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Air Management Programs

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Introduction

The federal Clean Air Act and Clean Air Act Amendments of 1990 established air pollution control requirements that states must implement over many years. The U.S. Environmental Protection Agency (EPA) is responsible for federal implementation of the Clean Air Act.

The Wisconsin Department of Natural Resources (DNR) is responsible for development and oversight of the state's programs to comply with federal requirements. DNR has authority to conduct air quality programs under Chapter 285 of the statutes and under administrative rules in the NR 400 series. The Department of Transportation (DOT) administers certain provisions regarding vehicle inspections and other transportation control measures.

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 to: (a) develop and implement state implementation plans that outline the measures the state will take to reduce emissions of ozone, particulate matter, and other air pollutants, in compliance with federal requirements; (b) issue permits to construct new and operate existing sources of air emissions, and assess fees to assist in administration of the program; (c) perform compliance and monitoring activities of air pollutant sources; (d) monitor air quality across the state; and (e) administer other air management programs. It describes funding sources and expenditures for DNR air management programs. The state's programs are funded with a combination of federal revenues, state-assessed program revenue fees, and state segregated revenues.

Overview of Federal Clean Air Act Requirements

The federal Clean Air Act requires EPA to establish air quality standards for various air pollutants, especially ozone and particulate matter, and to designate areas in states that do not meet the standards. These areas are called "nonattainment areas." States are required to develop, submit to EPA, and implement a series of plans describing the programs and controls the state will utilize to reduce emissions and attain specific air quality levels by established dates or risk further federal requirements and eventually sanctions.

The Clean Air Act also established programs to: (a) create stricter standards on emissions from motor vehicles (mobile sources); (b) use alternative clean fuels; (c) create additional controls on air emissions at industrial facilities (stationary sources); (d) establish other air emission control measures for power plants, stationary engines at industrial facilities, small nonroad engines, and sources that are too small to regulate individually; and (e) regulate emissions of other hazardous air pollutants.

The Clean Air Act requires states to implement a permit program for certain stationary sources of emissions of air pollutants, especially power plants and large industrial facilities. States are also required to implement programs to reduce emissions of other hazardous air pollutants.

Department of Natural Resources Air Management Organizational Structure

The implementation of air quality programs in

Wisconsin is conducted by the Department of Natural Resources (DNR) Bureau of Air Management in the Environmental Management Division, as well as staff in the DNR regional offices and support from staff in the Department's other programs. 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 inventory of industrial source emissions.

The Bureau of Air Management consists of five sections in the central office in Madison. The Compliance, Enforcement, and Emission Inventory Section coordinates the program's efforts to ensure that industry and others comply with clean air laws, manages DNR's process of obtaining annual reports of air emissions and related fees, and coordinates DNR's efforts related to asbestos abatement and small sources' emissions. The Monitoring Section plans and executes a program of monitoring ambient air quality statewide, provides support for air quality forecasting, and tracks emerging issues. The Permits and Stationary Source Modeling Section writes construction and operation permits for air pollution sources, negotiates permit conditions with industry representatives, and analyzes computer modeling to determine how air pollutant emissions will affect air quality. The Air Quality Planning and Standards Section develops state implementation plans for major air pollutants such as ozone and particulate matter, develops plans and implements programs related to motor vehicles and motor vehicle fuels, performs air quality forecasting, and administers diesel grant programs. The Business Support and Information Technology Section prepares and tracks budgets and work plans, administers grants, provides rule oversight, performs outreach and communication, handles finance and data management, and provides support to program mangers on personnel management.

The Air Management program also has seven statewide 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 modeling; (e) monitoring quality assurance; (f) monitoring field operations; and (g) monitoring technical support.

DNR occasionally convenes public meetings to obtain input from potentially affected parties and agencies involved in the state's effort to meet federal air quality requirements. The Department also convenes an Air Management Study Group appointed by the DNR Secretary to discuss issues related to the state's efforts to meet federal air requirements. The Air Management program also holds informational meetings on certain significant or controversial issues or proposed administrative rules.

National Ambient Air Quality Standards and Nonattainment Areas

Federal Standards

Under the Clean Air Act, EPA establishes national ambient air quality standards (NAAQS) based on scientific determinations of the threshold levels of air contaminants that will protect public health with an adequate margin of safety. Ambient air standards relate to the quality of the air people 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. The standards are set based on the amount of time of exposure, in recognition that individuals can tolerate higher levels of exposure

to pollutants for short periods of time compared to prolonged exposure. Where air pollution exceeds the standards, EPA requires states to establish plans 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. EPA is required to review the science supporting the national ambient air quality standards every five years and either propose changes or recommend that no changes be made.

Criteria Pollutants

EPA has adopted NAAQS for six "criteria pollutants," including ozone, sulfur dioxide, nitrogen dioxide, particulate matter (solid or liquid matter suspended in the atmosphere), carbon monoxide and lead.

Ozone. Ozone is a gas composed of three oxygen atoms that, at ground level, is a primary component of smog. Smog is a persistent urban pollution and health problem. Air pollution sources do not directly emit ozone, but do emit air contaminants that are precursors to ozone. Ozone is created by a chemical reaction between nitrogen oxides (NO_x) and volatile organic compounds (VOCs), which react in sunlight on hot days to create ozone.

Major sources of ozone formation are large industrial facilities, electric utilities, motor vehicles and a variety of small sources that in total result in sizeable emissions. 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.

Sulfur Dioxide. Major sources of sulfur dioxide (SO_2) are power plants, industrial facilities, and heavy equipment and vehicles that burn fuel with a high sulfur content. SO_2 is a component of 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 acidic compounds, which causes damage to lakes, forests, other ecosystems and buildings.

Volatile Organic Compounds. VOCs, while not listed as criteria air pollutants, have been targeted by EPA and states for reduction as part of smog control efforts. VOCs include a number of chemicals that are emitted as gases from other solids and liquids. Major sources of VOC emissions are solvents used by industry and households, residential wood consumption, nonroad equipment, and motor vehicles.

Nitrogen Oxides. Major sources of nitrogen oxides (NO_x) are power plants, factories, other industrial combustion sources and automobiles. The criteria pollutant nitrogen dioxide is one type of NO_x. In addition to being a component of ozone, NO_x is a component of particulate matter and acid rain.

Particulate Matter. Particulate matter is also called haze, dust, smoke, or soot. It consists of minute pieces of solid particles and liquid droplets. Particulate matter can enter the lungs through the mouth and nose and cause negative health effects.

There are two categories of particulate matter. Inhalable coarse particles, known as PM10, include particles that have aerodynamic diameters (term for measuring the diameter of an irregularly shaped particle) less than or equal to 10 micrometers in diameter. PM10 particles can cause nose and throat irritation and bronchitis, respiratory and cardiovascular problems for susceptible people. (A micrometer, also known as a micron, is $1/1000^{th}$ of a millimeter. There are 25,400 micrometers in an inch. A human hair is approximately 70 micrometers in diameter.) PM10 usually results from actions such as crushing, grinding, or agricultural

plowing, or from wind-blown dust.

Fine particles, known as PM2.5, are 2.5 micrometers or smaller in diameter, and can penetrate more deeply into the lungs compared to larger particles. EPA studies show that fine particles are more likely than coarse particles to contribute to health effects such as premature deaths and hospital admissions, and at lower concentrations than PM10. Fine particles, such as those found in smoke or haze, can be emitted in forest fires, or can form through chemical processes when gases emitted from power plants, certain industries, and automobiles react in the air.

Nonattainment Areas

EPA designates areas 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 during certain times of the day or year. Areas that are designated as nonattainment must take actions to reduce emissions of the specific pollutant. The more severe the air quality problem, 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. States and areas that do not achieve air quality standards by the applicable attainment date face penalties and additional mandatory requirements.

States are required to develop state implementation plans (SIPs), with a component called an attainment demonstration, that identify steps the state is taking to bring nonattainment areas into attainment of NAAQS by required deadlines. If the state's nonattainment areas fail to attain the national standard by the required deadline, the state must submit a revised state implementation plan prescribing control measures necessary to meet the air quality standards, including measures prescribed by EPA. This is discussed in a later section on state implementation plan requirements.

Currently, ozone, PM2.5, and sulfur dioxide are air contaminants for which some Wisconsin counties have been or are in nonattainment. Background on the standards and nonattainment designations issued prior to 2021 can be found in previous versions of the Legislative Fiscal Bureau's Informational Paper entitled, "Air Management Programs."

Ozone Attainment

An area is considered in nonattainment for ozone if a violation of the ozone standard occurs within the area. EPA determines the boundaries of the region on the basis of demonstrated air quality monitoring data.

EPA issued ozone standards in 1978, 1997, 2008, and 2015. For the 2008 eight-hour ozone standard of 0.075 parts per million, or 75 parts per billion, EPA in April of 2022 approved for attainment status the portion of Kenosha County east of Interstate 94, which was the final area in Wisconsin not yet designated.

In October, 2015, EPA issued the current eight-hour ozone standard of 0.07 parts per million (ppm), or 70 parts per billion (ppb). In Wisconsin, designations of marginal nonattainment as of December of 2022 include portions of Sheboygan, Washington, Racine, Waukesha, and Kenosha Counties, as well as all of Milwaukee and Ozaukee Counties. A Door County area was designated as attainment in April, 2022, and a Manitowoc County area was designated as attainment in March, 2022.

In March, 2022, DNR promulgated rules to incorporate the 2015 ozone NAAQS into state administrative code. Permits issued for facilities in these areas require more stringent emissions limits for NO_x and VOCs. Detailed descriptions of the boundaries of the nonattainment areas are available on the DNR website.

Particulate Matter Attainment

EPA made initial designations of PM10

nonattainment areas in 1991, designating all of Wisconsin as attainment. EPA has not changed the Wisconsin designation for PM10 since then. The PM10 standard in effect since 1997 is a 24-hour average of 150 micrograms per cubic meter.

EPA established standards for PM2.5 in 1997, 2006, and 2012. EPA requires states to establish monitoring sites and collect data on fine particulate matter. EPA specifies the types of data that states must collect. EPA uses the data to determine whether an area is to be designated as nonattainment.

In December, 2012, EPA revised the PM2.5 annual average standard to 12 micrograms per cubic meter, and retained the 24-hour average threshold of 35 micrograms per cubic meter. In December, 2014, EPA issued final designations of attainment areas for the 2012 annual PM2.5 standard, and classified all of Wisconsin as attainment. DNR promulgated administrative rule changes effective January 1, 2018, to adopt the federal 2012 PM2.5 standards. As of December, 2022, all of Wisconsin remains designated attainment of the PM2.5 standard.

Sulfur Dioxide Attainment

In 2010, EPA established a sulfur dioxide (SO_2) one-hour standard of 0.075 ppm (75 ppb), and DNR promulgated administrative rule changes to adopt the federal SO_2 standards in 2016. In 2013, EPA designated a portion of Oneida County as nonattainment, including the City of Rhinelander and nearby areas; the area was re-designated to attainment in January, 2022. In December, 2021, EPA designated portions of Outagamie County as nonattainment for the 2010 SO_2 NAAQS, except for the parts of the county in Oneida tribal lands. In April, 2022, EPA withdrew the nonattainment designation and finalized an attainment/unclassifiable designation based on supplemental data provided by DNR. The remaining areas of Wisconsin are designated as attainment.

State Requirements

If EPA adopts an air quality standard, states are required to adopt the standard, and Wisconsin statutes require DNR to promulgate by administrative rule a similar standard. The statutes specify that the state standard may not be more restrictive than the federal standard.

If EPA modifies an air quality standard that was in effect in 1980, statutes require DNR to modify the corresponding state standards unless the Department finds that the modified standard would not provide adequate protection for public health and welfare. DNR is only allowed to make this finding if the finding is supported with written documentation that includes specific information related to: (a) a public health risk assessment; (b) an analysis of population groups subjected to the air contaminant; (c) an evaluation of options for managing the risk; and (d) a comparison of the proposed standard with standards in Illinois, Indiana, Michigan, Minnesota, and Ohio.

If EPA does not adopt an air quality standard for an air contaminant, DNR may promulgate a state ambient air quality standard if the Department finds the standard is needed to provide adequate protection for public health or welfare, and if DNR provides specific written documentation to support its finding, including the four components described above.

State statutes specify that DNR may not identify a county as part of a nonattainment area under the Clean Air Act if the atmospheric concentration of an air contaminant in that county does not exceed the ambient air quality standard, unless the county is required to be designated under the Clean Air Act. For example, if the Clean Air Act requires that all of a metropolitan statistical area must be designated, a county within the metropolitan area might not have air quality standard exceedances, but might have to be identified as part of a federal nonattainment area.

Statutes require that when DNR issues documents that define or list specific nonattainment areas or that recommend that areas be designated as nonattainment areas, the Department must first hold a public hearing and receive public comment. DNR may not issue the documents related to the nonattainment areas until at least 30 days after the public hearing.

Statutes require that, at least 60 days before the Governor is required to make a submission to EPA on a nonattainment designation, DNR must provide a report to the Legislature's committees on the environment. The report must contain a description of the proposed nonattainment area and supporting documentation. DNR must respond to any comments from the legislative committees, but legislative approval is not required before DNR issues its list or recommendation, or before the Governor makes a submission to EPA. From July, 2020, through June, 2022, DNR submittals to the Legislature included: (a) proposed ozone attainment designations for Door, Manitowoc, and Kenosha Counties; (b) state action plans for marginal nonattainment areas; (c) a proposed SO_2 attainment designation for Oneida County; and (d) a ten-year maintenance plan for PM2.5 2006 standards for the Milwaukee-Racine area.

State Implementation Plans

Federal Requirements

The Clean Air Act requires states to achieve compliance NAAQS through the development of, and revisions to, a "state implementation plan" (SIP). The SIP is a series of documents and regulations that identify 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 air quality standards by specified deadlines for each classification of nonattainment. Areas with worse air quality classification have to implement more controls.

The SIP must include provisions for: (a) enforceable emissions limitations; (b) air quality monitoring programs; (c) an air permit program and fees to cover the cost of permitting; (d) prohibition of emissions that contribute significantly to nonattainment of an air quality standard or deterioration of air quality; (e) applicable controls on interstate air pollution transport; (f) demonstration of adequate personnel, funding, and state statutory authority; (g) requirements for monitoring by stationary sources; (h) enforcement authority and procedures; (i) procedures for revising the plan; (j) requirements for consultation and notification of local governments; and (k) air quality modeling to predict the effect of air emissions on air quality standards.

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

States are required to submit rate-of-progress state implementation plan revisions to EPA at various time intervals to demonstrate the state has achieved required milestones for achieving required emissions reductions.

Sanctions for Deficient State Implementation Plans

If a state does not submit a required SIP or submits a SIP that is judged to be inadequate, EPA may impose sanctions on the state. Under certain circumstances, if the state fails to submit a SIP demonstrating attainment of an ambient air quality standard, the Clean Air Act requires EPA to impose sanctions on the state. If a state does not rectify its SIP situation and sanctions are enacted, EPA develops a federal implementation plan to move the state toward attainment. In general, if EPA finds a SIP submittal incomplete, the state is

given 18 months to correct 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 that 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 determined to be deficient.

In February, 2022, EPA proposed disapproval of the Wisconsin SIP submittal to address ozone transport for the 2015 ozone standard. In April, 2022, EPA published a proposed federal implemental plan (FIP) addressing ozone transport for 26 states including Wisconsin. DNR reports that this action would resolve the disapproval. EPA is required to take final action on outstanding 2015 ozone transport SIPs by January 31, 2023.

Wisconsin Actions

Wisconsin's SIP addresses ozone, particulate matter, regional haze, and emissions of other regulated pollutants. (EPA regional haze regulations promulgated in 1999 are intended to reduce emissions affecting air quality in national parks and wilderness areas.) Wisconsin has submitted a series of revisions or modifications to the state implementation plan in accordance with a series of federal requirements. DNR continually develops plans and promulgates rules to implement the SIP.

To respond to federal requirements that nonattainment areas include more controls on emissions, Wisconsin's SIP has placed more stringent controls on ozone precursor emissions in the state's ozone nonattainment counties. From September, 2020, to August, 2022, the state submitted multiple SIP components to EPA that include: (a) area or county redesigations under ozone and SO_2 standards; (b) ozone new-source review procedures; (c) emissions reporting; and (d) state permit system changes. Wisconsin also submitted a new 10-year regional haze SIP in July, 2021, which is pending EPA approval.

Under Wisconsin statutes, DNR is required to adopt revisions to the SIP 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 (b) the measures are necessary to comply with percentage emission reductions required under the Clean Air Act.

State statutes specify that DNR may not submit a state implementation plan to EPA that includes a control measure or strategy that imposes or may result in regulatory requirements unless the Department has first promulgated the control measure or strategy as an administrative rule. DNR must submit a state implementation plan and a report describing the plan to the Legislature's environmental committees for review at least 60 days before the Department is required to submit the SIP to EPA. DNR is required to respond to any comments from the legislative committees but legislative approval is not required before DNR issues its list or recommendation, or before the Governor makes a submission to EPA.

The statutes authorize DNR to use the administrative rule process to develop and implement SIP modifications. Examples of DNR rules related to the SIP process include 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; and (f) monitoring requirements. 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.

States are required to regularly demonstrate to EPA that they are making specified progress to achieve compliance with emissions reductions requirements. DNR has submitted a series of rate-of-progress SIP revisions to EPA, which demonstrated the state had achieved required milestones of reducing emissions from stationary, mobile and area sources.

Interstate Cooperative Efforts

Wisconsin works with neighboring states to study regional air quality issues and to respond to issues related to the transport of emissions by wind from one area to another. Regional transport of air pollutants can be partially responsible for violations of air quality standards in other areas of the country.

The Lake Michigan Air Directors Consortium (LADCO) is an organization of Wisconsin, Illinois, Indiana, Michigan, Ohio, and Minnesota that studies regional ozone pollution and how best to control it in the Lake Michigan region. LADCO consists of a Board of Directors (the state air program directors), a technical staff, and several workgroups. The member states and LADCO staff cooperate on technical assessments and studies of regional air quality problems such as ozone, fine particles, regional haze, and air toxics. LADCO also provides a forum for the states to discuss regional air quality issues.

Types of Pollutant Sources

Pollutant sources are generally grouped into categories based on the characteristic of the pollutant source. The Clean Air Act establishes different control mechanisms for each type of source, and in some cases, subdivides the source for purposes of setting control requirements. The categories of pollutant sources include stationary, mobile, and area sources, and nonroad engines.

Stationary Sources

Stationary sources generally include fixed sources of pollution, such as factories, power plants, and other business facilities. Many of the Clean Air Act requirements for stationary sources apply only to those facilities that emit pollutants in amounts greater than a certain quantity.

Larger potential emitters of pollutants are referred to as major sources, and often emit substantial quantities of air contaminants such as 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 have to meet regulatory requirements as stringent as the same source would have to meet in a nonattainment area. Minor stationary sources include all facilities not categorized as a major source. Major sources are the primary facilities subject to the requirements of the Clean Air 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. EPA has adopted guidelines setting a generic method of controls that will meet the requirements for specified industrial categories. The facilities that 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

Mobile sources generally include any motor vehicle equipment that is capable of emitting any air pollutant while moving. Mobile sources include highway vehicles such as automobiles, buses, trucks, and motorcycles. Although emissions controls programs have been implemented, mobile sources of air pollution continue to be the largest single source of ozone-forming pollutants and carbon monoxide emissions.

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.

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

In Wisconsin, the six counties of Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha are subject to the reformulated gasoline requirements. The RFG requirement did not end when the counties achieved attainment of the 1997 ozone standard because the Clean Air Act amendments specifically require the use of RFG in the Milwaukee-Racine Consolidated Metropolitan Statistical Area.

The Clean Air Act requires certain centrally fueled fleets of 10 or more motor vehicles to operate clean-fuel vehicles and use clean fuels. This involves the use of vehicles that meet certified low-emission vehicle emission standards.

EPA has adopted, and continues to develop, regulations for tailpipe and evaporative emissions from vehicles, including: (a) use of ultra-low sulfur diesel fuel in heavy-duty diesel engines for highway vehicles; (b) greenhouse gas emission standards for new passenger cars, light-duty trucks, and medium-duty passenger vehicles; and (c) greenhouse gas and fuel economy standards for medium- and heavy-duty engines and vehicles. The requirements vary by model year and type of vehicles.

In December of 2021, EPA finalized more stringent greenhouse gas emission standards for light-duty cars and trucks through model year 2026. EPA is also promulgating new rules for NO_x emissions from heavy-duty vehicles and engines beginning with the 2027 model year. In April 2022, the National Highway Transportation Safety Administration (NHTSA) finalized more stringent corporate average fuel economy (CAFE) standards for light-duty cars and trucks through model year 2026.

Area Sources

Area sources encompass all other sources too small and numerous to regulate individually, and generally include paints, solvents, asphalt paving, bakeries, gas stations, auto body finishing shops, degreasing supplies, farm equipment, pesticides, small graphic arts shops, and consumer products. 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 ozone attainment plans submitted to EPA.

EPA regulates 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. DNR promulgated a rule to conform with updated federal RACT guidelines for VOCs from miscellaneous metal and plastic parts coatings and industrial adhesives. The rule was submitted to EPA in June of 2022.

Nonroad Engines

EPA regulates emissions from nonroad engines such as recreational vehicles, industrial equipment, lawn mowers and garden equipment, off-highway vehicles, construction equipment, farm equipment and marine engines. In Wisconsin, these regulations primarily affect small-engine manufacturing plants.

EPA regulations for heavy-duty nonroad diesel engines limit emissions of nitrogen oxides, hydrocarbons, carbon monoxide, and particulate matter, and include significant reductions in the allowable sulfur content for fuel. Requirements and the implementation timeline vary by type of engine and began with model year 2008. These engines include certain engines over 25 horsepower such as those used in forklifts, electric generators, airport baggage transport vehicles, certain farm and construction uses, warehouses, and ice-skating rinks.

EPA regulations phased in emission standards between 2006 and 2018, depending on the type of engine, for the exhaust of: (a) recreational vehicles such as snowmobiles, off-highway motorcycles and all-terrain vehicles; (b) recreational marine diesel engines over 50 horsepower used in recreational boats; (c) marine diesel engines above 800 horsepower and locomotives; (d) small nonroad spark-ignition engines rated below 25 horsepower used in household and commercial applications, such as lawnmowers, garden equipment, utility vehicles, generators, and other types of construction, farm, and industrial equipment; (e) marine spark-ignition engines and vessels, including outboard engines, personal watercraft, and inboard engines used in speedboats and recreational watercraft; and (f) large marine diesel engines, such as on ocean-going vessels.

DNR Revenues and Expenditures

DNR is authorized base funding of $17.3 million with 140.75 positions for air management activities in 2022-23. Approximately half of the staff is located in the Madison central office and the other half is in the DNR regional and subregional offices located throughout the state. Table 1 lists the funding sources and amounts, and positions authorized for DNR air management programs.

Within the Environmental Management Division, the Bureau of Air Management is authorized $15.4 million with 128.75 permanent positions to conduct monitoring, permitting, planning and compliance activities. During 2022-23, the Bureau is planning for approximately 83.25 full-time equivalent (FTE) positions of staff effort, including central office staff and regional staff. The program anticipates holding an equivalent of 33.0 FTE positions vacant during 2022-23, based on available federal and state revenues. As of December 1, 2022, 31.0 state-funded positions were vacant. Of these 31.0 state-funded vacancies, 26.5 were in the appropriation for operating air permits for federally regulated sources.

The Environmental Management Division is authorized 3.0 positions from federally-regulated stationary source fees for division-wide program management. The Bureau of Law Enforcement is authorized 2.5 positions from air funding sources. The Internal Services Division and External Services Division are authorized 6.5 positions from federal and state air funding sources for legal, administrative services, customer service and

Table 1: 2022-23 DNR Air Management Authorized Funding and Positions

Source	Fund Source	Amount	Positions
Bureau of Air Management			
Program Revenue (PR)			
Stationary Source Fees – Federally-Regulated Sources	PR	$6,024,300	52.00
Stationary Source Fees – State-Regulated Sources	PR	1,316,900	12.00
New Source Construction Permit Fees	PR	2,292,800	19.50
Asbestos Abatement Fees	PR	630,900	4.00
Ozone-Depleting Substance Fees	PR	135,500	1.50
Federal Clean Air Grants	FED	3,424,000	34.00
Petroleum Inspection Fund – Segregated Revenue (SEG)	SEG	1,518,200	4.75
Environmental Management Account – (SEG)	SEG	60,000	1.00
Subtotal Bureau of Air Management		$15,402,600	128.75
Division of Environmental Management			
Stationary Source Fees --- Federally-Regulated Sources	PR	$493,500	3.00
Public Safety			
Stationary Source Fees – Federally-Regulated Sources	PR	$104,000	1.00
Federal Clean Air Grants	FED	161,400	1.50
Internal and External Services Programs			
Stationary Source Fees – Federally-Regulated Sources	PR	$490,800	5.75
Federal Indirect Cost Reimbursement	FED	544,400	0.00
Petroleum Inspection Fund	SEG	101,900	0.75
Total DNR Air Management Funding		$17,298,600	140.75

licensing, communication and education strategy, and to assist businesses in meeting environmental requirements.

DNR's air management activities are funded from several sources, as shown in Table 2. Revenues from all sources were $12.5 million in 2020-21 and $13.5 million in 2021-22. Approximately 81% of funding for the program during the two years came from state-assessed stationary source operation permit fees, federal Clean Air Act grants, and the segregated petroleum inspection fund.

Approximately 39% of revenues in the two-year period of 2020-21 and 2021-22 came from stationary source operation permit fees paid by federally-regulated and state-regulated sources. Over 52% of air program positions were funded from stationary source fees during the two years, including 73.75 PR positions authorized from stationary source operation permit fees paid by these regulated sources. These fees are discussed in detail in a subsequent section related to operation permits and fees.

EPA provides the state with grants for general program operations associated with implementing Clean Air Act provisions, based on an agreed-upon work plan between EPA and DNR. EPA also provides funds for specific purposes such as to purchase air monitors to determine ambient levels of particulate matter in the air, to study air pollutants deposited in the Great Lakes and to monitor air toxics. DNR is authorized 35.5 permanent federal positions in 2022-23, of which 34.0 are in the Bureau of Air Management and the remaining 1.5 are in Bureau of Law Enforcement.

DNR is authorized 19.5 PR positions funded from air construction permit fees. The fees and activities funded from the fees are discussed in a subsequent section related to construction permits and fees.

Table 2: Revenues for DNR's Air Management Programs - 2020-21 and 2021-22

Source	2020-21 Actual	2020-21% of Total	2021-22 Actual	2021-22% of Total	Total 2020-21 and 2021-22	% of Total
Stationary Source Operation Permit Fees						
- Federally-Regulated Sources	$3,707,200	29.6%	$4,180,800	30.9%	$7,888,000	30.3%
- State-Regulated Sources	1,183,300	9.5	1,197,800	8.8	2,381,100	9.1
Federal Clean Air Act Grants	3,428,400	27.4	4,426,000	32.7	7,854,400	30.1
Petroleum Inspection Fund	1,423,600	11.4	1,518,200	11.2	2,941,800	11.3
Permit Review and Enforcement Fees	1,806,800	14.4	1,278,000	9.4	3,084,800	11.8
Asbestos Abatement Fees	711,500	5.7	752,500	5.6	1,464,000	5.6
Ozone-Depleting Substances Fees	139,600	1.1	130,200	1.0	269,800	1.0
Environmental Management Account	114,900	0.9	60,000	0.4	174,900	0.7
Other Program Revenues	3,900	<0.1	2,300	< 0.1	6,200	<0.1
	$12,519,200	100.0%	$13,545,800	100.0%	$26,065,000	100.0%

Note: Federal grants and state-assessed fees include actual revenues. Petroleum inspection fund, environmental management account, and general purpose revenues include authorized funding in both years.

DNR has 5.50 segregated (SEG) petroleum inspection fund (PIF) positions for air program activities in 2020-21 (4.75 are in the Bureau of Air Management, and 0.75 are in the Internal Services and External Services Divisions). DNR appropriations from the petroleum inspection fund are used for air management activities related to mobile source pollution control, air emission reduction from fuel storage and distribution systems, pollution prevention, and department-wide activities related to air management.

In addition, DNR is authorized $30,000 PIF SEG annually to construct and operate an ozone air quality monitoring station in Sheboygan County that meets certain criteria, as well as a sulfur dioxide monitoring site beginning January 1, 2020. Prior to 2017-18, the air monitoring station in Sheboygan County was funded from general purpose revenue (GPR). The petroleum inspection fund receives revenues from the 2¢ per gallon petroleum inspection fee assessed on petroleum-based fuel products entering the state. [For more information about the petroleum inspection fund, see the Legislative Fiscal Bureau's informational paper entitled, "Petroleum Inspection Fund."]

The DNR Air Management program is authorized 1.0 position from the segregated environmental management account of the environmental fund. The position is responsible for permitting, monitoring, and compliance related to industrial sand mining operations. [See the Legislative Fiscal Bureau's informational paper entitled, "Environmental Management Account."]

DNR collects other air pollution fees related to asbestos abatement inspections and the regulation of ozone-depleting refrigerants, and is authorized 5.5 positions from these fees. These fees and activities are discussed in subsequent sections related to those programs.

Air Emissions Reporting

Owners or operators of stationary sources of air emissions are required to provide DNR information related to their annual amount of emissions of various air contaminants. DNR compiles the information and is required to report it to EPA. DNR also uses the data to develop state implementation plans required by EPA and assess emission fees to stationary sources.

Owners or operators are required to submit data to DNR every spring for air emissions of the

Table 3: Reported Air Emissions from Stationary Sources, 2010 Through 2021 (Tons Per Year)*

Calendar Year	Sulfur Dioxide	Nitrogen Oxides	Particulate Matter**	Particulate Matter 10**	Volatile Organic Compounds	Carbon Monoxide	Hazardous Air Pollutants	CFCs	TRS	Total
2010	163,366	68,620	22,904	12,589	24,701	42,053	12,566	47	479	347,325
2011	142,930	65,261	21,874	13,058	24,247	42,668	12,859	1	543	323,441
2012	107,498	55,556	20,675	11,702	23,483	42,661	8,051	0	541	270,167
2013	108,986	56,044	19,089	11,288	23,184	42,394	9,947	0	525	271,457
2014	85,255	53,558	21,601	13,270	23,734	41,299	9,270	1	578	248,566
2015	61,683	70,682	17,548	9,646	26,142	49,310	11,229	2	601	246,843
2016	33,714	41,338	15,891	9,013	22,623	32,366	3,357	9	526	158,837
2017	29,995	42,074	17,831	9,658	22,334	34,464	2,527	1	557	159,441
2018	26,819	38,075	16,161	8,209	21,996	31,615	2,100	0	779	145,754
2019	19,927	31,971	13,863	7,394	21,075	26,188	1,150	0	782	122,351
2020	17,460	30,546	14,471	8,085	20,099	24,352	1,127	0	501	116,642
2021	16,905	27,780	14,262	7,337	18,757	22,016	1,042	0	349	108,448

*Tonnage figures are based on reported emissions of regulated stationary sources.
**PM includes particles at or below 100 microns in size. PM10 includes particles 10 microns or smaller. EPA and DNR require separate reporting of PM and PM10 and use different methods to calculate emissions of each.
CFCs = Chlorofluorocarbons (CFC-12, HCFC-141B, and HCFC-22)
TRS = Total reduced sulfur, sulfur trioxide and hydrogen sulfide

prior calendar year. DNR administrative rules include requirements for reporting procedures and minimum reportable amounts that vary by type of air contaminant. Table 3 lists the total amount of emissions from Wisconsin stationary sources from 2010 through 2021, as reported annually by federally-regulated and state-regulated facilities to DNR. The total tons of reported emissions declined from 347,325 tons in 2010 to 108,448 tons in 2021.

Air Construction Permits and Fees

The Clean Air Act requires stationary sources that emit air pollution to obtain a construction (new source) permit before beginning construction of the air pollution source. The program is also known as the new source review program. A construction permit allows a company to build, initially operate and test the air pollution source. The permit outlines 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 administers construction permit requirements under administrative code Chapter NR 406. DNR permit review staff work in each of the five DNR geographic regions. They are assigned to permit sources within specific counties in the regions.

Types of activities that may require a permit include: (a) use of adhesives, paints, inks or other solvents that cause emissions of VOCs and hazardous air pollutants (HAPs); (b) fuel use, excluding electricity, that results in emissions of carbon monoxide, sulfur dioxide, NO_x 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 auto body refinishing; (b) food products and nondurable 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.

All new, modified, reconstructed, relocated, or replaced air pollutant sources are required to obtain a construction permit before beginning construction, unless they are exempt from construction permit requirements under NR 406. The permit expires after 18 months and can have one 18-month extension under certain instances. Administrative rules include exemptions from construction permit requirements for specific types of sources with low emissions that meet specific criteria.

The federal construction permit requirements vary depending on whether 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 that are required to obtain construction permits in areas meeting the air quality standards are 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.

Under federal and state requirements, certain major sources in attainment areas are required to meet "best available control technology" (BACT) emissions limitations specified in the DNR permit on a case-by-case basis. Certain facilities in nonattainment areas 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.

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. The operation permit program is described in a subsequent section.

DNR issued 83 construction permits in 2020-21 and 69 in 2021-22. DNR has issued a total of 5,221 construction permits between 1988 and June 30, 2022. As of July 1, 2022, DNR was processing 48 construction permit applications.

Revenues and Expenditures

DNR activities related to reviewing and issuing construction permits are funded from program revenue (PR) fees authorized in administrative code Chapter NR 410. 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 2022-23, DNR is authorized funding of $2,292,800 with 19.5 positions to administer the construction permit program. Table 4 shows construction permit fee revenues and expenditures for

Table 4: Air Construction Permit Revenue and Expenditures

Year	Revenue	Expenditures
2012-13	$2,205,800	$1,507,200
2013-14	1,961,200	2,103,500
2014-15	2,382,000	2,024,900
2015-16	1,849,600	1,713,000
2016-17	1,841,700	1,955,800
2017-18	2,128,500	1,401,600
2018-19	1,483,400	1,421,100
2019-20	1,736,800	1,781,600
2020-21	1,806,800	2,079,500
2021-22	1,278,000	1,713,200

2012-13 through 2021-22. On July 1, 2022, the account had a cash balance of $1.53 million.

DNR administrative rules establish construction permit fees for reviewing applications to construct or modify sources of air pollutants. The fees, last revised effective January 1, 2011, cover actions such as review of major or minor source construction, modifications to sources, expedited review, modeling analysis, revisions to a permit, emissions testing, and determination of exemption from a construction permit or certain permit requirements. Applicants who withdraw or stop work on an application have to pay for review work completed to that point. The average fee was approximately $17,990 per permit in 2020-21 and $16,347 in 2021-22.

Timeline for Permit Issuance

In 2021-22, DNR issued construction permits in an average of 58 days after the receipt of a complete application, It took an average of 119 days from the time of the initial receipt of the application to issuance of the permit. However, the time varies widely, depending on the size and complexity of the source, the applicant's timeline, the quality of the application materials, whether the applicant requests expedited review and whether a public hearing is held regarding the application.

DNR is generally required to process a construction permit within 180 days of receiving a completed application if there is no public hearing, or 240 days if there is a hearing. The time allowed for processing a construction permit for a minor source is typically 120 days after the application is complete if there is no public hearing, or 180 days if there is a hearing.

After DNR receives a construction permit application, the Department has 20 days to provide the applicant with written notice of any additional information required to determine if the proposed construction, reconstruction, replacement or modification will meet state requirements. After the applicant provides the information, DNR has 15 days to notify the applicant whether the information satisfies the Department's request. The application is considered complete when the applicant satisfies the Department's request. A DNR air management permit reviewer then prepares an analysis of the complete application, evaluates the application to quantify the proposed emissions, identifies applicable emission limitations, analyzes the effect of the project on ambient air quality and prepares a preliminary determination on the approvability of the application. The DNR analysis and preliminary determination must be completed within 90 days after the application is considered complete for major sources, or within 30 days for minor sources.

A public notice and 30-day public comment period follows issuance of the preliminary determination. DNR may hold a public hearing if a hearing is requested within 30 days after DNR gives public notice if requested by a person who may be affected by the issuance of the permit, any affected state or EPA. DNR must hold the public hearing within 60 days after the deadline for requesting a hearing if the Department determines that there is a significant public interest in holding a hearing. DNR must issue or deny the construction permit within 60 days after the close of the comment period or public hearing, whichever is later.

Other Construction Permit Requirements

DNR administrative rules exempt certain sources from the requirement to obtain a construction permit if the emissions from the sources do not present a significant hazard to public health, safety or welfare, or to the environment. The rules require payment of a determination or application fee, and provide: (a) an exemption from construction permit requirements for certain facilities that

have actual emissions of pollutants less than certain specified levels (depending on the type of source), and that are not subject to additional control requirements such as federal hazardous air pollutant standards; and (b) an exemption from construction permit requirements for projects not exceeding certain maximum theoretical emissions. Examples of exempt sources are certain grain storage facilities, motor vehicle refinishing shops, graphic arts operations, and painting or coating operations. DNR issued 52 exemptions from construction permits in 2020-21 and 66 in 2021-22.

Among the exemptions for which owners or operators may apply are an exemption to, or modification of, certain construction permit requirements for activities or operations such as: (a) exemptions for certain equipment used for testing or research; (b) a modification to a stationary source regulated by a plant-wide applicability limitation; and (c) minor modifications at major stationary sources. DNR issued three of these permit exemptions or modifications in 2020-21 and three in 2021-22. Exemptions generally were for research and testing equipment and for facilities that would not result in a significant increase in emissions.

A person may request a waiver to the requirement to obtain a construction permit before beginning construction, reconstruction, replacement, or modification of a stationary source if the person shows that beginning the activity prior to the issuance of the permit is necessary to avoid undue hardship. Construction permit waivers allow a facility to begin on-site preparation such as site clearing, grading, dredging or landfilling prior to receiving a construction permit when necessary to avoid specified situations of undue hardship. The Department is required to act on the waiver request within 15 days of receipt of the request. A statutory $300 fee is assessed for the waiver request. In each of 2020-21 and 2021-22, DNR issued 15 waivers.

DNR promulgated administrative rule changes effective December 1, 2015, to simplify the construction permit process for certain sources, and to revise the definition of "commence construction" for minor source construction permits. The rules include: (a) an exclusion for minor sources that allows specified pre-construction activities to proceed before the construction permit is issued; (b) allowance for revocation of certain construction permits at closed facilities without providing written notice and without waiting 21 days; and (c) an exemption for certain restricted- use engines. On October 1, 2020, new provisions of Chapter NR 406 took effect to align the definition of "commence construction" with the federal definition.

Air Operation Permits and Fees

The Clean Air Act requires sources that emit above certain thresholds of air pollutants to obtain an operation permit to operate the source after the source is constructed. The federal operation permit program is also known as the Title V permit program, after the section in the Clean Air Act Amendments of 1990 that established the program. Federal requirements include greater oversight and more detailed compliance requirements for sources with these permits.

EPA must administer an operation permit program if the state fails to do so. EPA delegated to Wisconsin the authority to administer the federal operation permit program with interim approval in March, 1995, and full approval effective November 30, 2001. This paper refers to Title V permits and fees as federally-regulated sources.

While federal air permit requirements are generally only applicable to major sources, state law authorizes Wisconsin to also regulate minor sta-

tionary sources. DNR also issues non-Title V permits to sources required to obtain a permit under state law, but not federal law. This paper refers to these permits and fees as state-regulated sources.

An operation permit: (a) includes information about which pollutants are being released; (b) outlines all of the air pollution requirements that apply to a source: (c) establishes detailed limits on the emissions of air contaminants; (d) establishes a maximum increase over a baseline of emissions; (e) includes operating conditions to ensure that the source is in compliance with federal and state air pollution requirements; and (f) 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. Before DNR issues a permit to a stationary source, the source must demonstrate that it will meet federal and state standards.

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 code Chapter NR 407.

Federally-Regulated Operation Permits

A federal operation permit (FOP) is required for all facilities defined as major sources, many sources subject to federal air toxics regulation, and many facilities subject to federal new source emission 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 in attainment areas and in marginal or moderate ozone nonattainment areas for any criteria pollutant, or 50 tons per year of VOC or NO_x in serious nonattainment areas, or 25 tons per year of VOCs or NO_x in severe nonattainment areas; (b) 10 tons per year of any federal HAP; or (c) 25 tons per year of all combined federal HAPs. Examples of federally-regulated sources are large factories and power plants. DNR categorizes some permits as federal operation permits if the source is in the process of applying for a FOP, or is currently operating under a state operation permit or construction permit while it applies for a FOP.

State-Regulated Operation Permits

Certain stationary sources that emit air pollutants are known as state-regulated sources for purposes of operation permit requirements and fees. In general, these sources: (a) voluntarily accept permit limits that reduce emissions enough to be regulated under the state permit program, with federally enforceable conditions, and are known as "synthetic minor" sources; or (b) are required under state, but not federal law, to obtain an air operation permit, and are known as "natural minor" sources. 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.

State-regulated sources that are synthetic minor (SM) sources are required to have an operation permit, and have the potential to be a major source. They may instead obtain a state operation permit if they meet one of the following criteria:

1. SM80 (Synthetic Minor). These sources may, instead of obtaining a federal operation permit, obtain a state permit that contains conditions that limit potential emissions to less than 100% of the major source thresholds, but allows the emissions to be greater than 80% of the major source threshold. These permits are usually known as a federally enforceable state operating permit (FESOP). Some permits categorized by DNR as FESOP may not meet all the criteria of a SM80, but still include federally enforceable conditions to limit emissions in a similar manner as

FESOPs.

2. SM-FESOP. These sources may choose to obtain a FESOP that contains federally enforceable conditions that limit potential emissions to less than 80% of the major source threshold.

3. SM-ROP. These sources may obtain a registration operation permit (ROP), discussed in a subsequent section, that contains federally enforceable conditions that limit potential emissions to either less than 25%, or less than 50% of the major source threshold.

4. SM-GOP. These sources meet criteria for coverage under a general operation permit (GOP), discussed in a subsequent section, that contains federally enforceable conditions that limit emissions to less than the major source threshold.

5. SM-Other. These sources are issued a permit that does not meet the other SM categories, with conditions specific to the facility, and includes federally enforceable conditions that limit potential emissions to less than 80% of the major source threshold. Alternatively, some of these sources may be operating while DNR is reviewing their application for an operation permit.

Natural minor (NM) sources have potential emissions that are naturally below major source thresholds, and thus, are not considered federally-regulated sources. DNR issues state operation permits to facilities that meet one of the following criteria:

1. NM-SOP. These sources have a state operation permit (SOP) with provisions specific to the facility.

2. NM-ROP. These sources are required to have an operation permit and are covered by a registration operation permit.

3. NM-GOP. These sources are required to have an operation permit and are covered by a general operation permit.

4. NM-Other. These sources may be operating under a different permit provision but will be issued an operation permit under the state-regulated sources program, or may be in the process of applying for an operation permit.

Number of Permits Issued

In total, DNR has issued 643 initial federal operation permits (FOP) as of June 30, 2022. An additional three new or renewal FOP applications were in the public comment phase. DNR issued 885 initial FESOPs as of June 30, 2022. The operation permit is issued for operations at the entire facility and is valid for five years. As of June 30, 2022, DNR issued 1,792 renewals (1,036 FOPs and 756 FESOPs) out of 2,428 applications received.

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 July, 2022, 138 initial SOPs and 59 SOP renewals were issued and no additional applications were in the public notice and comment phase of review.

Timeline for Permit Issuance

After DNR receives an operation permit application, the Department has 20 days to provide the applicant with written notice of any additional information required to determine if the source, upon issuance of the permit, will meet state requirements. After the applicant provides the information, DNR has 15 days to notify the applicant whether the information satisfies the Department's request. After DNR determines the application is complete, a DNR air management permit reviewer prepares an analysis of the complete application, and prepares a preliminary determination on the approvability of the application. (There is no statutory timeline for this

review.)

A public notice and 30-day public comment period follows issuance of the preliminary determination. DNR may hold a public hearing if a hearing is requested within 30 days after DNR gives public notice. A request may be made by a person who may be affected by the issuance of the permit, any affected state or EPA. DNR must hold the public hearing within 60 days after the deadline for requesting a hearing if the Department determines that there is a significant public interest in holding a hearing. After the public hearing and comment period, DNR must issue or deny the operation permit, and submit it to EPA for approval if required by the Clean Air Act. If EPA objects to the issuance of the operation permit, DNR must revise the proposed permit as necessary to satisfy the objection.

The statutes generally require DNR to approve or deny an operating permit application within 18 months of receipt of a complete application for existing sources; a decision on the operating permit for new or modified sources must be made within 180 days of receipt of a complete application. DNR is required to notify an applicant for an operation permit, before issuing the permit, of any proposed emissions monitoring requirement for the permit. The applicant may choose to demonstrate that the proposed monitoring requirement is unreasonable. If the DNR Secretary determines that the monitoring requirement is unreasonable, the Department may not impose the monitoring requirement.

General Permits

DNR administrative rules authorize the issuance of general operation permits and general construction permits for similar categories of stationary sources. The rules: (a) include criteria for identifying eligible categories of sources and permit requirements; and (b) may exempt persons who qualify for a general operation permit from a construction permit.

As of June 30, 2022, DNR has issued four general permits to cover almost all nonmetallic mineral processing facilities, printers, and asphalt plants. A total of 1,331 general permits have been issued to owners or operators of stationary sources.

Within 15 days after DNR receives an application for coverage under a general permit, the Department is required to provide one of the following to the applicant: (a) written notice that the source qualifies for coverage under the general permit; (b) a written description of any information that is missing from the application for the permit; or (c) a written notice that the source does not qualify for the general permit.

Holders of a general permit pay an annual fee of $400. General permit fees are deposited in the state stationary sources appropriation. A source with a general permit does not pay construction permit fees, but is subject to general construction permit requirements.

Registration Permits

DNR administrative rules authorize issuance of registration operation permits and registration construction permits that authorize construction or operation, or both, of stationary sources with low actual or potential emissions. DNR has issued 4 different registration permits. The Type A registration permit for minor sources not exceeding 25% of major-source thresholds for criteria and hazardous pollutants was issued in 2006. The Type C permit for printers was issued in 2007 and last reissued in 2020. The Type B permit, limiting actual emissions to 50% of major-source thresholds for criteria and hazardous pollutants, was issued in 2016. The Type G permit for Green Tier sources was issued in February of 2019. DNR has granted coverage under a registration permit to 1,060 facilities as of June 30, 2022.

An owner or operator may apply for a registration permit if the source has actual emissions not exceeding the annual threshold for each pollutant, and slightly different thresholds for certain printing facilities. The registration operation permit allows the owner or operator to construct, modify or replace equipment without obtaining a construction permit, as long as the facility continues to comply with all conditions of the registration permit after the change.

Within 15 days after DNR receives an application for coverage under a registration permit, the Department is required to provide one of the following to the applicant: (a) written notice that the source qualifies for coverage under the registration permit; (b) a written description of any information that is missing from the application for the permit; or (c) a written notice that the source does not qualify for the registration permit.

Holders of a registration operation permit pay an annual fee of $400. Registration permit fees are deposited in the state stationary sources appropriation.

Under 2013 Act 20, DNR issued the Type B registration permit, effective February 23, 2016, authorizing the construction or operation, or both, for any stationary source with actual emissions that do not exceed 50% of any applicable major source threshold established under the federal Clean Air Act. The provision is subject to a requirement that DNR may not take action under air pollution requirements that conflicts with the federal Clean Air Act. As of June 30, 2022, DNR issued 146 Type B registration permits under this provision.

Exemptions

Minor sources are exempt from the requirement to obtain an operation permit if the emissions from the sources do not present a significant hazard to public health, safety, or welfare, or to the environment. Examples of exempt sources are painting or coating operations, graphic arts operations, motor-vehicle refinishing shops, certain dry cleaning operations, gasoline-dispensing facilities, grain storage facilities, grain processing facilities, and facilities with lesser maximum theoretical emissions.

Under the requirements of 2013 Act 20, DNR promulgated administrative rules effective December 1, 2015, to exempt natural minor sources from the requirement to obtain a state operation permit. The rules define a natural minor source as: (a) not a major source, which is required to obtain a federal operation permit; (b) not a synthetic minor source, which has federally enforceable permit conditions that limit emissions so the source does not have to obtain a federal operation permit); or (c) not a "part 70" source, which is subject to certain federal permitting requirements. Natural minor sources are exempt from paying the $400 annual operation permit fee for state-regulated sources. As of June 30, 2022, 37 natural minor sources were exempt from the requirement to obtain a state operation permit under the provision.

Under the requirements of 2013 Act 20, DNR informs state-regulated facilities about the benefits of obtaining a registration operation permit or an exemption from an operation permit. DNR does this through: (a) a web page that describes the permit options available to facilities; (b) emails to facilities; and (c) presentations to stakeholders.

Revenues and Expenditures

As with the construction permit program, DNR administers the operation permit program with staff located in each of the five DNR regions. They are assigned to work with permit sources within specific counties in the regions.

The Clean Air Act Amendments of 1990 required states to assess fees based on the tonnage of emissions generated by a stationary source that is a federally-regulated facility under the federal operation permit program. 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's air emissions tonnage fee system began with assessment of fees in 1992-93 for calendar year 1992 emissions. The fee structure has been changed in several subsequent biennial budget acts. Additional detail about past fee structures can be found in previous versions of the informational paper entitled, "Air Management Programs" on the Legislative Fiscal Bureau's website.

Beginning in 2005-06, separate appropriations exist for revenues assessed for operation permits for each of federally-regulated sources and state-regulated sources. The statutes require that the fees deposited in each of the two appropriations be used for the following: (a) the costs of reviewing and acting on applications for operation permits; (b) implementing and enforcing operation permits, except for court costs or other costs associated with an enforcement action; (c) monitoring emissions and ambient air quality; (d) preparing rules and materials to assist persons who are subject to the operation permit program; (e) modeling ambient air quality; (f) preparing and maintaining emission inventories; (g) any other direct and indirect costs of the operation permit program; and (h) costs of any other activities related to stationary sources of air contaminants.

Federally-Regulated Sources. Effective in 2013-14 for calendar year 2013 emissions, through 2022-23, sources that are required to obtain an operation permit under federal law continue to pay an annual air emissions tonnage fee of $35.71 per ton. In addition, all federally-regulated sources pay an annual base fee, based on the tons of actual billable emissions from the facility in the prior calendar year as follows: (a) $900 if the source emitted not more than 10 tons of billable emissions in the prior calendar year; (b) $1,300 if the source emitted more than 10 tons but not more than 25 tons in the prior calendar year; (c) $1,600 if the source emitted more than 25 tons but not more than 50 tons in the prior calendar year; (d) $2,300 if the source emitted more than 50 tons and not more than 80 tons in the prior calendar year; and (e) $3,000 if the source emitted more than 80 tons per year in the prior calendar year.

Finally, federally-regulated sources pay an annual flat fee if they meet applicable criteria. The flat fees include:

1. Sources pay $960 if one or more maximum achievable control technology (MACT) standards apply to the source. This refers to technology-based federal standards that apply to major sources of hazardous air pollutants. Emission limits vary based on the toxicity of the pollutant. Examples of sources are chemical manufacturing, industrial and commercial boilers and heaters, and iron and steel foundries.

2. Sources pay $960 if one or more federal new source performance standards (NSPS) apply to the source. This refers to technology-based federal standards requiring new sources of air pollutants to minimize air emissions. The standards are typically specified for the type and size of equipment rather than the amount of emissions of pollutants. Examples of sources are electric steam-generating units, incinerators, manufacturing plants, and various printing and coating operations.

3. Sources pay $1,500 if federal prevention of significant deterioration (PSD) permitting applies to the source. This is the federal pre-construction permitting program for major sources or major modifications at a major source in attainment areas. Examples of sources are electric utilities, paper mills, and foundries.

4. Sources pay $46,980 if the source is an electric utility with an electric generating unit (EGU), is privately-owned, and is a coal-fired generating unit. This includes some of the largest sources of air pollutants in the state. The fee does not apply to publicly-owned electric generating units.

State-Regulated Sources. State-regulated sources do not pay an annual fee based on the air emissions tons. Rather, a source pays an annual fee of $4,100 if the operation permit limits the source's potential to emit so that the source is not a major source, and the operation permit includes federally enforceable conditions that allow the amount of emissions to be at least at least 80% and less than 100% of the amount that results in the source being classified as a major source subject to the federally-regulated sources emissions tonnage fee. All other sources required to have a state operation permit pay an annual fee of $400. This includes holders of a general or registration operation permits. An owner or operator of a stationary source that is exempt from the requirement to obtain an operation permit does not pay a fee.

Annual Fees Assessed. Table 5 shows the total operation permit fees assessed by year, the emissions fee rate per ton, the number of billable tons of emissions, the fees assessed based on the tonnage rate, and the flat or base fees assessed to federally-regulated or state-regulated sources. In 2021-22, these sources were assessed fees totaling nearly $3.6 million.

Table 6 lists the operations permit fees assessed on federally-regulated facilities in 2020-21 for calendar year 2020 emissions and in 2021-22 for calendar year 2021 emissions. The table includes three sections. First, it shows the tons assessed the emissions tonnage fee, by type of pollutant. Federally-regulated sources that had billable emissions of at least five tons were billed an emissions fee of $35.71 per ton of emissions. In 2021-22, a total of 320 facilities with federal operation permits were assessed stationary source fees totaling $3.58 million in emissions tonnage fees for approximately 60,900 tons of billable pollutants that they emitted. Second, it shows the annual base fee, based on the tons of actual billable emissions. Third, it shows the annual flat fee paid by some federally-regulated sources that meet applicable criteria.

Pollutants assessed the fees include the criteria pollutants (carbon monoxide is exempted), hazardous air pollutants, and most other regulated pollutants under the Clean Air Act, such as ozone-depleting pollutants. A total of 94 different pollutants can be billed. Of the 94 pollutants, Wisconsin facilities emitted and were assessed on 18 different pollutants in 2021-22. In Wisconsin, the largest volume of emissions is generated by larger utilities, paper-related industries, and large chemical plants. The main reasons for the difference between reported and billed emissions were that several electric utilities and paper mills had emissions of sulfur dioxide and nitrogen oxides that exceeded the 5,000-ton cap per pollutant, and carbon monoxide is not subject to the fee. Emissions such as carbon dioxide and other greenhouse gases are currently reported but are not billed.

Table 7 shows the stationary source operation permit fees assessed by permit type. In 2020-21, 2,192 sources with operation permits were assessed $4.8 million in operation permit fees, including: (a) 341 sources with federal operation permits were assessed $3.6 million; and (b) 1,851 state-regulated sources were assessed $1.2 million. In 2021-22, 2,262 sources were assessed

Table 5: Stationary Source Operation Permit Fees - Fee Rate, Emissions, and Fees Assessed

Year of Emissions	Year of Assessment	Fee Rate Per Ton	Billable Tons	Tonnage Fees ($ millions)	Flat or Base Fees ($ millions)	Total Fees Assessed ($ millions)
1992	1992-93	$18.00	278,607	$5.01		$5.01
1993	1993-94	29.30	279,638	8.19		8.19
1994	1994-95	30.07	279,394	8.40		8.40
1995	1995-96	30.92	285,291	8.82		8.82
1996	1996-97	31.77	273,506	8.69		8.69
1997	1997-98	32.65	291,184	9.51		9.51
1998	1998-99	33.19	280,959	9.33		9.33
1999 (1)	1999-00	33.80	289,154	9.77		9.77
2000 (2)	2000-01	35.71	285,628	10.20		10.20
2001	2001-02	35.71	276,354	9.87		9.87
2002	2002-03	35.71	272,727	9.74		9.74
2003	2003-04	35.71	272,766	9.74		9.74
2004	2004-05	35.71	268,207	9.58		9.58
2005 (3)	2005-06	35.71	265,938	9.49		9.49
2006	2006-07	35.71	254,423	9.13		9.13
2007	2007-08	35.71	248,869	9.01		9.01
2008	2008-09	35.71	218,047	8.49		8.49
2009 (4)	2009-10	35.71	188,093	6.72	$1.34	8.06
2010	2010-11	35.71	188,467	6.73	1.10	7.83
2011	2011-12	35.71	178,472	6.37	1.10	7.47
2012	2012-13	35.71	155,630	5.56	1.10	6.66
2013 (5)	2013-14	35.71	154,086	5.50	3.08	8.58
2014	2014-15	35.71	145,171	5.18	3.07	8.25
2015	2015-16	35.71	118,348	4.23	3.01	7.24
2016	2016-17	35.71	91,793	3.28	2.89	6.17
2017	2017-18	35.71	89,404	3.19	2.82	6.02
2018	2018-19	35.71	84,003	3.00	1.60	4.60
2019	2019-20	35.71	70,162	2.51	1.47	3.98
2020	2020-21	35.71	61,254	2.19	1.41	3.60
2021	2021-22	35.71	60,912	2.18	1.41	3.59

(1) Beginning in 1999, the emission fee cap increased from 4,000 to 5,000 tons per pollutant.
(2) 1999 Wisconsin Act 9 eliminated the annual inflationary adjustment factor after 2000.
(3) For emissions in 2005 through 2008, the tonnage fee was paid for federally-regulated or state-regulated sources.
(4) Beginning with emissions in 2009, state-regulated sources pay a flat fee rather than a tonnage-based fee. Tons are shown for federally-regulated sources.
(5) Beginning with emissions in 2013, federally-regulated sources pay a tonnage fee and a base fee, and certain federally-regulated sources also pay a flat fee. The column for flat or base fees includes federally-regulated and state-regulated sources.

$4.8 million in operation permit fees, including: (a) 338 sources with federal operation permits were assessed $3.6 million; and (b) 1,924 state-regulated sources were assessed $1.2 million.

Expenditures. In 2022-23, DNR is authorized funding of $7,112,600 with 61.75 positions to administer the federally-regulated operation permit program. Of the positions, 52.0 are located in the Bureau of Air Management, and the remaining 9.75 are assigned to the Environmental Management division-wide administration, Public Safety, and Internal and External Services Programs. In 2022-23, DNR is authorized funding of $1,316,900 with 12.0 positions to administer the state-regulated operation permit program. Table 8 shows operation permit fee revenue collections and expenditures for 2012-13 through 2021-22, with separate columns for federally-regulated and state-regulated fees and expenditures. Actual revenue collections differ from the assessed amounts shown in Tables 5, 6, and 7 because some fees were received in the fiscal year following the year assessed. Table 1 shows 2022-23 funding amounts and authorized levels for the program revenue appropriations.

Table 6: Emissions Assessments for Stationary Sources with Federal Operation Permits, 2020-21 and 2021-22

Pollutant	Actual Tonnage (2020 Tons of Emissions)	Assessed Tonnage (2020 Billable Tons of Emissions)	Fiscal Year 2020-21 Assessed Revenues $35.71/ton	Actual Tonnage (2021 Tons of Emissions)	Assessed Tonnage (2021 Billable Ton of Emissions)	Fiscal Year 2021-22 Assessed Revenues $35.71/ton
A. Tonnage Fee by Pollutant Type						
Sulfur Dioxide	17,460	16,748	$598,077	16,905	16,848	$601,632
Nitrogen Dioxide	30,546	24,347	869,441	27,780	23,920	854,194
Particulate Matter	14,471	6,345	226,585	14,262	6,627	236,646
Particulate Matter 10	8,085	0	0	7,337	0	0
Volatile Organic Compounds (VOC)	20,099	12,471	445,325	18,757	12,186	435,170
Other Pollutants (HAP, CFC, and TRS)*	1,629	1,343	47,972	1,391	1,331	47,535
Carbon Monoxide	24,352	0	0	22,016	0	0
Subtotal Tonnage Fee		61,254	$2,187,400		60,912	$2,175,177

	Fee Amount	2020-21 Number of Sources	2020-21 Total Amount Assessed	Fee Amount	2021-22 Number of Sources	2021-22 Total Amount Assessed
B. Base Fee						
< or =10 tons of billable emissions	$900	67	$60,300	$900	57	$51,300
>10 tons and < or = 25 tons	1,300	50	65,000	1,300	54	70,200
>25 tons and < or =50 tons	1,600	58	91,400	1,600	54	86,400
>50 tons and < or = 80 tons	2,300	54	124,200	2,300	44	101,200
>80 tons	3,000	116	348,000	3,000	128	384,000
Subtotal Base Fee		345	$688,900		337	$693,100
C. Flat Fee						
MACT = Maximum Achievable Control Technology	$960	124	$119,040	$960	121	$116,160
NSPS = New Source Performance Standards	960	167	160,320	960	165	158,400
PSD = Prevention of Significant Deterioration	1,500	79	118,500	1,500	76	114,000
EGU = Electric Generating Unit	46,980	7	328,860	46,980	7	328,860
Subtotal Flat Fee		377	$726,720		369	$717,420
Total Assessments			$3,603,020			$3,585,697

*HAP = Hazardous Air Pollutants; CFCs = Chlorofluorocarbons; TRS = Total reduced sulfur, sulfur trioxide and hydrogen sulfide.

Table 7: Stationary Source Operation Permit Fees Assessed by Permit Type, 2020-21 and 2021-22

Permit Type Assessed	2020-21 Number of Permit Type	2020-21 Assessed Revenues	2021-22 Number of Permit Type	2021-22 Assessed Revenues
Federally-Regulated Source Permits				
Federal Operation Permits	341	$3,603,020	338	$3,585,697
State-Regulated Source Permits				
Synthetic Minor (SM80)				
Federally Enforceable State Operating Permit (FESOP)	114	$460,000	119	$480,500
Synthetic Minor				
FESOP	281	$112,400	287	$114,800
Registration Operation Permit (ROP)	304	121,600	320	128,000
General Operation Permit (GOP)	387	154,800	417	166,800
State Operation Permit (SOP)	49	19,600	48	19,200
Subtotal Synthetic Minor	1,021	$408,400	1,072	$428,800
Natural Minor				
Registration Operation Permit	453	$181,200	453	$181,200
General Operation Permit	0	0	0	0
State Operation Permit & Other SOP *	263	105,200	280	112,000
Subtotal Natural Minor	716	$286,400	733	$293,200
Total State-Regulated Sources	1,851	$1,154,800	1,924	$1,202,500
Total All Operation Permit Fees	2,192	$4,757,820	2,262	$4,788,197
Number Exempt from Permit and Fees	1,103		872	

*"Other" can include sources operating under a permit for which they have applied prior to DNR action on the permit application, or operating under some other type of permit provision but included by DNR in the listed category.

Table 8: Air Operation Permit Revenue Collections and Expenditures

	Federally-Regulated Permits		State-Regulated Permits		Total Operation Permits	
Year	Revenue	Expenditures	Revenue	Expenditures	Revenue	Expenditures
2012-13	$5,890,300	$5,951,300	$1,092,100	$876,600	$6,982,400	$6,827,900
2013-14	7,281,900	5,765,200	1,222,200	865,600	8,504,100	6,630,800
2014-15	7,265,900	6,127,900	1,227,000	418,400	8,492,900	6,546,300
2015-16	5,121,300	5,852,200	1,433,500	872,200	6,554,800	6,724,400
2016-17	3,882,600	5,235,400	1,029,200	904,700	4,911,800	6,140,100
2017-18	6,195,800	5,271,700	1,493,500	839,900	7,689,300	6,111,600
2018-19	4,410,800	5,616,600	1,093,200	973,300	5,504,000	6,589,900
2019-20	4,189,700	5,057,900	1,179,400	1,387,600	5,369,100	6,445,500
2020-21	3,707,200	3,999,500	1,183,300	1,387,600	4,890,500	5,387,100
2021-22	4,180,800	3,492,900	1,197,800	1,232,800	5,378,600	4,725,700

In 2022-23, the Bureau of Air Management is planning for 27.28 FTE for work specific to federally-regulated operations permits. The remaining 24.72 FTE are not work-planned, mostly due to inadequate funding levels. Federally-regulated operations permitting activities typically include: (a) ambient air modeling quality assurance when specified in an operation permit; (b) supervision; (c) administrative processing of permits; (d) compliance and enforcement; (e) emissions inventory; (f) development of multi-pollutant control strategies, best available retrofit technology, reasonably available control technology, and best available control technology for federally-regulated sources to meet Clean Air Act requirements; and (g) administrative support. Filling additional positions currently vacant, both for federally-regulated sources and for other areas in the Bureau of Air Management, would depend on DNR identifying needs in future work planning and sufficient revenue to fill the positions.

During 2022-23, DNR is planning for work in the Bureau of Air Management from 10.38 FTE of the 12.0 positions authorized from state-regulated operation permit fees. DNR is allocating the positions to perform the following functions for state-regulated sources: (a) permit review and approval; (b) implementation and enforcement of permits, including efforts related to sand mines; (c) administrative rule development; (d) preparation of materials for persons and sources subject to state-regulated permits; (e) ambient air quality modeling for permitted sources; (f) emissions inventory; and (g) ambient air monitoring at industrial sand mining and processing plants, in addition to 1.0 position funded from the segregated environmental management account.

Demonstration of Program Sufficiency

States are required to regularly demonstrate to EPA that the operation permit program meets federal requirements. In 2004, EPA published a Notice of Deficiency (NOD) for the Wisconsin federal Title V air operation permit program, in which EPA determined that the state's program did not comply with the Clean Air Act. EPA identified several deficiencies in the operation of the program. Wisconsin took several actions to eliminate the backlog of operation permit applications, separate the air operation permit fee appropriation into separate federally-regulated and state-regulated sources fees, demonstrate adequate staffing and funding levels, and make information technology improvements. In February, 2006, EPA formally determined that Wisconsin had resolved each of the deficiencies.

States are required to demonstrate to EPA that the emissions fees assessed by the state for federally-regulated sources will be sufficient to fully self-support the Title V program. EPA requires delegated state programs to monitor fee adequacy as part of their operations, and when necessary to propose fee adjustments to keep it fully funded. Any fee adjustment made, along with a fee adequacy showing, must be submitted for EPA approval. DNR last provided a fee adequacy report to EPA in February, 2017, along with other updates to information about how the Title V air permit program meets federal requirements and collects adequate fees. EPA last approved updates to Wisconsin's Title V program, including the fee adequacy showing, in a federal register notice on December 9, 2019.

Other Air Permits and Fees Administered by DNR

Asbestos Abatement Fees

DNR is responsible for administering asbestos abatement regulations in conformance with EPA requirements. Persons who remove asbestos-containing material as part of nonresidential demolition or certain renovation activities 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 at least 10 days before they perform asbestos abatement. Persons who are required to submit notification of asbestos abatement and demolition activity can either submit the information through the Internet-based system or submit a paper notification form. DNR reviews the notices for compliance with EPA requirements.

DNR collects asbestos inspection and construction permit exemption review fees from these persons. The actual fee amounts are established in administrative code Chapter NR 410, and cannot exceed statutory maximums. The statutory maximum fees include: (a) $700 for a combined asbestos inspection fee and construction permit exemption review fee if the combined square and linear footage of friable (readily crumbled or brittle) asbestos-containing material involved in the project is less than 5,000; or (b) $1,325 if the combined square and linear footage is equal to or greater than 5,000.

Table 9 shows that the fees set in administrative rule are less than the $700 maximum for small- ($135) or medium-sized ($400) projects. Three statutory fees include: (a) $100 for DNR review of a revised notice of an asbestos renovation or demolition activity; (b) $100 for DNR inspection of a property proposed to be used for a community fire safety training project for which the Department requires inspection; and (c) a requirement for payment of the required fee after the asbestos renovation or demolition if advance notice and advance payment of the fee was not made as required. DNR administrative rules also authorize the Department to charge for the costs it incurs for laboratory testing for a nonresidential asbestos demolition and renovation project.

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 a small number of asbestos abatement laws.

DNR received 1,583 notifications for asbestos abatement and demolition projects in 2020-21 (including 720 original, 823 revisions of notifications, 32 after-the-fact or on hold, and 8 cancelled notifications) and 1,697 in 2021-22 (including 797 original, 857 revisions, 28 after-the-fact or on hold, and 15 cancelled notifications). The number of notifications included 125 for community fire safety training project burns in 2020-21 and 83 in 2021-22, for which a $100 fee is charged. DNR staff, and counties and municipalities under contract with DNR, reported to EPA that they inspected 347 asbestos abatement projects in federal fiscal year 2020 and 487 projects in federal fiscal year 2021 before and after abatement activities.

Table 9: Asbestos Combined Inspection and Construction Permit Exemption Fees

Size of Asbestos Project	Statutory Maximum Fee	Combined Fee Set in Rule
Small (< 160 square feet, 260 linear feet)	$700	$135
Medium (= or > 160 square feet, 260 linear feet and < 1,000 combined feet)	700	400
Large (= or > 1,000 and < 5,000 combined feet)	700	700
Extra large (= or > 5,000 combined feet)	1,325	1,325
Notification revision	100	100
Community fire safety training burn	100	100

The various asbestos abatement fees are deposited in a DNR program revenue appropriation. The Department uses the asbestos abatement 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 collected asbestos abatement fees totaling $711,500 in 2020-21 and $752,500 in 2021-22. DNR program expenditures were $553,100 in 2020-21 and $460,000 in 2021-22. In 2022-23, DNR is authorized $630,900 with 4.0 PR positions for asbestos abatement activities.

Ozone-Depleting Substances Fees

While Clean Air Act regulations work to reduce harmful levels of ground-level ozone, the regulations also work to slow depletion of ozone in the stratosphere approximately six to 30 miles above the earth. Stratospheric ozone filters the sun's harmful ultraviolet radiation. Depletion of stratospheric ozone increases ultraviolet radiation, and has been associated with harmful health effects.

The federal Clean Air Act Amendments of 1990 required the phase-out of production and sale of chemicals that deplete stratospheric ozone between 2001 and 2030. Persons are required to recapture and recycle certain ozone-depleting chemical substances, and may not knowingly vent refrigerants from household appliances, commercial refrigerators and air conditioners. Certain ozone-depleting substances must be removed from products prior to disposal of the products. Federal rules finalized in November, 2016, require compliance with requirements for refrigerant evacuation, appliance maintenance and leak repair.

DNR administers rules related to the disposal of any equipment containing ozone-depleting refrigerants, also known as chlorofluorocarbons or CFCs. The DNR program prohibits 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.

DNR collects annual registration fees from persons who remove ozone-depleting refrigerants 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 deposited in a program revenue appropriation and are used to administer regulations to ensure that CFC removal activities do not release CFCs into the air.

DNR collected ozone-depleting refrigerants fees totaling $139,600 in 2020-21 and $130,200 in 2021-22. DNR program expenditures were $110,600 in 2020-21 and $81,700 in 2021-22. In 2022-23, DNR is authorized base funding of $135,500 with 1.5 PR positions for ozone-depleting refrigerant activities.

Air Monitoring Activities

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. 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. During 2022, DNR operated 35 monitoring sites throughout the state. DNR collected data on several different pollutants at

most of the sites as shown in Table 10. In addition, DNR processed data collected by others at 10 other sites, including eight industrial (seven of which are industrial sand operations) and two tribal sites.

Monitors at all 17 PM2.5 monitoring stations collect continuous samples on an hourly basis 24 hours a day. Measurements from the continuous PM2.5 monitors are updated and reported hourly on the DNR website.

DNR air monitoring efforts in 2022 included: (a) performing monitoring of the chemical composition of PM2.5 from at least two sites; (b) adjusting the monitoring efforts to create operational efficiencies; (c) performing continuous monitoring of fine particulates and other pollutants to aid in calculating the air quality index DNR uses to inform the public about ambient air quality on a daily basis; (d) maintaining the posting of hourly monitoring data on the DNR website, so those most likely to be affected by air pollution, such as families with asthmatic children, could take actions to minimize the impacts of air pollution on their health; (e) implementing federal ozone, sulfur dioxide and nitrogen oxides monitoring requirements; (f) supporting tribal entities and private stakeholders with air monitoring needs; and (g) operating atmospheric deposition monitors.

In 2020, the Air Management program began sampling for per- and polyfluoroalkyl substances (PFAS). PFAS are found in firefighting foams and various consumer products or food packaging, and research shows them to be hazardous to human health. The chemicals are primarily associated with groundwater and surface water contamination but may also be released in the air. Air sampling occurred at eight existing National Atmospheric Deposition Program monitoring sites. DNR and the Wisconsin State Lab of Hygiene subsequently published a paper on findings regarding PFAS concentrations in rainfall in Wisconsin as compared to other sites in the U.S.

Table 10: DNR Number of Air Monitoring Sites, by Type of Pollutant Monitored

Pollutant	Number of Monitoring Sites
Ozone	26 (plus 2 special purpose sites and 2 tribal sites)
PM2.5	16 (plus 2 tribal sites)
PM10	7 (6 of them collected continuous data, 1 collected filter-based)
Sulfur dioxide	6 (plus 1 tribal site)
PM2.5 (chemical makeup of particles)	4
Nitrogen dioxide	2 (plus 2 special purpose and 1 seasonal)
Continuous gaseous mercury	1
PMcrs (measures a different type of coarse particulates between 2.5 and 10 micrometers)	6 (plus 1 SPM)
Reactive oxides of nitrogen NO_X	2 (1 year-round and 1 during high-ozone seasons)
NOy	1
Carbon monoxide	2
Toxic air pollutants	2
Metals	2
Lead	None

Ozone monitoring provides the data used to determine attainment status for the ozone standards and provides specialized information on days during which ozone levels exceed standards. As required by federal rule, DNR performs an annual review of and solicits public comment on a monitoring network plan submitted to EPA by July 1.

Federal rules require Wisconsin to have an enhanced ozone monitoring (EOM) plan. DNR reports EOM plans give states discretion to determine what monitoring would be most useful to establish policies to address ozone pollution in impacted areas. Wisconsin's EOM plan consists of using specialized equipment designed to provide data to help DNR understand ozone development that impacts Wisconsin, particularly

as it affects counties along the Lake Michigan shoreline.

Beginning in 2013-14, funding was appropriated to DNR for the construction, operation, and maintenance of an air quality monitoring station in a county identified in its entirety as a nonattainment area for the 2008 eight-hour ambient air quality standard for the purpose of assessing ozone concentrations under federal regulations. Sheboygan County is the only county that met the statutory definition. An ozone air quality monitoring station known as the Sheboygan-Haven monitor was installed, and operation began in April, 2014. It has been seasonally operated since then. An ozone air quality monitoring station known as the Kohler-Andrae monitor is also located in Sheboygan County.

Under 2017 Wisconsin Act 59, funding for this air monitor was converted from GPR to petroleum inspection fund SEG, and was continued at $30,000 annually. In addition, the purposes of the appropriation were expanded to fund the operation and maintenance of an air quality monitoring station in a county where a sulfur dioxide monitor has been in place for three years as a result of certain federal sulfur dioxide monitoring requirements. An air monitoring station operated in Kaukauna (Outagamie County) as of January 1, 2017, met the requirements under the Act, and DNR assumed operations of the air monitoring station on January 1, 2020 (in 2019-20).

In addition to the air quality monitors, DNR's other monitoring activities during 2022 included: (a) collecting data from 20 meteorological stations, two of which are operated by tribal partners, which are used to evaluate the impact of weather on the ambient concentrations of pollutants being monitored; and (b) performing atmospheric deposition monitoring of the chemicals occurring in precipitation at three sites (Devil's Lake, Brule River, and Trout Lake) as part of the Department's participation in the National Atmospheric Deposition Program, a collaborative research effort of several states, federal agencies, and nongovernmental research organizations. The sites at Devil's Lake, Brule River, and Trout Lake are operated and funded by DNR. The remaining four NADP sites in Wisconsin are funded and operated by independent entities within the state.

DNR also collects air quality samples for the U.S. Department of Homeland Security BioWatch program. The details of that activity are for official use only.

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: (a) inspecting stationary sources to ensure compliance with emission limits, permit restrictions and operating requirements; (b) reviewing stack emissions test results or witnessing stack tests to determine whether a source is in compliance; (c) investigating complaints received from citizens; and (d) taking 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.

Table 11 shows the number of inspections made by DNR's Air Management program at Wisconsin major and synthetic minor facilities for the past 10 years and any enforcement resulting from those inspections. The enforcement process includes issuance of a letter of noncompliance or a notice of violation for more serious violations. While DNR does not track the number of various types of violations, examples of violations are failure to submit a report, failure to construct or operate according to

Table 11: Inspection and Compliance, 2012-13 to 2021-22

Fiscal Year	Number of Inspections	Noncompliance Rate	Letters of Noncompliance	Notices of Violation
2012-13	250	14%	29	22
2013-14	263	17	33	23
2014-15	303	19	58	19
2015-16	283	11	34	13
2016-17	212	12	52	12
2017-18	242	23	80	41
2018-19	190	16	64	32
2019-20	217	23	66	54
2020-21	214	22	33	15
2021-22	166	51	65	19

the permit, failure to obtain a permit before construction or operation, failure to monitor, or failure to submit compliance certification information, failure to notify DNR before removing asbestos, violations of emissions requirements, refrigerant recovery violations, and open burning.

Other Regulated Pollutants

Air Toxics

The Clean Air Act requires EPA to regulate emissions of toxic substances known as hazardous air pollutants (HAPs) not covered by national ambient air quality standards. Toxic substances can potentially cause serious human health problems, or can cause adverse environmental and ecological effects. Air toxics include certain heavy metals, chemicals and pesticides.

EPA requires industries to install maximum achievable control technology (MACT). EPA identified categories of sources that emit HAPs. A major source is a facility that may emit 10 tons per year of any single HAP, or 25 tons per year of any combination of HAPs. MACT standards require the maximum achievable degree of emissions reduction, and also consider the technological feasibility and cost. 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.

EPA promulgated a boiler MACT rule with standards for certain industrial and institutional boilers that burn fuel to produce steam that provides electricity or heat. The requirements are intended to reduce emissions of several types of hazardous air pollutants. As of July, 2022, 83 Wisconsin facilities are subject to the federal boiler MACT rules. Applicable federal regulations are made a part of a facility's federal operation permit.

In October of 2020, EPA finalized rules to allow facilities to submit permit applications to limit their potential emissions of HAPs below major source thresholds and remove federal MACT conditions from their permits. Prior to the change, a facility that was a major source of HAPs remained subject to the MACT standard after the compliance deadline of the applicable standard, even if the facility subsequently reduced emissions below major source thresholds.

DNR regulates hazardous air pollutants emitted by facilities through administrative code Chapter

NR 445. The rule regulates emissions of 535 substances above a certain threshold. The state rule focuses on the substance emitted rather than the source of the emissions. The rule specifies that if a federal hazardous air pollutant emission standard is promulgated for specific sources under the Clean Air Act, the federal standard applies rather than the state standard. The state enforces the federal standard for 27 toxics on the federal list but not on the state list.

Recent state action has taken steps to assess potential hazardous air pollutants. The Wisconsin PFAS Action Council in 2020 proposed several strategies for reducing atmospheric PFAS pollution, including: (a) encouraging development of federal air toxics standards for PFAS; (b) conducting consistent air sampling and subsequent PFAS measurements to establish baseline levels; and (c) researching the air pathway of PFAS exposure. In the 2021-23 biennium, DNR and the Wisconsin State Lab of Hygiene also researched methods for air monitoring for PFAS.

Under NR 445, facilities must identify air toxics emitted by the facility, quantify emissions, and reduce or control emissions under specified conditions. DNR places air toxics operational restrictions and compliance requirements into facility permits during normal revision or renewal of permits (typically every five years). DNR determines whether federal or state NR 445 standards apply for an individual facility as part of review of facility permits. DNR evaluates compliance with NR 445 requirements during normal inspections of facilities.

A facility is subject to fewer requirements under NR 445 if it is an incidental emitter of less than five tons per year of particulate matter and less than three tons per year of volatile organic compounds. These facilities are required to report emissions, obtain necessary permits, and comply with emissions standards.

Mercury Emissions

Mercury is a toxic, persistent pollutant that accumulates in the food chain. Mercury emissions in the air fall onto the earth's surface through rain and snow and enter lakes, streams and other water bodies. Once it reaches the water, mercury turns into a toxic form that concentrates in fish and animal tissues. People are exposed to mercury primarily by eating fish. EPA has acted to cut emissions of mercury from large industrial sources.

EPA administers mercury and air toxics standards for existing and new coal- and oil-fired electric utilities. EPA also administers a mercury emissions rule for industrial, commercial, and institutional boilers and process heaters.

DNR mercury emission rules in NR 446, effective in 2008, apply to air contaminant sources that emit mercury. The six utilities with coal-fired power plants regulated under the rule are Dairyland Power Cooperative, Manitowoc Public Utilities, Xcel Energy, We Energies, Wisconsin Power and Light Company, and Wisconsin Public Service Corporation. Power plants are currently generally required to comply with the federal mercury rule instead of the NR 446 requirements.

Greenhouse Gas Emissions

Carbon dioxide and other greenhouse gases are widely thought to trap heat in the atmosphere, with environmental and human health consequences. Major human-related sources of carbon dioxide emissions are the burning of coal, oil, and gas. These sources include power plants, motor vehicles, and other industrial combustion sources. According to EPA, in 2020 electricity generation and the transportation sector contributed 25% and 27%, respectively, of all greenhouse gas emissions in the United States.

EPA administers rules that define when federal operation permits are required for new and existing

industrial sources that emit greenhouse gases, as part of operation permits for emissions of other regulated pollutants. Under 2011 Wisconsin Act 171, DNR may only consider carbon dioxide emissions from the burning or decomposition of organic material, other than fossil fuels, in determining whether a construction permit or operation permit is required, or whether best available control technology is required, for greenhouse gas emissions if the carbon dioxide emissions are considered in a manner consistent with federal regulations.

DNR rules for construction and operation permits incorporate EPA's emission standards for greenhouse gas emissions, and the emission thresholds for determining whether facilities are major or minor sources. DNR estimates the amount of greenhouse gas emissions in all permit reviews, and regulates significant sources of emissions as part of federal and state construction and operation permit regulations.

EPA administers a greenhouse gas reporting rule that requires large sources to annually report their greenhouse gas emissions to EPA. Suppliers of fossil fuels or industrial greenhouse gases, manufacturers of vehicles and engines, and facilities with 25,000 metric tons or more per year of greenhouse gas emissions are subject to the reporting requirements. Information is available for sources required to report greenhouse gas emissions for 2010 through 2020. In September, 2020 (the most recent full reporting year available), 134 Wisconsin facilities reported greenhouse gas emissions to EPA totaling approximately 40 million metric tons on a carbon-dioxide-equivalent basis. (Carbon dioxide equivalent is an EPA-specified method of measuring various greenhouse gas emissions in terms of the amount of carbon dioxide that would create the same amount of emissions.)

In October, 2015, EPA issued a final rule known as the "Clean Power Plan" to reduce carbon dioxide emissions by U.S. fossil fuel-powered electric generating units (power plants) by approximately 30% nationwide by 2030. In October, 2017, EPA proposed to repeal the rule. On August 31, 2018, EPA proposed a rule known as the "Affordable Clean Energy (ACE) Rule" as a replacement for the Clean Power Plan. In June, 2019, EPA finalized the ACE rule, which establishes emissions guidelines for states to use when developing plans to limit carbon dioxide at existing coal-fired electric utility generating units (EGUs).

In January 2021, the U.S. Court of Appeals for the D.C. Circuit vacated the ACE rule. The Supreme Court subsequently reversed this decision in June, 2022. EPA has announced its intention to draft a new rule to regulate greenhouse gases from power plants, with a proposal expected in 2023. At this time, states are not being directed to work on ACE compliance plans. Fourteen coal-fired electrical generating units at eight power plants in Wisconsin were subject to the rule when it was active.

Other DNR Activities

Air Quality-Related Voluntary Initiatives

DNR air program staff work with other organizations in developing several voluntary initiatives intended to improve air quality. DNR administers the Green Tier program to encourage regulated facilities to achieve superior environmental performance by offering regulatory flexibility through negotiated agreements. DNR also works with industries to improve environmental performance, reduce air emissions, and simplify the reporting of emissions. Examples of industries are agribusiness, food processing, brewing, military, energy, wood products, paper, printing, transportation, small business, and other manufacturing types.

The air program conducts monitoring with the UW System, including: (a) PFAS-related monitoring with the Wisconsin State Laboratory of Hygiene; and (b) ozone monitoring with the UW Space Science and Engineering Center. Additionally, DNR, EPA, and local community groups have deployed low-cost air quality sensors across Wisconsin and nationally. The sensor program allows users to share results on a public website and worked to create correction factors to better align low-cost sensor data with regulatory monitors.

Small Business Environmental Assistance Program

The federal Clean Air Act Amendments of 1990 require states to operate a small business assistance program that includes technical assistance for businesses, a compliance advisory panel and a small business ombudsman. To comply, DNR administers the Small Business Environmental Assistance program. The program also provides assistance in other environmental regulations, especially waste and water.

DNR primarily allocates one position in the Bureau of Air Management for air regulations, and two other departmental staff to other environmental regulations. The Department funds the air management position with stationary source fees received from federally-regulated sources under the Title V operation permit program. The other positions are supported by the environmental management account of the environmental fund and the petroleum inspection fund.

The program provides technical assistance to small businesses on state and federal regulations. To do so, DNR staff develop informational publications, answer compliance questions, respond to regulatory inquiries, coordinate environmental compliance workshops, and direct businesses to other technical assistance providers. DNR maintains a web page and designates a staff person to work as a small business ombudsman to connect small businesses with DNR staff and information they need, make recommendations about DNR regulations that may affect small businesses, and facilitate resolution of disputes involving small businesses. In the 2021-23 biennium, DNR program staff made contacts with 243,000 small businesses, made presentations at conferences, and created web pages to provide environmental permitting information.

The Small Business Environmental Council consists of eight members appointed by the Governor, legislative leadership, and DNR. The Council is required to advise DNR concerning the Small Business Environmental Assistance program. During the 2021-23 biennium, the Council met quarterly to discuss environmental issues of concern to small businesses. The Council discussed ways to reach small businesses and increase awareness of the resources available at DNR to help them learn about the requirements. Council members submitted articles to trade magazines in their industry, invited other business support organizations to meetings, and made presentations at business events. During virtual meetings, Council members sought to gain new members to fill appointment vacancies.

Federal Diesel Emission Reduction Programs

DNR has received funds under the federal Congestion Mitigation and Air Quality (CMAQ) program and the federal American Recovery and Reinvestment Act of 2009 for diesel emission reduction activities in vehicles and equipment such as trucks, school buses, refrigeration trailers, and construction or agricultural equipment. The program funds truck idling-reduction units that provide heat, air conditioning, or electricity to the cab while the vehicle is stationary, in order to reduce idling of the engine when the vehicle is parked. The program has also funded exhaust retrofits, engine repowers, and school bus replacements. Since 2008, DNR has used the funds for 185 grant awards totaling $6,919,015 to fund 915 diesel idling-reduction devices or retrofits. Of the 915

units funded, the majority were school bus idle-reduction units, exhaust retrofits, or replacements.

DNR also administers the federal Diesel Emission Reduction Act (DERA) program. For the 2012 through 2021 federal fiscal year grant cycles, the state received total grants of $2.65 million. DNR has occasionally provided state matching funds, typically from petroleum inspection fund SEG. DNR has issued subgrants of $3.1 million under DERA since 2012. The equipment and vehicles eligible for funding include school and municipal buses as well as nonroad engines, equipment and vehicles used in construction, cargo handling, mining, energy production and agriculture.

Department of Transportation Activities

Wisconsin's motor vehicle inspection and maintenance program, in operation since 1984, requires that most 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 the program through a contract with a private firm, while DNR sets the emission standards. The program operates in seven previously designated moderate nonattainment counties under the 1997 eight-hour ozone standard (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha).

The seven counties continue to be subject to the inspection maintenance program as part of Wisconsin's state implementation plan. Before the state could end the vehicle inspection and maintenance program, it would have to submit a SIP revision to EPA demonstrating how the counties would maintain their attainment status without the inspection maintenance program, and how emissions reductions would be obtained from other sources than vehicles.

Vehicles are required to be tested every other year, beginning in the third year after the vehicle's model year, and, for vehicles more than five years old, upon a change of ownership. Certain vehicles, however, are not required to be tested. Specifically, gasoline-powered vehicles older than model year 1996 and diesel-powered vehicles older than model 2007 cannot be tested using current testing methods and so are exempt. In addition, vehicles of model year 1996 to 2006 that are over 8,500 pounds and vehicles of model year 2007 or newer that are over 14,000 pounds are also exempt from testing.

There is no fee paid by the vehicle owner for the initial test, although vehicle owners are responsible for the cost of any required repairs. Vehicles that fail an emissions test must be repaired and pass a subsequent test.

Beginning in July, 2012, the testing process was changed from a centralized to a decentralized system. Currently, testing may be performed at any of about 190 approved motor vehicle service stations. DOT's contractor coordinates the system for approving the facilities and providing testing-equipment. The contractor also pays service centers $2 per test conducted, and $4 per test if the service center also provides vehicle registration renewal at the time of the test. DOT pays the contractor $2.6 million per year in transportation fund SEG for these services. Previously, emissions testing was conducted at nine centralized service centers located throughout the testing counties.