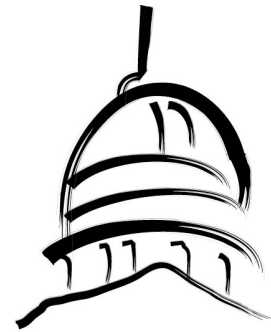


Air Management Programs



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*Prepared by
Kendra Bonderud*

*Wisconsin Legislative Fiscal Bureau
One East Main, Suite 301
Madison, WI 53703*

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Air Management Programs

Introduction

In 1990, Congress adopted the first comprehensive modifications to the federal clean air law since the 1970s. The Clean Air Act Amendments of 1990: (a) created stricter standards on emissions from motor vehicles; (b) called for the use of alternative clean fuels; (c) created additional controls on industrial facilities; and (d) established other control measures. In general, states are required to: (a) develop and submit to the federal government a series of implementation plans which detail the programs and controls the state will utilize to reduce emissions and attain acceptable air quality levels; and (b) implement the plans to attain specific air quality levels by established dates or risk further federal requirements and eventually sanctions.

The federal Environmental Protection Agency (EPA) is responsible for federal implementation of the Clean Air Act. In order to comply with the requirements of the amended Act, Wisconsin adopted 1991 Wisconsin Acts 302 and 269. The Department of Natural Resources (DNR) is responsible for development and oversight of the state's programs to comply with federal requirements. DNR is provided authority to conduct air quality programs under Chapter 285 of the statutes and administrative rules in the NR 400 series. It issues necessary construction and operation permits for air emission sources, monitors air quality across the state and enforces air quality standards. The Department of Transportation (DOT) and regional planning commissions assist in the administration of certain provisions regarding

vehicle inspections and other transportation control measures.

The Clean Air Act Amendments of 1990 called for a gradual implementation of many of its provisions. EPA has issued regulations during the 1990s that require states to reduce emissions of ozone, nitrogen oxide, particulate matter and other pollutants over several years. Federal clean air requirements are having major impacts on individuals and businesses in Wisconsin. In particular, DNR has submitted a series of plans to EPA that outline the measures the state will take in reducing ozone emissions in the southeastern portion of the state. DNR has initiated several programs and instituted several controls necessary to create plans that would reduce ozone emissions and move the state toward meeting national ozone standards. DNR has also established a program to issue permits to new and existing stationary sources of air emissions.

This paper provides an overview of the major federal provisions that affect Wisconsin, a discussion of actions required of the state and the state's plans and programs for meeting federal clean air requirements. The paper describes the air management activities of the DNR, including issuance of air emission permits, compliance and monitoring activities, development of state implementation plans in compliance with federal requirements, special air studies, other air management programs, and funding sources for DNR air management programs.

MAJOR FEDERAL CLEAN AIR ACT REQUIREMENTS

National Ambient Air Quality Standards

Under the Clean Air Act, the Environmental Protection Agency (EPA) establishes national ambient air quality standards (NAAQS) based on scientific determinations of the threshold levels of air contaminants below which no adverse effects will be experienced by humans or the environment. Ambient air standards relate to the quality of the air we breathe. In comparison, emission limits relate to the quality of the air emitted from a pollution source.

Under ambient air standards, the concentration of pollution below the standards is considered acceptable. Where air pollution exceeds the standards, emissions standards are established to reduce air emissions sufficiently to improve air quality to meet and maintain the ambient air quality standard. In addition, where the standards are met, the Clean Air Act includes requirements for some pollutants in order to prevent the deterioration of air quality.

The standards are set based on time of exposure, in recognition that individuals can tolerate higher levels of exposure to pollutants for short periods of time compared to prolonged exposure. Generally, there are two standards for each pollutant: (a) primary standards establish the air quality required to prevent any adverse impact on human health; and (b) secondary standards establish the air quality required to prevent any adverse impacts on vegetation, property, or other aspects of the environment.

EPA has adopted air quality standards for six "criteria pollutants," including ozone, sulfur dioxide, nitrogen dioxide, particulate matter (solid or liquid matter suspended in the atmosphere) that is less than 10 microns in diameter (PM10) or less than 2.5 microns in diameter (PM2.5), carbon monoxide and lead. If EPA adopts an air quality standard, then DNR must adopt a standard for the pollutant. Generally, state law prohibits DNR from adopting a standard that is more restrictive than the federal standard. However, if a federal air quality standard is relaxed by EPA and DNR determines that additional restrictions are needed to protect the public health or welfare, a standard more restrictive than the federal standard may be adopted, or a standard for an air contaminant not regulated by EPA may be adopted. DNR adopts primary and secondary standards by administrative rule. In 1987 EPA abolished the primary and secondary standard for total suspended particulate matter, but DNR retained the secondary standard based on public welfare concerns.

Ozone

Ozone is a primary component of smog, which is a widespread and persistent urban pollution problem. Large industrial facilities, motor vehicles and a variety of small sources that in total result in sizeable emissions, all play a role in ozone formation. Individuals exposed to high ozone concentrations may experience a significant health risk, especially the elderly, young children and people with respiratory difficulties. Health studies have shown exposure to moderate levels of ozone causes increased respiratory problems, such as asthma and emphysema and leads to permanent changes in lung structure. Ozone can also damage

crops, trees, rubber, fabrics and other materials. Air pollution sources do not directly emit ozone, but do emit air contaminants that are precursors to ozone. Ozone is created when volatile organic compounds (VOCs) and nitrogen oxides (NOx) interact in hot sunlight to create ozone. VOCs are emitted from many sources, including solvents used by industry, household products and motor vehicles. While VOCs are not listed as criteria air pollutants, EPA and state efforts have targeted VOCs for reduction as part of smog control efforts.

Nitrogen oxide

Major sources of nitrogen oxides are power plants, factories, other industrial combustion sources and automobiles. The criteria pollutant nitrogen dioxide is one type of NOx. In addition to being a component of ozone, NOx is a component of particulate matter and acid rain. Acid rain is formed when emissions of sulfur dioxide and nitrogen oxides undergo chemical changes in the atmosphere and return to the earth's surface as acid rain, which causes damage to lakes, forests, other ecosystems and buildings.

Particulate Matter

Particulate matter is also called haze, dust, smoke or soot, and is comprised of tiny pieces of solid particles and liquid droplets that refract light and create haze or brown clouds. Examples of sources of particulate matter include trucks, power plants, industrial processes, crushing and grinding operations, windblown dust, wood stoves, unpaved roads and agricultural plowing. Particulate matter that is 10 microns or smaller (PM10) can cause nose and throat irritation and bronchitis, respiratory and cardiovascular problems for susceptible people. Fine particulate matter that is 2.5 microns or smaller (PM2.5) can penetrate more deeply into the lungs compared to larger particles. EPA studies have concluded that fine particles are more likely than coarse particles to contribute to health effects such as premature deaths and hospital admissions, at

lower concentrations than allowed by the PM10 standards.

Nonattainment Areas

Areas are designated as "nonattainment" for a specific pollutant if the area fails to meet the NAAQS for the pollutant. Almost all major urban areas experience periods when concentrations of air pollutants exceed one or more NAAQS. Different categories of nonattainment are established for ozone and carbon monoxide based on the degree of the area's pollution problem. The more severe the air quality problem and, therefore, corresponding nonattainment classification, the more control measures a nonattainment area must implement. States must identify and implement additional controls if the measures required by the Clean Air Act do not achieve required standards.

Currently, ozone is the main air contaminant for which Wisconsin counties are in nonattainment. A region is considered in nonattainment for ozone if a violation of the ozone standard occurs within the region. The boundaries of a region can be determined on the basis of demonstrated air quality monitoring data. However, in large metropolitan areas, the boundary of the nonattainment area must include the entire metropolitan statistical area.

Ozone nonattainment area classifications were established by the 1990 Clean Air Act Amendments, based on the severity of each area's ozone problems. The categories, from least contaminated to the most contaminated, are: (a) marginal; (b) moderate; (c) serious; (d) severe; and (e) extreme. Six Wisconsin counties are designated as being in severe nonattainment of the national one-hour ozone standards, including Kenosha, Milwaukee, Ozaukee, Racine, Washington and Waukesha.

Manitowoc County is designated as a moderate

ozone nonattainment area. Door County is designated as a "marginal rural transport" county, and is not required to meet certain requirements placed on the other ozone nonattainment counties. In late 2002, DNR requested that EPA redesignate Manitowoc and Door counties as being in attainment. DNR anticipates that EPA will redesignate the two counties as being in attainment in the spring of 2003. Walworth, a marginal nonattainment county, and Kewaunee and Sheboygan, moderate nonattainment counties, were redesignated as in attainment in August, 1996.

Wisconsin has one remaining area designated for nonattainment. A portion of the City of Milwaukee is in nonattainment of particulate matter standards.

State Implementation Plan Requirements

The specific control measures used by states to achieve compliance with national ambient air quality standards are adopted through the development of, and revisions to, a "state implementation plan" (SIP). The SIP is a series of documents and regulations that identify, in great detail, the measures a state is taking to control emissions of regulated pollutants. The SIP must also demonstrate how these measures will allow the state to attain national ambient air quality standards by specified deadlines for each classification of nonattainment. Areas with worse air quality classification will have to implement more controls. As a result, the state's SIP will generally place more stringent controls on ozone pollutant emissions in the state's six severe ozone nonattainment counties.

The plans, required under the Clean Air Act, have specific deadlines for submission and EPA approval. If the state does not meet required deadlines, the state can be subject to further federal requirements and eventually sanctions. The SIP

must include the following general provisions.

1. Enforceable emissions limitations, control requirements, and schedules to achieve compliance with the Act.
2. Systems to monitor, compile and analyze data on air quality.
3. A permit program and a fee schedule to cover the costs of permitting.
4. Provisions that prohibit emissions which contribute significantly to nonattainment of an air quality standard or cause significant deterioration of air quality or visibility.
5. Applicable controls on interstate and international air pollution.
6. The assurance of adequate personnel, funding and authorities under state law to implement and enforce the SIP.
7. The required installation of monitoring equipment by stationary sources, reports on the monitored emissions and correlation of the monitored emissions to emission limitations.
8. Enforcement authority and procedures.
9. Provisions providing for the revision of the plan as required.
10. Requirements for consultation with local governments on applicable provisions and public notice if air pollutant levels exceed standards.
11. Air quality modeling to predict the effect of emissions on air quality standards.

Nitrogen Oxide State Implementation Plan

The EPA issued a rule, known as the "NOx SIP call," on September 24, 1998. The rule required 22

states, including Wisconsin, and the District of Columbia to reduce nitrogen oxide (NOx) emissions and address ozone transport issues. The NOx rule specified how much each state must reduce NOx emissions but does not mandate which sources must reduce NOx emissions or how states must make the emission cuts. Each state was required to submit a state implementation plan (SIP) to EPA in September, 1999, which addressed how the state will decrease emissions.

The NOx SIP call was challenged in federal court. On March 3, 2000, the Federal District Court of Appeals for the District of Columbia upheld the NOx SIP call for 19 of the 22 states. The court found that EPA did not provide information to support including Wisconsin in the NOx SIP call and the requirement that Wisconsin submit a NOx SIP was removed.

Sanctions for Deficient State Implementation Plans

If a designated state does not submit a SIP, or submits a SIP that is judged to be inadequate to achieve attainment of the standards, EPA may impose sanctions on the state. If a state does not rectify its SIP situation and sanctions are enacted, EPA develops a federal implementation plan in order to move the state toward attainment. In general, if EPA finds a SIP submittal incomplete, the state is given eighteen months to rectify the submittal before federal sanctions begin, and sanctions would apply until the plan deficiency is corrected.

Sanctions include: (a) a requirement that new industrial projects provide emission offsets at a ratio of up to two tons of emission reductions to one ton of new emission increases; (b) the withholding of federal highway aids, except for: (1) projects principally for safety improvements and (2) a specific list of project types which have a secondary impact of reducing vehicle emissions; and (c) EPA implementation and enforcement of a federal

implementation plan (FIP) in place of the state plan or portions of plan which is determined to be deficient.

Types of Pollutant Sources

Pollutant sources are generally grouped into categories based on the characteristic of the pollutant source. The Act establishes different control mechanisms for each type of source, and in some cases, subdivides the source for purposes of setting control requirements. These categories of pollutant sources include: (a) stationary sources, which generally include fixed sources of pollution, such as factories, power plants, gas stations and other business facilities; (b) mobile sources, which generally include any motor vehicle equipment that is capable of emitting any air pollutant while moving, such as automobiles, buses, trucks and motorcycles; and (c) area sources, which encompass all other sources too small and numerous to regulate individually, generally including lawn mowers, paints, solvents, asphalt paving, bakeries, autobody finishing shops, degreasing supplies, farm equipment, pesticides, small graphic arts shops, and consumer products. Area sources are regulated as a group. Nonroad engines can either be mobile or area sources and include industrial engines powered by gasoline, liquid propane gas or compressed natural gas, off-road vehicles, snowmobiles, all-terrain-vehicles and diesel marine engines.

Stationary Sources

Many of the Clean Air Act requirements for stationary sources apply only to those facilities that emit pollutants greater than a certain quantity. These larger emitters of pollutants are referred to as major sources and often emit substantial quantities of sulfur dioxide and nitrogen oxide. The definition of a major source varies with the pollutant and the

severity of the pollution in the area in which the facility is located. For example, a facility emitting 50 tons per year of a pollutant in a highly-polluted area may be a major source subject to regulation, but the same facility located in a less polluted area may not be regulated. Minor stationary sources include all facilities that are not categorized as a major source. Major sources are the primary facilities subject to the requirements of the Act, although provisions exist for the application of restrictions to minor sources in certain cases.

A primary requirement for existing stationary sources in nonattainment areas is the installation or retrofit of equipment with emission controls. A determination of what controls are required may be made on a case-by-case review of each facility. However, EPA has adopted guidelines setting a generic method of controls that will meet the requirements for specified industrial categories. The facilities which must install control equipment are determined based on: (a) the amount of pollution emitted by the facility; (b) the severity of the pollution problem in the nonattainment area; and (c) the industrial category of the facility. The emission limits are referred to as reasonably available control technology (RACT).

Mobile Sources

Despite current emissions controls, mobile sources of air pollution continue to be the largest single source of ozone-forming pollutants and carbon monoxide emissions. They account nationally for approximately one-half of ozone-forming pollutants and 90% of carbon monoxide in urban areas.

Vehicular pollution can be reduced through: (a) purifying the fuel; (b) reducing exhaust and evaporative emissions; (c) reducing vehicle travel; or (d) improving vehicle flow on the highway system. The Clean Air Act includes requirements for fuel content in polluted areas, new emission standards for vehicles and transportation control measures.

Vehicular pollution control provisions include: (a) more stringent emission standards for automobiles, trucks and urban buses; (b) clean-fueled vehicle standards for fleets and cars in the most polluted areas; (c) required use of reformulated gasoline; and (d) vehicle emission inspection and repair requirements. Clean fuels, to be used in clean-fueled vehicle fleets, may include methanol, ethanol, or other alcohols (including any mixture containing 85% or more by volume of alcohol with gasoline), reformulated gasoline, diesel, natural gas, liquified petroleum gas, hydrogen or electricity.

In the most severely polluted areas, gasoline sold for vehicle use must be modified to reduce emissions. The fuel required is dependent on the pollutant of concern. Federal law requires use of reformulated gasoline (RFG) in areas of the state experiencing significant ozone problems. The fuel must provide specified reductions in emissions of toxic air pollutants year round and summertime reductions in VOCs and NO_x. The components of RFG must meet certain refining and processing requirements.

RFG must also contain oxygenates to reduce carbon monoxide and toxics. Oxygenates are additives such as ethanol or ethers such as methyl tertiary butyl ether (MTBE). RFG sold in Wisconsin primarily uses ethanol.

In Wisconsin, six severe nonattainment counties (Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha) are subject to the reformulated gasoline requirements. Phase 1 reformulated gasoline requirements were effective in January, 1995. Phase 2 RFG requirements went into effective in January, 2000, and required further refinement of the components of reformulated gasoline to provide additional reductions in ozone pollutants. The Department of Commerce is responsible for establishing the minimum grade specifications, based on federal requirements.

The Clean Air Act Amendments of 1990 require certain centrally-fueled fleets of ten or more motor

vehicles to operate clean fuel vehicles and use clean fuels. This generally involves the use of vehicles fueled with alternatives to petroleum such as natural gas and electricity.

Gasoline station operators located in moderate or worse ozone nonattainment areas are required to install gasoline vapor recovery systems on dispensing equipment (referred to as stage II vapor controls). Vapors emitted include toxic air pollutants, such as benzene, in addition to ozone-forming pollutants. Facilities selling less than 10,000 gallons per month and independent marketers selling less than 50,000 gallons per month are exempt.

The required installation of stage II controls was phased-in over the three years of 1993 through 1995. The state submitted the elements of its vapor recovery program to EPA as part of the state's 1992 SIP requirements. DNR's compliance program enforced the requirements that owners or operators install the required stage II equipment. DNR's current compliance efforts focus on the proper operation and maintenance of existing required systems.

For moderate or worse ozone nonattainment areas, the Clean Air Act requires the state to demonstrate that current vehicle usage, emissions, congestion levels and other factors are consistent with the levels used by the state for the purpose of demonstrating future attainment of air quality standards. If the current levels exceed the levels projected, then the state must implement transportation control measures as part of their overall air quality plan to reduce emissions. For severe areas, the Act requires a state to offset increases in vehicle emission due to increased vehicle miles traveled over a 1990 base level. These demonstrations occur as part of the annual process of the development of transportation plans by the Wisconsin Department of Transportation. DNR submitted the required transportation control measure planning requirements to EPA as part of

the State's 1992 SIP submittal.

Area Sources

The Clean Air Act does not include specific statutory requirements or deadlines that area sources must meet, except as necessary to obtain required emission reductions and demonstrate attainment. EPA establishes most area source controls. However, states have implemented area source controls as part of their emission reduction ozone attainment plans submitted to EPA.

EPA has regulated the volatile organic compound content of paints, stains, and architectural coatings used by area sources. The regulations vary depending on the type of coating and source using the coating.

Nonroad Engines

EPA adopted regulations for non-road engines, beginning in 1995, which affect a broad range of engine types, including recreational vehicles, industrial equipment, lawn and garden equipment, off-highway vehicles, construction equipment and farm equipment. In Wisconsin, these regulations primarily affect small engine manufacturing plants.

In 2002, EPA adopted new standards for emissions of nitrogen oxides, hydrocarbons and carbon monoxide from several types of previously unregulated nonroad engines. The requirements and implementation timeline vary depending on the type of engine or vehicle. The emissions standards will apply to all new engines sold in the United States and any imported engines manufactured after the standards begin.

Large industrial spark-ignition engines will have to meet a tier one of emissions standards beginning in 2004 and a stricter tier two beginning in 2007. These engines include certain engines over 25 horsepower such as used in forklifts, electric generators, airport baggage transport vehicles,

certain farm and construction uses, warehouses, and ice-skating rinks. Recreational vehicles covered by the new standards include snowmobiles, off-highway motorcycles and all-terrain-vehicles. New emissions standards for recreational vehicles will be phased in beginning in 2006. Recreational marine diesel engines over 50 horsepower used in recreational boats will have to begin meeting phased emissions standards beginning in 2006, depending on the size of the engine.

Ozone

Most EPA and state efforts to date have focused on ozone because of the widespread problem with smog in the United States. EPA established a one-hour ozone standard of a concentration of 0.12 parts per million (ppm). Violation of the standard currently determines whether a region is in nonattainment. An area violates the one-hour standard if the number of days in which the standard was exceeded exceeds three during a three-year period.

EPA adopted an eight-hour ozone standard of a concentration of 0.8 ppm in July, 1997. An area is considered to be violating the eight-hour standard if the average of the fourth highest eight-hour concentrations during each of three consecutive years is equal to or greater than 0.85 ppm. (The 0.85 ppm is due to the rounding method used by EPA). The eight-hour ozone standard was challenged in court. The United States Supreme Court issued a decision in February of 2001 that upheld the eight-hour standard. EPA has not yet designated any areas as in nonattainment of the eight-hour standard.

EPA agreed to settle a lawsuit with several environmental groups that addresses nonattainment areas for the eight-hour ozone standard. EPA did not designate nonattainment areas for the eight-

hour ozone standard in the appropriate time period as required by the Clean Air Act. The settlement agreement, to be filed in Federal Court in early January, 2003, requires that EPA finalize the nonattainment designations for the eight-hour ozone standard by April 15, 2004. To complete these designations by the April, 2004, deadline, EPA has asked that the Governors of each state recommend nonattainment areas by April 15, 2003. Based on the most current three years of ozone monitoring data, DNR has made a preliminary determination that there are 10 counties in Wisconsin that would be designated as eight-hour ozone nonattainment areas: Door, Kenosha, Kewaunee, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha.

For the ozone nonattainment area, control requirements apply to the two air pollutants that are precursors of ozone, VOCs and NOx. The Clean Air Act Amendments allow for states to petition for a waiver from the NOx requirements if they can show NOx control measures do not help ozone nonattainment areas attain national ozone standards. Preliminary modeling results in Wisconsin demonstrated that NOx reductions in high ozone areas of Chicago and Milwaukee can exacerbate the ozone problems in areas immediately downwind of these metropolitan areas while having positive impacts on ozone in areas further downwind that are, for the most part, already in attainment. Wisconsin requested a waiver on any further NOx reductions and EPA approved the waiver in February, 1996. EPA may reevaluate the waiver as it reviews future DNR attainment plan submittals.

Under the reasonable further progress provision of the Clean Air Act, the state was required, by 1996, to submit a 15% reduction plan of ozone forming VOCs from a 1990 base level of emissions, adjusted for any emission reduction accruing from Clean Air Act mandated controls implemented between 1990 and 1996. EPA approved the Wisconsin plan in 1996.

In addition, beginning in 1996, the state was required to implement plans to achieve an additional 3% annual reduction in VOCs in the state's severe nonattainment counties. The "rate-of-progress" requirement continues annually thereafter until the area reaches attainment or until the required attainment date in 2007 for the state's severe nonattainment counties.

For severe ozone attainment areas, state rate-of-progress plans are required to meet milestone year VOC emission reductions. Beginning with emissions in 1996 and every third year thereafter (1999, 2002, 2005 and the 2007 attainment deadline), the state must demonstrate that the VOC emission reductions for the preceding period have been achieved. EPA guidance allows NO_x reductions as a substitute for VOC reductions for rate of progress milestones beginning in 1999. Wisconsin has met the 1996 and 1999 milestones. These activities are described further in Chapter 2 in the section on ozone and state implementation plan development.

If the rate-of-progress milestone is not met, the state must: (a) have the area reclassified to the next higher nonattainment classification; (b) implement additional approved measures to meet the next milestone (these measures must be able to go into effect without further legislative actions or administrative rules); or (c) adopt an economic incentive program. An economic incentive program may include: (a) emission fees; (b) a system of marketable permits; (c) state fees on the sale or manufacture of products contributing to ozone; (d) requirements to reduce vehicle miles traveled; or (e) other transportation control measures.

Ozone Attainment Deadlines

The 1990 Amendments establish categories of ozone nonattainment based on the severity of the pollution problems. Deadlines to achieve compliance are established to provide areas with the greatest pollution problem the longest time to reduce those pollution levels. As mentioned earlier,

eight Wisconsin counties (Door, Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Washington and Waukesha) are in nonattainment of national one-hour ozone standards. Door County was designated as a "rural transport" county with an attainment deadline of 1993. Manitowoc County is a moderate nonattainment area with an attainment deadline of 2007 (formerly 1996). Door and Manitowoc counties have implemented all required control programs but are still designated as nonattainment. DNR anticipates that EPA will approve DNR's request to redesignate the two counties as in attainment in the spring of 2003. The remaining six counties are severe nonattainment counties and are required to meet an attainment deadline of 2007.

States were required to submit attainment demonstration plans for the one-hour ozone standard by December, 2000. Based on EPA's current schedule for designating eight-hour nonattainment areas, states will have to submit attainment demonstration plans for the new eight-hour ozone standard by April, 2007. (The Wisconsin plan submitted in December, 2000, and approved in October, 2001, is discussed in the next chapter on state activities.)

Failure to Attain Air Quality Standards

The 1990 Amendments establish planning procedures and penalties for states that do not achieve air quality standards by the applicable attainment date. For Wisconsin, this would currently apply to the requirements established for the counties in nonattainment for ozone. If the state's nonattainment areas fail to attain national ozone standard by the required deadline, DNR must submit a revised state implementation plan prescribing control measures necessary to meet the air quality standards, including measures prescribed by EPA. Generally, attainment under the revised SIP would be required within five years, although EPA may extend the period to 10 years.

Marginal, moderate and serious ozone nonattainment areas will be "bumped up" to the next higher nonattainment classification, or the nonattainment classification of the area at the time EPA determines that attainment has not been achieved, whichever is more stringent. This reclassification results in the application of additional control measures required under the higher classification. Manitowoc County has protection from bump-up procedures because the transport of air pollution from outside the county is considered to have an overwhelming effect on the air quality in Manitowoc County. Sanctions for failure to attain ozone air quality standards will not apply to Door County, since the county is subject to ozone transport from outside the county and all required controls programs have been implemented.

If severe ozone nonattainment areas fail to meet air quality standards, then each major stationary source will be assessed an annual fee of \$5,000 (adjusted for inflation) for each ton of VOC emissions which the source emitted in excess of 80% of a baseline amount. In addition, VOC reduction requirements of 3% per year will continue to apply to the area until the standard is obtained. In severe ozone nonattainment areas, if the ozone level is above a specified threshold or if the area has failed to meet its most recent emission reduction milestone, the new source review standards for extreme nonattainment areas will be applied (including lower tonnage thresholds to be a regulated source and higher offset ratios) for new or modified sources.

Particulate Matter

In July, 1997, EPA adopted a new national ambient air quality standard for fine particulate matter 2.5 microns or less (PM2.5) in addition to the existing standard for particulate matter 10 microns or less (PM10). The current PM10 standard

is an annual average of 50 micrograms per cubic meter and a daily average of 150 micrograms per cubic meter. The new PM2.5 standard is a 24-hour average of 65 micrograms per cubic meter and an annual average of 15 micrograms per cubic meter. To determine if an area meets the annual standard, EPA will collect data on the yearly average PM2.5 levels for three consecutive years, and if the average of the three yearly averages is less than 15 micrograms per cubic meter, the area will meet the standard. To determine an area's attainment status for the 24-hour standard, EPA will calculate the 98th percentile monitored concentration, and if the averages of those concentrations for a three-year period are less than 65 micrograms per cubic meter, the area will meet the standard.

EPA required states to establish monitoring sites and collect data on fine particulate matter between 1998 and 2002. Wisconsin's PM2.5 monitoring network began operating in 1999. The PM2.5 standard was challenged in court. The U.S. Supreme Court issued a decision in February of 2001 that upheld the PM2.5 standard. EPA will identify nonattainment areas do not meet the PM2.5 standard in 2003 or 2004. Those areas that do not meet the PM2.5 standard would then need to take steps to reduce fine particulate matter emissions.

Air Toxics

EPA administers a separate regulatory framework for toxic substances not covered by national ambient air quality standards. Toxic substances can potentially cause significant effects at low concentrations in localized instances. They can cause or are suspected of causing cancer or other serious human health problems, or cause adverse environmental and ecological effects. Air toxics include certain heavy metals, chemicals and pesticides.

The 1990 Clean Air Act Amendments established a list of 189 hazardous air pollutants (HAPs) that must be regulated within 10 years. EPA has deleted one pollutant from the list and may delete or add a substance if scientific data demonstrates that such a change is appropriate. Toxics are regulated through a two-phase strategy. The first phase is based on technology standards and requires industries to install maximum achievable control technology (MACT). The second phase of control will require facilities to adopt additional controls if the facilities have emissions remaining after MACT standards have been met which will create potentially harmful concentration of air toxics, termed residual risk.

Prior to 1990, Wisconsin had adopted several provisions related to the control of the emission of toxic air contaminants. As a result, 437 toxic chemicals are currently regulated under state law. The state list partially overlaps with the federal list of 188 HAPs.

During 2000 through 2002, DNR and an advisory group reviewed the potential addition or deletion of chemicals under state regulation. DNR held public hearings in August, 2002, to discuss proposed changes to the list of regulated toxic chemicals that would add 153 chemicals and delete five chemicals from state regulation. No state rule exists for 38 toxics on the federal list but the state enforces the federal standard for these toxics (this would decrease to 29 toxics under the proposed rule).

Required Controls

EPA has identified categories of sources that emit HAPs. Major sources within the categories are subject to regulation. A major source is a facility that may emit ten tons per year of any single HAP, or 25 tons per year of any combination of HAPs. In certain cases, facilities with lower emissions such as dry cleaners may be regulated. Requirements under an area source program will reduce toxic air

emissions of the thirty most serious urban area source pollutants. Standards are also set for municipal waste incinerators and facilities handling chemicals whose accidental release would threaten public health or the environment.

EPA was required to adopt maximum achievable control technology (MACT) standards for all major sources of the 188 HAPs by November 15, 2000. Between 1993 and September 30, 2002, EPA issued or delisted 71 air toxics standards for many major industrial sources, including chemical plants, steel mills, lead smelters, as well as some categories of smaller sources such as dry cleaners. As a standard is adopted, facilities must achieve compliance within three years, with the possibility of a one-year extension. Industrial source categories required to meet the standards will be phased-in over 10 years.

EPA failed to adopt approximately 20 MACT standards by May 15, 2002 (18 months after the deadline), so federal law required the states to establish control standards on a case-by-case basis. As a result, affected sources were required to submit Part 1 of a two-part application to DNR as the state permitting authority by May 15, 2002. The deadline for Part 2 of the application is May 15, 2004, but is being revised under a consent agreement following litigation. After a complete Part 2 application is received, DNR will have 18 months to issue an operation permit containing the applicable case-by-case MACT determination.

Residual risk standards are to be set within eight years after a MACT standard is established for a source category (nine years after the first round of MACT standards). The first MACT standards were completed in the fall of 1993. EPA has not issued any residual risk standards but is expected to begin issuing them in 2003.

While the MACT standards require the maximum achievable degree of emissions reduction, technological feasibility and cost are considered

when setting the standards. Stricter controls are required for new facilities than for existing facilities. The controls may involve: (a) changes in equipment, design or operational methods; (b) process changes; (c) the substitution, reuse or recycling of materials; (d) work practice changes; (e) collection, capture, or treatment of pollutants released from a process, stack or other points; or (f) operator training and certification. For example, reductions will likely be achieved by identifying and controlling routine small leaks of substances, involving valves, flanges, pumps, compressors, caps and seals.

EPA directly administers an early reduction program that allows an existing facility to receive a six-year extension to meet MACT standards if the facility achieves a 90% reduction in emissions (95% for hazardous particulates) prior to the time that the standard is proposed, for a total compliance period of ten years. No facilities in Wisconsin have yet opted for an extension under this program.

Accidental Releases

EPA administers a regulatory program to address accidental or catastrophic releases of highly toxic air emissions. EPA has identified a list of at least 100 extremely hazardous air pollutants, based on: (a) the severity of acute health effects; (b) the likelihood of accidental releases; and (c) the potential magnitude of human exposure. While DNR notifies the industrial facilities in the state of the federal regulatory requirements for the pollutants on the federal list, EPA administers the regulatory aspects of the program. Facilities are required to identify possible hazards and develop risk management plans to be submitted to EPA. A federal Chemical Safety and Hazard Identification Board investigates accidents and makes recommendations regarding accident prevention.

Urban Air Toxics Strategy

EPA was required to complete a final urban air toxics strategy by June, 1999. It completed the final

strategy in July, 1999, that identified 33 priority air toxic pollutants (from the larger list of 188 HAPs) that pose the greatest threat to public health in urban areas. EPA released a final workplan for implementing an air toxics strategy in October, 2001, and is in the process of developing guidance and rules to implement the strategy.

The urban air toxics strategy will target reductions in the emission of these pollutants in urban areas from major industrial sources, smaller stationary sources and cars and trucks. The strategy describes activities that will be undertaken to set emission standards for HAPs, develop local and community-based initiatives to focus on specific pollutants and community risks, conduct additional monitoring and research and educate and obtain input from affected people about the strategy.

Permits

The Clean Air Act Amendments of 1990 require sources that emit air pollution to obtain a construction (new source) permit before beginning construction of the air pollution source and an operation permit to operate the source. A permit includes information about which pollutants are being released, establishes detailed limits on the emissions of air contaminants, establishes a maximum increase over a baseline of emissions and includes related requirements such as monitoring, record-keeping and reporting. The permit incorporates requirements of the state implementation plans into specific requirements for an individual facility.

Types of activities that may require a permit include: (a) use of adhesives, paints, inks or other solvents that cause emissions of VOCs and HAPs; (b) fuel use (excluding electricity) that results in emissions of carbon monoxide, sulfur dioxide, NOx and some HAPs; and (c) grinding, sanding,

welding, material handling or other activities that create dust or fumes that emit particulate matter and some HAPs. Types of businesses that may need a permit include: (a) metal parts coating or autobody refinishing; (b) food products and non-durable goods; (c) chemical, rubber and plastic products; (d) paper, printing and publishing; (e) lumber, wood products and wood furniture; (f) primary metals industry; (g) health services; (h) combustion sources; and (i) road paving material production.

EPA must administer an operation permit program if the state fails to do so. Wisconsin administers an EPA-approved operation permit program that became effective in April, 1995. A federal operation permit is required for all facilities defined as major sources, many sources subject to a federal air toxics regulation, and many facilities subject to federal new source standards. Generally, major sources for operation permits include facilities that have the potential to emit any one of the following: (a) over 100 tons per year of any criteria pollutant or 25 tons per year of VOCs in severe nonattainment areas; (b) ten tons per year of any federal HAP; or (c) 25 tons per year of all combined federal HAPs.

The federal construction permit requirements vary depending on whether or not the facility is located in a nonattainment area. Facilities in nonattainment areas must meet more stringent standards. In areas that currently meet air quality standards, requirements are designed to prevent industrial growth from causing a significant deterioration of the air quality. Regulated major source facilities are required to install equipment with emission controls being generally used by industry for new construction. Generally, major sources for construction permits in areas which meet the air quality standards include facilities that have the potential to emit over 250 tons per year of any criteria pollutant, or over 100 tons per year in specified source categories.

Major new sources of air pollutants in nonattainment areas are subject to more stringent new source review requirements. Facilities must install equipment with emission controls based on a "lowest achievable emission rate" (LAER) standard. This standard is the most stringent control technology and is determined by: (a) the most stringent emission limitation achieved in practice within an industry; or (b) the most stringent emission limit contained in any state plan. In addition, facilities in nonattainment areas must provide specified offsets to proposed increased emissions. Offsets are emission reductions obtained from other sources of air pollution in the nonattainment area. The Clean Air Act Amendments of 1990 apply these requirements to smaller sources of pollution.

Certain industries are subject to emission limits for specific pieces of equipment. EPA is authorized to identify categories of industrial pollutant sources and establish specific emission standards for equipment used by that category. The emission standards are based on the best system of emission reduction achievable, taking into account: (a) the cost of achieving the reduction; (b) energy requirements; and (c) non-air quality health and environmental impacts. As EPA promulgates standards, DNR is required by state law to adopt those standards as administrative rules. These equipment standards are incorporated into air permits. The standards are referred to as new source performance standards.

Acid Rain

Acid rain is formed when emissions of sulfur dioxide and nitrogen oxides undergo chemical changes in the atmosphere and return to the earth's surface as acid rain, causing damage to lakes, forests, other ecosystems, and buildings. Power plants are estimated to account for approximately

three-quarters of sulfur dioxide and one-third of nitrogen oxide emissions. Emissions of these substances often travel hundreds of miles.

The Clean Air Act Amendments of 1990 focus on reducing national power plant emissions of sulfur dioxide from approximately 20 million to ten million tons annually in two phases: the first phase effective in 1995 and the second in 2000. A power plant is allotted emissions allowances equal to the number of tons of sulfur dioxide it is allowed to emit. Power plants are given the option to reduce their emissions or acquire allowances from other facilities to achieve compliance. An emissions cap requires the maintenance of achieved reductions.

Phase I requirements apply to power plants which have a generating capacity and emissions rate above specified levels. Each regulated plant holds one emissions allowance for every ton of sulfur dioxide emitted each year, beginning January 1, 1995. The Amendments established the number of emissions allowances for 111 affected plants, including six Wisconsin plants (Edgewater, La Crosse/Genoa, Nelson Dewey, North Oak Creek, Pulliam and South Oak Creek). Plants that reduce emissions below the levels established in the Clean Air Act will create excess allowances. The facilities may use the excess allowances as follows: (a) retain, or bank, them to meet future electricity demand or for use during Phase II; (b) use the allowances at another plant under common ownership; or (c) sell them to another electric utility or other buyer.

During Phase II, effective January 1, 2000, the plants regulated under Phase I are required to further reduce emissions, and in general, all power plants will be subject to emissions allowance requirements. This phase establishes an annual cap on emissions nationally at 8.9 million tons, to be distributed by EPA, although provisions exist for EPA to distribute an additional 0.53 million tons in bonus allowances for a 10-year period. Generally, new plants will need to obtain allowances from existing plants or from EPA sales or auctions,

although certain new plants will be allocated limited allowances in an initial EPA distribution. Utilities may obtain additional emissions allowances from EPA by following EPA requirements.

The federal acid rain program also limits nitrogen oxides emissions. Limitations on nitrogen oxides emissions are based on the amount of fuel put into a boiler. The specific numerical nitrogen oxides limit is also dependent on the technical design category of the boiler.

Stratospheric Ozone Depletion

The federal Clean Air Act Amendments of 1990 require the phase-out of production and sale of chemicals that deplete stratospheric ozone. Federal stratospheric ozone regulations are implemented by EPA and are not delegated to the states. Some states, including Wisconsin, have implemented programs to protect stratospheric ozone.

While ground-level ozone has detrimental health effects and is regulated under nonattainment provisions of the Clean Air Act, ozone in the stratosphere (or upper atmosphere, approximately six to 30 miles above the earth) is considered beneficial. Stratospheric ozone filters the sun's harmful ultraviolet radiation and is considered a factor in potential global climate change. Increased ultraviolet radiation has been associated with: (a) increased incidence of eye cataracts; (b) increases in cases of blindness; (c) increased skin cancer deaths; (d) depression of human immune systems and resulting increases in infectious diseases; and (e) reductions in phytoplankton, a base food source in the ocean's food chain.

Chlorofluorocarbons (CFCs) and several other chemicals have been identified as a cause of the destruction of the stratospheric ozone layer. These chemicals are generally used: (a) in refrigeration

and air conditioning; (b) in foam packaging and insulation; (c) as solvents or aerosol propellants; (d) for soil fumigation; and (e) for produce sterilization. CFCs drift into the upper atmosphere and release chlorine that destroys the ozone layer.

The 1990 Amendments and subsequent federal law changes phased out the production and sale of most Class I chemicals by 1996, and the rest by 2001. Class I chemicals include, at a minimum, CFCs, halons, methyl chloroform, carbon tetrachloride and methyl bromide. In general, Class II chemicals will be restricted beginning in 2015 with a complete ban effective in 2030. The primary Class II chemical category is hydrochlorofluorocarbons (HCFCs), commonly used as a refrigerant, and considered significantly less damaging to the upper ozone layer than CFCs.

Beginning in 1992, Class I and Class II substances must be recaptured and recycled. It is prohibited to knowingly vent refrigerants from household appliances, commercial refrigerators and air conditioners. Beginning in 1994, substances contained in bulk in products were required to be removed prior to disposal of the products, and the products containing those substances must be equipped to facilitate recapture of the substances.

The 1990 Amendments banned nonessential CFC-containing consumer products, beginning in 1992 or 1994 depending on the type of product. Examples of banned products include party streamers, noise horns, noncommercial cleaning fluids for electronic and photographic equipment, aerosol products or other pressurized dispensers and plastic foam products. Labeling is required for all containers containing products made with Class I or Class II substances.

DNR Air Management Organizational Structure

The implementation of air quality programs is conducted by DNR's Bureau of Air Management in the Air and Waste Division, with support from staff in the Department's other programs. The Bureau of Air Management consists of eight sections in the central office in Madison, four of which serve specific industrial process functions. The other four sections deal with issues not related to specific industrial sectors. Air management staff in the five DNR regions perform permit review and issuance for new construction and existing sources, stack emission test plan approval, compliance inspections and enforcement, complaint investigation, inspection of asbestos demolition and renovation and industrial source emission inventory.

The industrial sections are responsible for permit processing, compliance, computer modeling of the air quality at stationary sources, monitoring, emission inventory, and development of program rules and guidance. The four industrial sections are: (a) the Combustion Process Section focuses on utilities, sources with industrial boilers and wood combustion sources; (b) the Printing and Coating Section focuses on the printing industry and miscellaneous metals manufacturing; (c) the General Manufacturing Section focuses on pulp and paper manufacturing, foundries and glass manufacturing; and (d) the Small Business Section focuses on activities such as dry cleaners, degreasing operations, stage II vapor recovery facilities at gas stations, asbestos demolition and removal, ozone-depleting refrigerant removal and

rock crushing plants. The other four sections are: (a) the Regional Pollutant and Mobile Source Section develops SIPs for major air pollutants such as ozone and fine particulate matter; (b) the Monitoring Section monitors air quality statewide; (c) the Environmental Studies Section addresses emerging environmental issues by performing activities such as toxics studies, health impact assessments, biomonitoring and climate change studies; and (d) the Management Section prepares budgets and workplans, administers grants, provides rule oversight, and handles finance, data and personnel management.

The air management program also has 10 statewide standing teams to ensure consistency, monitor and evaluate program performance, involve DNR staff statewide and make policy recommendations related to the specific functions of the team. The teams include: (a) construction (new source review) permits; (b) operation permits; (c) compliance and enforcement; (d) stationary source emission inventory; (e) stationary source modeling; (f) hazardous air pollutants; (g) air modeling field operations; and (h) air monitoring technical support and data management.

DNR convenes a 16-member Clean Air Act Task Force to obtain input from potentially affected parties and agencies involved in the state's effort to meet federal requirements. The task force is appointed by the Secretary of DNR and is made up of four members each from the following areas: local government; industry and labor; transportation; and environment and health. The Task Force also includes the Permits and Fees Committee and the Climate Change Committee. In addition, other

committees are sometimes convened with DNR staff and interested persons that advise the committees on specific issues. Two of these completed their recommendations during 2002, including a toxics rule technical advisory group and a mercury citizens advisory group. The Clean Air Act Task Force and its committees provide technical advice to the Natural Resources Board on the state's options in meeting federal requirements relating to air quality issues.

DNR Funding

DNR is authorized a total of 186.5 positions for air management activities in 2002-03. Approximately half of the staff is located in the Madison central office and the other half is in the DNR regional offices (located in Eau Claire, Green Bay, Madison, Milwaukee, Rhinelander and Spooner). Table 1 lists funding and positions authorized for DNR air management programs. The Bureau of Air Management is authorized 167.25 positions to conduct monitoring, permitting, planning and compliance activities. The Air and Waste Division is authorized 3.0 positions for divisionwide program management. The Division of Enforcement and Science is authorized 2.5 positions for law enforcement. The Division of Administration and Technology is authorized 6.0 positions for legal, administrative and information technology services. The Division of Customer Assistance and External Relations is authorized 7.75 positions for customer service and licensing, cooperative environmental assistance and communication and education strategy.

Table 1: 2002-03 DNR Air Management Authorized Funding and Positions

| Source | Fund Source | Funding | Positions |
|---|-------------|----------------|-------------|
| Bureau of Air Management | | | |
| Program Revenues | | | |
| Stationary Source Emission Fees | PR | \$8,943,600 | 99.00 |
| New Source Construction Permit Fees | PR | 1,498,200 | 19.50 |
| Asbestos Abatement Fees | PR | 344,400 | 2.00 |
| Ozone-Depleting Substance Fees | PR | 133,100 | 2.00 |
| Other Program Revenues | PR | 100,000 | 0.00 |
| Federal Grants | | | |
| Clean Air | FED | 2,947,800 | 38.50 |
| Leaking Underground Storage Tank | FED | 23,600 | 0.50 |
| Petroleum Inspection Fund | SEG | 1,373,900 | 5.00 |
| General Fund | GPR | <u>64,800</u> | <u>1.00</u> |
| Subtotal Bureau of Air Management | | \$15,429,400 | 167.25 |
| Air and Waste Division Management | | | |
| Stationary Source Emission Fees | PR | 363,100 | 3.00 |
| Division of Enforcement and Science | | | |
| Stationary Source Emission Fees | PR | 81,800 | 1.00 |
| Federal Clean Air Grants | FED | 120,000 | 1.50 |
| Division of Administration and Technology | | | |
| Federal Indirect Cost Reimbursement | FED | 944,000 | 5.50 |
| Petroleum Inspection Fund | SEG | 561,800 | 0.50 |
| Division of Customer Assistance and External Relations | | | |
| Stationary Source Emission Fees | PR | 593,800 | 6.75 |
| Petroleum Inspection Fund | SEG | <u>163,900</u> | <u>1.00</u> |
| Total DNR Air Management Funding | | \$18,257,800 | 186.50 |

The state's air management programs are funded from several sources, as shown in Table 2. Revenues for DNR air management programs from all sources were approximately \$21.1 million in 2000-01 and \$18.5 million in 2001-02, or an average of \$19.8 million per year over the two years. The majority (almost 56% in the two-year period of 2000-01 and 2001-02) of revenues for DNR air management programs come from stationary source emissions tonnage fees. Emission tonnage fees, along with federal Clean Air Act grants, the petroleum inspection fund and permit fees account for over 97% of program funding. DNR also collects other air pollution fees related to asbestos inspections and the regulation of ozone depleting refrigerants.

Table 2: Revenues for DNR's Air Management Programs

| Source | 2000-01 Revenues | 2000-01 % of Total | 2001-02 Revenue | 2001-02 % of Total | Total 2000-01 and 2001-02 | % of Total |
|------------------------------------|---------------------|-----------------------|--------------------|-----------------------|------------------------------|---------------|
| Stationary Source Emission Fees* | \$12,333,700 | 58.4% | \$9,732,200 | 52.5% | \$22,065,900 | 55.6% |
| Federal Clean Air Act Grants | 3,657,500 | 17.2 | 3,400,600 | 18.4 | 7,058,200 | 17.8 |
| Permit Review and Enforcement Fees | 2,449,900 | 11.6 | 2,589,400 | 14.0 | 5,039,300 | 12.7 |
| Petroleum Inspection Fund | 2,176,600 | 10.3 | 2,238,700 | 12.1 | 4,415,400 | 11.1 |
| Asbestos Abatement Fees | 228,900 | 1.1 | 228,200 | 1.2 | 457,000 | 1.2 |
| Ozone-Depleting Substances Fees | 99,700 | 0.5 | 109,700 | 0.6 | 209,300 | 0.5 |
| General Purpose Revenue | 69,500 | 0.3 | 67,500 | 0.4 | 137,000 | 0.4 |
| Other Program Revenues | <u>120,200</u> | <u>0.6</u> | <u>164,200</u> | <u>0.8</u> | <u>284,400</u> | <u>0.7</u> |
| | \$21,136,000 | 100.0% | \$18,530,500 | 100.0% | \$39,666,500 | 100.0% |

*Additional emission fee revenues were collected by DNR and transferred to the Department of Commerce for administration of the Small Business Clean Air Assistance Program totaling \$174,300 in 2000-01 and \$169,200 in 2001-02, for 2.0 positions. 2000-01 emission fee revenues include approximately \$2.9 million in fees assessed in 1999-00 and exclude \$0.8 million assessed in 2000-01 and collected in 2001-02. 2001-02 emission fee revenues include \$0.8 million assessed in 2000-01 and excludes \$1.0 million assessed in 2001-02 and collected in 2002-03.

Stationary Source Emissions Tonnage Fee. The Clean Air Act Amendments of 1990 require states to assess fees based on the tonnage of emissions generated by a facility. The fees may only be used for the implementation of Clean Air Act provisions. States must demonstrate to EPA that the fees collected on emissions are adequate to cover the state's program costs associated with reducing the emissions of facilities being assessed the fees. States may place a cap on the tonnage of emissions that a fee is assessed on. States may adjust the fee rate annually based on the change in the consumer price index.

Wisconsin adopted an air emissions tonnage fee system consistent with the Clean Air Act amendments, beginning with calendar year 1992 emissions, assessed in 1992-93. Wisconsin adopted an annual cap of 4,000 tons per pollutant per facility. In 1999 Wisconsin Act 9, the annual cap was increased to 5,000 tons per pollutant per facility, effective with 1999 emissions. Pollutants assessed the fees include the criteria pollutants (carbon monoxide is exempted), hazardous air pollutants, and other regulated pollutants under the Clean Air Act, such as ozone-depleting pollutants.

Table 3 shows the fee rate per ton of billable pollutants for the calendar years 1992 (assessed in 1993-94) through 2002 (to be assessed in 2002-03). The fees for 1994 through 1999 were adjusted according to changes in the consumer price index.

Table 3: Stationary Source Emission Fee Rate and Billable Tons

| Year of Emissions | Fee Rate Per Ton | Billable Tons | Emission Fees Assessed (\$ millions) |
|-------------------|------------------|---------------|--------------------------------------|
| 1992 | \$18.00 | 278,607 | \$5.01 |
| 1993 | 29.30 | 279,638 | 8.19 |
| 1994 | 30.07 | 279,394 | 8.40 |
| 1995 | 30.92 | 285,291 | 8.82 |
| 1996 | 31.77 | 273,506 | 8.69 |
| 1997 | 32.65 | 291,184 | 9.51 |
| 1998 | 33.19 | 280,959 | 9.33 |
| 1999 * | 33.80 | 289,154 | 9.77 |
| 2000 ** | 35.71 | 285,628 | 10.20 |
| 2001 | 35.71 | 276,354 | 9.87 |
| 2002 | 35.71 | N.A. | N.A. |
| Average 1992-2001 | | 281,972 | \$8.78 |

*Beginning in 1999, the emission fee cap increased from 4,000 to 5,000 tons per pollutant per year.

**1999 Act 9 eliminated the annual inflationary adjustment factor after 2000, and includes a fee of \$0.86 per ton in 2000 and subsequent years.

1999 Act 9 deleted the annual consumer price index adjustment for years after 2000 and included a one-time adjustment of \$0.86 per ton. This fixed the fee rate at \$35.71 per ton for 2000 and subsequent years. Table 3 also shows the number of billable tons of emissions for each year and the total emission fees assessed.

In 2002-03, the DNR is authorized 109.75 PR positions from emissions fees (out of the 133.25 total program revenue positions shown in Table 1). In addition, the emissions fees support two positions in the Department of Commerce, described in a later section on the small business clean air assistance program.

In 1999 Wisconsin Act 9, a performance-based emission fee system was created effective with calendar year 2001 emissions assessed in 2001-02 (in the spring of 2002). DNR was required to promulgate administrative rules that would: (a) use the fees billed in 2001 for calendar year 2000 emissions for each facility as the basis of the new fee system; (b) establish a fee system applicable to each facility based on a fee per unit of emissions, based on a five year rolling average of the amount of the emissions by the facility; (c) establish a performance-based approach, under which if an individual facility's amount of emissions increases from one year to the next, the amount of fees paid by the facility would increase proportionately, and if an individual facility's air emissions decreased from one year to the next, the amount of fees paid by the facility would decrease proportionately; (d) establish that the performance-based system will not include the use of multipliers or other similar measures to increase fees above the level based on actual emission levels; and (e) specify that the emission fee per ton set in the rule may not be changed. In 2001 Act 16, criterion (b) was modified to specify that the fee per unit of emissions would be based on the previous year's emissions instead of basing it on a five-year rolling average of emissions. DNR is implementing the Act 16 requirement by assessing the \$35.17 per ton flat fee

Table 4: Assessments for 2001-02 Stationary Source Emissions

| Pollutant | Actual Tonnage (2001 Tons Of Emissions) | Assessed Tonnage (2001 Billable Tons of Emissions) | Fiscal Year 2001-02 Assessed Revenues \$35.71/ton |
|-------------------------------------|---|--|---|
| Sulfur Dioxide | 247,148 | 116,421 | \$4,157,394 |
| Nitrogen Oxides | 153,914 | 97,152 | 3,469,298 |
| Particulate Matter | 24,993 | 23,735 | 847,577 |
| Volatile Organic Compounds (VOC) | 34,631 | 33,177 | 1,184,750 |
| Other Pollutants (HAP, CFC and TRS) | 5,869 | 5,869 | 209,582 |
| Carbon Monoxide | <u>41,540</u> | <u>0</u> | <u>0</u> |
| TOTAL | 508,095 | 276,354 | \$9,868,601 |

against the prior year's reported emissions and not promulgating rules that contain other performance-based emission fee provisions.

Table 4 lists the emissions tonnage fee assessed in 2001-02 for calendar year 2001 emissions. The fee was assessed on 60 different billable pollutants. A total of 1,316 facilities had billable emissions of at least five tons and paid fees for the billable pollutants that they emitted. In Wisconsin, the largest volume of emissions is generated by larger utilities, paper-related industries and large chemical plants. A portion of the total emissions were assessed the emissions tonnage fee. For 2001 emissions, 276,354 of the 508,095 tons, or 54%, of emissions were subject to the emissions tonnage fee.

Table 5 lists the total amount of emissions from Wisconsin stationary sources from 1992 through 2001, as reported under requirements of the state permit program. Emissions decreased in 2001 primarily because of economic conditions, with several industrial plant closures or plants operating at less capacity or hours than in 2000.

Federal Revenue. EPA provides the state with grants for general program operations associated with implementing Clean Air Act provisions, based on an agreed work plan between EPA and DNR.

Table 5: Reported Air Emissions from Stationary Sources (Tons Per Year)*

| Calendar Year | Sulfur Dioxide | Nitrogen Oxides | Particulate Matter | Volatile Organic Compounds | Carbon Monoxide | Hazardous Air Pollutants | CFCs | TRS | TOTAL |
|---------------|----------------|-----------------|--------------------|----------------------------|-----------------|--------------------------|------|-----|---------|
| 1992 | 338,102 | 153,104 | 29,526 | 44,866 | 85,560 | 51,909 | 227 | 672 | 703,966 |
| 1993 | 248,889 | 151,104 | 26,519 | 47,421 | 67,371 | 36,070 | 143 | 623 | 578,140 |
| 1994 | 248,505 | 149,923 | 25,816 | 44,825 | 67,066 | 27,496 | 180 | 636 | 564,447 |
| 1995 | 250,612 | 154,852 | 34,400 | 46,380 | 47,388 | 29,760 | 89 | 695 | 564,176 |
| 1996 | 257,615 | 163,569 | 32,795 | 45,968 | 48,952 | 22,445 | 93 | 677 | 572,114 |
| 1997 | 295,460 | 162,988 | 35,067 | 44,981 | 50,504 | 23,671 | 54 | 781 | 613,506 |
| 1998 | 289,352 | 166,821 | 28,865 | 43,317 | 50,865 | 20,963 | 73 | 701 | 600,957 |
| 1999 | 268,113 | 157,879 | 28,458 | 42,652 | 52,758 | 20,509 | 69 | 722 | 571,160 |
| 2000 | 256,718 | 186,389 | 29,786 | 41,501 | 69,712 | 17,451 | 75 | 677 | 602,309 |
| 2001 | 247,148 | 153,914 | 24,993 | 34,631 | 41,540 | 5,189 | 116 | 564 | 508,095 |

*Tonnage figures are based on reported emissions of regulated stationary sources.

CFCs = Chlorofluorocarbons (CFC-12, HCFC-141B, and HCFC-22)

TRS = Total reduced sulfur, sulfur trioxide and hydrogen sulfide

EPA also provides funds for specific purposes such as to purchase air monitors to determine ambient levels of particulate matter PM_{2.5} in the air, to study air pollutants deposited in the Great Lakes and to study climate change. DNR is authorized 46 FED positions in 2002-03, of which 39 are in the Bureau of Air Management and the remaining seven are in the Division of Enforcement and Science and the Division of Administration and Technology.

Federal Indirect Cost Reimbursement. Federal indirect revenues are the portion of federal grants received by the Department for general administrative or overhead costs such as accounting, human resources, legal services, information technology and rent. In 2001 Act 16, \$944,000 in expenditure authority and 5.5 positions in the Division of Administration and Technology were converted from stationary source emission fees to funding from federal indirect cost reimbursement in each of 2001-02 and 2002-03. The Department allocated federal indirect revenues from federal air grants to the Division totaling \$475,000 in 2001-02 and \$552,900 in 2002-03. During the 2001-03 biennium, DNR also allocated federal

indirect revenues that originated from other program grants to the Division of Administration and Technology to fund activities previously funded from emission fees.

Petroleum Inspection Fund. The segregated, petroleum inspection fund receives revenues from the 3¢ per gallon petroleum inspection fee assessed on all petroleum products entering the state. The fund is primarily used for the petroleum environmental cleanup fund award (PECFA) program. Appropriations from the fund are used for air management activities related to mobile source pollution control, vapor recovery from fuel storage and distribution systems, pollution prevention and cooperative environmental assistance. DNR is authorized 6.5 SEG petroleum inspection fund positions in 2002-03.

Permit Review and Enforcement Fees. DNR collects program revenue (PR) fees from source owners and operators who are required to obtain a permit for construction or modification of a facility. DNR uses the revenues for staff activities related to reviewing and issuing the permits. In 2002-03, DNR is authorized 19.5 PR positions for

construction permit review activities.

Asbestos Abatement Fees. DNR collects program revenue asbestos inspection and permit exemption review fees from persons who perform asbestos abatement as part of nonresidential demolition and certain renovation activities. Persons must notify DNR before they perform asbestos abatement and must pay the following fees established in administrative rule: (a) an asbestos inspection fee ranging from \$50 to \$210, with a statutory maximum of \$210; (b) a construction permit exemption review fee of \$50 or \$125, with no statutory maximum; and (c) no fee for revisions to original notifications of asbestos abatement activity. The Department uses the revenues to administer asbestos abatement regulations in conformance with EPA requirements, to hire contractors to conduct inspections of asbestos abatement activities and to provide training. DNR is authorized 2.0 PR positions for asbestos abatement activities.

Ozone-Depleting Substances Fees. DNR collects program revenue annual registration fees from persons who remove ozone-depleting refrigerants (chlorofluorocarbons or CFCs) from motor vehicles and appliances such as refrigerators and air conditioners during salvage operations. Annual fees are also collected from persons who transport appliances for salvage. These revenues are used to administer CFC regulations to ensure that CFC removal activities do not release CFCs into the air. DNR is authorized 2.0 PR positions for regulation of ozone depleting substances.

Other Program Revenues. DNR receives a small amount of program revenues from other state agencies. This primarily includes grants from the Wisconsin Department of Transportation (DOT) from funds provided to the Wisconsin DOT from the federal Congestion Mitigation and Air Quality (CMAQ) program of the U.S. Department of Transportation. The CMAQ program funds projects in nonattainment areas that will reduce transportation-related emissions.

Air Permits

While federal requirements are generally only applicable to major sources, state law authorizes Wisconsin to also regulate minor stationary sources. However, the state regulations for minor sources are less stringent than the requirements for major sources. For example, minor sources are generally not required to install or retrofit equipment to control emissions, as is required of major sources. DNR administers a construction (or new source) permit program and an operation permit program. Both permit types outline all of the air pollution requirements that apply to a source, including emission limits and operating conditions to ensure that the source is in compliance with federal and state air pollution requirements. DNR permit review staff are located in each of the five DNR geographic regions. They are assigned to permit sources within specific counties in the regions.

Construction Permits (New Source Review)

All new, modified, reconstructed, relocated or replaced air pollutant sources which are not exempt from construction permit requirements under administrative rule NR 406 are required to obtain a construction permit before beginning construction. A construction permit allows a company to build, initially operate and test the air pollution source. The permit expires after 18 months and can have one 18-month extension under certain instances. The source is required to have a complete operation permit on file with DNR by the time the construction permit expires in order to continue operating the source.

DNR conducts approximately 215 to 250 construction permit reviews per year for new or expanded facilities, including 215 in 2000-01 and 240 in 2001-02. Approximately four-fifths of the reviews are for facilities in attainment areas and

one-fifth are for facilities in nonattainment areas. DNR issued 1,832 construction permits between 1993 and November, 2002.

DNR issues major source construction permits in an average of 150 days after the receipt of a complete application, but the time varies widely, depending on the size of the source, whether the applicant requests expedited review and whether a public hearing is held regarding the application. After DNR receives a complete application, an air management permit reviewer evaluates the application to quantify the proposed emissions, identify applicable emission limitations, analyze the effect of the project on ambient air quality and ensure that the proposed construction will comply with applicable laws. DNR then makes a preliminary determination as to whether the application can be approved. A 30-day public comment period follows issuance of the preliminary determination. If there is significant public interest, DNR may hold a public hearing within 60 days of the end of the public comment period. DNR must issue or deny the construction permit within 60 days after the close of the comment period or public hearing.

Construction permit activities are funded from program revenue fees authorized in administrative rule NR 410. The current fee schedule went into effect in January, 2000. The fees for an individual source vary depending on situations such as the type of request, type of pollutant, whether emission testing is required, and whether the applicant requests expedited review.

In 2002-03, DNR is authorized \$1,498,200 with 19.5 positions to administer the construction permit program. In 2001-02, DNR collected \$2,589,400 in permit fee revenues. In 2002-03, the average fee is approximately \$8,000 per permit review.

In 2001 Act 16, DNR was authorized to promulgate administrative rules that specify the types of stationary sources that may obtain general

construction permits. A general construction permit may cover several similar sources. It would be used instead of issuing an individual construction permit for each source covered by the general construction permit. DNR plans to begin promulgating administrative rules for general construction permits during 2003. The Department is considering the source categories of small heating units, rock crushers, small electric generators, printing presses and hospital sterilizers.

Operation Permits

DNR administered a state-authorized operation permit program from 1985 to 1992 and issued 350 permits under the program. In 1992, DNR submitted new operation permit rules to EPA to meet the Clean Air Act Amendments. The Department began issuing operation permits in late 1994 and EPA granted interim approval to the program on March 6, 1995. The program is generally known as the Title V program, after the subchapter of federal EPA regulations. EPA granted full approval for Wisconsin's administration of the operation permit program effective November 30, 2001.

DNR allocates approximately 25 staff to operation permit review and approval activities. Operation permit staff are funded from emissions tonnage fee revenues. Expenditure authority for a total of 109.75 DNR staff (and two Commerce staff) is provided from emissions tonnage fee revenues. In addition to operation permit review, other Title V program implementation activities involve compliance, supervision, modeling, emissions inventory, and administrative support.

The same sources subject to construction permit requirements are required to file an operation permit application at the same time they file a construction permit application, unless they are exempt from operation permit requirements under administrative rule NR 407. For example, in January, 1998, DNR rules exempted certain grain

handling facilities from obtaining operation permits. DNR issues federal operation permits (FOP) for major sources and federally enforceable state operating permits (FESOP) for synthetic minor sources (an option for a major source that wants to reduce emissions enough to become a minor source). DNR conducts the review, public comment and public hearing processes simultaneously with the similar processes for the construction permit. After DNR makes a decision to issue or deny the operation permit, EPA has 45 days to review, comment and agree with DNR's decision or object.

DNR issued 795 FOPs and FESOPs as of November 1, 2002, and 506 remain to be issued. The federal deadline for DNR issuance of these permits was April, 1998, three years after EPA approval of the program. Few states have met the EPA deadline for issuance of federal permits. DNR indicates that permit review and analysis has taken approximately twice as long as estimated early in the program. DNR has required an average of approximately 250 to 300 hours per permit instead of 120 estimated initially, and many complex permits remain to be issued. As long as a source submitted an application within the required application deadline in 1994 or 1995, the source may continue to operate until DNR issues the permit. The operation permit is issued for operations at the entire facility and is valid for five years.

DNR has developed a plan to become current on issuance of original and renewal operation permits. As of November, 1, 2002, the Department has reviewed 130 applications for operation permit renewals. The Department plans to issue renewals of FOPs and FESOPs before the original permits expire after the five year term. DNR's goal is to have a 25% backlog of permits waiting for renewal (meaning 25% of pending applications for renewal have not been issued) by July 1, 2003, a 15% backlog by July 1, 2004, and a 10% backlog by July 1, 2005, and subsequent years.

In addition to the FOPs and FESOPs, DNR issues state operation permits (SOP) for minor sources not subject to federal permit requirements. Examples of minor sources are some rock crushers, drycleaners and smaller boilers. As of November 1, 2002, 50 SOPs were issued and 651 were waiting to be reviewed. DNR has also issued three general operation permits (GOP) where all sources within a specific industry would have the same applicable emission limits. The Department has issued GOPs for rock crushers, ethylene oxide sterilizers at hospitals and small boilers. DNR is in the process of developing a general operation permit for lithographic and screen printers.

Monitoring

DNR operates a statewide air monitoring program to: (a) determine the ambient air quality levels statewide; (b) identify areas where air quality standards are not being achieved; (c) measure the environmental impact of air pollutants; and (d) evaluate the effectiveness of efforts and control strategies to improve air quality. DNR monitors criteria pollutants, acid rain, mercury, toxics and bioindicators (sensitive species that show distinct responses to particular pollutants). Data from the monitoring networks is collected and analyzed to ensure quality and used for air quality reporting and planning purposes.

DNR operates several networks of air quality monitors at numerous permanent sampling sites throughout the state. The DNR monitor include: (a) 38 where ozone is monitored (including the Lake Michigan Car Ferry and aircraft monitoring); (b) 18 where total suspended particles (particulate matter) are monitored; (c) 28 where PM2.5 (fine particulate matter) is monitored; (d) six where PM2.5 is continuously monitored; and (e) six fine particulate speciation monitors, which allow DNR to characterize the chemical composition of the fine

particulates such as sulfate, nitrate, elemental carbon and organic carbon.

The 28 PM2.5 monitors collect a discreet sample for a 24-hour period, then the filter is collected and analyzed to determine the average PM2.5 reading, no sample is done for two to five days, and a new filter collects another 24-hour PM2.5 reading. The six continuous PM2.5 monitors must all be located at one of the 28 PM2.5 monitoring locations, and allow measurement of the PM2.5 concentrations during every part of the day instead of obtaining one reading for the 24-hour period. The six PM2.5 monitors are also located at one of the 28 PM2.5 monitors (but don't have to be).

The majority of DNR air monitoring efforts in 2002 related to implementing: (a) the PM2.5 monitoring network and monitoring to answer questions about visibility and regional haze issues; and (b) continuous monitoring of fine particulates to aid in calculating the air quality index DNR uses to inform the public about ambient air quality on a daily basis. Ozone monitoring will provide the data used to determine attainment status for the new ozone standards and provides specialized information on days where ozone levels exceed standards. DNR performs an annual review of monitoring locations every January, solicits public comment and submits a monitoring plan to EPA.

In addition to the air quality monitors, DNR performs other monitoring activities. The Department operates a network of 24 meteorological stations, which are used to evaluate the impact of weather on the ambient concentrations of pollutants being monitored. DNR conducts a biomonitoring program to evaluate the potential adverse effects of air pollution on bioindicators. For example, the program examines the impacts of ozone, sulfur dioxide and nitrogen oxide on crops, trees and other plants. The biomonitoring program uses lichens, milkweed, aspen and other plant species that are sensitive to air pollution. DNR is also monitoring emissions

that may contribute to greenhouse gases (heat-trapping gases such as carbon dioxide).

Compliance and Enforcement

EPA has delegated compliance and enforcement responsibilities related to Clean Air Act provisions in Wisconsin to DNR. DNR performs activities such as to: (a) inspect stationary sources to ensure compliance with emission limits, permit restrictions and operating requirements; (b) review stack emissions test results or witness stack tests to determine if a source is in or out of compliance; (c) investigate complaints received from citizens; and (d) take enforcement action when necessary to obtain compliance. The Department also submits a variety of compliance data to EPA to assist in maintaining a national database of air program compliance and enforcement information.

DNR's Air Management program performed 227 inspections at Wisconsin facilities in 2000, 306 in 2001 and 188 in 2002 as of November. Inspections found noncompliance issues during 23% of the inspections, ranging from minor recordkeeping violations to more serious emissions violations. DNR issued 109 notices of violation in 2000, 101 in 2001 and 108 in 2002. DNR also issued 135 letters of noncompliance in 2000, 142 in 2001 and 94 in 2002. During 2000 through 2002, the largest category of violation was related to asbestos abatement regulations, followed by violations related to particulate matter, volatile organic compounds and open burning.

Ozone and SIP Development

During the 1990s, Wisconsin submitted a series of revisions or modifications to the state

implementation plan (SIP) to EPA in accordance with a series of federal requirements. DNR continually develops plans and promulgates rules to implement the SIP.

Under Wisconsin law, DNR is required to adopt revisions to the SIP related to ozone that conform to the Clean Air Act. The state SIP may vary from the federal requirements if the Governor determines that: (a) the measures are part of an interstate ozone control strategy; or (2) the measures are necessary in order to comply with percentage emission reductions required under the Act. The statutes authorize DNR to use the administrative rule process in developing and implementing SIP modifications. DNR has implemented changes related to: (a) permitting requirements; (b) fee assessment; (c) technology standards applied to stationary sources; (d) standards applied to mobile sources; (e) area source controls; (f) monitoring requirements; and (g) all other modifications to the current SIP resulting from the amendments.

DNR uses extensive computer modeling to develop portions of the SIP, identify the mix of controls and programs most effective in reducing emissions, move the state toward attaining air quality standards and bring the state's nonattainment areas into attainment by federal deadlines. Data on numerous variables that impact air quality, including air monitoring station data, vehicle miles traveled, economic growth factors, emission levels of various ozone sources, and several other data sources are used to simulate the actual air quality environment in a nonattainment area. Once the actual environment is simulated, the computer is able to predict how a given control measure or program will reduce ozone pollutant emissions and overall ozone levels in the nonattainment area.

Rate-of-Progress Demonstration Plan

DNR inventoried actual emissions of VOCs

from all stationary, mobile and area sources and first submitted it as part of its 1992 SIP requirements. In late 1993, DNR submitted a 1996 rate-of-progress SIP revision to EPA describing actions the state planned to implement to achieve the 3% annual VOC reduction beginning in 1996, known as the "15% VOC reduction plan." In March, 1996, Wisconsin became the first state to receive EPA approval of its 15% VOC reduction plan.

The 1990 level of emissions in the state was 341 tons per day, so the state was required to reduce VOC emissions by 51.2 tons per day, beginning in 1996. The 1996 plan allocated the reduction as follows: (a) 51% (26.3 tons per day) from mobile sources; (b) 36% (18.4 tons) from area sources; and (c) 13% (6.5 tons) from industrial sources. Federal programs to reduce VOC emissions included reformulated gasoline, clean fuel fleets and revised motor vehicle emission standards. Wisconsin program elements included rules defining VOC RACT (reasonably available control technology) for major sources, enhancement to the vehicle inspection and maintenance programs, stage 2 gasoline fuel vapor recovery, solvent limits for various coatings applications and some voluntary industrial solvent regulation enhancements.

In 1997, after an analysis of VOC emissions in the nine county nonattainment area (Door, Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha), DNR sent a letter to EPA indicating that the state had achieved the required milestone of reducing VOCs by 15% from the 1990 base level of emissions. EPA did not take further action on the DNR finding.

In 1997, DNR submitted a 1999 rate-of-progress SIP revision to EPA describing actions the state planned to begin implementing in 1999 to achieve the required additional 3% annual reduction in VOCs in the state's severe nonattainment counties. In the 1999 plan, DNR projected that VOC emission

control measures in the 1996 plan, along with additional emission reductions from adopted federal programs, would be sufficient to reach the 1999 rate-of-progress. EPA has not taken action on the DNR submittal. In 2000, DNR completed an analysis of emissions that demonstrated that the state met the emissions milestone for 1999 of reducing VOC emissions by 9% from 1996 to 1999.

In late 2000, DNR included the 2002, 2005 and 2007 rate-of-progress SIP revisions with the one-hour attainment demonstration plan described in a following section. In October, 2001, EPA approved the rate-of-progress plans.

Lake Michigan Ozone Study

Many states and interested persons believe that the generation of ozone-forming pollutants in one area can be partially responsible for violations in another area. This is due to emissions transported by wind from one area to another. DNR felt that much of the Lake Michigan region's ozone nonattainment problem was due to the Chicago metropolitan area, with smaller but significant amounts coming from sources in southeastern Wisconsin. In 1987, Wisconsin filed a lawsuit against EPA because EPA was not ensuring that Illinois and Indiana were submitting complete plans to correct their ozone problems. Under the terms of the settlement, the three states, EPA and the State of Michigan are funding a study to: (a) understand ozone formation and transport in the Lake Michigan region; (b) collect information on the weather and air quality conditions that cause ozone to exceed national standards; and (c) develop a computer modeling system to assist states in determining the best methods and practices to use in meeting federal ozone standards.

The Lake Michigan Air Directors Consortium (LADCO) was organized by Wisconsin, Illinois, Indiana and Michigan to implement the study. During the 1990s, through LADCO, the four states,

along with the federal government, have studied ozone pollution and how best to control it in the Lake Michigan region. Study findings showed that: (a) the Lake Michigan states cannot reasonably meet federal ozone standards through local control programs alone because of the high level of ozone-forming compounds coming into the region from the rest of the country; and (b) the transport of ozone-forming compounds from the area's severe nonattainment counties to the less severe nonattainment counties was also occurring. DNR officials indicate that unless the "background level" of ozone forming compounds coming into the region and to the various counties within the region is accounted for in the computer models, it will be impossible for each state to model an ozone reduction plan that can demonstrate attainment without placing extreme controls on the nonattainment areas in each state.

Ozone Transport Assessment Group

In March, 1996, recognizing that long-range ozone transport exists, EPA, 37 states and private industry groups undertook a national study, known as the Ozone Transport Assessment Group (OTAG), of the impact of the inter-regional transport issue on individual state's planning and ozone reduction efforts. The study used the LADCO computer model and data from states in the study area to determine the level of ozone being transported to and from the 37 eastern states (North Dakota to Texas and all of the states eastward) and identify the types of sources and geographic areas of ozone emissions and pollution. During the course of the study, EPA continued the requirement that those states with ozone nonattainment areas enact the controls necessary to meet the Clean Air Act requirements.

In June, 1997, OTAG recommended a strategy to EPA for reducing the transport of ozone in the eastern United States, to make it easier for large urban ozone nonattainment areas in the study region to achieve the ozone air quality standard.

The OTAG computer modeling demonstrated that nitrogen oxide emissions did not stay in their area of origin but instead drifted to impact the air quality of other areas. OTAG also found that VOC emission reductions are effective in reducing local concentrations of ozone but not regional concentrations because VOCs do not travel long distances. OTAG recommended that NOx emissions be reduced from several NOx sources, including utilities and other point sources that have large boilers, turbines and engines. EPA considered OTAG recommendations in revising its nitrogen oxide regulations in 1998.

One-Hour Attainment Demonstration Plan

During 1999, DNR worked to develop a response to the EPA NOx SIP call (see earlier section on SIP requirements). However, DNR discontinued that planning process when the courts ruled that Wisconsin did not have to submit a NOx SIP in 1999. After the court decision, the state focused on preparation of a one-hour ozone attainment demonstration plan.

The state was required to submit an attainment demonstration plan to EPA for the one-hour ozone standard by December, 2000. In late 2000, DNR submitted a one-hour ozone attainment demonstration plan to EPA, as supported by administrative rules promulgated by the Department. In October, 2001, EPA approved the plan.

The attainment demonstration plan includes elements that, when implemented, are expected to:

1. Demonstrate improved air quality sufficient to attain the one-hour standard by 2007.
2. Achieve the federally-mandated, rate-of-progress deadlines for reducing VOC and NOx emissions in the milestone years of 2002, 2005 and 2007.

3. Establish VOC and NOx emission budgets for mobile, area and stationary sources in 2002, 2005 and 2007.

4. Set an ozone season NOx emission rate for five specific electric generation facilities for each year of 2002 through 2007.

5. Establish enforceable rate-of-progress control measures to meet the contingency requirement by setting the 2003, 2006 and 2007 emission rates for the five electric generation facilities.

6. Establish reasonable available control technology (RACT) requirements for VOC emissions from industrial cleaning operations in southeastern Wisconsin.

7. Revise DNR administrative rules to establish a federally mandated excess emissions fee of \$5,000 per ton of VOC for major source emissions in southeastern Wisconsin if this area remains in nonattainment for ozone in 2008.

Additional Air Studies

DNR's air program studies several emerging policy issues in cooperation with other agencies and the private sector. Air program staff perform toxics studies and health impact assessments and use the information for policy development of air toxics standards. During the last few years, DNR has placed increasing emphasis on studying the impact of air emissions of mercury, dioxin and other pollutants on the water bodies of the state and the Great Lakes. The air program also studies the relation of energy policy and land use to air quality management.

In 1998, DNR and the Climate Change Committee of the Clean Air Task Force published a

climate change action plan that discussed a framework of actions that Wisconsin sources could take to reduce the emission of greenhouse gas emissions. In 1999, DNR published a draft paper on a mercury reduction strategy and subsequently convened a Mercury Stakeholders Group to discuss possible actions that could be taken to reduce mercury emissions.

Other Issues

Voluntary Emission Reduction Registry

In 1999 Act 195, a voluntary emission reduction registry program was enacted. DNR promulgated administrative rule NR 437, effective November 1, 2002, to implement the program. Under the program, the Department will register emissions reductions or avoided emissions of greenhouse gases or air contaminants or carbon sequestration, if the emissions reduction or avoided emission occurs before required by law. Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride or any other gas that traps heat in the atmosphere. Air contaminants include particulate matter, mercury, lead and the ozone precursors nitrogen oxides and volatile organic compounds. Carbon sequestration is the establishment or enhancement of a carbon reserve, which is a system that takes in and stores more carbon from the atmosphere than it releases to the atmosphere.

NR 437 establishes protocols for quantifying baseline emissions, that is, the average annual amount or rate of a greenhouse gas or air contaminant emitted before an emission reduction or avoidance action is taken, or the amount of carbon stored before a carbon sequestration project is undertaken. Persons may submit voluntary emissions registration forms to DNR. DNR will maintain a database of registered emissions.

Asbestos Abatement

DNR is responsible for administering asbestos abatement regulations in conformance with EPA requirements. Persons who perform demolition or certain renovations including the removal of asbestos-containing material must follow asbestos abatement regulations to minimize the release of asbestos fibers into the air. Renovations are subject to DNR asbestos regulations if the amount of asbestos-containing materials exceeds minimum thresholds specified in administrative code. Persons must notify DNR before they perform asbestos abatement, and must pay asbestos inspection fees and a construction permit exemption fee. DNR receives approximately 3,000 notices of asbestos abatement and demolition projects per year. DNR reviews the notices for compliance with EPA requirements and enters information about the notices into a nationwide database. DNR inspects active abatement projects and conducts post-abatement inspections.

DNR is authorized to initiate enforcement action against persons who do not comply with asbestos abatement regulations. The Department may also issue citations for violations of asbestos abatement laws. DNR is also required to enter all enforcement-related information into a nationwide database.

Ozone-Depleting Refrigerants

Wisconsin administers three programs to reduce emissions of ozone-depleting refrigerants (CFCs). The Department of Agriculture, Trade and Consumer Protection administers rules, effective in 1991, related to the: (a) installation, repair, and servicing of mobile air conditioners and refrigerated trailer systems; (b) recycling of CFCs removed from mobile air conditioners; and (c) the labeling of ozone-depleting substances. The Department of Commerce administers rules, effective in 1992, related to the installation or servicing of stationary refrigeration equipment. DNR administers rules, effective in 1993, related to

the disposal of any equipment containing ozone-depleting refrigerants.

The three state programs prohibit knowing or negligent releases of ozone-depleting refrigerants. The federal Clean Air Act provisions on stratospheric ozone are somewhat more comprehensive than Wisconsin law but the two laws are generally consistent.

Motor Vehicle Inspection and Maintenance

Wisconsin's motor vehicle inspection and maintenance program (I/M), in operation since 1984, requires that vehicles in southeastern Wisconsin be inspected to ensure that they comply with emission standards and that pollution control equipment is operational. The state Department of Transportation (DOT) administers I/M through a contract with a private firm, while DNR sets the emission standards. Currently, the program operates in the state's six severe nonattainment counties (Kenosha, Milwaukee, Ozaukee, Racine, Washington and Waukesha) and in Sheboygan County. Approximately 1.4 million vehicles in the seven-county area are subject to testing under the program.

Vehicles are required to be tested every other year, and, for vehicles more than six years old, upon a change of ownership. The following vehicles, however, are exempt from testing: (a) vehicles with a model year of 1967 or earlier; (b) vehicles with a gross vehicle weight rating over 10,000 pounds; (c) vehicles exempt from registration; (d) vehicles powered with diesel fuel; and (e) motorcycles and mopeds. Vehicles that fail an emissions test must be repaired and pass a subsequent test, or receive a waiver, prior to being registered. A waiver is issued if the vehicle continues to fail after repairs are done costing in excess of limits established by DNR, or if testing staff determine that compliance cannot be achieved with repairs.

Emissions tests are conducted by a private

contractor. The cost of the testing, which totals about \$11.6 million in 2002-03, is paid for by a combination of the transportation fund and federal congestion mitigation/air quality improvement funds. There is no fee for the test, although vehicle owners are responsible for the cost of any required repairs.

Wisconsin Partners for Clean Air

The "Wisconsin Partners for Clean Air" program in southeastern Wisconsin seeks voluntary actions by business and government organizations to reduce emissions that cause ground level ozone. DNR indicates that the program has broad support from key businesses, local governments and community groups that work toward achieving a reduction of two tons per summer day of ozone related emissions expected from the once-mandatory program.

Examples of program activities include: (a) education partnerships between schools and businesses; (b) notification to businesses, schools, health care facilities and government agencies of days that may have ozone standard exceedences (Ozone Action Days); (c) quantification of voluntary point source and mobile source emission reductions; and (d) partnerships with health care providers to educate the public about the effects of ozone on health of individuals.

Gasoline Vapor Recovery Grants

In addition to federal requirements for gasoline station operators located in moderate or worse ozone nonattainment areas to install stage II vapor recovery systems on gasoline dispensing equipment, Wisconsin also requires the installation of gasoline vapor recovery systems at larger facilities statewide. This requirement is based on the control of toxic emissions associated with gasoline vapors. The Legislature adopted a grant program, funded from the segregated petroleum inspection fund, to reimburse most of the costs of the design, acquisition and installation of Stage II

equipment at fuel dispensing facilities in ozone nonattainment areas in eastern and southeastern Wisconsin. The grant program is not a requirement of the Clean Air Act. DNR was authorized to award grants on or before December, 31 1995, or June 30, 1996, depending on the type of facility. Vapor recovery grants reimbursed actual expenditures based on the type of vapor recovery system installed, with a maximum grant of \$37,250. The program provided approximately \$19.9 million in grants to 733 fuel dispensing facilities. The last awards were paid in 1998-99.

Small Business Clean Air Assistance Program

The Clean Air Act Amendments of 1990 require states to establish a program to assist small businesses in complying with the requirements of the Act. The Wisconsin program is administered by DNR and the Department of Commerce. Commerce is appropriated \$199,700 in 2002-03 with two positions to administer the program. The program is funded from emissions tonnage fees collected by DNR.

The focus of the Small Business Clean Air Assistance Program is to assist small businesses in complying with the technical and environmental provisions related to the Clean Air Act. Small businesses are those which: (a) are owned or operated by a person that employs 100 or fewer individuals; (b) are owned by a small business concern as defined under federal code; (c) emit less than 50 tons per year of any regulated pollutant; and (d) emit less than 75 tons per year of all regulated pollutants in total. For ozone related pollutants, only those businesses located in the state's ozone nonattainment areas and emitting between 25-50 tons of ozone related pollutants would be eligible for the program. The program's provisions allow for the exemption of assistance and services to small businesses that have sufficient technical and financial capabilities to meet the requirements of the Clean Air Act. However, as long as program resources allow,

program services will be offered to all businesses, beyond those defined above.

Acid Rain

Wisconsin enacted significant controls in 1985 Act 296 to reduce acid rain. This law required Wisconsin's major electric utilities to meet average annual emission limits, beginning in 1993, and set annual goals for emissions of sulfur dioxide and nitrogen oxides that have resulted in a 50% reduction in sulfate emissions from 1980. The annual goal for sulfur dioxide emissions after 1992 is 250,000 tons from major utility sources and 75,000 tons from other large sources.

Wisconsin's effort to reduce acid rain has primarily been through the reduction of sulfur dioxide emissions from stationary sources. Coal-burning electrical utilities account for most of the sulfur dioxide pollution in Wisconsin. Pulp and paper mills are also major contributors with natural and other sources emitting smaller amounts.

Wisconsin's utilities affected under Clean Air Act Amendment Phase I requirements generally will have excess sulfur dioxide emission allowances and are in a position to make use of the emissions trading provision of the Act. Utilities in Wisconsin have sold emissions allowances under these provisions.

Mercury Emissions

In response to a petition filed in May, 2000, by several environmental organizations, sportfishing groups, lake associations and lawmakers, the Natural Resources Board directed DNR to develop administrative rules to regulate mercury emissions to the air. In December, 2000, the Board directed that the Department present proposed rules to the Board in March, 2001, that protect public health and the environment, but are cost effective, reasonable, and do not interfere with the ability of

utilities to meet the state's energy needs.

DNR held public hearings on proposed rules in September and October of 2001. The proposed rules would require major electric utilities to reach the following reductions in mercury emissions from baseline emissions by the following dates after promulgation of the rule: (a) 30% reduction in five years; (b) 50% reduction in ten years; and (c) 90% reduction in 15 years.

DNR convened a Citizen Advisory Committee to review public comments received at the public hearings and make recommendations for addressing areas of concern and controversy. The Committee included environmental, industrial, utility and tribal interests. In September, 2002, the Citizen Advisory Committee sent a report to the Natural Resources Board. The report discussed

issues of concern related to the proposed rules for further evaluation, presented the various perspectives of stakeholder members of the committee and recommended that the Department use the report along with other public input to determine what revisions to the proposed rules might be appropriate.

In addition, DNR established a Technical Advisory Group to evaluate technical merits of the proposed rule. As of December, 2002, the Technical Advisory Group had not reached agreement on how to present the efforts of the group.

As of December, 2002, DNR was evaluating the input of the Advisory Group members and other members of the public. DNR anticipates that it will present a proposed final rule to the NR Board sometime in 2003.

APPENDIX

Summary of Clean Air Act Requirements Affecting Wisconsin

Ozone Nonattainment Area Requirements

| Control Measures | <u>2007 Attainment Deadline (originally 1996)</u> Manitowoc County | <u>2007 Attainment Deadline</u> Kenosha, Milwaukee Ozaukee, Racine, Washington & Waukesha Counties |
|--|--|---|
| Reduce Ozone-Forming Emissions by Specified Percentages | x | x |
| Install Vapor Recovery Gas Pumps | x | x |
| Expand Vehicle Inspection Program | | x |
| Require Clean Fuel Vehicle Fleets | | x |
| Use Reformulated Gasoline | x | x |
| Adopt Transportation Control Measures | | x |
| Reduce Area Source Emissions | x | x |
| Expand New Facility Emission Requirements | | x |

Statewide Requirements

| | |
|--|---|
| Conduct Emissions Inventories | Vehicle Emission Standards |
| Regulate Toxic Pollutants | Implement Regional Ozone Control Strategies |
| Control Acid Rain | Enhance Enforcement |
| Expand Permit Program | Expand Monitoring |
| Regulate Stratospheric Ozone Depleting Chemicals | Conduct Air Quality Research |
| Regulate Industrial Emissions | Reduce Emissions from Urban Buses |