



**MURIEL BOWSER**

**MAYOR**

SEP 23 2016

Shawn M. Garvin

Regional Administrator

U.S. Environmental Protection Agency, Region III

Mail Code 3RA00

1650 Arch Street

Philadelphia, PA 19103

**RE: Nonattainment Designation Recommendation for the District under the 2015 Ozone Standards**

Dear Mr. Garvin:

On behalf of the District of Columbia (District), thank you for the opportunity to recommend a designation status for the 2015 8-hour national ambient air quality standards (NAAQS) for ground-level ozone.

Certified air quality data (2013-2015) from the District's ambient air monitoring station network indicates no exceedances of the 2015 8-hour ozone NAAQS of 0.070 parts per million (ppm). However, more recent 2016 preliminary data from the District's stations recorded ozone air quality that is above the NAAQS. Thus, in accordance with Section 107(d)(1) of the Clean Air Act, I am recommending that the entire District be designated as a nonattainment area under the 2015 8-hour ozone NAAQS. This is based on U.S. Environmental Protection Agency (EPA) guidance provided to states and tribes for making recommendations for area designations. Additional details and analysis for the District's recommendation are provided in Attachment A.

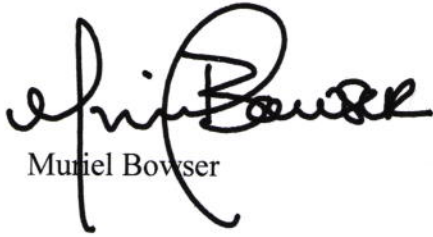
Being a non-industrial jurisdiction, the District is home to only a small number of pollution sources that contribute to ozone precursor emissions. As noted in Attachment A, sources in the District contribute less than ten percent of the precursor pollution emitted in the Washington DC-MD-VA metropolitan statistical area (MSA). The District requires cooperation from the surrounding jurisdictions for mitigating its air quality issues and achieving the health-based ozone air quality standards.

I understand that EPA's own analysis identified transported ozone precursor pollution as the significant contributor for ozone air quality problems in the District. When developing the Cross State Air Pollution Rule (CSAPR), EPA determined that 37 states contributed over 70% of the ozone pollution in the District in 2012. The District has proactively implemented several programs for controlling the ozone precursor pollution emissions generated within its boundaries. Because of the

regional nature of the ozone problem, mitigation efforts for controlling ozone precursor pollution must take place at a bigger regional level. Hence, the District asks EPA to consider a large geographic area for a nonattainment area. A larger nonattainment area will ensure parity on air pollution control programs between the impacted and contributing jurisdictions, and provide the needed reductions in transported precursor pollution that will result in air quality improvements in the District for achieving the 2015 8-hour NAAQS for ground-level ozone.

If you need further information on this matter, please contact Tommy Wells, Director of the Department of Energy and Environment, at (202) 535-2600.

Sincerely,

A handwritten signature in black ink, appearing to read "Muriel Bowser". The signature is fluid and cursive, with a large initial "M" and "B".

Muriel Bowser

Enclosure

cc: Cristina Fernandez, Director, Air Protection Division, EPA Region III  
Tommy Wells, Director, Department of Energy and Environment, Government of the District of Columbia  
Cecily Beall, Associate Director, Air Quality Division, Department of Energy and Environment, Government of the District of Columbia

**Attachment A**

**Analysis and Supporting Documentation**

**for**

**The District of Columbia's Designation Recommendation for the  
2015 8-Hour Ozone National Ambient Air Quality Standards (NAAQS)**

**September 2016**



Prepared by:  
Monitoring and Assessment Branch  
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## 1.0 Summary

The U.S. Environmental Protection Agency (EPA) revised the 8-hour ground-level ozone primary and secondary National Ambient Air Quality Standards (NAAQS) to 0.070 parts per million (ppm) in 2015. According to EPA's guidance on "Area Designations for the 2015 Ozone NAAQS," Section 107(d) of the Clean Air Act (CAA) governs the process for initial area designation recommendations by states and tribes after EPA establishes new or revised NAAQS<sup>1</sup>. The Mayor is required to submit such a recommendation for the District of Columbia (District).

EPA recommends that states and tribes base their designation recommendations on air quality data from the most recent complete three consecutive calendar years of quality-assured monitoring data available. The relevant three-year period with quality-assured ambient air data is 2013 to 2015. EPA may however use preliminary data from 2016 to help inform final designations. A "nonattainment" designation is reserved for areas that are violating the NAAQS or contributing to a violation of the NAAQS in a nearby area. The same three-year period of data must be used for all portions of the area.

Attainment or nonattainment boundaries for each area are to be evaluated and determined on a case-by-case basis considering the specific facts and circumstances unique to the area. Since ozone precursor emissions are pervasive and transported long distances, the examination of violations in counties in the Combined Statistical Area (CSA) or Core Based Statistical Area (CBSA)<sup>2</sup>, both delineated by the federal Office of Management and Budget (OMB), are considered reasonable. Area-specific analyses of five factors listed below are particularly relevant:

- Air quality data;
- Emissions and emissions-related data (e.g., vehicle miles traveled, or VMT; population);
- Meteorology;
- Geography and topography; and
- Jurisdictional boundaries.

Generally, an explanation of the nature and causes of the ozone air quality problem in a specific area, the scope and scale of the problem, and all nearby contributing sources of emissions can be used to create a weight-of-evidence case for the recommendation. EPA allows states to consider exceptional events when recommending designations. Although the designation process is exempt from the public notice and comment rulemaking process, EPA intends to consider public input when finalizing recommendations.

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<sup>1</sup> EPA memo from Janet McCabe to Regional Administrators, "Area Designations for the 2015 Ozone National Ambient Air Quality Standards" (February 25, 2016), found at <https://www.epa.gov/sites/production/files/2016-02/documents/ozone-designations-guidance-2015.pdf>

<sup>2</sup> A CSA includes two or more adjacent CBSAs.

This document presents an analysis of ozone concentrations in counties within the CSA boundary that includes the District. Ambient monitoring data in the District indicate 2015 design value (DV) concentrations at the NAAQS level of 0.070 ppm. However, there were exceedances of the NAAQS during 2016, and the preliminary air quality data from 2016 indicate a DV concentration of 0.071 ppm in the Washington-Arlington-Alexandria, DC-VA-MD-WV (WAA) Metropolitan Statistical Area (MSA), which is above the new standards. By considering preliminary data from 2016, the District recommends a **nonattainment** designation for the District.

EPA's own analysis<sup>3</sup> identified transported ozone precursor pollution emissions as the single biggest contributor of ground-level ozone air quality in the District. The District has proactively implemented several programs for controlling emissions generated within its boundaries. Because of the regional nature of the ozone problem, mitigation efforts for controlling ozone precursor pollution must take place at a bigger regional level. Hence, the District asks EPA to consider a large geographic area that includes all contributing jurisdictions as the boundary for a nonattainment area. A larger nonattainment area will ensure parity on air pollution control programs between the impacted and contributing jurisdictions, and provide the needed reductions in transported precursor pollution emissions that will lead to air quality improvements in the District for achieving the 2015 8-hour ozone NAAQS.

### **1.1 The Combined Statistical Area (CSA)**

The District is within the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA (WBA) CSA, which is composed of several Metropolitan Statistical Areas (MSAs) and Micropolitan Statistical Areas ( $\mu$ SAs):

- Washington-Arlington-Alexandria, DC-VA-MD-WV (WAA) MSA, which includes the District;
- Baltimore-Columbia-Towson, MD (BCT) MSA;
- Hagerstown-Martinsburg, MD-WV MSA;
- Chambersburg-Waynesborough, PA MSA;
- Winchester, VA-WV MSA;
- California-Lexington Park, MD MSA;
- Easton, MD  $\mu$ SA; and
- Cambridge, MD  $\mu$ SA.

Figures 1 and 2 identify counties and independent cities within the WBA CSA, which comprises a total of 41 jurisdictions.

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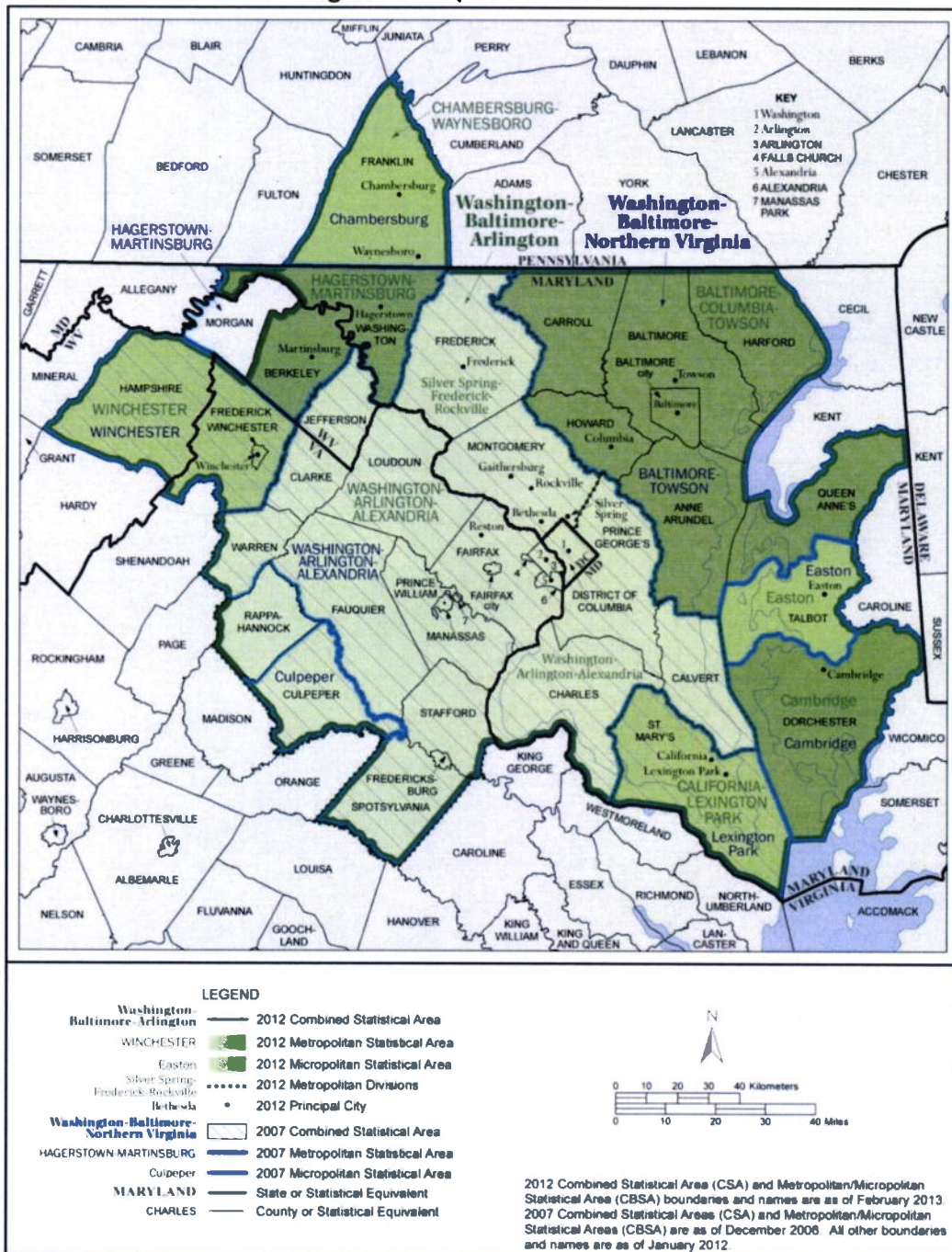
<sup>3</sup> Based on EPA's proposed Cross-State Air Pollution Rule (CSAPR), "Air Quality Contributions Data File," found at <https://www3.epa.gov/crossstaterule/techinfo.html>

**Figure 1. Counties in the WBA CSA by MSA and  $\mu$ SA**

<b>Washington-Arlington-Alexandria, DC-VA-MD-WV MSA</b>		<b>Baltimore-Columbia-Towson, MD MSA</b>	
DC	Washington (city)	MD	Anne Arundel
MD	Calvert	MD	Baltimore (city)
MD	Charles	MD	Baltimore
MD	Frederick	MD	Carroll
MD	Montgomery	MD	Harford
MD	Prince George's	MD	Howard
VA	Alexandria (city)	MD	Queen Anne's
VA	Arlington	<b>Hagerstown-Martinsburg, MD-WV MSA</b>	
VA	Clarke	MD	Washington (Hagerstown city)
VA	Culpeper	WV	Berkeley (Martinsburg city)
VA	Fairfax	WV	Morgan
VA	Fairfax (city)	<b>Chambersburg-Waynesborough, PA MSA</b>	
VA	Falls Church (city)	PA	Franklin
VA	Fauquier	<b>Winchester, VA-WV MSA</b>	
VA	Loudoun	WV	Hampshire
VA	Manassas (city)	VA	Frederick
VA	Manassas Park (city)	VA	Winchester (city)
VA	Prince William	<b>California-Lexington Park, MD MSA</b>	
VA	Rappahannock	MD	St. Mary's
VA	Spotsylvania	<b>Easton, MD <math>\mu</math>SA*</b>	
VA	Stafford	MD	Talbot
VA	Fredericksburg (city)	<b>Cambridge, MD <math>\mu</math>SA*</b>	
VA	Warren	MD	Dorchester
WV	Jefferson	<b>* <math>\mu</math> = micropolitan</b>	



Figure 2. Map of the WBA CSA



To evaluate potential nonattainment area boundaries, the following analyses focus on the WAA MSA and BCT MSA because they represent a majority of the jurisdictions in the CSA, and each contains a major urban center.

## 2.0 Air Quality Data

The first step in defining an area to be designated attainment or nonattainment is to identify all monitored violations of the NAAQS using the most recently available DV concentrations. A DV is a three-year statistic based on ambient data that describes the air quality status of a given location relative to the level of the NAAQS.

There are 20 ambient ozone monitors in 18 jurisdictions in the WAA and BCT MSAs, of which only two had a 2015 DV that exceeded the 2015 8-hour ozone NAAQS. Both of the violating monitors are in the BCT MSA along the northeastern border with Pennsylvania and north of an inland tip of the Chesapeake Bay: Padonia (Baltimore County) and Edgewood (Harford County). A third monitor exceeded the 2015 NAAQS in the Fair Hill Natural Resource Management Area in Cecil County. Cecil County is not located within the WBA CSA, but it is adjacent to Harford County at the northeastern most tip of the CSA and is consistently amongst the highest DVs

Preliminary 2016 DV results<sup>4</sup> indicate that in addition to the Fair Hills monitor in Cecil County, five monitors in the WBA CSA have exceeded the NAAQS: Padonia and Essex (Baltimore County), Edgewood and Aldino (Harford County), and Aurora Hills (Arlington, VA).

### 2.1 Historical Data

Historical ozone air quality measurements data also can help inform decisions regarding the nonattainment area boundary. Figure 3 below shows the counties in the WBA CSA in reference to a major interstate highway that spans along the entire East Coast, I-95. Figure 4 shows DV trends in the region that indicate that the following ten jurisdictions (counties and cities) with monitors generally have had the highest DVs in the WBA CSA since 2005. The same monitors had 2014 DVs above the 2015 NAAQS:

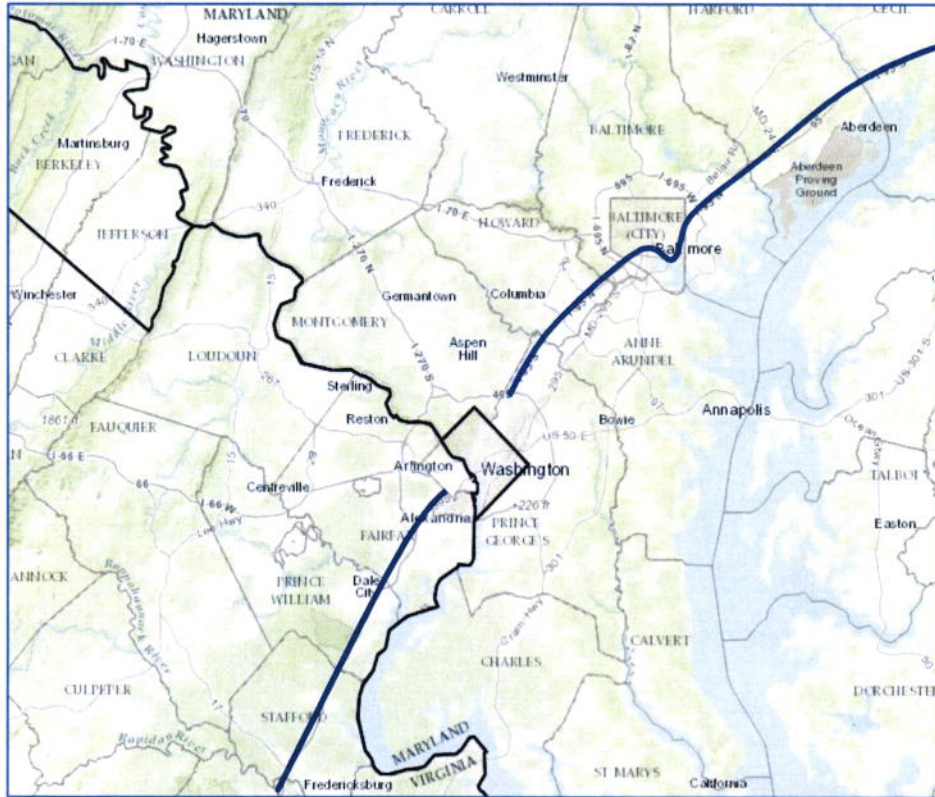
- The District of Columbia;
- Maryland counties: Anne Arundel, Baltimore, Calvert, (Cecil), Charles, Harford, and Prince George's; and
- Virginia counties: Arlington, Fairfax.

These counties and cities tend to be located in the middle and eastern portions of the WBA CSA. All of them are part of two existing nonattainment areas for the old 1997 and 2008 NAAQS – one that encompasses the DC-MD-VA metropolitan area and one surrounding the Baltimore metropolitan area. All of them contain portions of or are east of the major interstate highway, I-95.

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<sup>4</sup> Email from Tom Downs, Maine Department of Environmental Protection, "2016 data from AIRNOW-TECH as of 8/15/2016" (August 17, 2016).

**Figure 3. Counties in Relation to I-95**



The other jurisdictions in the CSA with monitors<sup>5</sup> with lower DVs include:

- Maryland: Carroll, Frederick, and Montgomery, Baltimore (city); and
- Virginia: Fauquier, Frederick<sup>6</sup>, Loudoun, Prince William, and Stafford.

These counties tend to be located towards the middle and western portions of the CSA. All but two counties – Fauquier County and Frederick County, VA – are located within an existing nonattainment area. All of these jurisdictions are to the west of I-95 except for Stafford County, Montgomery County, and Baltimore City. Portions of I-95 traverse towards the eastern borders of these three jurisdictions.

There are 23 additional jurisdictions in the CSA that do not have monitors in the WAA or BCT MSAs:

- Maryland counties: Dorchester, Howard, St. Mary's, Queen Anne's, Talbot, and Washington; and

<sup>5</sup> The Arlington city monitor stopped operating in 2012.

<sup>6</sup> Since the Frederick, VA, monitor is the only monitor in the CSA not located within the WAA MSA or the BCT MSA, it is not considered in the following analyses.

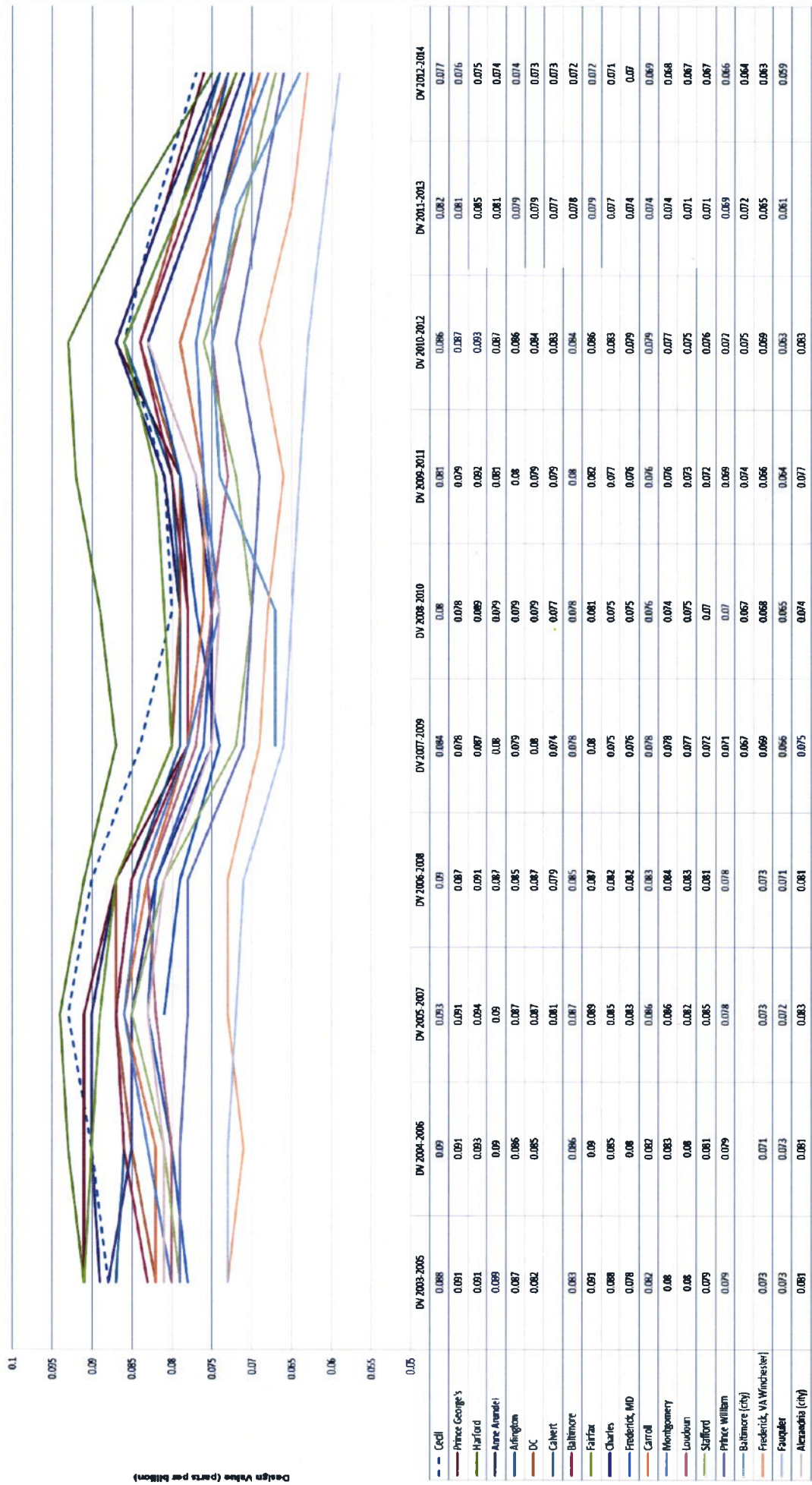
- Virginia: Alexandria (city), Clarke, Culpeper, Fairfax (city), Falls Church (city), Fredericksburg (city), Manassas (city), Manassas Park (city), Rappahannock, Spotsylvania, Warren, and Winchester (city).
- West Virginia: Berkeley, Hampshire, Jefferson, and Morgan;
- Pennsylvania County: Franklin.

These counties are on the outskirts of the CSA, with the exception of Howard County. Howard County is the only county without a monitor that is located within an existing nonattainment area and includes a portion of I-95 along its eastern border.

It is interesting to note that the ozone air quality trend followed a similar pattern at all measurement sites in the CSA: the DVs peaked in 2007 or 2008, began dipping in 2009, and peaked again in 2012, with drops since then.

Figure 4. Design Value Trends of Counties with Monitors in the WBA CSA

Design Value Trends in the Washington-Baltimore-Arlington, DC-MD-WV-PA CSA



### **3.0 Emissions and Emissions-Related Data**

Emissions sources that may contribute to monitored violations in the WBA CSA and are included in EPA's Ozone Designations Mapping Tool version 1, provided to help with 2015 NAAQS designations analysis, include large point sources and onroad vehicles. Point "stationary sources," are in fixed locations, and onroad "mobile sources" do not have a fixed location and are generally propelled by or operated using an internal combustion engine. Population estimates are also included in EPA's mapping tool because they are often used as an indicator of emissions activity. More activity in an area means that more people are driving, more energy is used, and more goods are produced.

The following analyses show that while NOx emissions from large point sources are comparable in the WAA MSA and BCT MSA, onroad vehicle NOx emissions and traffic density are larger in the WAA MSA. Also, the population in the WAA MSA is higher compared to the BCT MSA's.

#### **3.1 Large Point Sources of NOx**

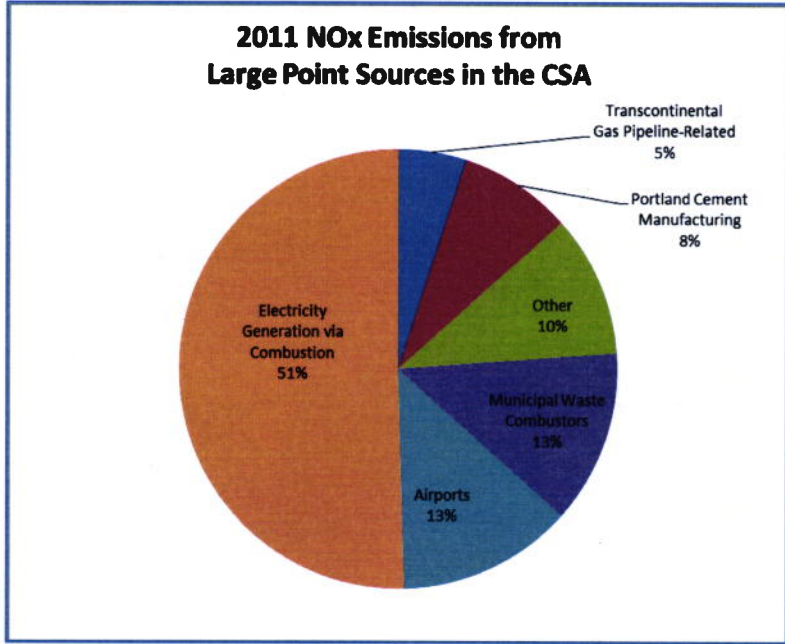
In 2011, total NOx emissions from large point sources in the BCT MSA were slightly higher than total NOx emissions from large point sources in the WAA MSA: 53% compared to 47%, respectively. These estimates do not include emissions from two facilities that shut down after 2011: the Pepco-Benning Generating Station in the District and the GenOn Potomac River Limited Liability Corp in Alexandria, VA<sup>7</sup>. The types of large point sources of NOx throughout the WBA CSA are identified in Figure 5.

Because of various control programs and electric generating unit (EGU) shutdowns in the WBA CSA, the portion of NOx emissions from the large point source sector has been shrinking in recent years and the percentage breakdown may continue to change as EGU regulations and other air pollution controls become fully implemented. The largest NOx emitters were EGUs in Anne Arundel and Prince George's Counties. Large NOx point source categories also included airports and municipal waste combustors (MWCs). Over 85 percent of the "other" NOx emissions were from a munitions plant, a steel mill, and steam and heating facilities. Most of the large NOx facilities were located within or adjacent to the two urban centers: Baltimore and the District. Loudoun and Prince William Counties, which are suburbs of the WAA MSA, also had large NOx units.

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<sup>7</sup> Inventory files for the MARAMA 2017 Beta inventory do not indicate any additional plant closures in the immediate region.

Figure 5. NOx Emissions from Large Point Source Categories in the WBA CSA



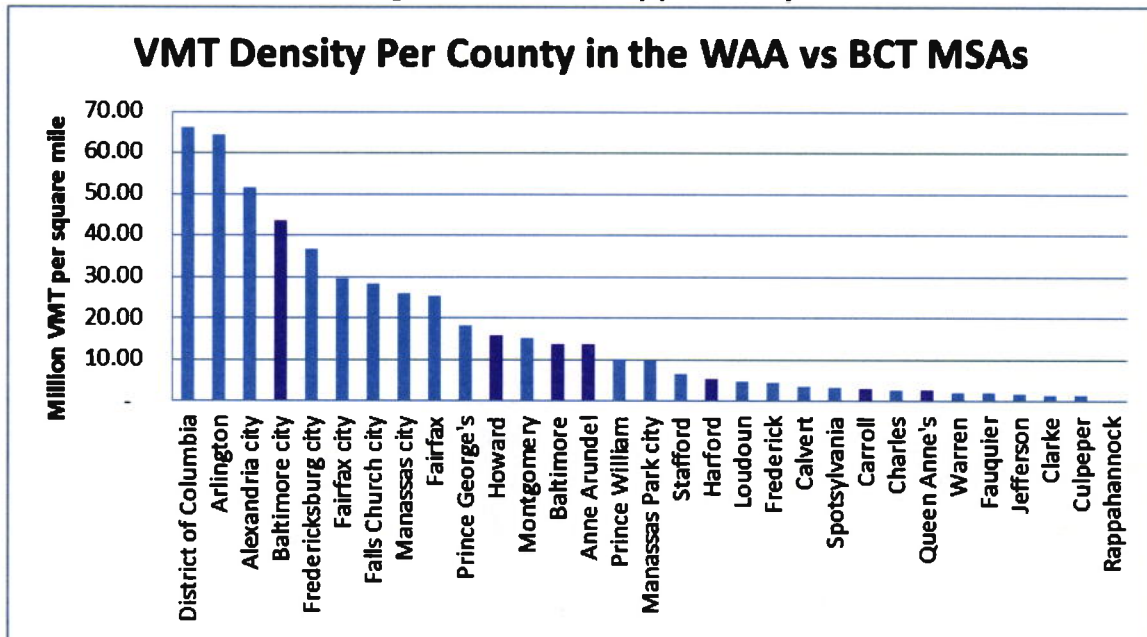
Source: EPA's Ozone Designations Mapping Tool v1

### 3.2 Onroad Emissions and VMT

On average, onroad sources contribute about 52% to total NOx emissions in counties in the WAA and BCT MSAs, which represent a majority of the CSA. In 2011, 64% of onroad NOx emissions in the two MSAs were from the WAA MSA, which encompassed 71% of the land area.

High vehicle miles traveled (VMT), the average annual daily traffic for a section of road multiplied by the length of the road, span across nearly all of the WAA and BCT MSAs. VMT generally is most heavily concentrated along the interstate highways: I-95, I-70, I-270, I-66, and the beltways that surround the two urban centers: the District and Baltimore. Of the ten counties with the highest VMT per square mile of land (VMT density, or most congested), nine are located in the WAA MSA, as demonstrated in Figure 6.

Figure 6. VMT Density per County



Note that blue bars are for counties in the WAA MSA, and purple bars are for counties in the BCT MSA.

The top ten counties with the highest VMT density in the WBA CSA (District, Arlington, Fairfax, and Prince George's, Baltimore, Anne Arundel, Harford, Calvert, Charles, and Cecil) also happen to have monitors that reported higher ozone DV concentrations.

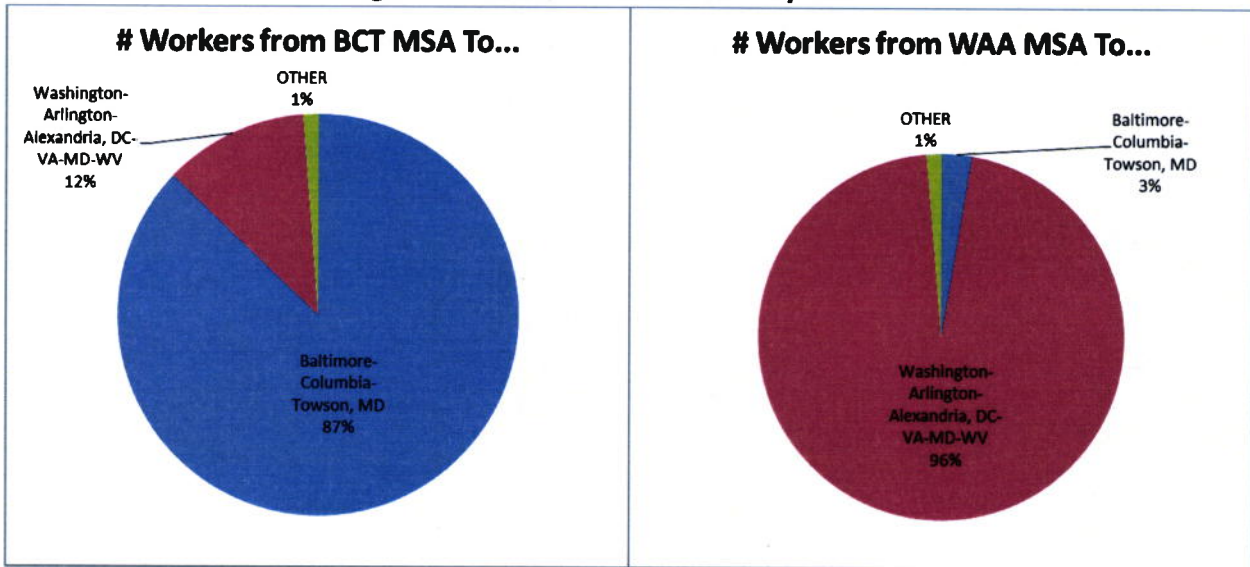
### 3.3 Population and Commuting Patterns

Population estimates and forecasts for the WAA and BCT MSAs are compiled by each region's Metropolitan Planning Organization (MPO). MPOs are regional policy bodies required by law in urbanized areas with populations over 50,000. They are designated by local officials and governors of states and are responsible for carrying out metropolitan transportation planning requirements of federal highway and transit legislation. MPOs work closely with air quality agencies to implement CAA requirements.

Counties with the highest DV concentration monitors in the CSA are not necessarily the counties with the largest populations. The larger populations in the Washington area are compounded by weekly commuters. It is also notable that more people commute from the BCT MSA to the WAA MSA than vice versa, as demonstrated in Figure 7, and 87% of them commute by vehicle.



Figure 7. Number of Commuters by MSA



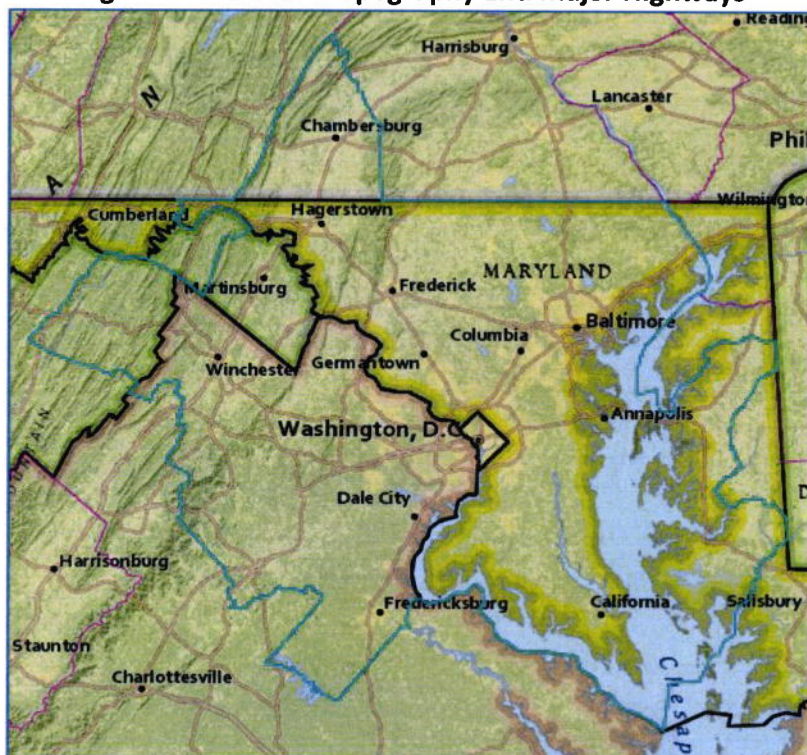
Source: U.S. Census Bureau, "Commuting (Journey to Work), 2009-13 5-Year American Commuting Survey Commuting Flows, Table 2 (County to County by Travel Mode)," found at: <http://www.census.gov/hhes/commuting/> (August 2016)

#### 4.0 Meteorology, Geographic, and Topographic Information

The WBA CSA is located in the Mid-Atlantic region of the United States, between more rigorous climates in the north and warm temperate climates in the south. Weather patterns are influenced by the Appalachian Mountains to the west and north and the Chesapeake Bay and Atlantic Ocean to the east. The CSA is near the average path of the low pressure systems that move across the country. Changes in wind direction are frequent. During the summer, the area is influenced by a large semi-permanent high pressure system commonly known as the Bermuda High, which is typically centered over the Atlantic Ocean near the coast of Florida that brings warm humid air to the Washington area. Downtown areas often experience a heat island effect. The proximity of large bodies of water and the inflow of winds from the south contribute to high relative humidity during much of the year.

The CSA contains built urban environment in and around the District and Baltimore, rural farmland to the west and around the Chesapeake Bay, and extensive suburban development throughout. There are four seasonal temperature fluctuations throughout the region per year. Average temperatures (in degrees Fahrenheit) range from the low 20s in January to the high 80s in July. Precipitation distribution is uniform at roughly 40 inches annually in the form of rain or snow throughout the year. Figure 8 shows a topographic map of WBA CSA.

**Figure 8. WBA CSA Topography and Major Highways**

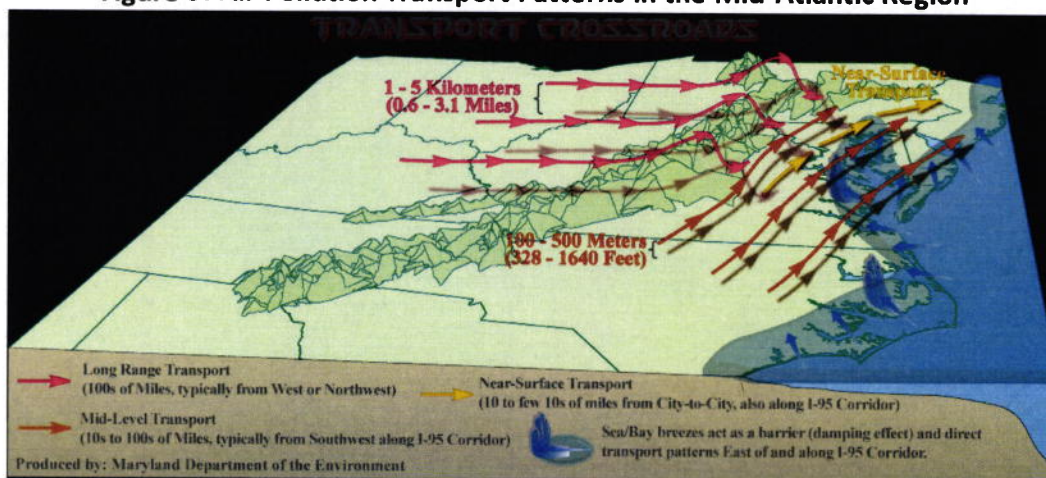


The University of Maryland (UMD) and Maryland Department of the Environment (MDE) have conducted extensive research over the past 20 years using aircraft measurements, balloon borne ozonesondes, mountaintop monitors, and other methods to assess the ozone pollution that enters the State of Maryland and region. They have identified at least three predominant types of air pollution transport regimes, as shown in Figure 9:

- Long-range transport travels hundreds of miles, typically from the west or northwest. An “elevated ozone reservoir” of air is trapped at about 2,000 feet above the earth’s surface at night by a nocturnal inversion until temperatures cause it to drop during morning hours. Ozone in the reservoir reacts with local pollutants by the afternoon.
- Medium-range (mid-level) transport travels within the Mid-Atlantic, typically from the southwest and up along the I-95 corridor (east of the Appalachian Mountains). It is typically found at about 2,000 feet above the earth’s surface and is transported by a “nocturnal low level jet” that moves an average of 30 miles per hour.
- Local (near-surface) transport travels ten to a few dozen miles from city to city, also along the I-95 corridor.<sup>8</sup>

<sup>8</sup> Maryland Department of the Environment, “Clean Air Progress in Maryland: Accomplishments 2012,” found at: <http://www.mde.state.md.us/programs/Air/Documents/GoodNewsReport2012/GoodNews2012finalinteractive.pdf> (accessed in 2013).

**Figure 9. Air Pollution Transport Patterns in the Mid-Atlantic Region**

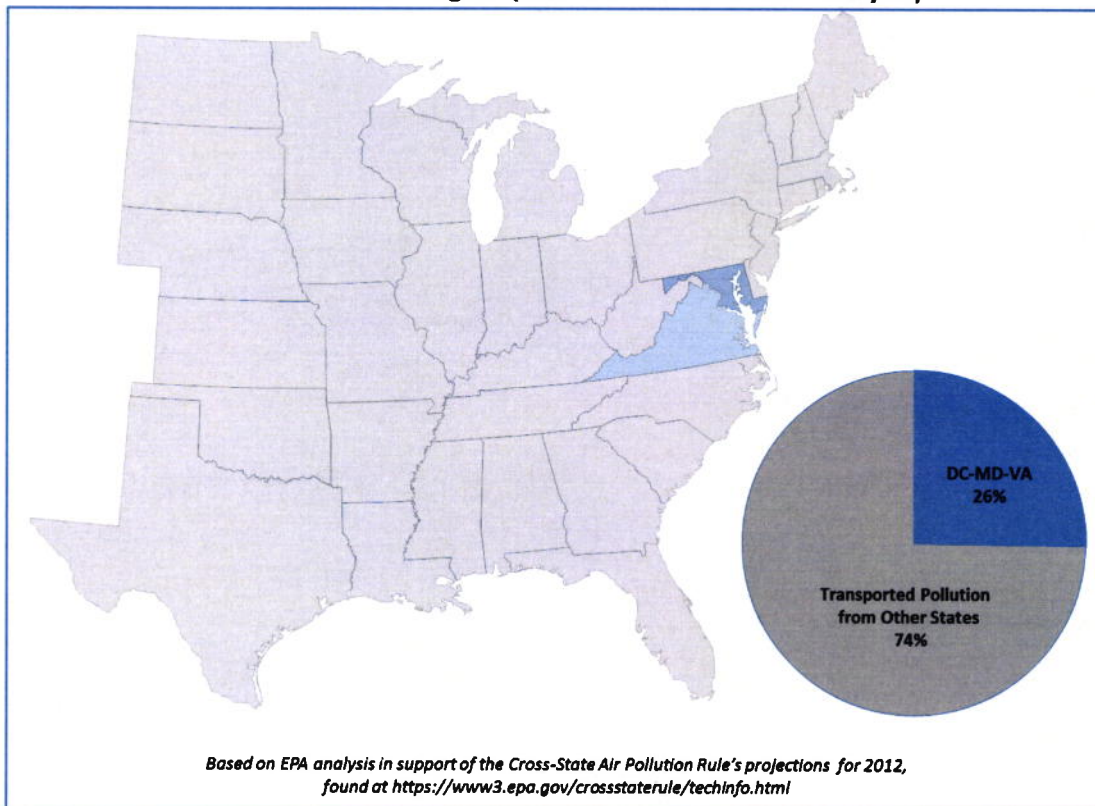


*Source: Maryland Department of the Environment*

Locally, the Chesapeake Bay plays a key role. Strong breezes within the WBA CSA along the western coastline of the Bay create a “wall” that can cause transported air pollutants to converge and move north along the Bay instead of across the Bay, resulting in higher concentrations at the northern tip of the Bay. This may help explain the consistently higher DVs in the northern jurisdictions of the WBA CSA: Baltimore, Harford, and Cecil Counties. Based on UMD’s assessments, long and medium-range transport of ozone precursor emissions into the region can have very significant role in local air quality in the WBA CSA.

EPA also conducted an assessment of the long-range transport of ozone precursor pollution and estimated contributions from various jurisdictions to impacted areas. According to EPA’s modeling analysis for the Cross-State Air Pollution Rule (CSAPR), jurisdictions outside of the WBA CSA have a profound influence on the ozone air quality in the CSA. For example, 37 states (as shown in Figure 10) were projected to contribute over 70% of ozone-causing pollution to the region in 2012. Figure 10 summarizes the geographic domain and results from EPA’s CSAPR assessment related to long-range transport of ozone precursor pollution.

**Figure 10. Long-Range Transport of Ozone Precursor Pollution to the WBA CSA Region (Based on EPA's CSAPR Analysis)**



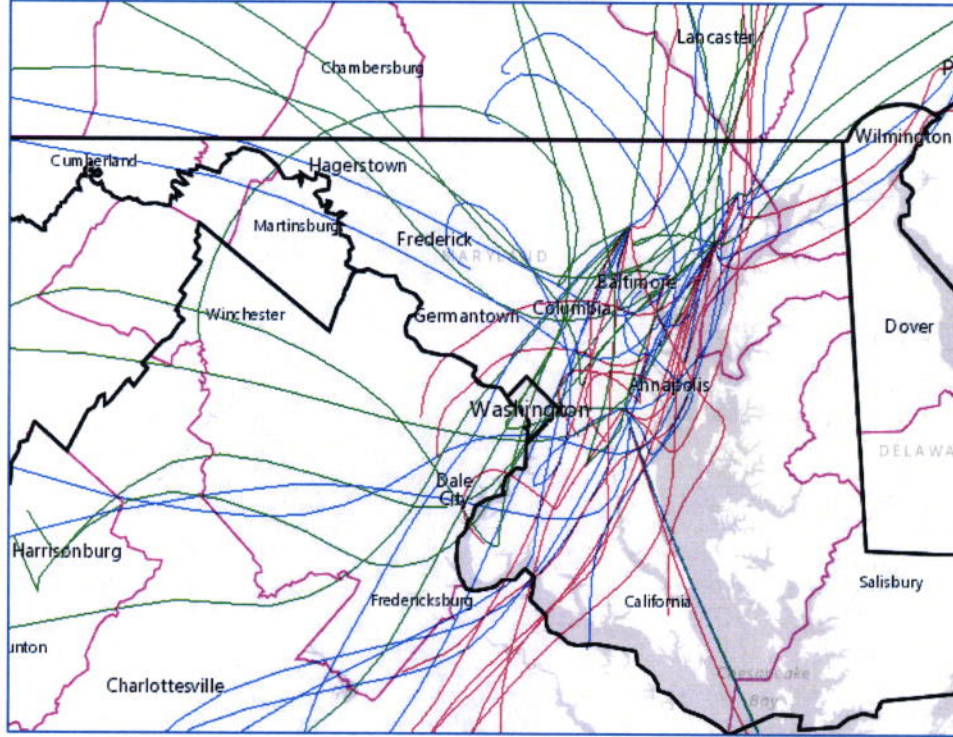
#### 4.1 HYSPLIT Trajectories

EPA's Ozone Designations Mapping Tool illustrates three-dimensional paths traveled by air parcels to violating monitors developed using the HYSPLIT (Hybrid Single-Particle Lagrangian Integrated Trajectory) modeling system. Back trajectories are provided for violating monitors for each day of high ozone concentration at those monitors during the years 2012 to 2014 at three above-ground-level (AGL) starting heights: 100 meters (red), 500 meters (blue), and 1000 meters (green). Each line represents 24 hours in length, using National Oceanic and Atmospheric Administration (NOAA) meteorological data<sup>9</sup>.

Back trajectories for BCT MSA monitors (Figure 11) and WAA MSA monitors (Figure 12) show that a majority of the low-level pollution events (red lines) traveled in areas to the east of the I-95 corridor and to the west of the Bay. Higher-level pollution events generally began to the west of the WBA CSA, particularly the Ohio Valley region to the west.

<sup>9</sup> [https://geodata.epa.gov/arcgis/rest/services/OAR\\_OAQPS/HySplit/MapServer](https://geodata.epa.gov/arcgis/rest/services/OAR_OAQPS/HySplit/MapServer)

**Figure 11. Back Trajectories during High Ozone Events at BCT MSA Monitors**



**Figure 12. Back Trajectories during High Ozone Events at WAA MSA Monitors**

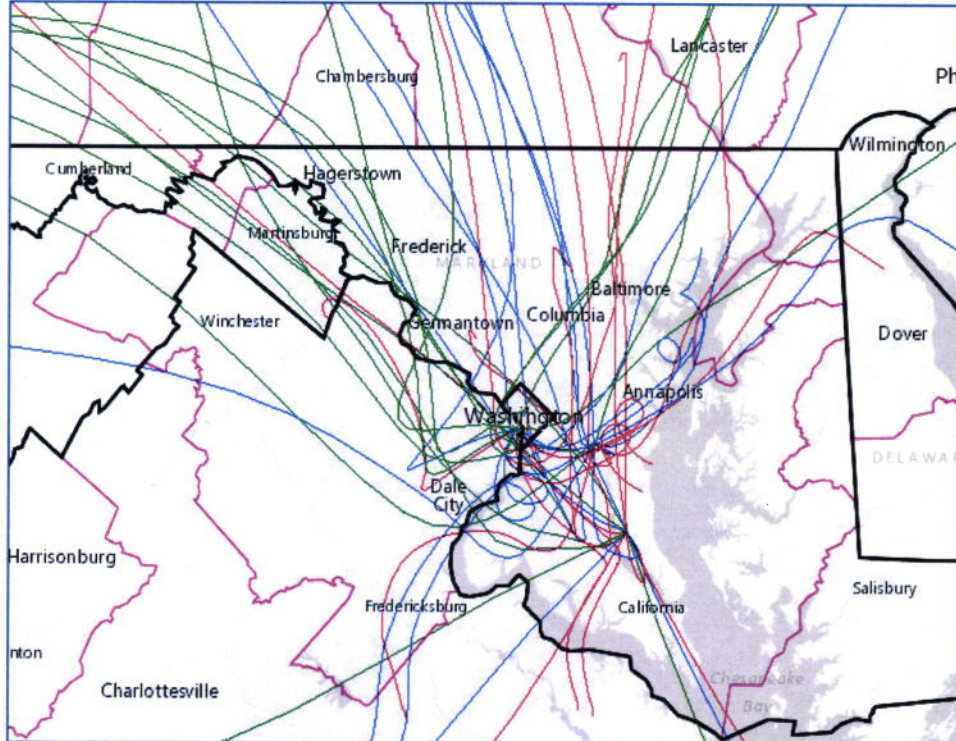
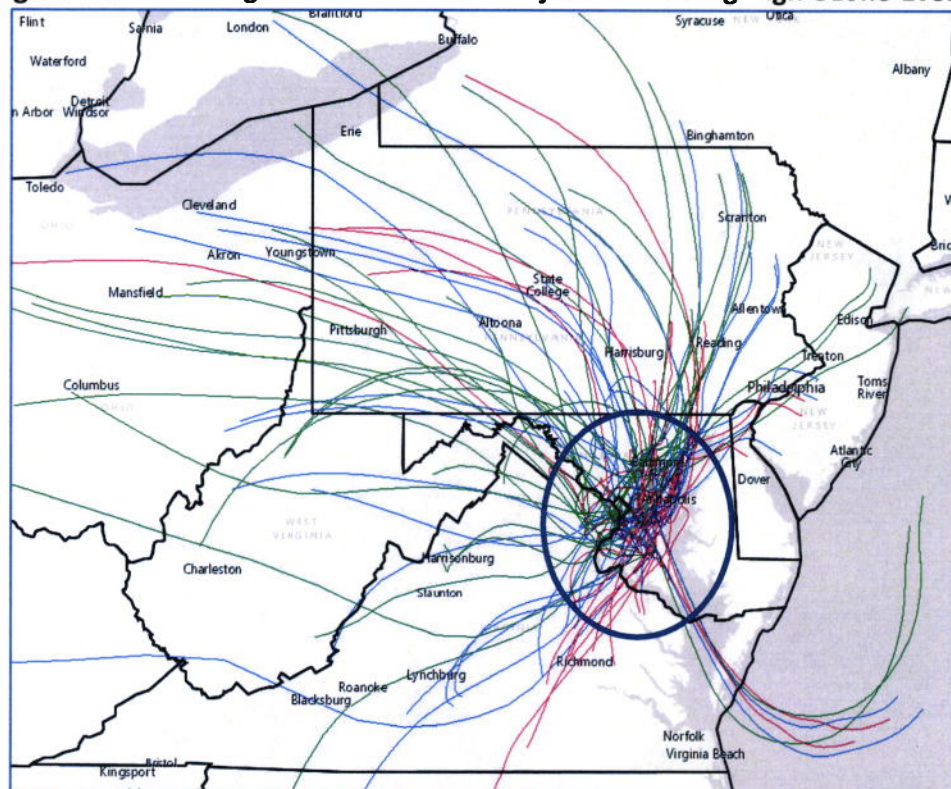


Figure 13 shows a broader view of back trajectories to monitors in the CSA during high ozone events. The concentration of lines within the oval suggests that there is reason to explore the potential of a larger nonattainment area that encompasses both the Baltimore and Washington areas and beyond. The origins of lines provide evidence of the role of long-range transport and further confirm that transported pollution from jurisdictions outside of the CSA contribute to ozone pollution in the WBA CSA, as suggested by EPA's CSAPR analysis.

**Figure 13. Broad Regional View of Back Trajectories during High Ozone Events**



## 5.0 Jurisdictional Considerations

According to EPA's guidance, jurisdictional considerations are to be considered for the purposes of providing a clearly defined legal boundary and carrying out the air quality planning and enforcement functions for nonattainment areas.

The District traditionally has been part of a DC-MD-VA ozone nonattainment area that includes the following jurisdictions for both the 2008 and 1997 8-hour ozone NAAQS:

- District of Columbia
- Calvert County, Maryland
- Charles County, Maryland
- Frederick County, Maryland
- Montgomery County, Maryland
- Prince George's County, Maryland

- Arlington County, Virginia
- Alexandria City, Virginia
- Fairfax County, Virginia (includes the independent cities of Fairfax and Falls Church)
- Loudoun County, Virginia
- Prince William County, Virginia (includes the independent cities of Manassas and Manassas Park)

All of these jurisdictions except for Calvert County are members of a MPO called the National Capital Region Transportation Planning Board (TPB), which is organized through the Metropolitan Washington Council of Governments (MWCOG). They represent roughly half of the WAA MSA.

A separate BCT MSA ozone nonattainment area for the 2008 and 1997 8-hour ozone NAAQS includes the following jurisdictions:

- Anne Arundel County, Maryland
- Baltimore (City)
- Baltimore County, Maryland
- Carroll County, Maryland
- Harford County, Maryland
- Howard County, Maryland

These jurisdictions are members of a MPO called the Baltimore Regional Transportation Board organized by the Baltimore Metropolitan Council (BMC). Queen Anne's County is within the same BCT MSA but is not part of the MPO or nonattainment area.

## **5.1 Potential for Change**

All of the jurisdictions included in both the Washington and Baltimore nonattainment areas that are represented by the two separate MPOs are also within the Ozone Transport Commission (OTC), which extends from parts of Virginia to Maine.<sup>10</sup> Within the air quality community, there is precedent for engaging in discussions and problem-solving across nonattainment boundaries.

The transportation community is considering changes to the existing MPO structure. On June 27, 2016, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) proposed a rule to revise transportation planning regulations to promote more effective regional planning. The proposed rule encourages the consolidation of metropolitan planning areas (MPAs) so that each MPO covers an entire urbanized area and contiguous area expected to become urbanized within 20 years.<sup>11</sup>

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<sup>10</sup> According to CAA § 184(a), the OTR includes the State of Maryland and the MSA that includes the District and parts of Virginia.

<sup>11</sup> See 81 Fed. Reg. 41473.

More than one MPO may serve a single MPA if warranted by the size and complexity of the MPA. When establishing nonattainment boundaries for the 2015 NAAQS, the final FHWA-FTA rulemaking may be worth considering.

## 6.0 Weight of Evidence Discussion

Certified air quality data for 2015 from the region's ambient network suggests that the District and the metropolitan area are attaining the 2015 ozone NAAQS. However, there are several reasons to consider a **nonattainment** designation for the District, along with a large nonattainment boundary that expands the nonattainment area further to encompass contributing jurisdictions as indicated in EPA's analysis.

- Factor 1 – Air quality data:
  - Preliminary 2016 ozone DV concentrations indicate that at least one monitor in the WAA MSA has violated the 2015 NAAQS.
  - The BCT MSA monitors continue to violate the 2015 NAAQS
- Factor 2 – Emissions and emissions-related data:
  - Large point source emissions of NO<sub>x</sub> are slightly higher in the BCT MSA, but generally have less influence on air quality violations than onroad sources.
- Factors 3 and 4 – Meteorology, Geographic, and Topographic Information:
  - Due to wind and weather patterns, high ozone events within the WBA CSA tend to occur most frequently between I-95 and the Chesapeake Bay.
  - Long-range and medium-range transport of ozone precursor pollution from jurisdictions outside of the WBA CSA has profound influence on the local ozone air quality in the District and WBA CSA.
- Factor 5 – Jurisdictional Considerations:
  - There is precedence and potential for multi-jurisdictional areas to work together to address shared ozone air quality problems.

## 7.0 Conclusion

Based on the certified ambient data, the 2015 design value concentrations for the District's monitors indicated air quality at the new 2015 8-hour ozone NAAQS level of 0.070 ppm. However, based on preliminary 2016 ozone data which showed exceedances of the standards, and the results of a five-factor analysis, the District recommends a **nonattainment** designation for the District for the 2015 ozone NAAQS. Because of the regional nature of the ozone problem, and as recognized in EPA's analyses of transported pollution, mitigation efforts for controlling ozone precursor pollution must take place at a bigger regional level. Hence, the District asks EPA to consider a **large geographic area that includes all contributing jurisdictions as the boundary for a nonattainment area**. A large nonattainment area will ensure parity on air pollution control programs between the impacted and contributing jurisdictions, and provide the reductions necessary in transported precursor emissions that will result in air quality improvements in the District for achieving the 2015 8-hour NAAQS for ground-level ozone.