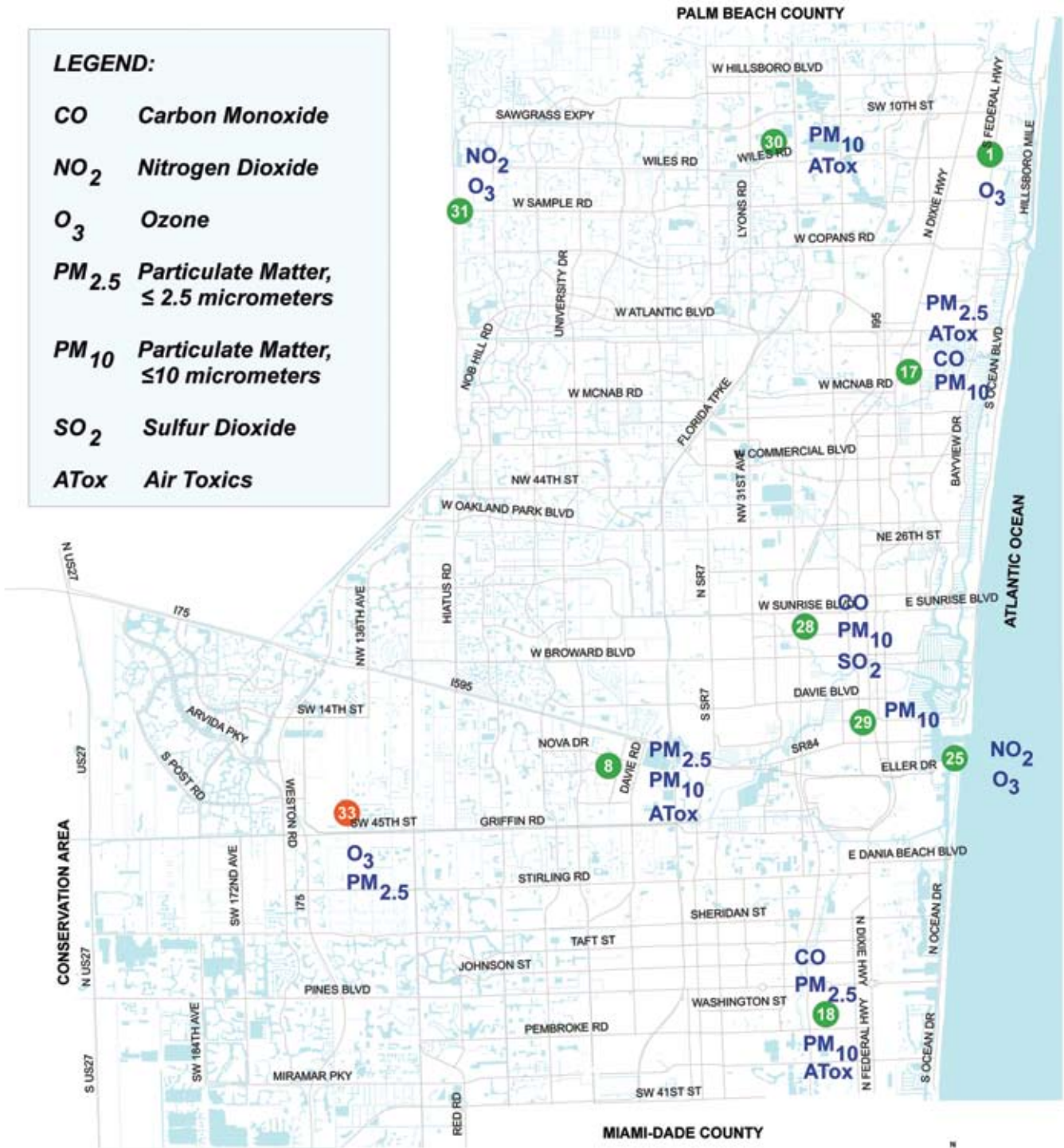


[www.broward.org/air](http://www.broward.org/air)

# Air Monitoring Stations Map

## LEGEND:

- CO** Carbon Monoxide
- NO<sub>2</sub>** Nitrogen Dioxide
- O<sub>3</sub>** Ozone
- PM<sub>2.5</sub>** Particulate Matter, ≤ 2.5 micrometers
- PM<sub>10</sub>** Particulate Matter, ≤ 10 micrometers
- SO<sub>2</sub>** Sulfur Dioxide
- ATox** Air Toxics



**SITE #33 IS UNDER CONSTRUCTION  
COMPLETION DATE 2006**



Updated: April 2006



Environmental Protection Department