

EPA' PRELIMINARY DESIGNATIONS - 2015 OZONE NAAQS

Sunil Kumar
Principal Environmental Engineer

MWAQC-TAC
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Background

- **October 2015 – EPA revised Ozone NAAQS from 75 ppb to 70 ppb (8-hour average)**
- **October 2016 – States provided their initial recommendations for designations of counties and cities located within their respective jurisdictions**
- **EPA Response to States’ Initial Designations**
 - Round 1 (Nov 2017): EPA responded to states’ initial recommendations by publishing a preliminary list of counties and cities designated as “attainment/unclassifiable” in each state
 - Round 2 (Dec 2017): EPA sent to states a preliminary list of counties and cities designed as “nonattainment”

Next Steps

- **States' Response to EPA Letter**
 - States have 120 days to respond to EPA's preliminary designations using updated air quality data, expected to stick with their own initial recommendations and EPA's intended designations

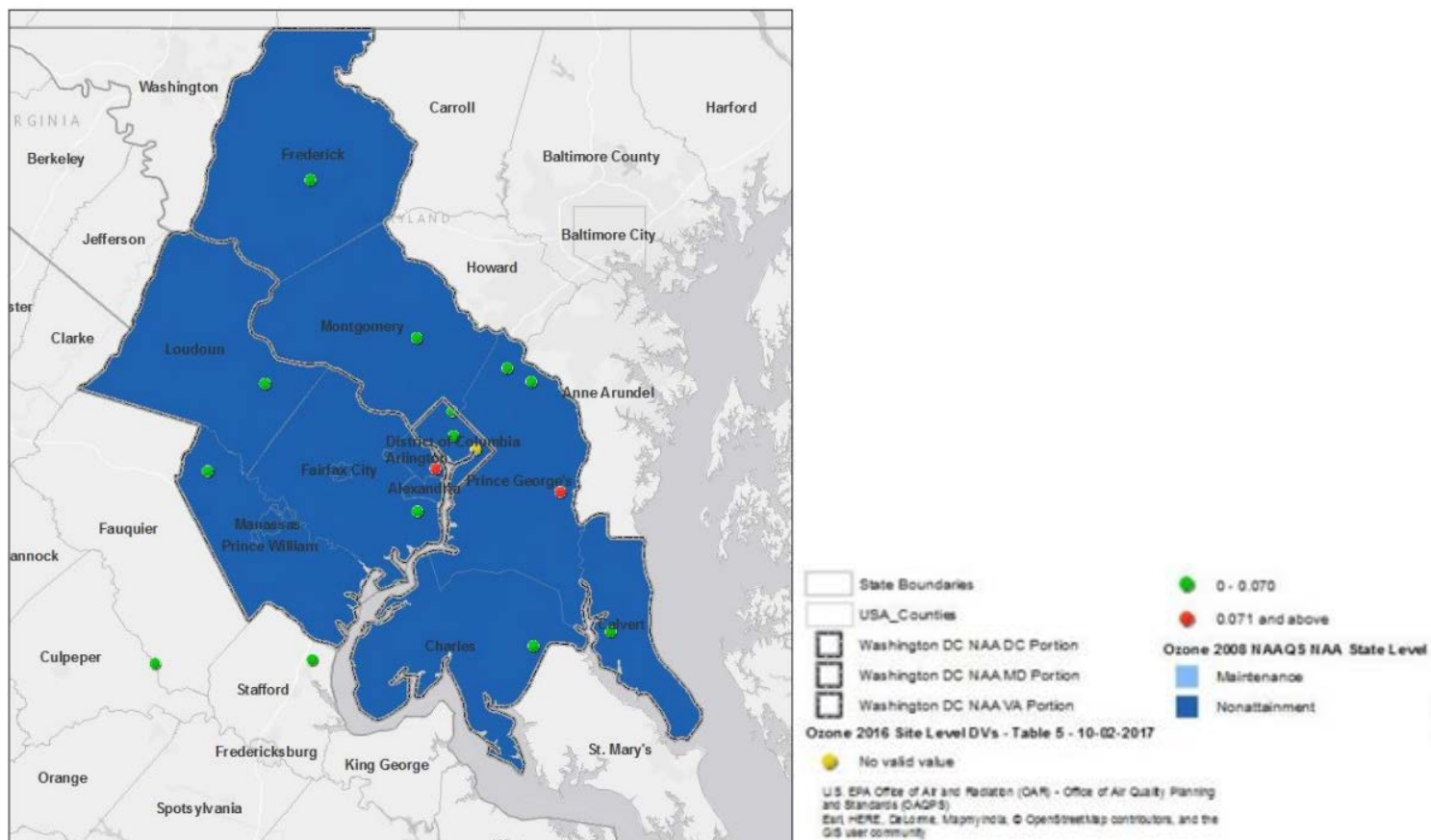
- **EPA's Final Designations - Due Spring 2018 (EPA Estimate)**
 - EPA issues final designations after receiving and reviewing states' response to their letter

Preliminary List of Nonattainment Counties/Cities – Washington, DC-MD-VA Area

Washington, DC	Maryland	Virginia
District of Columbia	Calvert	Arlington
	Charles	Fairfax
	Fredrick	Fairfax City
	Montgomery	Falls Church City
	Prince George's	Loudoun
		Prince William
		Manassas City
		Manassas Park City
		Alexandria



EPA's Intended Nonattainment Boundaries for the Washington, DC-MD-VA Area



Technical Basis – Nonattainment Designations

- **EPA reviewed five (5) factors for each city and county located in the Washington, DC-MD-VA-WV CBSA to develop the list of nonattainment counties and cities**
 - Air quality data (for each ozone monitor)
 - Emissions & emissions-related data (locations of sources, population, amount of emissions, and urban growth patterns)
 - Meteorology (Weather & transport patterns)
 - Geography/Topography (physical features that may influence the fate and transport of emissions and ozone concentrations)
 - Jurisdictional boundaries (counties, existing nonattainment areas, MPOs)

Air Quality & Emissions Data

- **Ozone Design Value**
 - Prince George’s and Arlington monitors - 72 ppb (2014-16)
- **Emissions:** Both NO_x and VOC emissions analyzed
 - NO_x emission for counties/cities (Washington, DC-MD-VA-WV CBSA):
 - Prince George’s (17%), Montgomery (15%), Fairfax (14%), District of Columbia (7%), Prince William (6%), Loudoun (6%), Frederick (5%), Charles (3%), Arlington (3%), Calvert (1%), Alexandria City (1%), Manassas City (<0.5%), Fairfax City (<0.5%), Falls Church City (<0.5%), and Manassas Park City (<0.5%)
 - Fredrick, VA (4%), Stafford (3%), Spotsylvania (3%), Fauquier (3%), Jefferson (1%), Culpeper (1%), Warren (1%), Fredericksburg City (1%), Hampshire (1%), Clark (1%), Winchester City (<0.5%), Rappahannock (<0.5%)



Air Quality & Emissions Data

- **Emissions**

- VOC emission for counties/cities (Washington, DC-MD-VA-WV CBSA):



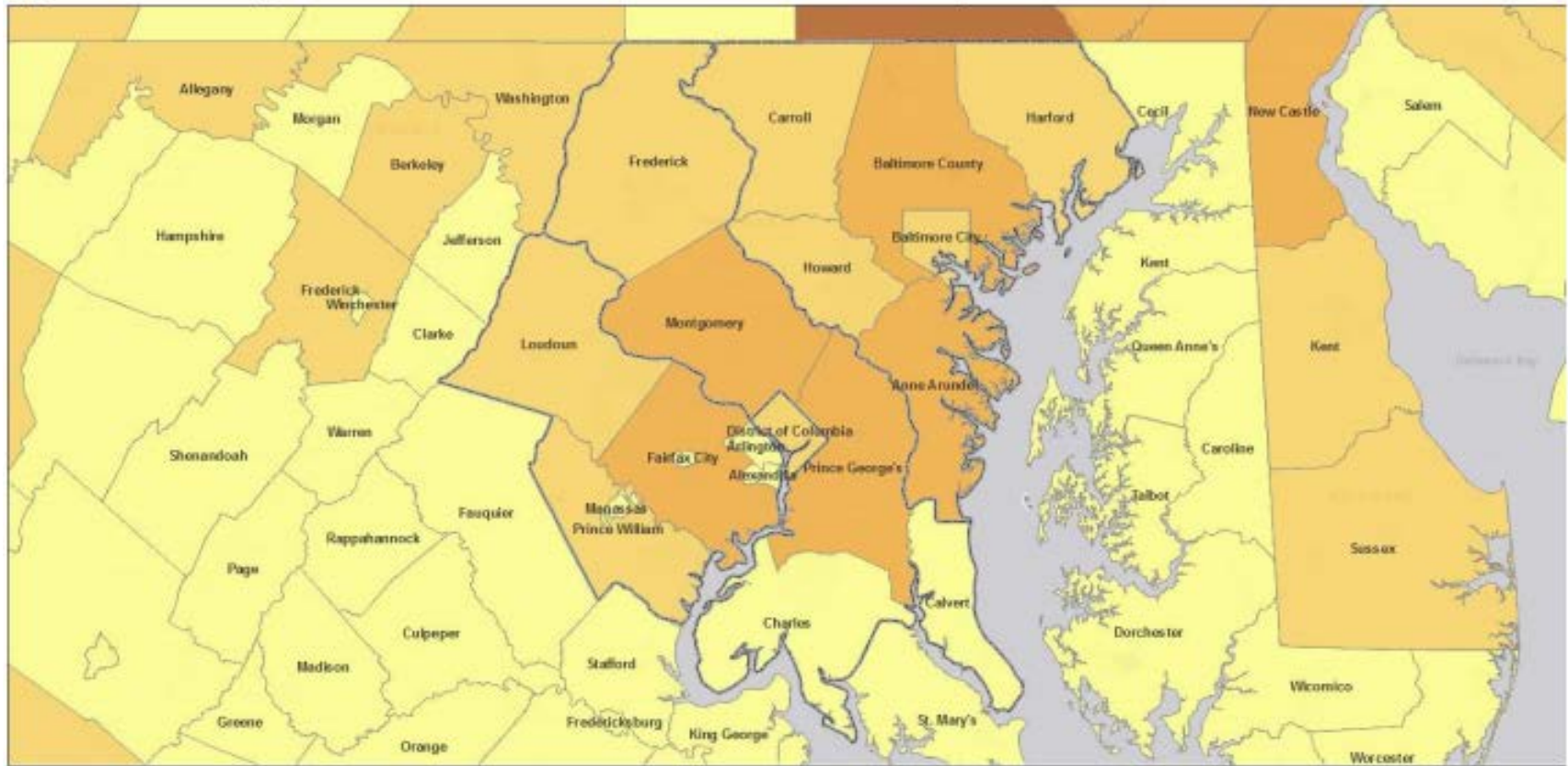
- Montgomery (16%); Fairfax (16%); Prince Georges (13%); District of Columbia (8%); Prince William (7%), Loudoun (6%), Frederick (5%), Charles (3%), Arlington (3%), Alexandria City (2%), Calvert (2%), Manassas City (1%), Fairfax City (1%), Falls Church City (<0.5%), Manassas Park City (<0.5%)



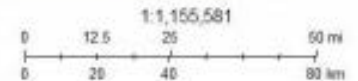
- Frederick, VA (4%), Fauquier (2%), Hampshire (2%), Rappahannock (2%), Jefferson (1%), Warren (1%), Spotsylvania (1%), Winchester City (1%), Stafford (1%), Fredericksburg City (1%), Clarke (1%)



NOx Emissions

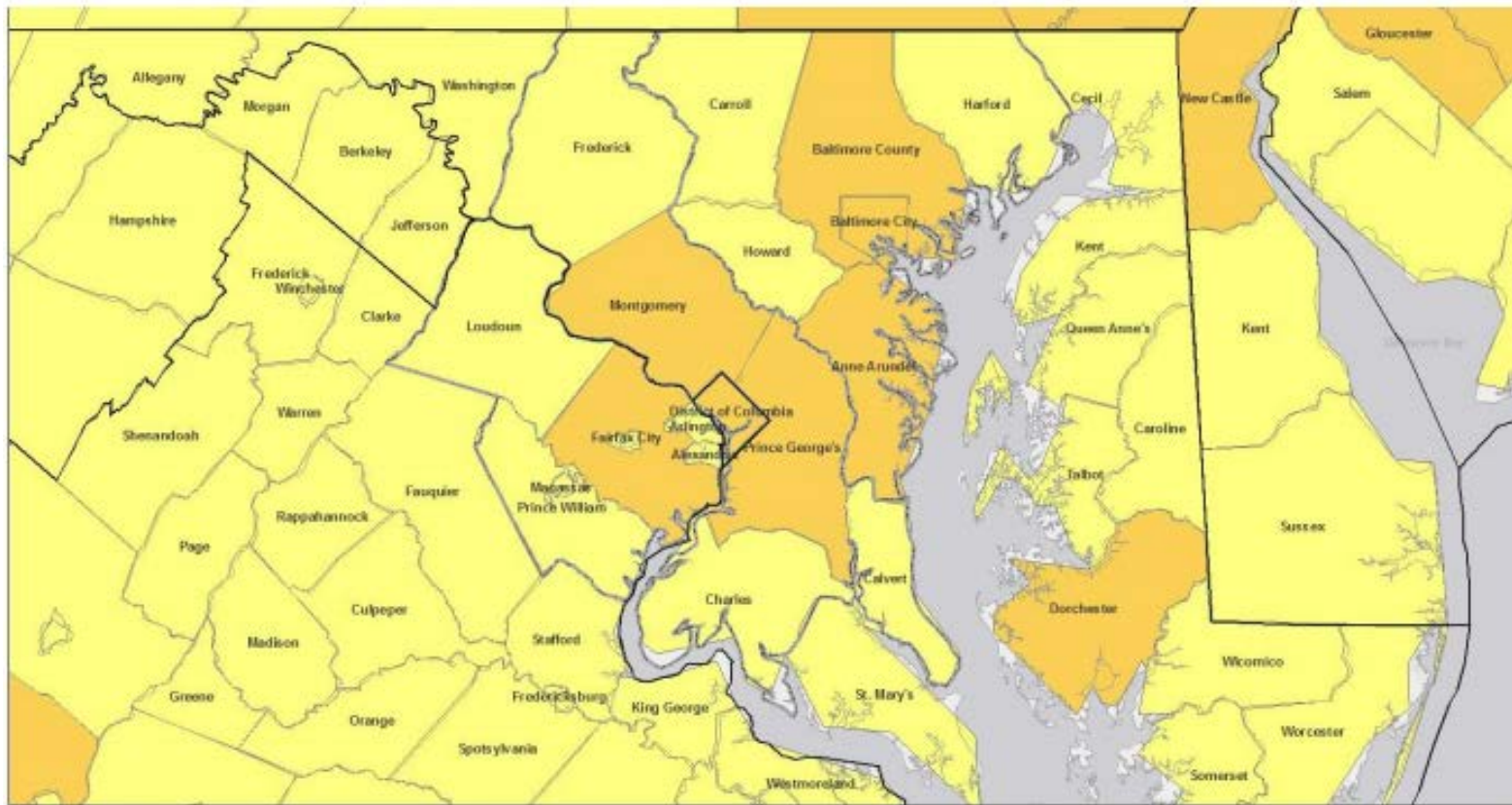


November 30, 2017

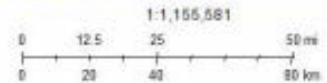


DATA SOURCES: EPA, MDT, MDOT, DEPRM, MARYLAND, MARYLAND, & OPENSTREETMAP CONTRIBUTORS, AND THE ODS USER COMMUNITY

VOC Emissions

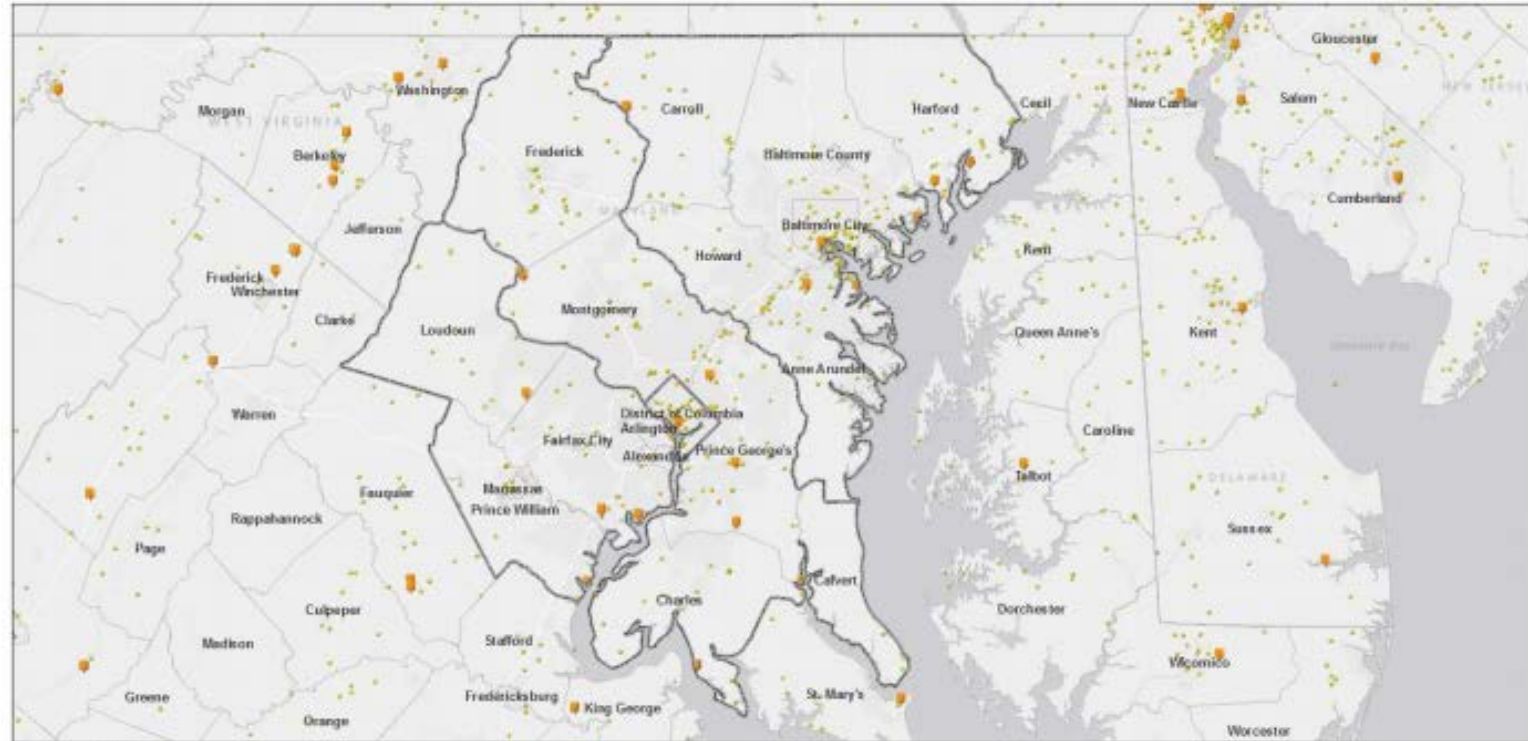


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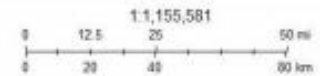
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Large Point Sources



November 30, 2017

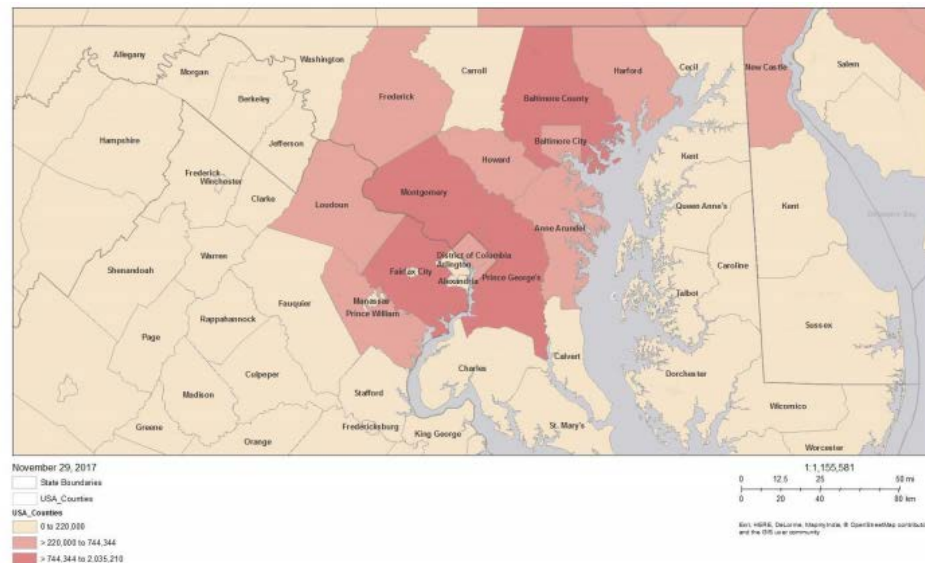
- USA_County
- Baltimore NAA
- Washington DC NAA/DC Portion
- Washington DC NAA/MD Portion
- Washington DC NAA/VA Portion
- Large Point Sources (VOC > 100 or NOx > 100)
- Small Point Sources



DATA SOURCES: EPA, HERE, DeLorme, Mapbox, OpenStreetMap contributors, and the GIS user community

Population Density & Degree of Urbanization

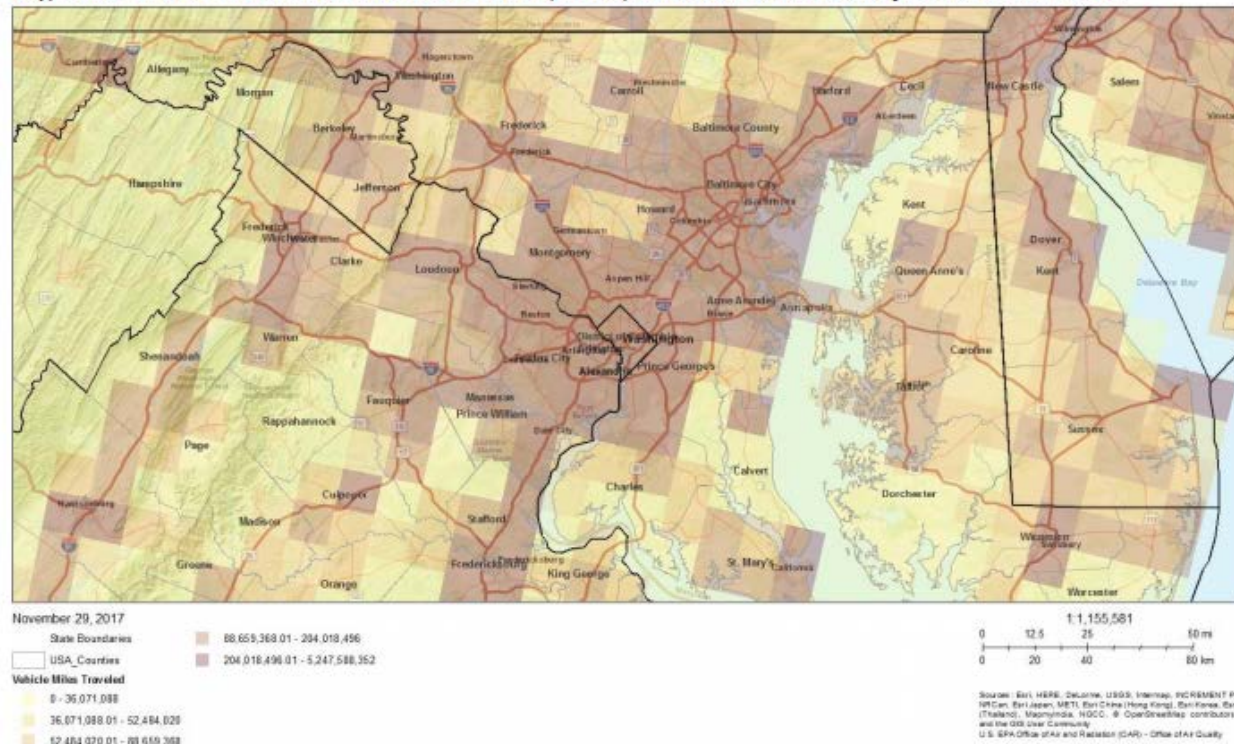
- **Densely populated area – High area & mobile emissions**
 - Intended nonattainment cities/cities have highest population in CBSA
 - High population density and growth rate compared to most attainment counties/cities in CBSA



Traffic & VMT

- **Areas with high VMT – High on-road mobile emissions**
 - Intended nonattainment cities/cities have highest VMT and number of commuters in CBSA

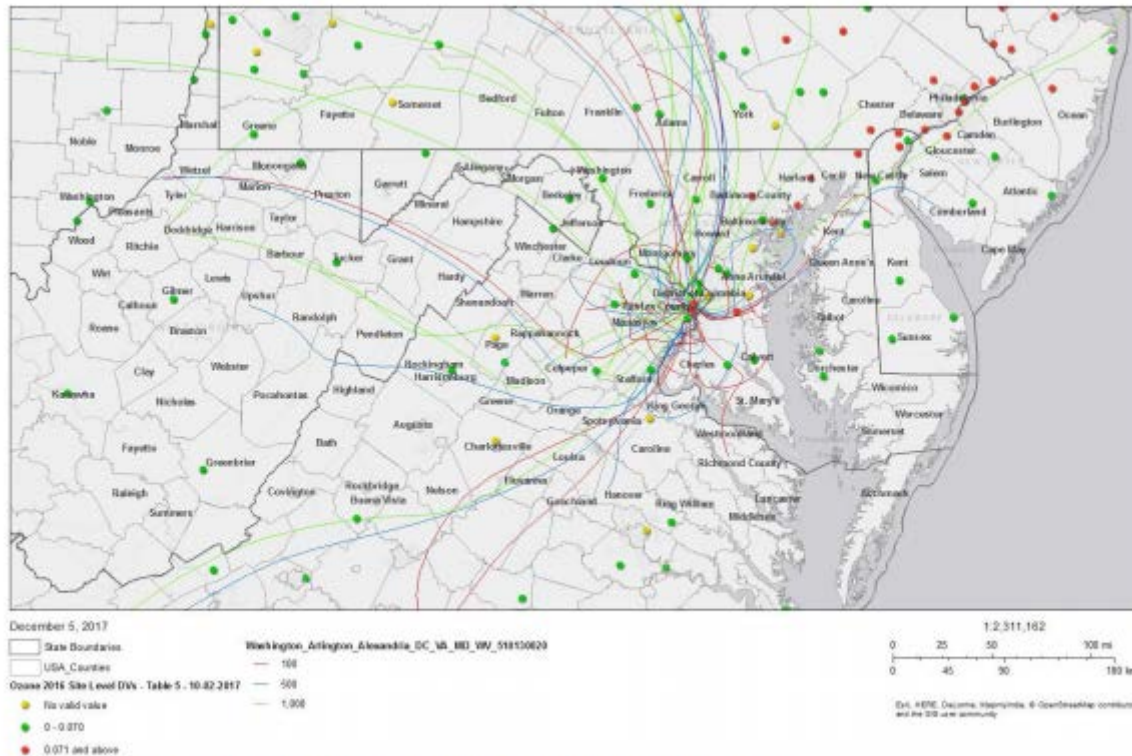
Figure 6. Twelve Kilometer Gridded VMT (Miles) Overlaid with Transportation Arteries.



Meteorology

- **Meteorology – To identify areas potentially contributing to the monitored violations**

Back Trajectories: Arlington Monitor

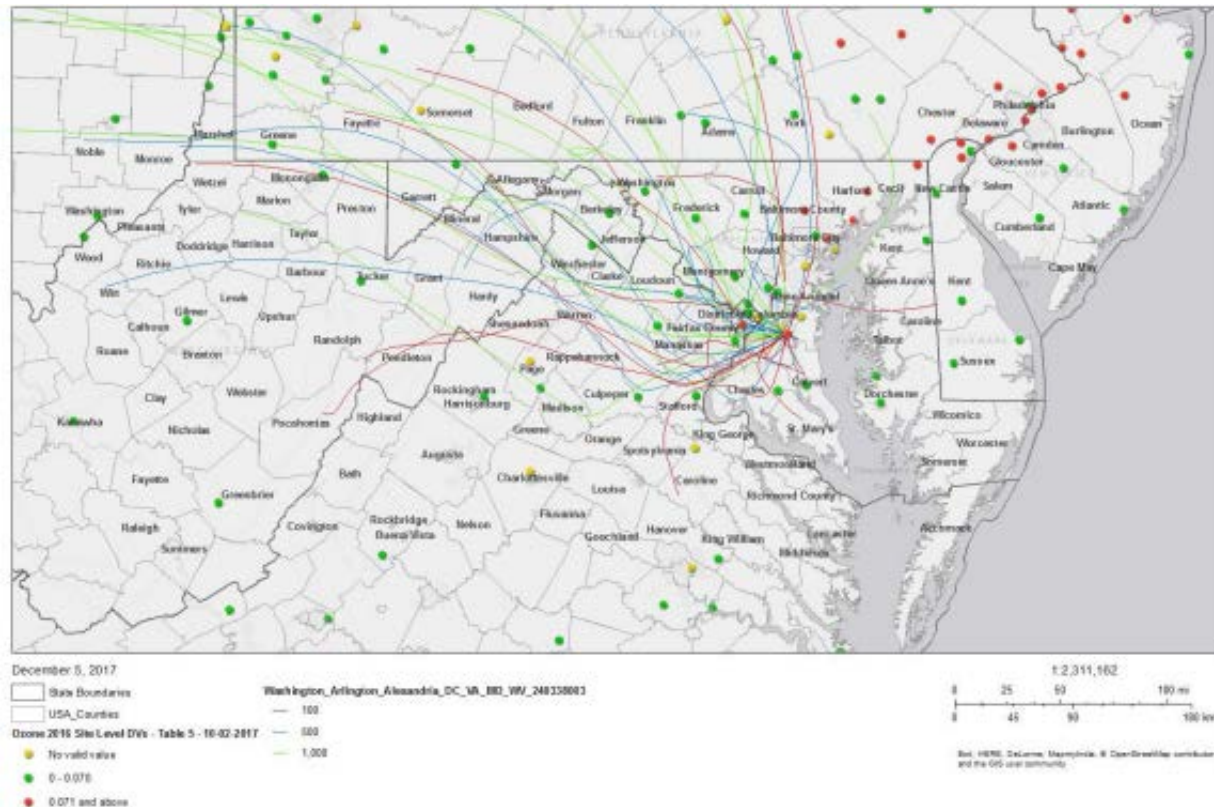


^a Trajectories are based on HYSPLIT runs for the 2014-2016 design value period.

Meteorology

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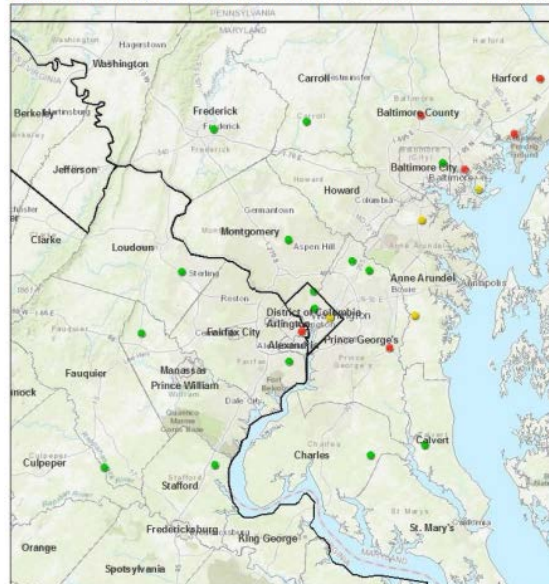
Back Trajectories: Prince George's Monitor



Geography & Topography

- **Geography & Topography – Physical features influence the fate and transport of emissions as well as the formation and distribution of ozone concentrations**
 - Washington region does not have any geographical or topographical features significantly limiting air pollution transport within its air shed. Therefore, this factor did not play a role in this evaluation

Figure 8. Topographic illustration of the Washington-Baltimore-Arlington CSA.



Jurisdictional Boundaries

- **Jurisdictional Boundaries**
 - Counties, air districts, MPOs, and existing nonattainment areas for providing a clearly defined legal boundary to carry out the air quality planning and enforcement functions for nonattainment areas
 - Intended counties/cities in the Washington region have been part of the ozone nonattainment area for a long time
 - TPB covers all the nonattainment counties/cities in the region