

Delaware Particulate Matter (PM) Advance Program

Year 3 Summary & Year 4 Plan



Delaware Department of Natural Resources and Environmental Control

Division of Air Quality

March 5, 2019

Section 1 - Introduction

In January of 2013, the United States Environmental Protection Agency (EPA) announced the Particulate Matter (PM) Advance program, which continues and expands the U.S. Environmental Protection Agency's (EPA) cooperative work with states, tribes, and local governments to reduce air pollution. PM Advance is a collaborative and voluntary effort to encourage fine particulate matter (PM_{2.5}) attainment or maintenance areas to reduce emissions of PM_{2.5} and its precursors, so they can continue to meet both current and future National Ambient Air Quality Standards (NAAQS) for PM_{2.5}. PM Advance encourages the use of local strategies to reduce PM_{2.5} and its precursors, with results expected to:

- help ensure continued health protection over the long term
- provide state, tribal, and local governments with a margin against potential future violations of the PM_{2.5} NAAQS
- better position an area to achieve air quality concentrations that enable it to avoid a nonattainment designation with respect to any future revised NAAQS
- allow for greater ability to choose from control measures and programs that make the most sense for the area and that are cost-effective, and
- result in multi-pollutant benefits; for example, reductions of nitrogen oxides can lead to lower ambient fine particulate matter levels as well as lower ambient ozone levels, and energy efficiency programs can reduce greenhouse gases.

On July 30, 2013 the State of Delaware Department of Natural Resources and Environmental Control (DNREC), Division of Air Quality (DAQ), sent a letter to EPA requesting acceptance of Delaware in the PM Advance program. EPA responded with a letter to Delaware on August 13, 2013 accepting Kent and Sussex Counties into the Advance program, but not New Castle County, because at that time New Castle County was designated as nonattainment under the 1997 and 2006 PM_{2.5} National Ambient Air Quality Standards (NAAQS).

On August 5, 2014, EPA finalized rulemaking that re-designated New Castle County as attaining the 1997 and 2006 PM_{2.5} NAAQS, with an effective date of September 4, 2014.¹ Consequently, the DAQ received a letter from EPA on September 5, 2014 that included New Castle County, and thus *all* of Delaware, into the PM Advance program. Furthermore, EPA designated all of Delaware as attainment for the 2012 annual PM_{2.5} NAAQS on December 18, 2014.

On September 2, 2015, DAQ submitted the “Path Forward Plan”² to EPA Region 3, which provided the following:

- The motivations for Delaware’s participation in the PM Advance program,
- The status of ambient air quality in Delaware relative to the current daily and annual fine particulate NAAQS,

¹ 79 Federal Register 45350

² <http://www.dnrec.delaware.gov/Air/Documents/PM%20Advance/Path%20Forward%20Plan.pdf>

- The sources and magnitude of emissions of fine particulate matter and its precursors,
- Existing and on-going efforts that contribute to the reduction of PM emissions, and
- Projects planned for Year 1 of the program.

Delaware's participation in the PM Advance program began in 2015 and is anticipated to end in 2020. Delaware may opt to renew or discontinue its participation post-2020. This report summarizes the projects and activities from the third year of the program and identifies projects and activities planned for the fourth year.

Section 2 Year 3 Projects, Control Measures, and Activities

The following sections provide information on projects and measures initiated or completed in the third year of the PM Advance program. The projects implemented in the third year are contributing to the reduction of primary PM_{2.5} and its precursors, as well as reducing ozone precursors (New Castle County is nonattainment for the 2015 8-hr ozone standard).

2.1 PM Advance Webpage

Delaware's PM Advance webpage includes information about the PM Advance Program, copies of Delaware's annual PM Advance Reports, and basic information and links related to reduction of PM emissions. The webpage is located at <http://www.dnrec.delaware.gov/Air/Pages/PM-Advance.aspx>.

2.2 Diesel Emission Reduction Act Projects

In 2018, DAQ completed several Diesel Emission Reduction Act (DERA) projects³, school bus replacements, as detailed below. Air pollution from diesel vehicles has health implications for everyone, but children are more susceptible because they breathe more air per pound of body weight than do adults. Diesel exhaust from school buses contains significant levels of fine particulate matter. Children riding older school buses may be exposed to higher levels of these harmful diesel pollutants.

DAQ completed the following DERA projects with the Delaware Department of Education (DDoED) and five private bus contracting companies:

- Boulden Bus Inc. – Replaced two existing model Year 2003-2004 diesel school buses with new, cleaner propane buses in summer 2018.
- Bowman Bus Service, Inc. – Replaced one existing model Year 2000 diesel school bus with a new, cleaner diesel bus in summer 2018.
- Davis Bus Inc. – Replaced one existing model Year 2006 diesel school bus with a new, cleaner propane bus in summer 2018.
- Mikerra Transportation, LLC. – Replaced one existing model Year 2002 diesel school bus with a new, clean diesel bus in summer 2018.

³ Federal Fiscal Year 2017 DERA Grant.

- School Mule – Replaced four existing model Year 2003-2006 diesel school buses with new, cleaner propane buses in spring 2018.

2.3 Adopt/Amend Air Regulations

Delaware remains in non-attainment of federal ground-level ozone requirements and volatile organic compounds (VOC) emissions contribute to the formation of ozone. Since VOC is also a precursor of PM_{2.5}, VOC reductions obtained from ozone control measures will assist in meeting the goals of the PM Advance Plan. In addition, SO₂ is also a precursor of PM_{2.5}. The sections below summarize activities related to VOC and SO₂ regulations.

2.3.1 Solvent Degreasing

Delaware based its Solvent Degreasing Regulation, 7 DE Admin Code 1124 - Control of Volatile Organic Compound Emissions, Section 33.0, on the 2001 Ozone Transport Commission (OTC) Model Rule for Solvent Cleaning. In 2010, OTC revised the 2001 model rule, which was approved in 2013. The OTC Model Rule determined that a VOC emission reduction of 89 tons per day would result in the Ozone Transport Region (OTR) in 2014. Based on population, a VOC emission reduction of about one ton per day will result in Delaware upon adopting the OTC rule.

Delaware has begun the regulatory development process to amend 7 DE Admin Code 1124 to incorporate the 2010 OTC model rule revisions. A final regulation is expected in 2020.

2.3.2 Sandblasting

In DE Admin. Code 1102 – “Permits”, sandblasting qualified for an exemption from the requirements to have an air quality permit in Delaware. DAQ completed the regulation revision process to remove the permit exemption for outdoor dry abrasive blasting of certain water tanks.

Effective January 11, 2019, a Source Category Permit⁴ is required for the removal of lead-containing exterior coatings from outdoor water tanks by dry abrasive blasting. DNREC has developed permit requirements that will require that dry abrasive blasting operations for tanks with lead-containing exterior coatings have sufficient containment measures, to prevent the abrasive material from traveling beyond the property line where the operation is being conducted. Permitting of this activity will lead to a reduction of particulate and lead emissions.

More information about the Source Category Permit can be found at: <https://de.gov/sandblasting>.

2.3.3 Stage II Decommissioning

Stage II vapor recovery is technology that prevents gasoline vapors from escaping into the air during refueling. This process takes the vapors normally emitted directly into the atmosphere when pumping gas and recycles them back into the fuel storage tanks, preventing them from polluting

⁴ <https://dnrec.alpha.delaware.gov/air/permitting/sandblasting/>

the air. For the same vapor-control purpose, since 1998, new passenger cars, light-duty trucks, and most heavy-duty gasoline powered vehicles have been equipped with onboard refueling vapor recovery (ORVR) systems. Since ORVR controls are now widespread in use, EPA has allowed states to phase-out Stage II vapor recovery systems.

In addition, the ORVR system and the vacuum-assist Stage II system, such as those mainly installed in Delaware's gasoline stations, are incompatible. Such an incompatibility causes increased vapor emissions when refueling an ORVR-equipped vehicle at a Stage II-equipped station.

DAQ has begun the regulatory development process to amend pertinent sections in 7 DE Admin. Code 1124 to allow decommissioning of Stage II vapor recovery systems in Delaware along with incorporating improved technology, inspections and testing requirements for a well-controlled Stage I system to ensure gas stations remain vapor tight. DAQ has begun drafting language for the proposed regulation. A final regulation is expected in 2019.

2.3.4 I/M Program Updates

DAQ is in the process of updating two regulations related to Delaware's Inspection and Maintenance Program:

- 7 DE Admin. Code 1126 – Motor Vehicle Emissions Inspection Program
- 7 DE Admin. Code 1131 – Low Enhanced Inspection and Maintenance Program

The purpose of these actions is to amend regulations for vehicles registered in Delaware by harmonizing emissions testing as a cohesive statewide program. Most significantly, DAQ is proposing to require On-Board Diagnostic (OBD) emissions testing for 1996 and newer vehicles registered in Sussex County. The proposed amendments will establish identical emissions testing requirements for Delaware's three counties as well as exempt the first seven model years of a vehicle pursuant to House Bill 246 - an act to amend Title 21 of the Delaware Code relating to Registration, Title, and Licenses of Motor Vehicles.

DAQ has begun the regulatory development process to amend 7 DE Admin Code 1124 and 1131. Overall, the proposed changes will strengthen Delaware's current I/M program, with a net reduction in emissions expected.

2.4 Mobile Sources and Measures

2.4.1 California ZEV requirements

During the first year of the PM Advance program DAQ performed preliminary analyses to determine if Delaware should adopt the California Air Resources Board (CARB) Zero Emission Vehicle program. The DAQ continues to evaluate the feasibility of adopting the ZEV program.

2.4.2 Evaluate Inspection and Maintenance (I/M) Program for Diesel Trucks

DAQ has held discussions with the Division of Motor Vehicles to consider inclusion of medium and heavy-duty diesel vehicles in the I/M program. The DAQ continues to evaluate the feasibility of a medium and heavy-duty diesel I/M program.

2.4.3 Idling Workgroup

In 2005, Delaware established Admin Code 1145 - Excessive Idling of Heavy Duty Vehicles. DAQ initiated an Idling Workgroup in June of 2017. The purpose of the workgroup is to promote education and awareness concerning idling. Stakeholders include DNREC Environmental Crimes Unit, Delaware Department of Transportation (DelDOT), Delaware Fleet Services, State and City Police, City Planning Representatives, Public Health, Nemours Children's Health System, and several local Metropolitan Planning Organizations (MPOs). The Workgroup held meetings in June and September of 2017. In addition, the workgroup began drafting a charter, to refine the goals of the workgroup. DAQ has been unable to develop the program further because of limited staff resources.

DAQ is also working with the OTC Mobile Source Committee's Idling Workgroup to take a regional approach to idling issues.

2.4.4 SmartWay® Program

The [SmartWay®](#) Program is a public-private initiative between EPA, large and small trucking companies, rail carriers, logistics companies, commercial manufacturers, retailers, and other federal and state agencies. Its purpose is to improve fuel efficiency and the environmental performance (reduction of both greenhouse gas emissions and air pollution) of the goods movement supply chains.

EPA helps SmartWay® Partners move more goods, more miles with lower emissions and less energy. SmartWay® Affiliates are organizations that are helping to spread the word about sustainable supply chain transportation efforts and growing the SmartWay Program.

In May 2016, the Delaware Division of Air Quality became a SmartWay® Affiliate. Delaware currently has two affiliates (DAQ and the Produce Marketing Association) and six partners. DAQ has been unable to develop the program further because of limited staff resources.

2.4.5 Roadside Monitoring

The Clean Air Act Amendments of 1990 require Enhanced I/M program areas to supplement emissions testing at stations with on-road testing. On-road testing is defined as testing of vehicles for conditions impacting the emission of Hydrocarbons (HC), Carbon Monoxide (CO), Nitrogen Oxides (NO_x) and/or Carbon Dioxide (CO₂) emissions on any road or roadside in the nonattainment area or the I/M program area. DAQ has implemented a multi-year remote sensing

design (RSD) study to be completed as a supplemental emission measurement on at least 0.5% of vehicles subject to I/M testing.

During October 2018, 13,339 RSD emission measurements from on-road in Delaware were analyzed. The analysis found that average emissions for vehicles registered in the Enhanced I/M area (New Castle and Kent Counties), were lower for HC, CO, and NO_x than for vehicles registered in the Basic I/M area (Sussex County).

2.5 DAQ's Moveable Monitoring Platform

The [Moveable Monitoring Platform](#) (MMP) monitors various ambient pollutant concentrations in areas of concern. These are areas where a permanent monitoring station is not located, and where communities are likely to experience disparate air pollution impacts, such as communities located near major highways, heavy industry, or located in densely populated areas. The MMP has been located near the Eden Park Community, starting in September of 2016. DAQ is using the MMP to evaluate both Total Suspended Particulate (TSP) and PM_{2.5} concentrations in the Eden Park Community to determine potential PM exposure.

Preliminary evaluation of data between October 2016 and December 2018 has indicated that concentrations of TSP are elevated in this community, when compared to other locations within the state. Exceedances of the State Secondary Standard for TSP, which addresses environmental impacts and is based on the original NAAQS for TSP, were recorded 4 times in 2016, 4 in 2017 and once more in early 2018. Several different methods for evaluating TSP have been used during the course of this study, for consistency, exceedances reported here are from the same method reported in last year's report. DAQ has continued to focus its efforts on reducing TSP levels in the community. PM_{2.5} levels continue to be comparable to other monitoring sites within Delaware. DAQ anticipates that emission reduction efforts related to TSP may also help reduce levels of PM_{2.5} in the area.

DAQ Engineering and Compliance staff conducted eight site visits in 2018 at permitted facilities within the area, to ensure that facilities complied with dust reduction conditions within their permits. In addition, DAQ made site visits to two facilities that do not require an air quality permit, to address any potential dust issues. Staff worked with these facilities to implement voluntary dust reduction actions where necessary.

Two additional studies, detailed below, were conducted in 2018 to determine the distribution of dust along the Route 9 corridor and to characterize heavy metal concentrations in the Eden Park area. The MMP was removed from service in February 2019, at the conclusion of these two studies.

DAQ presented monitoring data results to the local communities at several 2018 events: All-Civics Association Meeting, Wilmington Area Planning Council (WILMAPCO) Open House, and Coast Day.

2.5.1 Dust Distribution Study

In October 2018, DAQ initiated a dust distribution study to address concerns voiced by the larger community along the Route 9 Corridor with regards to dust and other pollutants. Dust concentrations and volatile organic compound (VOC) samples at two additional sites along Route 9 were collected for several months to assess pollutant levels between Eden Park and Interstate 295. DAQ completed the study in February 2019 and is currently analyzing samples.

2.5.2 Xact Metals Monitoring Study

In October 2018, DAQ initiated a study using a near real-time metals monitor for metals analysis of PM₁₀ in Eden Park. The goals of the Xact study are to characterize heavy metal concentrations in the Eden Park area, determine the sources of these metals, and to understand how concentrations compare to both nearby and national monitoring sites. The community of Eden Park is an environmental justice area and is surrounded by the Port of Wilmington, multiple industrial facilities, and the I-495 corridor, all of which are potential sources of heavy metals in the ambient air.

This project included collection of hourly metals data using a Cooper Environmental Services Xact 625i instrument (Xact) to complement the 24-hr integrated monitoring. Sonoma Technology Inc., under contract with DAQ, will then conduct an analysis of the hourly metals data using receptor modeling with Positive Matrix Factorization (PMF) and wind direction analyses to attempt to identify sources of the metals and their locations. DAQ completed the study in February 2019 and is currently analyzing samples.

2.6 Transportation and Development Planning

The Planning Branch of DAQ was very active in participating in work groups and committees associated with transportation and development planning. DAQ participation provides input and recommendations on air quality and environmental health concerns that currently exist in a community or that may result from a proposed project. Some of DAQ's contributions to development planning efforts are highlighted here.

2.6.1 Preliminary Land Use Service Reviews

DAQ provided comments and recommendations for minimizing air quality impacts of proposed development projects in Delaware. DAQ provided these comments through the Preliminary Land Use Service (PLUS) process. The PLUS process involves reviews by all applicable state agencies at the start of the land development process, adding value and knowledge to the process without taking over the authority of local governments to make land use decisions. In 2018, DNREC focused its reviews on comprehensive development plans, re-zoning requests and ordinances. DAQ staff reviewed over 40 projects and plans in 2018.

2.6.2 Review of Comprehensive Plans

DAQ provided recommendations for the proposed comprehensive plan update for Kent County. DAQ recommended mixed-use development, allowing opportunities for the increased use of public transit, and expansion of the current bicycle and pedestrian network. The County adopted its comprehensive plan on September 11, 2018 and included an air quality component, which included recommendations to explore opportunities to incorporate alternative fuel vehicles into fleet vehicles and add electric vehicle supply equipment and charging in common areas where feasible. The final plan also included recommendations for the expansion of bicycle & pedestrian networks, mixed use development, and tree preservation.

Sussex County Council adopted its 2018 comprehensive plan on December 4, 2018. Sussex County included an air quality component in the plan, which included the following strategies to help identify opportunities to improve air quality in the County:

- Examine the County’s obligation under federal air quality regulations that promote air quality credits to offset emissions from new transportation projects and
- Reduce auto emissions by supporting alternative travel modes and/or improved traffic flow.

2.6.3 Transportation Corridor Master Plans

The Division of Air Quality provided extensive comments to WILMAPCO, the largest metropolitan planning organization in Delaware, regarding their proposed Route 9 Corridor Master Plan. Route 9 passes through communities directly south of downtown Wilmington. These communities are in close proximity to the Port of Wilmington and other heavy industry. Truck traffic serving these industries travel along Route 9 and through the communities contributing to diesel fine particulate matter and road dust emissions.

In September 2017, WILMAPCO initiated the Route 9 Corridor Transportation and Land Use Master Plan Monitoring Committee to help guide recommendations of the Master Plan. DAQ has participated in the monthly Monitoring Committee meetings. Other participants include local civic and community leaders, and state and county governmental agency representatives.

2.6.4 Volkswagen Settlement

The 2017 Volkswagen Settlement required Volkswagen to fund a \$2.7 billion mitigation trust fund to pay for projects that reduce NOx. The State of Delaware’s share of the Environmental Mitigation Trust is approximately \$9.6 million. Delaware was approved as a beneficiary on January 28, 2018. DAQ will explore whether proposed projects have the added benefit of reducing PM emissions.

In response to the Settlement, DAQ developed a mitigation plan⁵ to accept and distribute these funds to eligible projects in February 2017. The plan, which was finalized in December 2018, is

⁵ <https://dnrec.alpha.delaware.gov/air/mobile-sources/vw-mitigation-plan/>

focused on the eligible types of mitigation actions that can produce the greatest air quality benefit in terms of NO_x emission reductions, reduce public exposure to diesel particulate matter, and promote clean vehicle technologies.

2.6.5 Other Multi-modal Transportation Initiatives

In the past year, the Division of Air Quality has participated in the following initiatives:

- Participated in Dover/Kent County Metropolitan Planning Organization’s Technical Advisory Committee.
- Participated on the following WILMAPCO Committees:
 - Technical Advisory Committee
 - Air Quality Subcommittee
 - Congestion Management Subcommittee
- Assisted in the implementation of more alternative fueling stations, Electric Vehicle Supply Equipment, and electric/alternatively-fueled Fleet vehicles; in partnership with the Division of Climate, Coastal & Energy (DCCE), the Office of Management and Budget, and DelDOT.

2.6 Other Delaware Emission Reduction Projects, Control Measures, and Activities

2.6.1 Division of Climate, Coastal & Energy (DCCE) - DNREC

Renewable Energy

- [Green Energy Program](#) – Provides rebates for residential and small scale renewable energy systems. In 2018, DNREC awarded over \$950,000 in grant funding to the following projects: 504 solar photovoltaics, 14 geothermal heat pumps, and 1 solar thermal.
- [Renewable Energy Portfolio Standards](#) – State has mandates that Delaware’s utilities derive 25% of their energy portfolios from renewable sources by 2025.
- [Offshore Wind Power Working Group](#) – Identifies ways Delaware can benefit economically and environmentally from offshore wind power.
- [Delaware Renewable Energy Taskforce](#) – Established to provide recommendations on establishing renewable energy trading mechanisms and other structures to support the growth of renewable energy in Delaware.

Energy Efficiency

- [Delaware Energy Efficiency Advisory Council](#) – Helps reduce energy loss and cost by developing statewide programs to increase energy efficiency, reduce energy usage, and lower consumer energy costs.
- [The Delaware Energy Efficiency Investment Fund](#) – Helps commercial and industrial customers replace aging, inefficient equipment and systems with energy efficient alternatives. In 2018, DCCE funded 85 projects, for over \$1 million.

- [Weatherization Assistance Program](#) – Free program that helps homeowners and renters cut their energy bills by weatherproofing and improving the energy efficiency of their homes. In 2018, DCCE provided weatherization services to over 250 Delaware residents.

Clean Fuel and Transportation Initiatives

- [Electric Vehicle Rebates](#) – Offers clean vehicle and charging station rebates. DNREC provided 390 rebates for alternative fuel vehicles purchased in 2018, for a total of \$961,000. Individual rebates ranged from \$1,000 - \$3,500.
- [Propane and Natural Gas Vehicles](#) – Offers clean, bi-fuel and heavy-duty vehicle rebates. In 2018 DNREC provided one rebate for \$20,000, for a Peterbilt 520 Compressed Gas vehicle.
- [Delaware Clean Cities Coalition](#) – Helps Delaware residents, businesses, and fleet operators work together to reduce the use of petroleum, develop regional economic opportunities, and improve air quality.
- [Transportation and Climate Initiative](#) – Regional collaboration of 12 Northeast and Mid-Atlantic jurisdictions that seeks to develop the clean energy economy, improve transportation, and reduce carbon emissions in the transportation sector.

Green Infrastructure

- [Green Infrastructure Primer](#) – Provides an introduction to green infrastructure projects and their benefits, as well as information on selecting, building, and maintaining them.

2.6.2 DelDOT

- Routes 1, 13, and 113 were designated Alternative Fuel Corridor designations in 2018. The U.S. Department of Transportation establishes Alternative Fuel Corridors to support alternative-fueling stations, including electric, hydrogen, propane and natural gas fueling infrastructure at strategic locations along major national highways.
- Congestion Mitigation and Air Quality Improvement Program – This project is part of Delaware’s Transportation Improvement Program (TIP). It supports completion of a statewide network of pedestrian and bicycle pathways, bicycle routes and pedestrian connections, and promotes travel by non-motorized modes for reduced congestion, active transportation choices, access to recreation, and reduced vehicle emissions.
- [Pedestrian Council](#) – Assists DelDOT with re-evaluation, implementation, and recommendations regarding the Statewide Pedestrian Action Plan and prioritization of pedestrian infrastructure improvements.
- [First State Trails and Pathways Initiative](#) – Public outreach for bicycling, walking, and providing safe and convenient ways to reach local work, shops, schools, recreational sites and transit.
- [RideShare – Delaware Authority for Regional Transit \(DART\)](#) - Aids commuters with finding and using alternative modes of transportation.

2.6.3 State of Delaware – Office of Management and Budget

- [Fleet Link](#) – Statewide commuter program for State employees. Vanpools operate on a statewide basis and provide a shared-cost alternative to commuting to work in privately owned vehicles.

2.6.4 Electric Utilities

Delmarva Power

- [Peak Energy Savings Credit](#) – Customers earn a credit off their bill for every kilowatt hour (kWh) they save below their baseline average energy use. Savings for 2018 were 258 MWh and 78.7 MW.
- [Delaware Energy Wise Rewards™ Program](#) – During the peak electricity demand times in the summer, Delmarva Power automatically cycles off and on participating central air conditioners and heat pumps to help reduce the region's demand for electricity. Customers earn a one-time installation credit and a choice of a programmable thermostat or outside switch and an annual participation credit. Savings for 2018 were 46 MWs.

Delaware Electric Cooperative (DEC)

- [Switch and Save](#) – When periods of peak demand occur, DEC automatically signals participating central air conditioning/heat pump cooling units to reduce consumption.
- [Beat the Peak](#) – Member-owners receive text alerts when DEC is approaching a period when the price for energy is expected to be high. Encourages voluntary energy-conservation measures. Customers can also sign up to have an in-home “Beat the Peak” indicator installed.
- [LED Light Discounts](#) – Member-owners can receive exclusive deals on energy efficient bulbs.
- [Solar Grants](#) – Grants for home or business solar systems. In 2018, the DEC completed 205 solar installations with a combined capacity of 1,778 kW/DC.
- [Variable Frequency Drives Program](#) - DEC offers farmers an energy efficient way to irrigate their crops. DEC expanded its irrigation grant program in 2012 to include funding for variable frequency drives (VFDs). By installing a VFD on an irrigation unit, farmers will be able to lower their energy consumption and save money. To date, the program has converted 268 diesel motors to electric. Estimated pollutant reductions in tons/year are: PM 4.8, CO - 82, and Non-methane Hydrocarbons (HMHC)+NO_x – 98.

DEC also initiated two new programs in late 2018:

- [Beat the Peak With Nest](#) – DEC has partnered with Nest's Rush Hour Rewards Program to offer a new money-saving program to members. Members who install or who have already installed a Nest thermostat are eligible for the program. Members agree to allow DEC to adjust their thermostats a few degrees during summer Beat the Peak alerts. In 2018 cumulative demand reduction was 1,268 kW through the program.

- [Beat the Peak With Electric Vehicles](#) – DEC is offering a billing credits for electric vehicle (EV) owners who do not use their EV chargers during Beat the Peak alerts. A WIFI signal is sent to the charger that regulates the flow of power during Beat the Peak alerts. In 2018 cumulative demand reduction was 139 kW through the program.

Delaware Municipal Electric Corporation (DEMEC)

- [Demand Response](#) – When the potential for an extreme weather event is found DEMEC uses models to determine when customers should be asked to reduce electric load. Customers participating in the program are typically given about 24 hours in advance of an upcoming peak and preparations are made to notify customers. In 2018 cumulative demand reduction resulted in 20,289 kWh.

2.6.5 Delaware Sustainable Energy Utility (DESEU)

- In August 2018, Governor Carney signed Senate Bill 113, authorizing the creation of a Delaware Voluntary Property Assessed Clean Energy (D-PACE) program to establish a clean energy financing program for the installation of energy efficiency technologies and clean energy systems for qualifying commercial properties statewide. DESEU will serve as the administrator of the PACE program.
- [Energize Delaware](#) – Energy savings programs for Delaware’s homes, businesses, non-profits, and schools.
 - In 2017, Energize Delaware Programs resulted in \$1,772,586 in annual energy savings and 10,494 tons of annual emissions avoided (CO₂, SO₂ and NO_x).
 - In 2017, DSEU initiated a residential solar loan program. The program offers loans up to \$30,000 for up to ten years to homeowners installing solar systems. The program resulted in installation of 193 kW capacity of solar systems in 2017.
 - The Low-Interest Revolving Loan Fund encourages the adoption and installation of end-use energy efficiency measures and customer-sited renewable generation and greenhouse gas reduction measures. The program resulted in installation of 1,702 kW capacity of solar PV systems in 2017.
 - In 2018, Energize Delaware received a Partner of the Year Award for Energy Efficiency Program Delivery. The award recognizes states, utilities, and other organizations for sponsoring energy efficiency programs to improve the efficiency of products, homes, and buildings within their community.

2.6.6 The Air Quality Partnership of Delaware

The mission of the Air Quality Partnership of Delaware (AQP), a public/private coalition of businesses, agencies, and individuals interested in clean air, is to raise awareness and inform Delawareans about practices that improve air quality and citizen health. AQP programs include:

- Idling Gets You Nowhere Campaign - Goal of the Campaign is to reduce vehicle idling at schools.

2.6.7 Delaware Transit Corporation

The Delaware Transit Corporation (DART) has received three million dollars in grants from the Federal Transit Administration in 2016 and 2017. The funding will allow DART to move forward with the addition of eight electric buses in New Castle County, two in Sussex County, and six for Dover. DART expects three busses to be put into service in Dover by the summer of 2019.

DART will receive over three million dollars in additional funding under the “Buses and Bus Facilities Infrastructure Investment Program” to expand the New Castle County Bus Facility to increase transit service in and around Middletown. The funds will support additional maintenance to support an increased fleet and a growing population.

In addition, on January 31, 2019, Best Workplaces for Commuters recognized DART as one of 300 U.S.-based employers who meet the program’s National Standard of Excellence, by offering exceptional commuter benefits to employees.

2.6.8 Department of Education

The Department of Education’s Green Ribbons Schools program honors schools for their innovative efforts to reduce environmental impact and utility costs, improve health and wellness, and ensure effective sustainability education. In 2018, Emalea P. Warner Elementary School, in Wilmington Delaware, received the National Green Ribbon Award for outstanding achievements in recycling, saving energy, saving water, growing our own food and more.

2.6.9 League of American Bicyclists

The League of American Bicyclists (LAB) has ranked Delaware as the seventh most bike friendly state in the US. In passing the Bicycle Friendly Delaware Act in October 2017, Delaware continues to be on the forefront of bicycling policy and law development. In addition, LAB recognized three communities (Lewes, Newark, and Dover) and two government entities (City of Newark and DelDOT) as bicycle friendly.

Section 3 Year 4 Planned Projects, Control Measures, and Activities

The following subsections provide information on new and ongoing measures that will provide additional emission reduction benefits to Delaware in 2019. These control measures will not only reduce primary PM_{2.5} and its precursors, but many of these measures will also reduce ozone precursors, and help Delaware in reducing greenhouse gases.

3.1 Develop and Launch Wood Burning Webpages

DAQ developed draft webpages for residential wood burning in year 1 of the PM Advance program. DNREC has begun rolling out a new web page platform, which will provide a consistent

look and feel across the Department. DAQ plans to launch webpages for residential wood burning using DNREC's new web page platform.

3.2 Diesel Emission Reduction Act Projects

DAQ has identified 31 DERA⁶ projects for 2019 with the following school districts:

- Brandywine – Replace six existing model Year 2003-2007 diesel school buses with new, cleaner propane buses.
- Capital – Replace five existing model Year 2000-2003 diesel school buses with new, cleaner propane buses.
- Christina – Replace thirteen existing model Year 1995-2005 diesel school buses with new, cleaner diesel buses.
- Red Clay – Replace six existing model Year 2003-2006 diesel school buses with new, cleaner propane buses.
- Woodbridge – Replace one existing model Year 2005 diesel school bus with a new, clean propane bus.

3.3 Adopt/Amend Air Regulations

In 2019, DAQ plans to pursue the following regulatory actions:

3.3.1 Solvent Degreasing

Work on the solvent degreasing regulation will continue with anticipated completion in 2020.

3.3.2 Stage II Decommissioning

Work to allow decommissioning of Stage II vapor recovery systems in Delaware will continue with anticipated completion in 2019.

3.4 Mobile Sources and Measures

3.4.1 Idling Workgroup

DAQ plans to continue the Idling Workgroup in 2019.

3.4.2 SmartWay® Program

DAQ plans to develop and launch a webpage for the SmartWay® Program.

⁶ Federal fiscal year 2018 DERA grant.

3.4.3 Roadside Monitoring

DAQ plans to continue the multi-year remote sensing design (RSD) study in 2019.

3.5 DAQ's Moveable Monitoring Platform

The MMP was removed from service in February 2019 and monitoring data is currently being analyzed. DAQ will prepare a final report at the completion of the Eden Park study. The report will provide the community with valuable monitoring results, which can help empower local community members to influence state and local decision making. DAQ is in the process of determining the next study area for the MMP.

3.6 Transportation and Development Planning

The Planning Section of DAQ plans to continue to be very active in participating in work groups and committees associated with transportation and development planning. Some of DAQ's planned activities for Year 4 are listed below:

3.6.1 Preliminary Land Use Service Reviews

The Division of Air Quality will continue to provide comments and recommendations for minimizing air quality impacts of proposed development projects in Delaware as long as the Department remains engaged in this process.

3.6.2 Review of Comprehensive Plans

The Division of Air Quality will continue to provide recommendations for proposed comprehensive plans in Delaware. The Cities of Wilmington, New Castle County, and Rehoboth Beach are currently updating their comprehensive plans.

3.6.3 Transportation Corridor Master Plans

WILMAPCO, DeIDOT, and New Castle County are in the process of developing Master Plans for Southern New Castle County and Concord Pike.

The objective of the Southern New Castle County master plan is to inform development and preservation decisions, recommended physical improvements and governmental policies regarding transportation and land use for Southern New Castle County, as implemented through the New Castle County Comprehensive Plan.

3.6.4 Volkswagen Settlement

In January 2019, DNREC published a request for proposals (RFP) for VW Mitigation Trust Fund Projects that reduce nitrogen oxide and other emissions, are cost-effective, and provide environmental benefits to communities disproportionately impacted by air pollution. DNREC

plans to award approximately \$3.2 million in 2019 utilizing Volkswagen Environmental Mitigation Trust funds. The deadline for submittal of proposals is March 28, 2019.

In addition, DAQ has identified 26 school bus replacements for 2019 with the Department of Education, utilizing VW funds:

- Brandywine – Replace ten existing model Year 2001-2006 diesel school buses with new, cleaner propane buses.
- Cape Henlopen – Replace five existing model year 2002-2005 diesel school buses with new, cleaner diesel buses.
- Capital – Replace four existing model Year 2001 diesel school buses with new, cleaner propane buses.
- Colonial – Replace four existing model Year 2001-2006 diesel school buses with new, cleaner diesel buses.
- Red Clay – Replace three existing model Year 2001-2005 diesel school buses with new, cleaner propane buses.

3.6.5 Other Multi-modal Transportation Initiatives

In Year 4, the Division of Air Quality anticipates participating in the following initiatives:

- Dover/Kent County Metropolitan Planning Organization’s Technical Advisory Committee.
- WILMAPCO Committee meetings
 - Technical Advisory Committee
 - Air Quality Subcommittee
 - Congestion Management Subcommittee
- Assist in the implementation of more alternative fueling stations, Electric Vehicle Supply Equipment, and electric/alternatively-fueled fleet vehicles; in partnership with DCCE, the Office of Management and Budget, and DelDOT.

3.7 Grant Funding

DAQ plans to seek funding as applicable through PM Advance-related grants to implement projects and studies that will reduce PM emissions.

3.8 2014 NATA Data

DAQ will use the 2014 NATA data to help identify areas with elevated PM emissions and to assist in prioritizing local emission reduction efforts in Year 4 and beyond.

Section 4 Year 4 Planned Stakeholder Engagement

Stakeholder engagement and collaboration is an important aspect of accomplishing PM_{2.5} emission reductions through voluntary and regulatory measure under the PM Advance program. DAQ plans to complete the following activities in Year 4.

- DAQ has developed a PM Advance website to inform stakeholders and the public of the PM Advance program. The website will be maintained and updated, as new projects are developed and existing project progress. The website will also serve as a resource for the citizens of Delaware to understand the adverse health effects of fine particulate matter, and to know the sources of PM_{2.5} that impact Delaware air quality.
- Engage with DelDOT and the metropolitan planning organizations within Delaware to identify PM emission reducing projects in the context of transportation planning.
- Meet with health and environmental advocacy groups throughout the state to obtain concerns they have regarding emissions of and exposure to PM_{2.5} in Delaware. Solicit ideas on approaches that DAQ could implement to reduce emissions and exposure.
- Inform health and environmental advocacy groups of potential funding sources, such as grants. Encourage these local groups to develop ideas for community driven projects to reduce PM emissions and exposure to PM.
- As DAQ assesses disparate air quality impacts on certain communities within Delaware as part of its on-going strategic plan, DAQ will work with communities through the PM Advance Program to find solutions when the impacts are a result of fine particulates.
- Seek public input of Delaware's PM Advance Program through direct interaction with civic and environmental advocacy groups. DAQ will post PM Advance Plans on its website and seek public input on proposed PM Advance projects and activities.
- Develop outreach materials regarding PM Advance for local communities and stakeholder groups.
- Set up informational booths about PM Advance related projects at local environmental and health outreach events such as the local health fairs, Delaware Coast Day, etc.

Section 5 PM Advance Reporting Requirements

As part of the 5-year Plan, DAQ will report annually to EPA on the programs contained within this document, as well as new programs developed during each year and anticipated in the subsequent year. The next report to EPA will summarize activities through December 31, 2019 and identify projects and activities anticipated to take place in 2020.