oppaga
Progress Report

February 2004 Report No. 04-11

Florida's Air Quality Is Good; Steps Taken to Address Air Toxics, But Plan Not Developed

at a glance

Generally, the state's air quality is good.

- **The state met federal and state ambient air quality standards.**
- **Citizens who live in Florida counties where air quality is monitored experienced good or moderate quality air 99.8% of the time in Fiscal Year 2002-03.**
- **No counties violated the EPA's standard for ozone during the period from 2000 to 2002.**

Although the Department of Environmental Protection has taken some steps to address our prior report's recommendations related to air toxics, it has not implemented our recommendation to develop a statewide air toxics plan.

Scope

In accordance with state law, this progress report informs the Legislature of actions taken by the Department of Environmental Protection in response to a 2002 OPPAGA report.[1, 2] This report presents our assessment of the extent to which the department has addressed the findings and recommendations included in our report.

Background

The Air Resources Program's mission is to protect human health and welfare by maintaining or improving the state's air quality. Prolonged exposure to outdoor air pollutants, such as ozone and particulate matter, contribute to asthma and other health problems. Florida's elderly, children, and persons with respiratory problems are especially sensitive to air pollutants. These pollutants are emitted from mobile sources such as motor vehicles and stationary sources such as electricity generating plants.

The Department of Environmental Protection's Division of Air Resource Management is primarily responsible for implementing requirements of the federal Clean Air Act and state air quality laws and regulations. Program activities include

- operating a statewide ambient monitoring network that measures air quality throughout the state;
- issuing permits to new and modified sources of air pollutants;
- inspecting air pollution sources to ensure that they comply with permit requirements, such as emission limits; and
- assisting small business owners in complying with applicable air pollution laws and regulations.

[1] Section 11.51(6), *F.S.*

[2] *Justification Review: Florida's Air Quality Is Generally Good, But Ozone and Air Toxics Are Concerns,* Report No. 02-29, May 2002.

The program's activities are largely driven by federal regulations. Most program air quality activities involve controlling six "criteria" air pollutants identified by the U.S. Environmental Protection Agency (EPA): ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead.[3] The EPA has established national ambient air quality standards that set limits for concentrations of these pollutants.[4]

The EPA may designate areas that violate federal air quality standards as being in "nonattainment." States containing such areas must submit a plan to the EPA specifying actions that will be taken to bring the areas into attainment. If the state plan is not approved, the EPA may impose sanctions, such as prohibiting the expenditure of federal transportation funds in the affected areas.

During the period from 1987 to 1994, six Florida counties did not meet ambient ozone standards and were designated as ozone nonattainment areas by the EPA.[5] As required by the EPA, the department developed a plan to reduce ozone concentrations in these areas. The six counties attained the federal ambient air quality standard for ozone by 1996.[6]

Other air pollutants besides the six criteria pollutants pose potential health risks to the public. Air toxics, also referred to as hazardous air pollutants, are chemicals known or suspected to cause cancer or other serious health problems, such as birth defects.

The federal Clean Air Act directs the EPA to develop standards for reducing emissions of air toxics. In response, the EPA established technology-based Maximum Achievable Control Technology (MACT) standards for 174 industry groups that emit air toxics.[7] These differ from ambient air quality standards because they establish emission limits on specific sources rather than on concentrations of pollutants in the ambient air.

Florida's DEP has adopted the MACT standards and enforces them through its permitting and compliance activities. These standards specify emission reductions based on levels achieved by the best performing facilities in an industry. For example, the department may require a dry-cleaning facility to install a refrigerated condenser to control emission levels of perchloroethlyene in order to comply with the MACT standards.

The Legislature appropriated $21 million and authorized 188 positions for the Air Resources Program in Fiscal Year 2003-04. Of these positions, 91 are assigned to the department's central office in Tallahassee while the remaining 97 are assigned to district offices.

Prior Findings

Florida's air quality met state and federal standards, but concerns about ozone persisted in some locations

Our 2002 report found that the state met federal and state ambient air quality standards as of April that year. Department data also showed that citizens in Florida counties where air quality is monitored experienced good or moderate quality air 99.3% of the time.[8] In addition, emissions of several major pollutants, such as sulfur dioxide and nitrogen oxides, decreased or remained stable over the period from 1991 to 2000.

[3] Health-based criteria have been used to establish ambient air quality standards for these pollutants. Ozone is not directly emitted, but is formed from a chemical reaction involving nitrogen oxides, volatile organic compounds, and sunlight.

[4] The state has adopted the federal standards for five of the six criteria pollutants. However, the state's standards for sulfur dioxide are more stringent than the federal standards.

[5] These counties were Broward, Dade, Duval, Hillsborough, Palm Beach, and Pinellas.

[6] For a more detailed discussion see *Review of Florida's Outdoor Air Quality Programs*, Report No. 96-33, January 1997, and *Follow-up Report on Florida's Outdoor Air Quality Program,* Report No. 98-21, November 1998.

[7] These are also known as National Emission Standards for Hazardous Air Pollutants (NESHAP).

[8] These results are based on data obtained by ambient air quality monitors throughout the state. During Fiscal Year 2002-03, 90% of Florida's population lived in counties with ambient air quality monitors. Ambient monitors are generally placed in urban areas where high concentrations of criteria pollutants are likely to occur.

However, ozone was a concern in Florida because it exceeded air quality standards more than other criteria pollutants.[9] From 1999 to 2001, average ozone levels in Escambia and Sarasota counties exceeded a new EPA standard.[10] Further, ozone levels in five counties, Hillsborough, Manatee, Orange, Polk, and Pinellas, were close to violating the EPA's new standard.

During the period covered by our 2002 report, the Department of Environmental Protection and the EPA were implementing strategies to reduce ozone concentrations by lowering nitrogen oxides and other pollutant emissions from various sources.

Program efforts to assess air toxics risks were limited

Air toxics such as benzene and chloroform are chemicals that are known or suspected to cause cancer or other serious health problems. Primary sources for most of the air toxics in Florida are gasoline and diesel engines, although prescribed burning may contribute to high levels in some counties.

In 2002, the EPA released to the department its estimates of the amount of air toxics that people breathe and the resulting health risk for the year 1996. These risk estimates were based on the EPA's 1996 emission inventory, the most complete and up-to-date available data, and estimates of population exposure to these chemicals. The department's analysis of EPA estimates found that risk levels of 14 air toxics exceeded benchmark concentrations in Florida. Thirteen of the 14 air toxics are likely or known to cause cancer. Generally, highly urbanized areas had the highest estimated levels of air toxics.

The department's analysis also found that estimated risk levels in some Florida counties were among the highest in the nation. The estimated levels of certain air toxics in Broward, Dade, Hillsborough, Leon, Orange, Osceola, Pinellas, and Seminole counties were among the top 10% of all U.S. counties.[11] The EPA's estimates were confirmed in some Florida counties that monitor for air toxics.

Our 2002 report noted that the state had limited information for assessing health risks posed by air toxics. The department did not monitor air toxics in the state and only six counties conducted monitoring to detect these chemicals.

We also reported that the department did not have sufficient data to assess trends in air toxics because it did not require major facilities to report air toxics emissions data until 2000. These facilities were not required to report such data again until 2005. As a result of this limited data, the department could not determine the health risks posed by air toxics throughout the state.

We concluded that state and local pollution control managers should be prepared to implement an air toxics program. Accordingly, we recommended that the department develop a statewide air toxics plan, in consultation with local pollution control programs and the EPA, that identifies statewide and local air toxic concerns and presents strategies to address them. We also recommended that the department present the plan to the Legislature prior to the 2003 legislative session.

Current Status

Florida's air quality continues to be good

The state continues to meet federal and state ambient air quality standards. The department reports that citizens in Florida counties where air quality is monitored experienced good or moderate quality air 99.8% of the time in Fiscal Year 2002-03. This was slightly better than prior years, as air quality met these standards 99.3% of

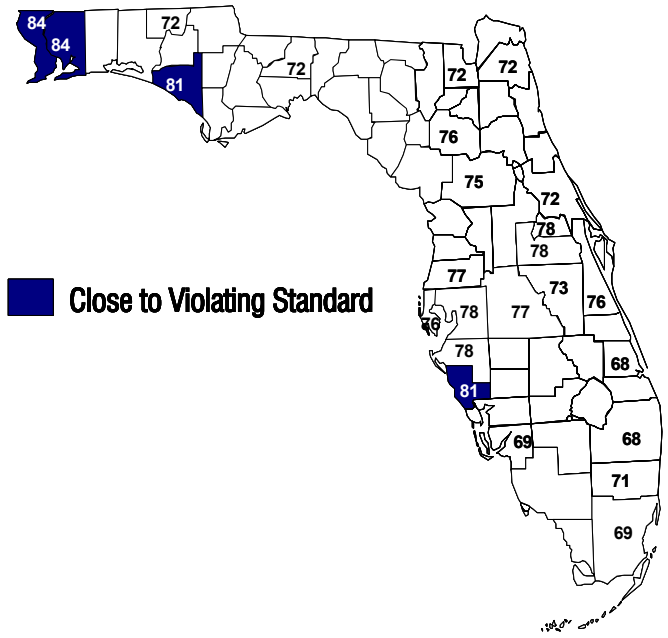
[9] An exceedance occurs when the amount of a pollutant in the ambient air is greater than the air quality standard. A violation of the ambient standard is based on several factors. An example of a violation would be four or more exceedances of the one-hour ozone standard over a three-year period.

[10] During most of the period covered by our report, the EPA's standard for ozone was 0.12 parts per million during a one-hour period. The EPA proposed a new, more stringent eight-hour ambient air quality standard for ozone (.08 parts per million during an eight-hour period) in 1997 after studies found that adverse health effects occur at lower levels of ozone for prolonged periods. After years of litigation, a federal appeals court upheld the new standard on March 26, 2002.

[11] Department staff believe that the EPA estimates significantly overstate the level of formaldehyde in Osceola County. They assert that Osceola County would have to burn 133 times the amount of natural gas burned statewide in 1996 in order to produce the EPA's estimated formaldehyde level.

the time in Fiscal Year 2000-01. Further, no counties violated the EPA's eight-hour standard for ozone concentrations during the period from 2000 to 2002. Only four counties—Bay, Escambia, Santa Rosa, and Sarasota—were close to violating the standard. (See Exhibit 1.) This was an improvement over prior years. As noted earlier, our 2002 report found that two counties violated the standard and five counties were close to violating it during the period from 1999 to 2001.

Exhibit 1
Only Four Counties Would Come Close to Violating the EPA's New Ozone Standard [1]



[1] The EPA considers an area in nonattainment if the average of the annual fourth highest ozone readings at any ozone monitor for any three-year period equals or exceeds 85 parts per billion. Counties with readings of less than 85 parts per billion but more than 79 parts per billion were close to violating the standard. Exhibit 1 shows a three-year average (2000-2002) of the fourth highest daily value of those counties with monitors.

Source: Department of Environmental Protection.

Department managers say they intend to propose legislation during the 2004 legislative session that would encourage utilities to voluntarily reduce emissions from their older power plants. These plants emit mercury, nitrogen oxides, and other pollutants.

The department has not adopted a statewide air toxics plan

The department has not implemented our recommendation to develop a statewide air toxics plan. Department managers gave several reasons for not developing this plan:

- the department lacked the resources to develop and implement an air toxics plan;
- it is premature to develop a risk-based air toxics program before the necessary federal structure called for by the Clean Air Act is in place; and
- most air toxics are emitted from mobile sources that are regulated by federal rules.

Nonetheless, the department is in the process of taking some steps to address issues related to air toxics. For example, department managers report that that they plan to coordinate air toxics inventories, develop capabilities to perform air toxic risk assessments, and develop a system for compiling air toxic data and reporting it to the EPA. They also said department and local air program employees are planning to attend an EPA-sponsored training workshop on performing air toxics risk assessments in March 2004. This workshop will precede the expected release of the EPA's latest air toxics assessment data in the late spring of that year.

Further, in August 2003, the department reassigned an employee to coordinate air toxics monitoring activities among the local air programs, the department, and the EPA. The employee's duties also include analyzing air toxic data.

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