2015 Air Quality Management Plan

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# Introduction

In 1997, the United States Environmental Protection Agency (EPA) established a new 8-hour ozone National Ambient Air Quality Standard (NAAQS). As part of the implementation of the new standard, states submitted area designation recommendations to the EPA in June of 2000. The Eastern Panhandle area of West Virginia (Berkeley and Jefferson counties) was identified as nonattainment for Particulate Matter 2.5 (PM2.5) and as one of the potential nonattainment areas for ozone.

PM.25 and the SIP

As required by the Clean Air Act, the Eastern Panhandle area was included in the State Implementation Plan (SIP) to reduce its levels of PM 2.5. In 2009, the EPA determined that the Martinsburg area was in attainment with the 1997 standard, based on data for the 3-year period 2006-2008. In December 2014, the EPA approved the state’s request to redesignate the West Virginia portion of the Martinsburg-Hagerstown nonattainment area for PM2.5 to a maintenance designation, effectively changing applicable permitting requirements.

Ozone and The Early Action Compact

Concerns were raised regarding the area’s adverse impacts to a potential nonattainment designation. In response, the Eastern Panhandle Planning and Development Council (Region 9 or Region) and West Virginia Department of Environmental Protection (WVDEP) began to investigate possible voluntary actions that could be implemented proactively to improve air quality and lessen the possible impact of a formal nonattainment designation in areas that marginally exceed the new standard.

The most promising of the options explored was the EPA’s Ozone Early Action Compact (EAC) program. EACs are voluntary agreements by the localities, states, and the EPA to develop Early Action Plans (EAPs) to reduce ozone precursor pollutants and improve local air quality in a proactive manner, and in a shorter time than what would occur through the traditional nonattainment area designation and SIP planning process. The Eastern Panhandle area entered into an Early Action Compact which includes both Berkeley and Jefferson counties. This Compact was signed by all the parties involved and then submitted to the EPA in December 2002.

Air Quality Management Program

This report represents the first air quality management plan (AQMP) document prepared by Region 9 since the above-mentioned actions. It shall be used as a reference document for its communities to voluntarily improve local air quality and their overall environment. The AQMP includes actions and activities with the overall goal of reducing precursor pollutants which contribute to PM2.5, PM10 and 8-hour ozone (Ozone) formation that are practicable in our area.

Particle pollution (also called particulate matter or PM) is the term for a mixture of solid particles and liquid droplets found in the air. Some particles, such as dust, dirt, soot, or smoke, are large

or dark enough to be seen with the naked eye. Others are so small they can only be detected using a microscope. These particles can be made up of hundreds of different chemicals. Some particles, known as primary particles, are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires. Others form in complicated reactions in the atmosphere of chemicals such as sulfur dioxides and nitrogen oxides that are emitted from power plants, industries and automobiles. These particles, known as secondary particles, make up most of the fine particle pollution in the country.

Ground-level ozone, the main ingredient in smog, is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC) in the presence of sunlight and hot weather.

## Purpose

The purpose of the Region 9 Air Quality Management Plan (AQMP or Plan) is to set forth a comprehensive and integrated program that will assure the Region’s commitments towards complying with the federal 24-hour PM2.5, PM10, and 8-hour Ozone air quality standard. Specifically, the Plan will serve as resource document of the Region’s voluntary education, engagement, and implementation strategies to allow for a healthy environment, attracting new businesses, and controlling its own regulatory regime.

## The Health Impact of Poor Air Quality

Health studies have shown a significant association between exposure to fine particles and premature death from heart or lung disease. Fine particles can aggravate heart and lung diseases and have been linked to effects such as: cardiovascular symptoms; cardiac arrhythmias; heart attacks; respiratory symptoms; asthma attacks; and bronchitis. These effects can result in increased hospital admissions, emergency room visits, absences from school or work, and restricted activity days.

Roughly one out of every three people in the United States is at a higher risk of experiencing PM2.5 related health effects. One group at high risk is active children because they often spend a lot of time playing outdoors at times when concentrations of fine particles are higher. In addition, children’s bodies are still developing and they breathe more air per pound of body weight than adults. The elderly population is often at high risk due to reduced lung capacity or preexisting medical conditions. People of all ages who are active outdoors are at increased risk because during physical activity; PM2.5 penetrates deeper into the parts of the lungs that are more vulnerable to injury.

Breathing ozone can trigger a variety of health problems, particularly for children, the elderly, and people of all ages who have lung diseases such as asthma. Ground-level ozone can also have harmful effects on sensitive vegetation and ecosystems, possibly causing crop damage and negatively impact our area’s agricultural industry.

## The Economic Impact of Poor Air Quality

The WVDEP requires virtually all industries which produce any of the six major air pollutants to obtain an air quality permit. For smaller industries producing less than 100-250 tons per year of

any one pollutant, the permit is relatively easy and inexpensive to obtain. However, major industries with greater emissions output undergo a higher level of scrutiny during the application process. For industries located in, or looking to locate in, an area that is designated nonattainment, or has not met the applicable NAAQS for a particular pollutant, additional requirements under the permitting process can add millions of dollars to the cost of doing business, and consequently deter a company from locating in a nonattainment area.

W. Va. Code §45-19-1 requires that industries in a nonattainment area achieve the Lowest Achievable Emission Rate (LAER), a standard that must be reached regardless of cost; whereas, industries in attainment areas utilize the Best Available Control Technology (BACT) standard, in which cost to the company can be taken into consideration. In reaching the LAER, Source Impact Analyses, meteorological data collection, and other studies must be conducted which may result in requiring businesses to install specialized equipment to limit their emissions. These factors all increase overall costs to businesses operating in a nonattainment area.

The Region 9 Air Quality Management Plan will provide assurance to job-creating industries that our area’s designation is a priority, and the Region will continue to work diligently to remain in good standing. Region 9 personnel will be available to both the commissions and development authorities in its area to respond to any questions prospective or existing businesses may have regarding EPA air quality standards and the Region’s current designation, and will also maintain a working relationship with both the WVDEP and the EPA, acting as a liaison between these agencies and local governments.

## The Regulatory Impact of Poor Air Quality

In December 2014, the EPA approved the state’s request to redesignate the West Virginia portion of the Martinsburg-Hagerstown Nonattainment Area for PM2.5 to a maintenance designation. This designation lifts the burden from our area’s major industries, and major employers, from additional expenditures to meet the LAER, and also assures companies looking to locate in the region that the permitting process will be shorter and less expensive. It is important that the region remain away from nonattainment, as the designation is a very real deterrent to prospective businesses, as well as local existing ones seeking to expand.

Although this redesignation should be recognized for its achievement, it should be noted that these standards may be reevaluated be EPA in the future. If at any point during the area’s maintenance designation, the EPA lowers its PM2.5 standard the area may no longer continue with its maintenance designation and will again be designated nonattainment and again be included in the SIP regulatory regime.

The EPA’s current ozone standard is 75 parts per billion (ppb). However, EPA is currently taking comments on their new proposed range for the ozone standard through the end of February 2015. The new ozone standard is expected to be issued by October 1, 2015. It appears as though EPA will propose a standard within the range of 65-70 ppb. Our area’s current rating is 67 ppb. If our area loses its current attainment status and slips into a maintenance area for ozone, the Hagerstown Eastern Panhandle Metropolitan Planning Organization (HEPMPO) will need to enhance its air quality model in the future, adding more scrutiny and costs to new projects which would need to account for this pollutant standard.

Region 9 personnel will be available to assist local economic development authorities in assuring prospective and existing businesses that the Region has a thorough plan that the area is taking an active role in its current designation, and will continue be proactive in complying with the evolving standards.

## Emission Sources and Monitoring

Air pollution forms either directly or indirectly from pollutants emitted from a variety of sources. The majority of emissions are related to human activity, as a result of fuel combustion from such sources as cars and trucks and from the evaporation of organic liquids, such as those used in the building and cleaning processes.

Air quality data is consistently being collected and logged through a monitoring station located near Martinsburg High School, and is suitable for NAAQS comparisons. The results are being used to determine and designate our areas air quality. The parameters, sampling method, scale and purpose of the monitoring station are as follows:

Particulates:

PM2.5 single event Lo-Volume sampler, Federal Reference Method, samples once every three days. Samples analyzed by gravimetric analysis.

Representative siting scale: Urban

Monitoring objective/site type: Population-oriented

Gaseous:

Ozone – UV absorption continuous gas monitor operated during ozone season April – October Representative siting scale: Urban

Monitoring objective/site type: Population-oriented

## 1.5 Need for Integrated and Coordinated Planning

The Region has several environmental programs to consider: The Chesapeake Watershed Program (CWP), National Ambient Air Quality Standards (NAAQS), and the National Flood Insurance Program (NFIP). Developing an integrated planning approach is the most cost- effective and efficient path to meet the Region’s diverse environmental improvement goals for water quality, air quality, flood management and climate objectives. For instance, the Region’s strategies to reduce water pollution, such as “Green Infrastructure”, in the Chesapeake Watershed can also benefit air quality, flood risk reduction and climate needs.

Responsibilities for achieving these goals span all levels of government. By effectively identifying, integrating and coordinating strategies which are able to satisfy multiple programs, Region 9 is able to increase overall environmental benefit, while maintaining the same level of cost.

# Public Education and Outreach Program

This section summarizes the public education and outreach (PEO) activities Region 9 has underway, as well as identifies potential future efforts that will be pursued.

## Purpose

The purpose of the PEO program is to reduce or eliminate behaviors and practices that cause or contribute to adverse air quality impacts, to alert the area to ozone action days or other environmental emergencies, to notify the area of upcoming opportunities, and to celebrate successes. The program may target the following audiences:

* + - General public
		- Schools
		- Faith Based Organizations
		- Businesses including home-based and mobile businesses
		- Homeowners, landscapers, and property managers
		- Engineers, contractors, and developers
		- Elected officials, policy makers, review staff, land use planners, engineers, maintenance staff, homeland security and emergency mangers, and other City employees

Moving forward, Region 9 can develop an approach, or tools, to measure the understanding and adoption of targeted behaviors among the targeted audiences. Any resulting measurements can be used to direct education and outreach resources most effectively and evaluate changes in targeted behaviors.

## Current Activities

Region 9 is currently developing an active public education and outreach program that uses a variety of approaches to inform residents and businesses about pollution prevention activities.

Some examples of materials and activities include:

* + - *Brochures or fact sheets* for general public and specific audiences
		- *Digital and social media communications* such as websites, posts, and email campaigns.
* *Event participation* with educational displays at community environmental classes, events and festivals

## Planned Activities

In addition to the current activities mentioned above, the following activities will be pursued by Region 9 to support its public education and outreach program.

* + - Build upon existing public education and outreach activities identified above Examples include:

•Continue adding contacts to our list serve and manage through Constant Contact

* + - * Develop and disseminate an Ozone Action Day Alert email containing practices for susceptible groups and tips on how to reduce your impact.

•Digitize education brochures and upload on Twitter, Facebook and the Region 9 website.

•Develop a Brochure Toolbox containing existing brochures to ensure that all communities have available stock on hand at their public facilities.

•Public Venues:

•Libraries

•Colleges

•Tax Offices, Town Halls, Utility Offices

•Department of Motor Vehicles

•Post Office

•MARC train stations

•Eastern Panhandle Transit Authority (EPTA)

•Farmer’s Markets

•Private Venues:

•Major retailers (e.g. Walmart, Target)

•Pharmacies

•Emergency Rooms

•Faith-Based Organizations

•Food and Grocery Stores

* + - Develop an approach, or tools, to measure the understanding and adoption of targeted behaviors.
		- Train volunteer citizen educators or local environmental groups, such as watershed organizations, that could staff festivals and other events, as well as present related topics to other local groups and leaders.
		- Continue working with Apple Valley Waste’s newsletter representative.
* Their quarterly newsletter is sent to an estimated 100,0000 customers receiving residential or commercial trash removal service.
	+ - Appear at public sponsored events to discuss Environmental Improvement, such as:
* EP Entrepreneur Forum
* Chamber of Commerce events
* Eastern Panhandle Organization of Homeowners Associations meetings
* Farmer’s Markets
	+ - Periodically update elected officials on program progress.
* Continue coordinating “lunch and learns” with local staff, state delegates and senators, and federal representative staff.
* Consider coordinating annual trip to Washington DC to meet with federal representatives.
	+ - Region 9 will actively serve on the Hagerstown Eastern Panhandle Metropolitan Planning Organization (HEPMPO) Technical Advisory Committee (TAC) and Air Quality Conformity Advisory Committee (AQAC).
* The above committees provide assistance and recommendations for transportation projects to the Interstate Council (ISC) of HEPMPO, the decision-making body of the organization. The ISC is comprised of representatives of the respective State departments of transportation, public transit operators, and local elected officials.
	+ - Investigate and consider rejoining the I-81 Coalition Environmental Committee

# On-The-Ground Implementation

This section summarizes the AQ Implementation Strategies and planned activities.

## Purpose

The ability to reduce and capture emissions will hinge upon the success of Region 9’s implementation strategies.

## Current Activities

There are no currently activities being performed by Region 9 for this section.

## Planned Activities

* + - Promote and Develop Urban Tree Canopy (UTC) Programs.

Region 9 will continue to work with communities interested in incorporating UTC goals within their comprehensive plans and assist in implementing UTC strategies.

* Ensure that the public is aware of the importance and benefit of trees.
	+ Tree leaves have the ability to absorb precursor pollutants and trap small particulates within their “hair-like” surface.
	+ Trees reduce urban heat island effects, increase shade and cool temperatures all of which reduce the formation of Ozone.
	+ Trees reduce energy demands, decreasing emissions from power plants.
* Continue working with Cacapon Institute and WV Division of Forestry and assisting their ongoing efforts with Tree Canopy Expansion.
	+ - Promote Green Infrastructure and Energy Efficient Building Code Policy Development

Region 9 will continue to work with local governments interested incorporating higher regulatory standards or policies into their local building and development process.

•Consider instituting a building permit or business license pledge for using low- VOC and or zero-VOC paints and stains for new construction and for maintenance or remodeling.

•Voluntarily adopt the one inch capture requirement for stormwater management ordinances which incorporates the use Green Infrastructure practices.

•Develop comprehensive Green Infrastructure plans.

•Promote Leadership in Energy and Environmental Design (LEED) certification for new buildings and major renovation projects.

* Congestion Mitigation for Air Quality (CMAQ)

Region 9 will work with the HEPMPO to locate congested areas and support projects dedicated to correcting vehicle congestion problems. This effort will aim to reduce emissions and reduced exposure of pollutants to the general public while providing monetary savings due to consuming less fuel**.**

* Training

Region 9 will promote Leadership in Energy and Environmental Design (LEED)

* + LEED certification for a project can occur at a number of levels. Each level has a higher degree of efficiency and probably a higher expense. Some of this can be customized to your budget. It may be advisable to have county and city planners and engineers receive some LEED training
	+ Work with local Extension Agencies to develop programs which teach residents to make their own household products with safer alternatives, limiting the use of aerosols and other VOC-emitting chemicals.
	+ Identify needs and develop a coordinated program that builds upon training currently in place.
	+ Develop a mechanism for internal coordination on Air, Water, Flooding, and Climate Resiliency activities among local government staff.

# Program Management and Administration

This section outlines the oversight and administrative activities necessary to support the development and implementation of the Region’s AQ Plan.

## Purpose

Continuous evaluation of the program will ensure its efficiency and effectiveness.

## Current Activities

There are no currently activities being performed by the Region 9 for this section.

## Planned Activities

The following are activities are planned by Region 9 to support development and implementation of its AQMP.

* + - Develop and implement an AQMP.
		- Prepare written documentation of the AQMP that is to be reviewed and updated every two years by the Region 9 Air Quality Committee beginning in 2015 .
		- Development of an annual report. The annual report shall include a copy of the current AQMP and is intended to summarize:
* Status and assessment of each component of the AQMP.
* A description of activities being implemented to support each component of the AQMP including, but not limited to:
	+ Grants applied for and obtained.
	+ Acres of trees planted.
	+ Public education and involvement activities
	+ Number of Ozone Action Days

This report, as well as current and planned activities for the upcoming year, will be presented at the first Region Council meeting in March of every year.

* + - An evaluation of the effectiveness of current activities, as well as Region 9’s obligation for continued implementation of AQMP components already in effect.
		- Develop a cost-tracking mechanism that is easily implementable
* Cost or estimated cost of development and implementation of each AQMP activity will help to determine future feasibility.
* Region 9 shall include coordination mechanisms among its communities to eliminate barriers and integrate practices which improve their overall environment.
* Consider hiring a consultant to conduct a financing feasibility study to recommend a long-term dedicated funding stream that is equitable and effective for Region 9 to maintain a comprehensive environmental program.