

Framework for Air Quality Management

The framework for a successful air quality program consists of four components.

Monitoring of air quality is conducted at a network of sampling stations around the county. Results from monitoring are used to determine compliance with air quality standards, make the Air Quality forecast, provide a basis for reviewing air pollution permits, etc. The monitoring provides data which indicates the overall effectiveness of the Federal, State and county control strategies.

Permitting allows emission of a certain level of pollutants based on the existing air quality. Any potential source of pollution may be required to obtain a permit. Air quality experts review the application before issuing the permit to ensure that the source will not exceed emission standards.

Enforcement of air quality rules results in the regulation of sources such as open burning, gasoline stations and other industrial sources. Technical surveys and routine compliance inspections are made by field personnel. Through inspections and enforcement activities, government can ensure that a source is complying with the limitations of its permit.

Planning is responsible for providing air quality expertise for transportation planning, periodic emission inventories, and developing the plans to meet and maintain the National Ambient Air Quality Standards. They also study the impact of motor vehicles on air quality, analyze air quality for trends, review legislative policies, participate in federal, state, and local meetings on air pollution issues, and carry out special research projects. This section also prepares the Daily Air Quality Forecast and maintains the Public Outreach and Awareness program, which informs the public about air quality issues, possible health concerns, and things that they can do to help improve the air around them.



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CLEAN AIR.....

DOING YOUR SHARE FOR PINELLAS COUNTY!

Pinellas County
Department of Environmental
Management - Air Quality
Division

Clean air is an essential resource....



...and one we cannot afford to take for granted. Accomplishing many of our everyday activities depends on having clean air, however our everyday activities can also contribute to the pollution of this vital resource. A decline in overall air quality can damage health and property and affect business, recreation and tourism. Because each of us contributes to air pollution, each of us must take some responsibility for reducing the impacts of pollution.

SOURCES OF POLLUTION

Air pollution is caused primarily by transportation and industrial/commercial activities. **Mobile Sources** significantly contribute to air pollution. These include cars, trucks, boats, aircraft, and even lawn and garden equipment. Although Federal, State and local programs are reducing emissions from these sources, continued population growth and the use of vehicles, etc. makes control of these sources difficult.

Mobile Source pollution can be reduced by simple activities and choices such as:

- Proper vehicle maintenance (regular tune ups, rotate tires, proper tire pressure, etc.).
- Don't "top-off" (overfill) your tank. Refuel your tank in the cooler part of the day (early morning or evening).
- When looking to buy, opt for a Low-Emission Vehicle. Choose a four-cycle engine over a two-cycle for lawn equipment, boats and personal watercrafts.
- Try to use public transportation, carpool, walk or ride a bike and combine trips if you can.

Major stationary sources of air pollution in Florida are most often **industrial/commercial** sources. These sources of air pollution are usually thought of as point sources (e.g. smokestacks). There are other sources, however, that are more widespread. These are considered as area sources and include: agriculture, surface coating, printing, publishing and plating operations.

Industrial Source pollution can be reduced by:

- The use of control equipment, which helps remove pollutants before they are released into the air.
- Applying pollution prevention measures.
- Using materials that are more environmentally friendly. Such as water-based paints, and low or zero Volatile Organic Compound (VOC) products.
- Ensuring that systems are well maintained and running properly.

The Division has Pollution Prevention resources that can help businesses establish Best Operating Practices to prevent pollution at the source.

Health Effects

Scientists generally agree that Air Pollution can cause health problems.

Ozone (O₃) is produced through a photo-chemical reaction of hydrocarbons and nitrogen oxides in the presence of sunlight. Ozone, the main ingredient of smog, irritates the eyes, nose and throat and places a burden on the respiratory system and heart.

Particulates are solid particles or liquid droplets consisting of acid aerosols, heavy metals or soot. Particulates can aggravate respiratory disease and irritate eyes.

Asbestos is a mineral and can be found in thousands of different kinds of building materials. As long as these materials are not crumbled, they are not dangerous. Once crumbled the microscopic fibers can become airborne and could cause serious lung damage and possibly cancer.

Carbon monoxide (CO) is produced mainly from automobile exhaust or whenever fuels are being burned. CO reduces a person's ability to think and see clearly and if there is enough in one area it could result in death.

Sulfur dioxide (SO₂) is produced by power plants and industries burning coal or oil. SO₂ irritates the lungs and causes or aggravates respiratory problems.

Nitrogen oxides (NO_x) are produced by all combustion processes, including motor vehicles. NO_x also places a strain on the heart and respiratory system.

Hydrocarbons (HC) are produced from the incomplete combustion of fuel and from the evaporation of gasoline from motor vehicles and storage areas.

Lead (Pb) is emitted primarily from lead smelters and incinerators. It also persists in the environment from past activities such as the use of leaded gasoline and lead based paint. It can affect the nervous system and lead to anemia.

Air Toxics include known or suspected carcinogens (e.g. benzene and beryllium) and non-carcinogens (e.g. mercury and styrene).