



Commonwealth of Virginia

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

www.deq.virginia.gov

Stefanie K. Taillon
Acting Secretary of Natural and Historic Resources

Michael S. Rolband, PE, PWD, PWS Emeritus
Director

February 5, 2025

VIA ELECTRONIC MAIL

Ms. Catherine Libertz
Acting Regional Administrator
U.S. EPA Region III
Four Penn Center
1600 JFK Boulevard
Philadelphia, PA 19103-2029
Libertz.Catherine@epa.gov

Dear Ms. Libertz,

Pursuant to Section 107(d)(1)(A) of the Clean Air Act and on behalf of the Governor of the Commonwealth of Virginia, I hereby submit the initial recommendations and comments on the designation of areas in Virginia under the 2024 Primary Annual National Ambient Air Quality Standard (NAAQS) for Fine Particulate Matter (PM_{2.5}). This letter is in direct response to the guidance provided in the February 7, 2024, EPA memorandum that outlines the data and analyses to be considered in making these area designation recommendations.

The Department of Environmental Quality (DEQ) operates an ambient PM_{2.5} monitoring network in Virginia. The latest ambient concentrations observed by this monitoring network are well below the level of the new standard (see enclosure) and have significantly decreased since 2002. At the same time, emissions of PM_{2.5} and related precursor pollutants have also decreased due to the implementation of both state and federal programs. We believe that these observed levels and trends are generally representative of the Commonwealth regarding the pollution exposure and air quality improvements experienced by the general public. Therefore, I respectfully request that all of Virginia be designated attainment for the 2024 annual PM_{2.5} standard based on the official 2023 design values for all monitors in Virginia.

Thank you again for this opportunity to provide input on this important issue for Virginia. Please contact me if you have any questions.

Sincerely,



Michael Rolband
Virginia Department of Environmental Quality
(804) 698-4020
Michael.Rolband@deq.virginia.gov

Enclosures

cc: Cristina Fernandez, EPA RIII Air and Radiation Division Director
(Fernandez.Cristina@epa.gov)
Michael Dowd, DEQ Air & Renewable Energy Division Director
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Thomas Ballou, DEQ Office of Air Data Analysis Manager
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Enclosure I
Virginia PM_{2.5} Air Quality and Emissions Data

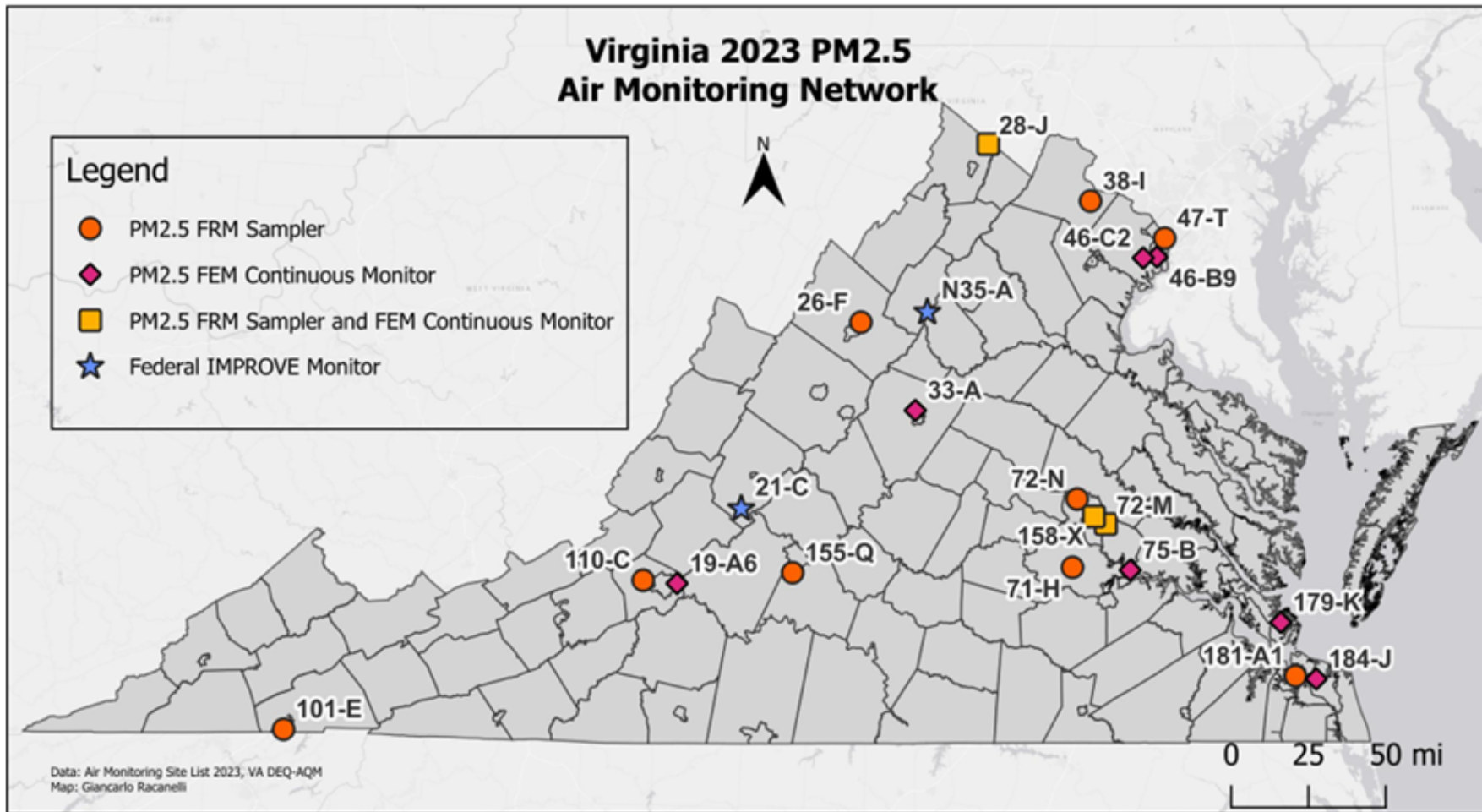
- I. PM_{2.5} Monitoring Network Map
- II. PM_{2.5} Monitor Data Design Values (2021-2023)
- III. PM_{2.5} Monitor Data Annual Design Value Trends (2002-2024)
 - a. Graph
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- IV. PM_{2.5} Monitor Data Daily Design Value Trends (2002-2024)
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- V. Virginia 2022 Statewide Anthropogenic Emissions (NH₃, NO_x, PM_{2.5}, SO₂, VOC)
- VI. Virginia 2022 Statewide Anthropogenic Emissions, VOC
- VII. Virginia 2022 Statewide Anthropogenic Emissions, NH₃
- VIII. Virginia 2022 Statewide Anthropogenic Emissions, NO_x
- IX. Virginia 2022 Statewide Anthropogenic Emissions, PM_{2.5}
- X. Virginia 2022 Statewide Anthropogenic Emissions, SO₂
- XI. Virginia PM_{2.5} Direct and Indirect Pollutant Contributor Emissions Trends (2002-2022)

Notes:

- 1. All DEQ ambient air quality monitors and historical monitoring data is maintained and updated by the Office of Air Quality Monitoring (I to IV).
- 2. Graph II shows the official certified annual PM_{2.5} design values for 2021-2023 for all Virginia monitors which serves as the basis for the area designation recommendations.
- 3. Graphs and tables III and IV show the annual and 24-hour 2.5 design value trends from 2002 to 2024. Please note that the 2024 data is preliminary and unofficial. Also note that the EPA chose not change the 24-hour standard in 2024, the 2012 standard of 35 micron per cubic meter is still in effect.
- 4. The Virginia 2022 anthropogenic emissions data of NH₃, NO_x, PM_{2.5}, SO₂, VOC was obtained from the U.S. Environmental Protection Agency 2022 Air Emissions Modeling Emissions Inventory. This is the latest year available for a comprehensive emissions inventory of all source sectors (V to X).
- 5. The Virginia direct and indirect pollutant contributor emissions trends were obtained from the US EPA's [Air Pollutant Emissions Trends webpage](#) (XI).

I. PM_{2.5} Monitoring Network Map¹

PM_{2.5} Monitoring Network

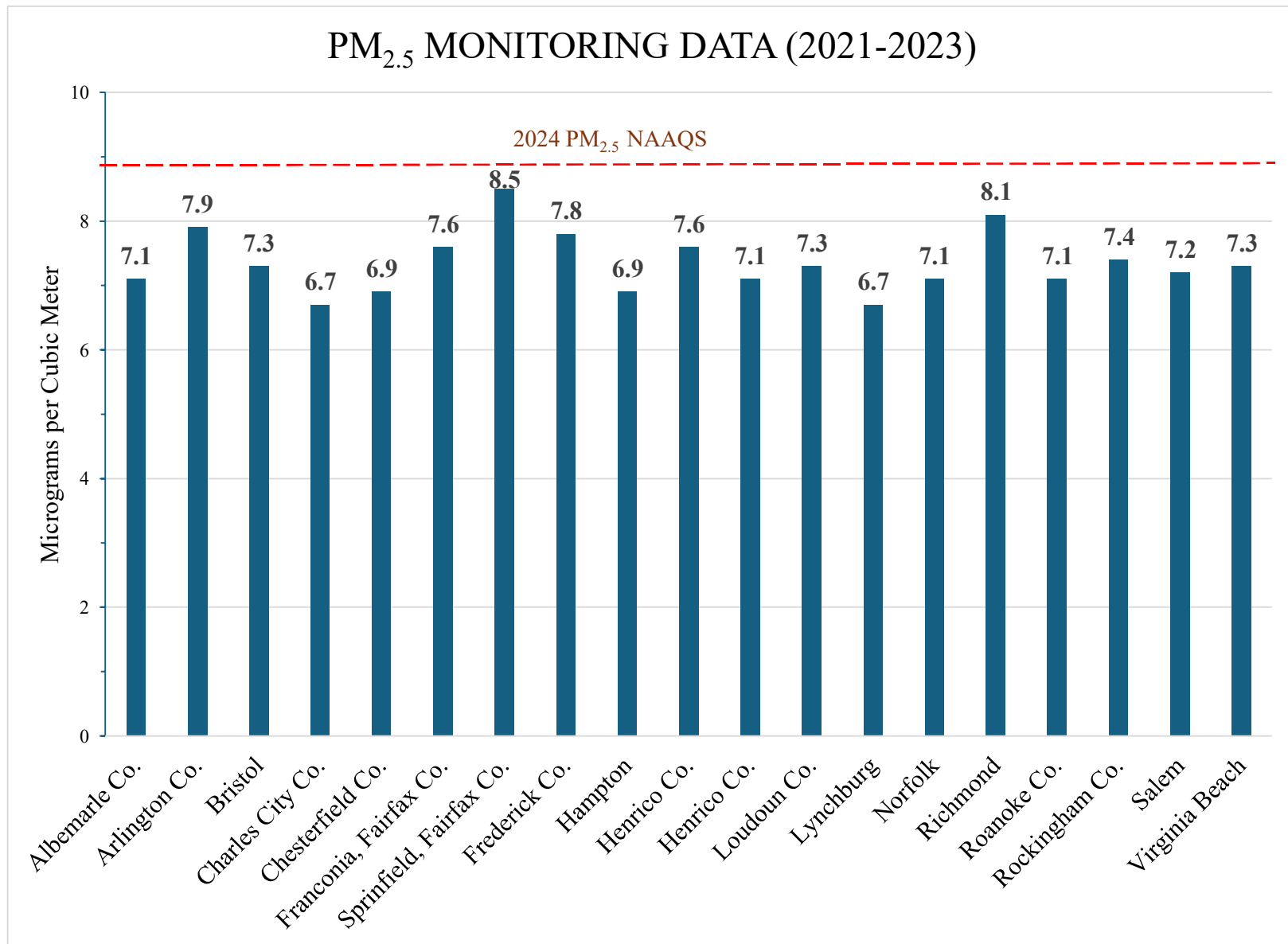


¹ Virginia Department of Environmental Quality. *Virginia Ambient Air Monitoring 2023 Annual Report*, 2023. Retrieved January 27, 2025 from <https://www.deq.virginia.gov/our-programs/air/reports>.

PM_{2.5} Virginia Monitoring Stations and Site IDs

Site ID	AQS ID	County/City	Station Location
19-A6	51-161-1004	Roanoke Co.	Herman L. Horn Elementary School, Ruddell Rd.
21-C	51-163-0003	Rockbridge	USDA Forest Service, Natural Bridge Station
26-F	51-165-0003	Rockingham	Rockingham VDOT
28-J	51-069-0010	Frederick	Woodbine Road, Lester Building Systems
33-A	51-003-0001	Albemarle	Albemarle High School
38-I	51-107-1005	Loudoun	Broad Run High School, Ashburn
46-B9	51-059-0030	Fairfax	Franconia Park, Telegraph Rd.
46-C2	51-059-0031	Fairfax	Park and Ride, 6831 Backlick Rd.
47-T	51-013-0020	Arlington	Aurora Hills Visitors Center. 18th and Hayes St.
71-H	51-041-0004	Chesterfield	Beach Road VDOT
72-M	51-087-0014	Henrico	Henrico Police Athletic League, 2401 Hartman St.
72-N	51-087-0015	Henrico	DEQ Piedmont Office, Glen Allen
75-B	51-036-0002	Charles City Co.	Rt. 608, Shirley Plantation
101-E	51-520-0006	Bristol	Highland View Elementary School
110-C	51-775-0011	Salem	Salem High School
155-Q	51-680-0015	Lynchburg	Leesville Hwy. & Greystone Dr., City Water Tower
158-X	51-760-0025	Richmond City	Joseph Bryan Park
179-K	51-650-0008	Hampton	NASA Langley Research Center
181-A1	51-710-0024	Norfolk	2 nd St. and Woodis Ave.
184-J	51-810-0008	Virginia Beach City	DEQ Tidewater Regional Office
N35-A	51-113-0003	Madison	Big Meadows, Shenandoah National Park

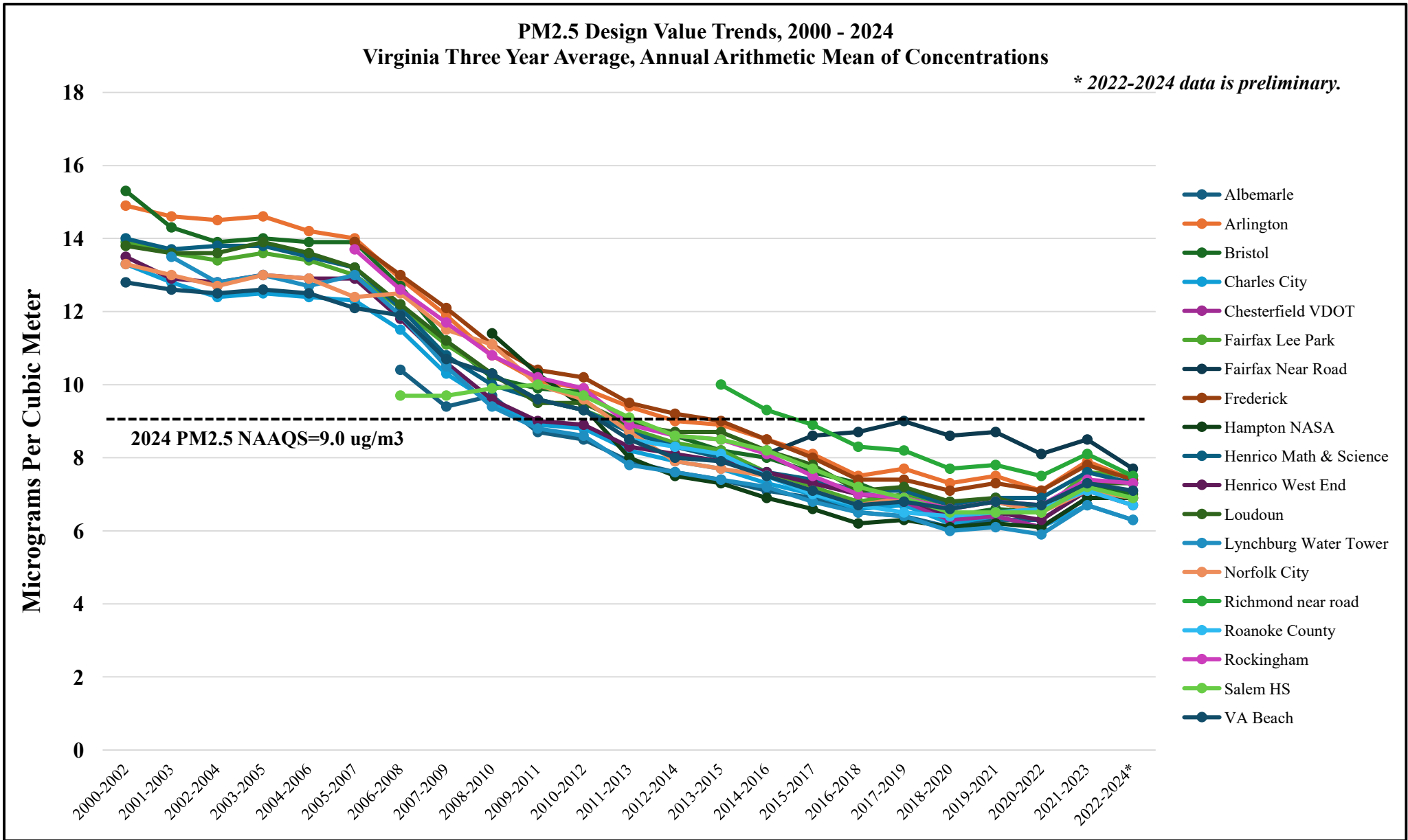
II. PM_{2.5} Monitor Data Design Values (2021 – 2023)²



² U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

III. PM_{2.5} Monitor Data Annual Design Value Trends, (2002-2024)³

a. Graph



³ U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

PM_{2.5} Monitor Data Annual Design Value Trends, (2002-2024) ⁴

b. Table

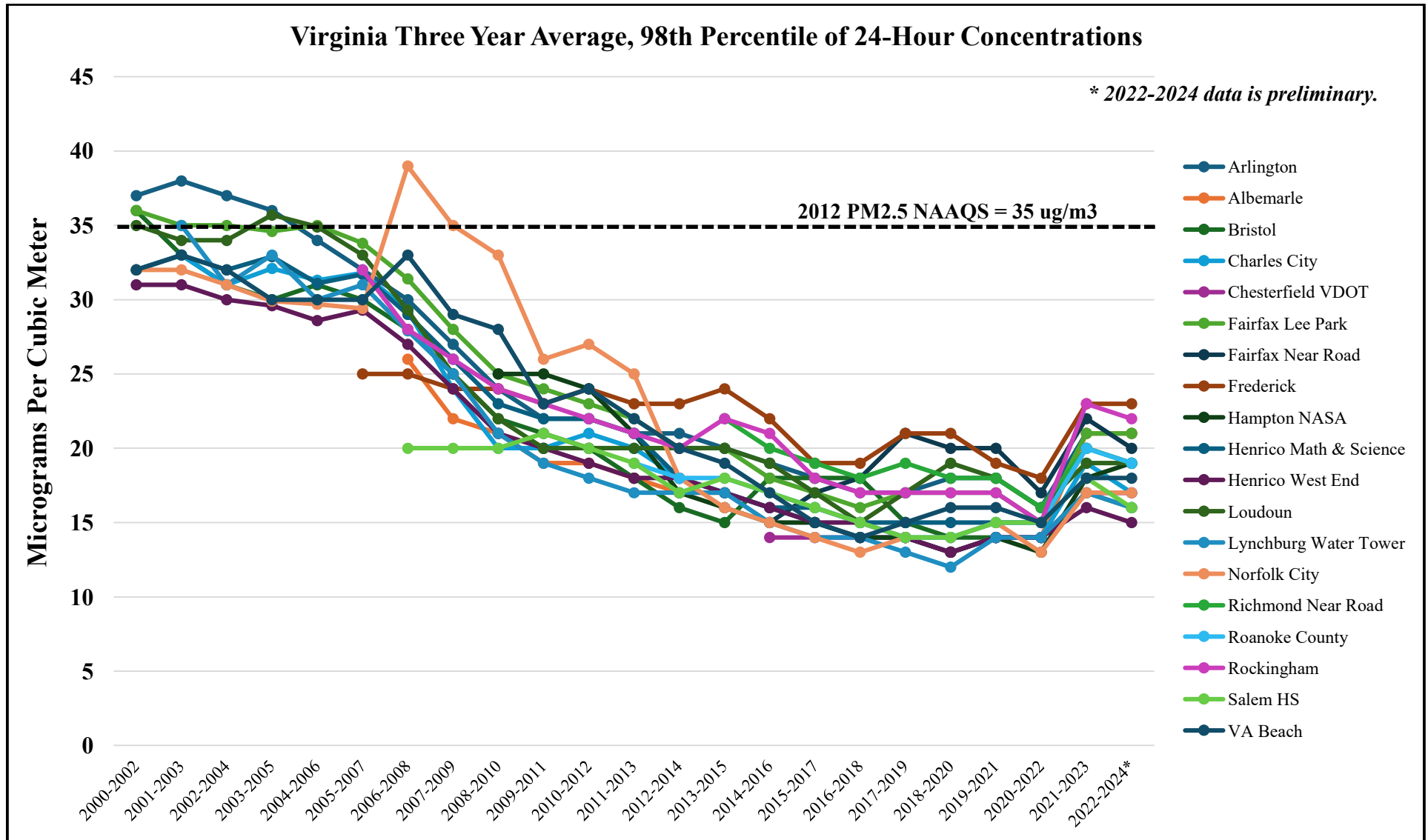
	2000- 2002	2001- 2003	2002- 2004	2003- 2005	2004- 2006	2005- 2007	2006- 2008	2007- 2009	2008- 2010	2009- 2011	2010- 2012	2011- 2013	2012- 2014	2013- 2015	2014- 2016	2015- 2017	2016- 2018	2017- 2019	2018- 2020	2019- 2021	2020- 2022	2021- 2023	2022- 2024*
Albemarle							10.4	9.4	9.7	8.7	8.5	7.9	7.6	7.4	7.1	6.9	6.5	6.4	6.1	6.3	6.3	7.1	7.1
Arlington	14.9	14.6	14.5	14.6	14.2	14.0	12.9	11.9	10.8	10.1	9.9	9.4	9.0	8.9	8.5	8.1	7.5	7.7	7.3	7.5	7.1	7.9	7.4
Bristol	15.3	14.3	13.9	14.0	13.9	13.9	12.7	11.2	10.2	9.9	9.8	9.0	8.6	8.2	8.0	7.6	7.3	6.8	6.4	6.6	6.5	7.3	7.0
Charles City	13.3	12.8	12.4	12.5	12.4	12.3	11.5	10.3	9.5	8.9	8.8	8.2	7.9	7.7	7.3	7.0	6.6	6.7	6.2	6.4	6.1	6.7	6.3
Chesterfield VDOT															7.5	7.3	7.0	6.8	6.3	6.4	6.1	6.9	6.9
Fairfax Lee Park	13.9	13.6	13.4	13.6	13.4	13.0	12.1	11.1	10.3	9.6	9.3	8.8	8.4	8.2	7.6	7.2	6.8	7.0	6.7	6.8	6.5	7.6	7.5
Fairfax Near Road															8.1	8.6	8.7	9.0	8.6	8.7	8.1	8.5	7.7
Frederick						13.9	13.0	12.1	11.1	10.4	10.2	9.5	9.2	9.0	8.5	8.0	7.4	7.4	7.1	7.3	7.1	7.8	7.4
Hampton NASA									11.4	10.3	9.4	8.0	7.5	7.3	6.9	6.6	6.2	6.3	6.1	6.2	6.1	6.9	6.9
Henrico Math & Science	14.0	13.7	13.8	13.8	13.5	13.2	12.1	10.8	10.0	9.6	9.3	8.7	8.3	8.0	7.6	7.4	7.1	7.1	6.7	6.9	6.9	7.6	7.3
Henrico West End	13.5	12.9	12.8	13.0	12.9	12.9	11.8	10.6	9.6	9.0	8.9	8.3	8.1	7.9	7.6	7.3	7.0	6.9	6.4	6.5	6.3	7.1	6.7
Loudoun	13.8	13.6	13.6	13.9	13.6	13.2	12.2	11.2	10.3	9.5	9.5	8.9	8.7	8.7	8.2	7.8	7.1	7.2	6.8	6.9	6.6	7.3	7.3
Lynchburg Water Tower		13.5	12.8	13.0	12.7	13.0	11.9	10.5	9.4	8.8	8.6	7.8	7.6	7.4	7.2	6.8	6.5	6.4	6.0	6.1	5.9	6.7	6.3
Norfolk City	13.3	13.0	12.7	13.0	12.9	12.4	12.5	11.5	11.1	10.0	9.6	8.7	7.9	7.7	7.5	7.1	6.7	6.9	6.6	6.8	6.5	7.1	6.9
Richmond near road														10.0	9.3	8.9	8.3	8.2	7.7	7.8	7.5	8.1	7.5
Roanoke County												8.5	8.3	8.1	7.5	7.0	6.7	6.5	6.4	6.5	6.6	7.1	6.7
Rockingham						13.7	12.6	11.7	10.8	10.2	9.9	8.9	8.6	8.5	8.1	7.5	7.0	6.9	6.6	6.8	6.7	7.4	7.3
Salem HS							9.7	9.7	9.9	10.0	9.7	9.1	8.6	8.5	8.2	7.7	7.2	6.9	6.5	6.5	6.5	7.2	6.9
VA Beach	12.8	12.6	12.5	12.6	12.5	12.1	11.9	10.7	10.3	9.6	9.3	8.5	8.0	7.9	7.5	7.1	6.7	6.8	6.6	6.8	6.7	7.3	7.1

*2022-2024 data is preliminary.

⁴ U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

IV. PM_{2.5} Monitor Data Daily Design Value Trends, (2002-2024)⁵

a. Graph



Note: US EPA chose not to change the daily PM_{2.5} standard in 2024 and therefore the 2012 daily standard of 35 micrograms per cubic meter is still in effect.

⁵ U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

PM_{2.5} Monitor Data Daily Design Value Trends, (2002-2024)⁶

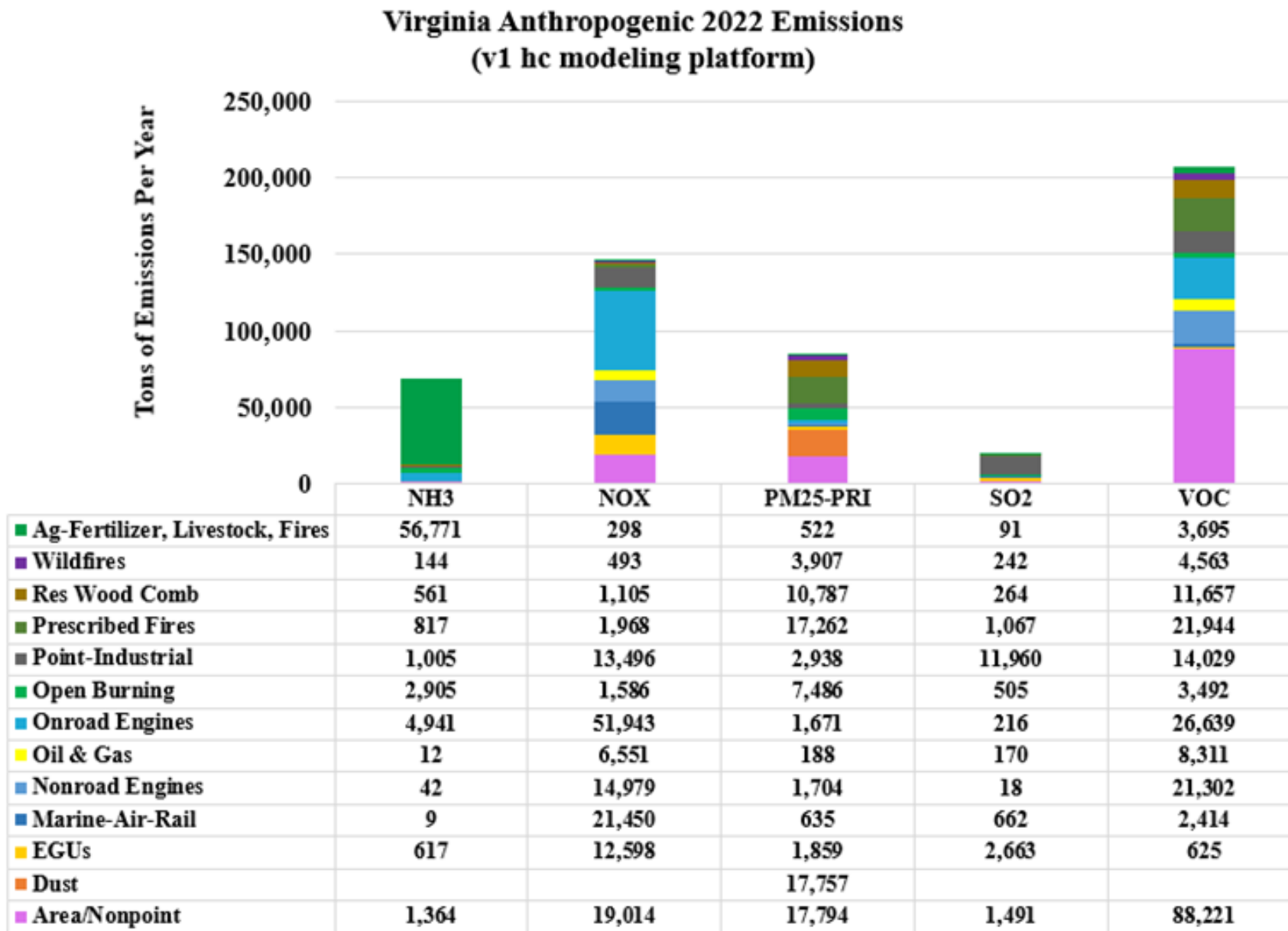
b. Table

	2000- 2002	2001- 2003	2002- 2004	2003- 2005	2004- 2006	2005- 2007	2006- 2008	2007- 2009	2008- 2010	2009- 2011	2010- 2012	2011- 2013	2012- 2014	2013- 2015	2014- 2016	2015- 2017	2016- 2018	2017- 2019	2018- 2020	2019- 2021	2020- 2022	2021- 2023	2022- 2024*
 Arlington	37	38	37	36	34	32	30	27	24	22	22	21	21	20	19	18	17	17	18	18	16	21	21
 Albemarle							26	22	21	19	19	18	17	17	16	15	14	14	13	14	14	21	21
 Bristol	36	33	31	30	31	30	28	25	22	21	20	18	16	15	18	18	18	15	14	14	14	17	16
 Charles City	32	33	31	32	31	32	29	24	20	20	21	20	18	17	16	15	14	14	13	14	14	19	17
 Chesterfield VDOT															14	14	14	14	13	14	14	17	17
 Fairfax Lee Park	36	35	35	35	35	34	31	28	25	24	23	22	20	20	18	17	16	17	17	17	15	21	21
 Fairfax Near Road															15	17	18	21	20	20	17	22	20
 Frederick						25	25	24	24	23	24	23	23	24	22	19	19	21	21	19	18	23	23
 Hampton NASA									25	25	24	21	17	16	15	15	14	14	13	14	13	18	19
 Henrico Math & Science	32	33	32	33	31	32	29	26	23	22	22	21	18	17	16	16	15	15	15	15	15	20	19
 Henrico West End	31	31	30	30	29	29	27	24	21	20	19	18	18	17	16	15	15	14	13	14	14	16	15
 Loudoun	35	34	34	36	35	33	29	25	22	20	20	20	20	20	19	17	15	17	19	18	16	19	19
 Lynchburg Water Tower		35	31	33	30	31	28	25	21	19	18	17	17	17	15	14	14	13	12	14	14	17	16
 Norfolk City	32	32	31	30	30	29	39	35	33	26	27	25	18	16	15	14	13	14	14	15	13	17	17
 Richmond Near Road														22	20	19	18	19	18	18	16	20	19
 Roanoke County												19	18	18	17	16	15	14	14	15	15	20	19
 Rockingham						32	28	26	24	23	22	21	20	22	21	18	17	17	17	17	15	23	22
 Salem HS							20	20	20	21	20	19	17	18	17	16	15	14	14	15	15	18	16
 VA Beach	32	33	32	30	30	30	33	29	28	23	24	22	20	19	17	15	14	15	16	16	15	18	18

*2022 – 2024 data is preliminary.

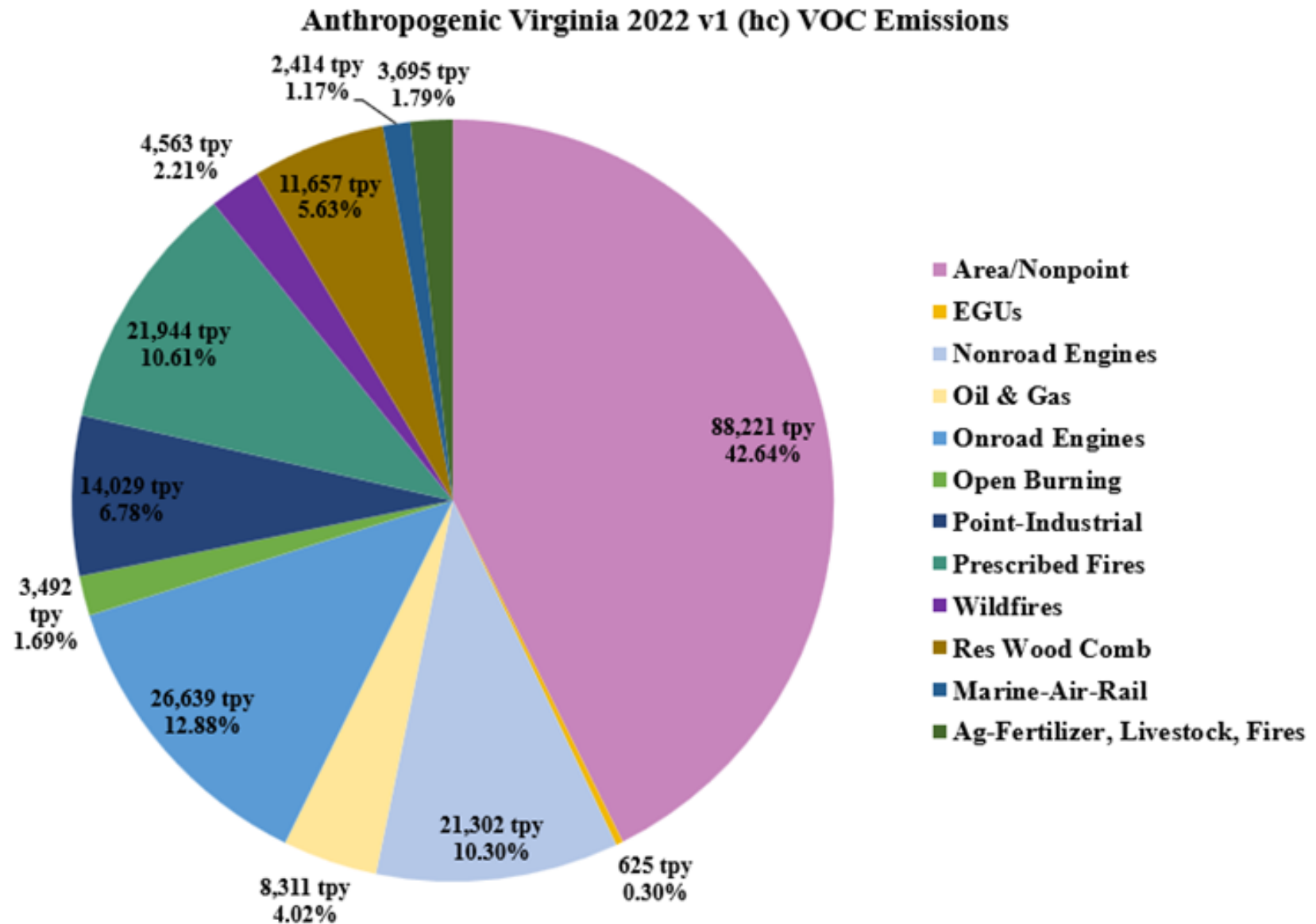
⁶ U.S. Environmental Protection Agency. Emissions Modeling AQS AMP480 Report. Accessed January 21, 2025.

V. Virginia 2022 Statewide Anthropogenic Emissions (NH₃, NO_x, PM_{2.5}, SO₂, VOC)⁷



⁷ U.S.Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

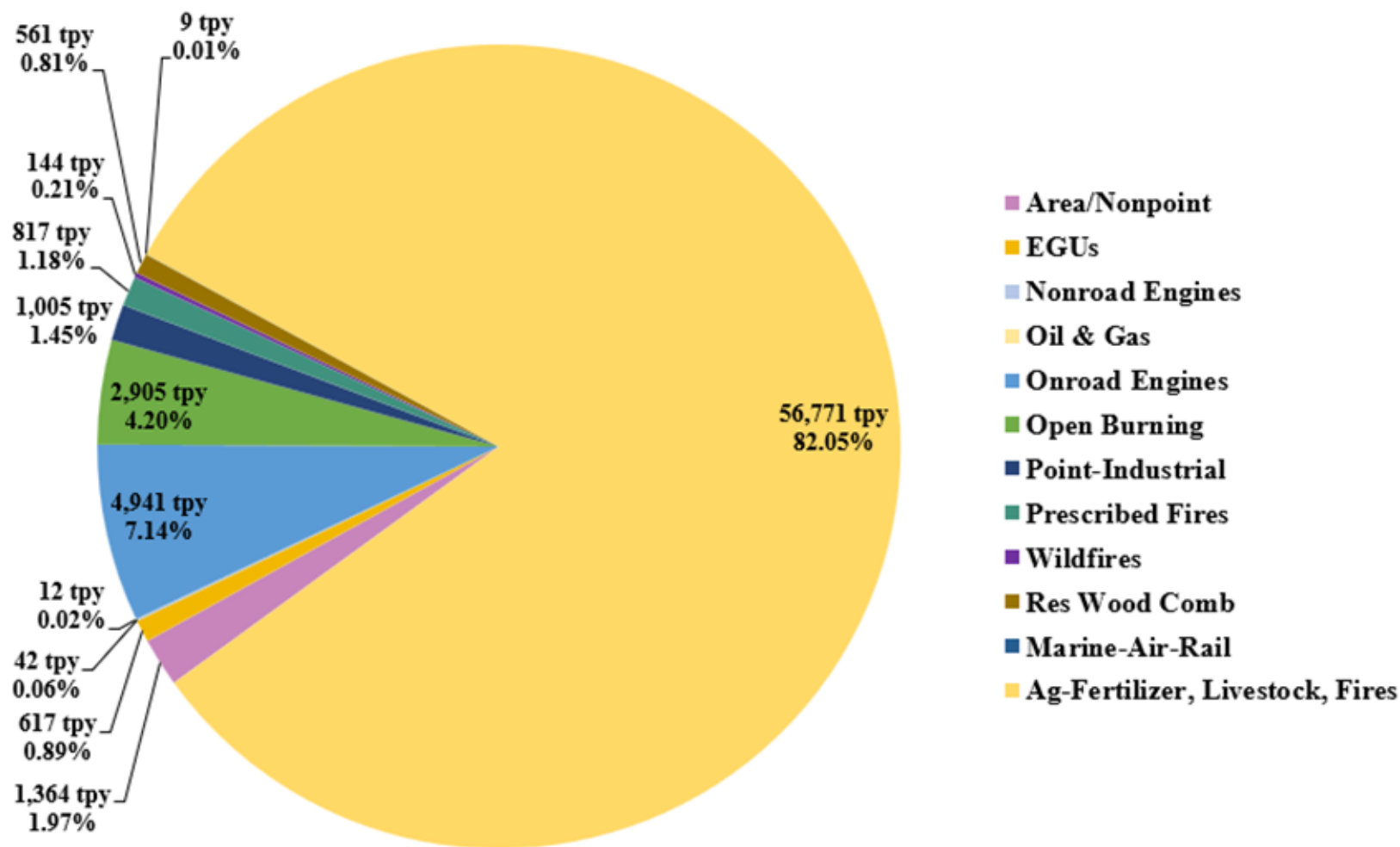
VI. Virginia 2022 Statewide Anthropogenic Emissions (VOC)⁸



⁸ Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

VII. Virginia 2022 Statewide Anthropogenic Emissions (NH₃)⁹

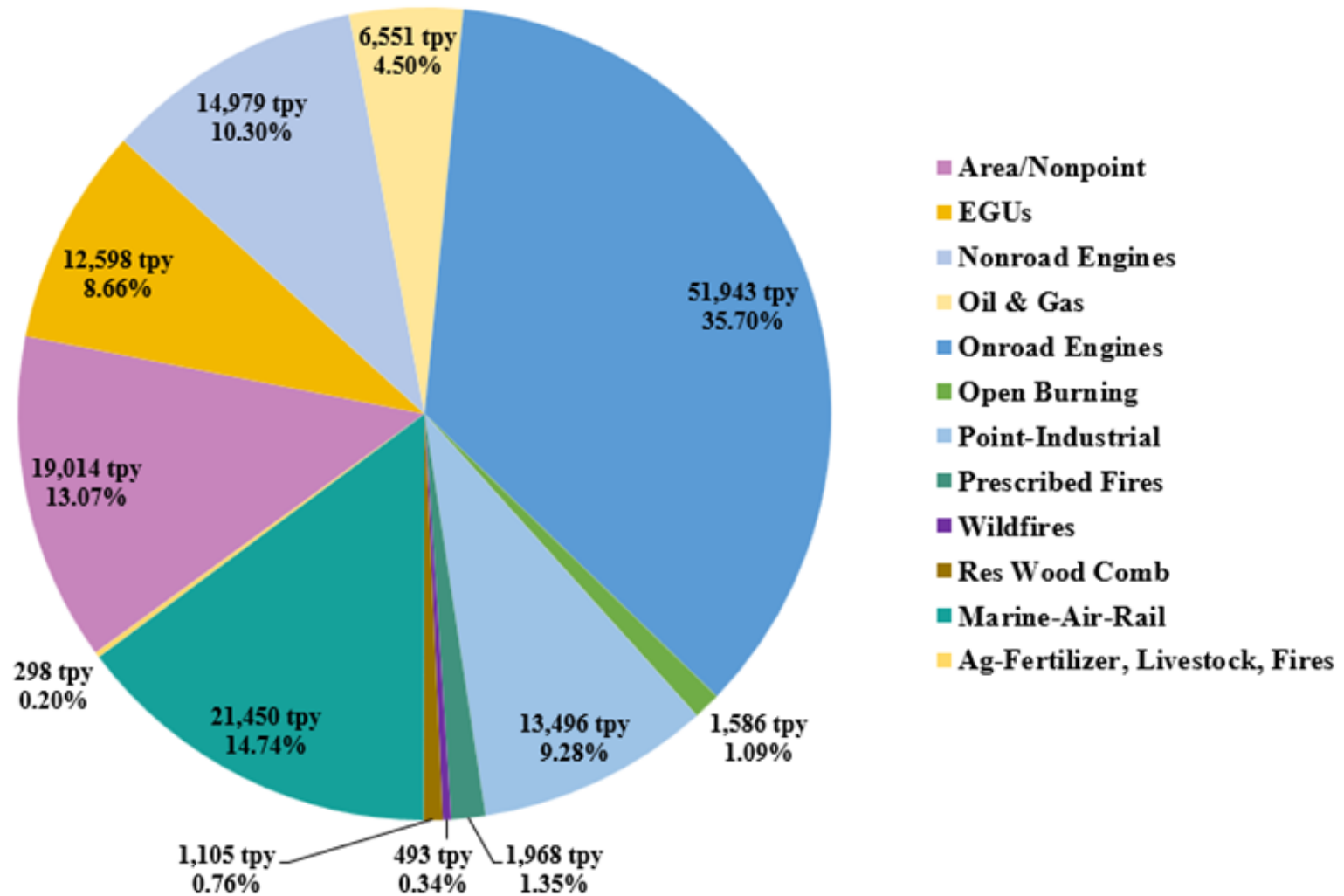
Anthropogenic Virginia 2022 v1 (hc) NH₃ Emissions



⁹ U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

VIII. Virginia 2022 Statewide Anthropogenic Emissions (NO_x)¹⁰

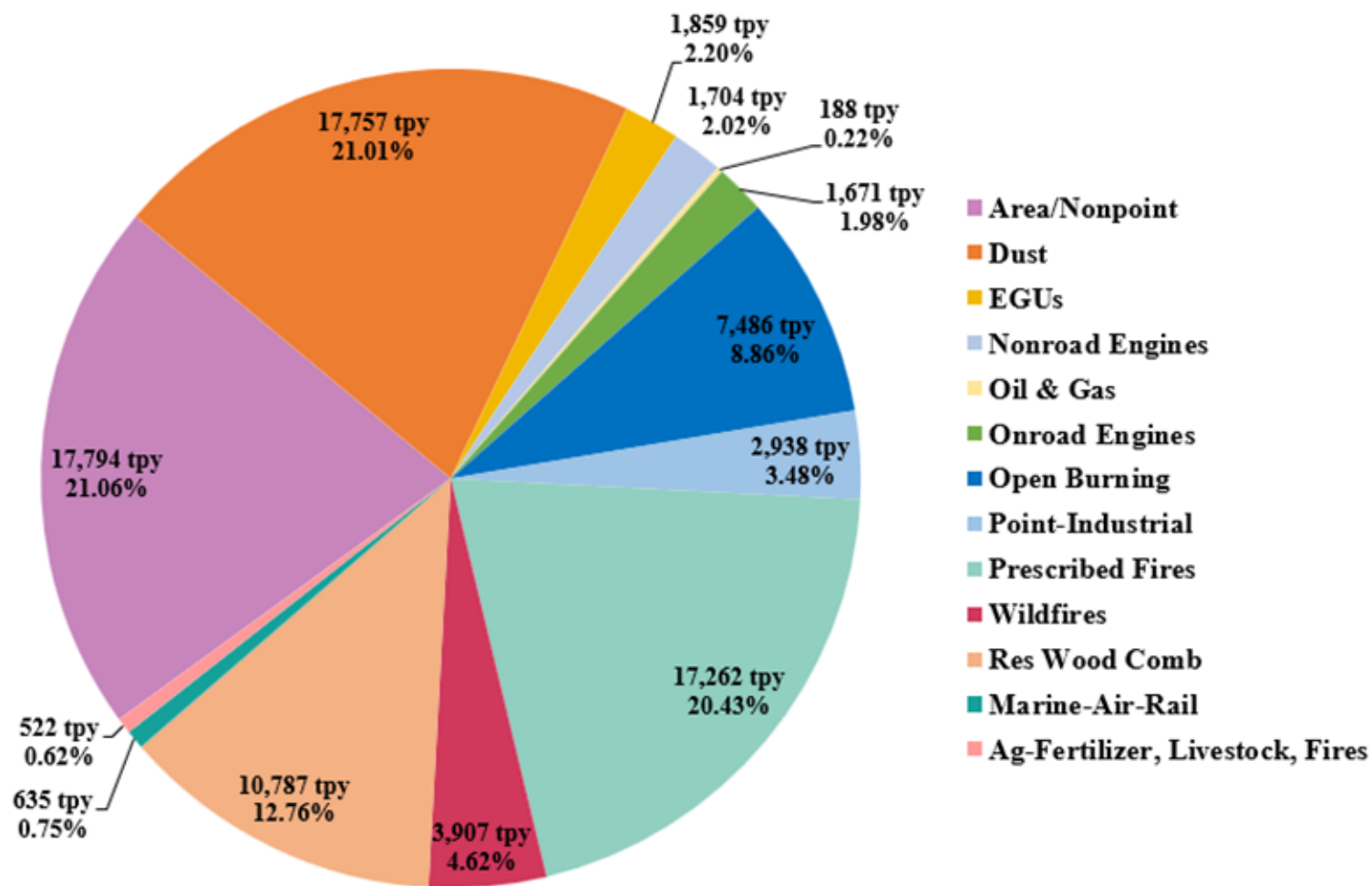
Anthropogenic Virginia 2022 v1 (hc) NO_x Emissions



¹⁰ U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

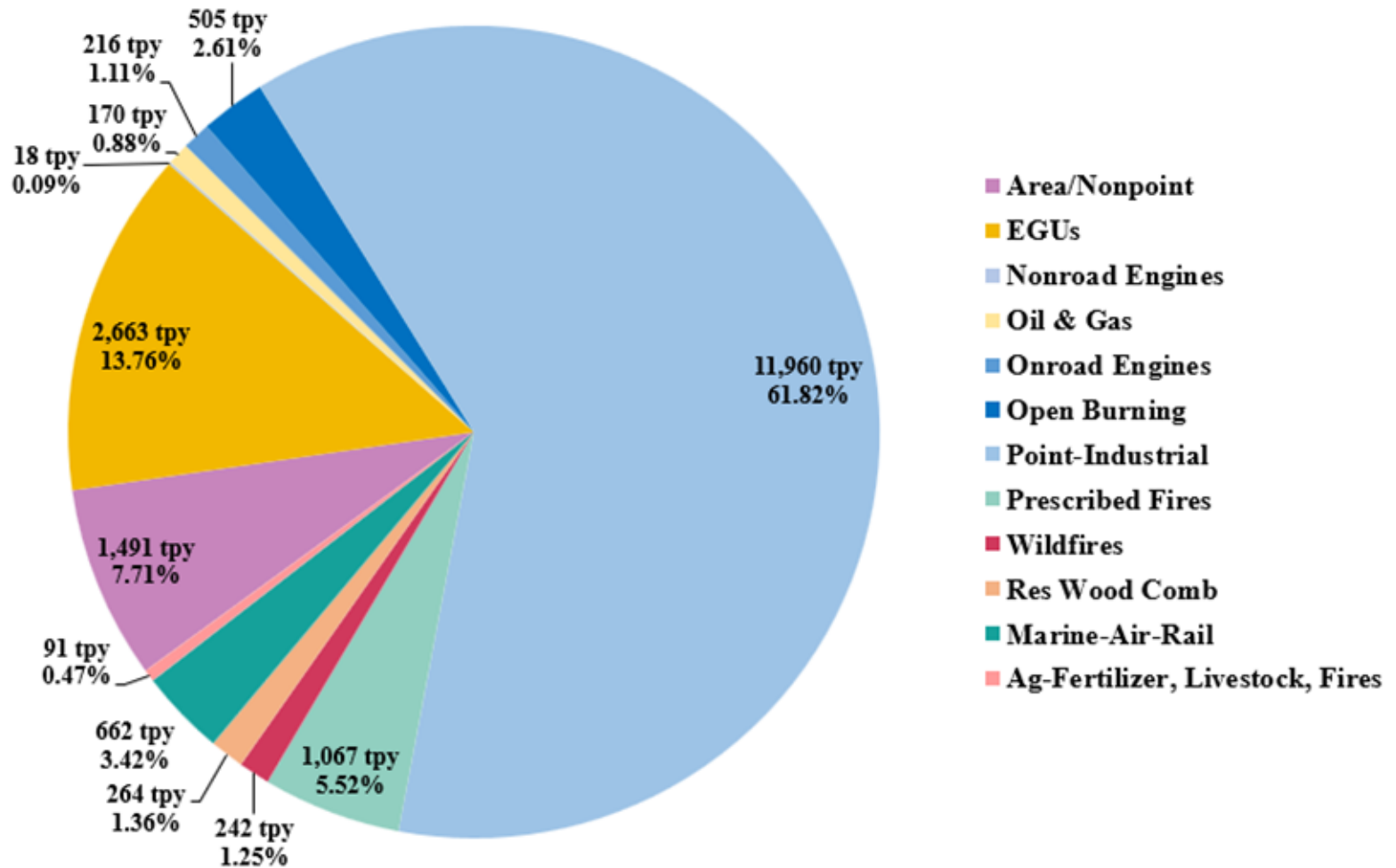
IX. Virginia 2022 Statewide Anthropogenic Emissions (PM_{2.5})¹¹

Anthropogenic Virginia 2022 v1 (hc) Primary PM_{2.5} Emissions



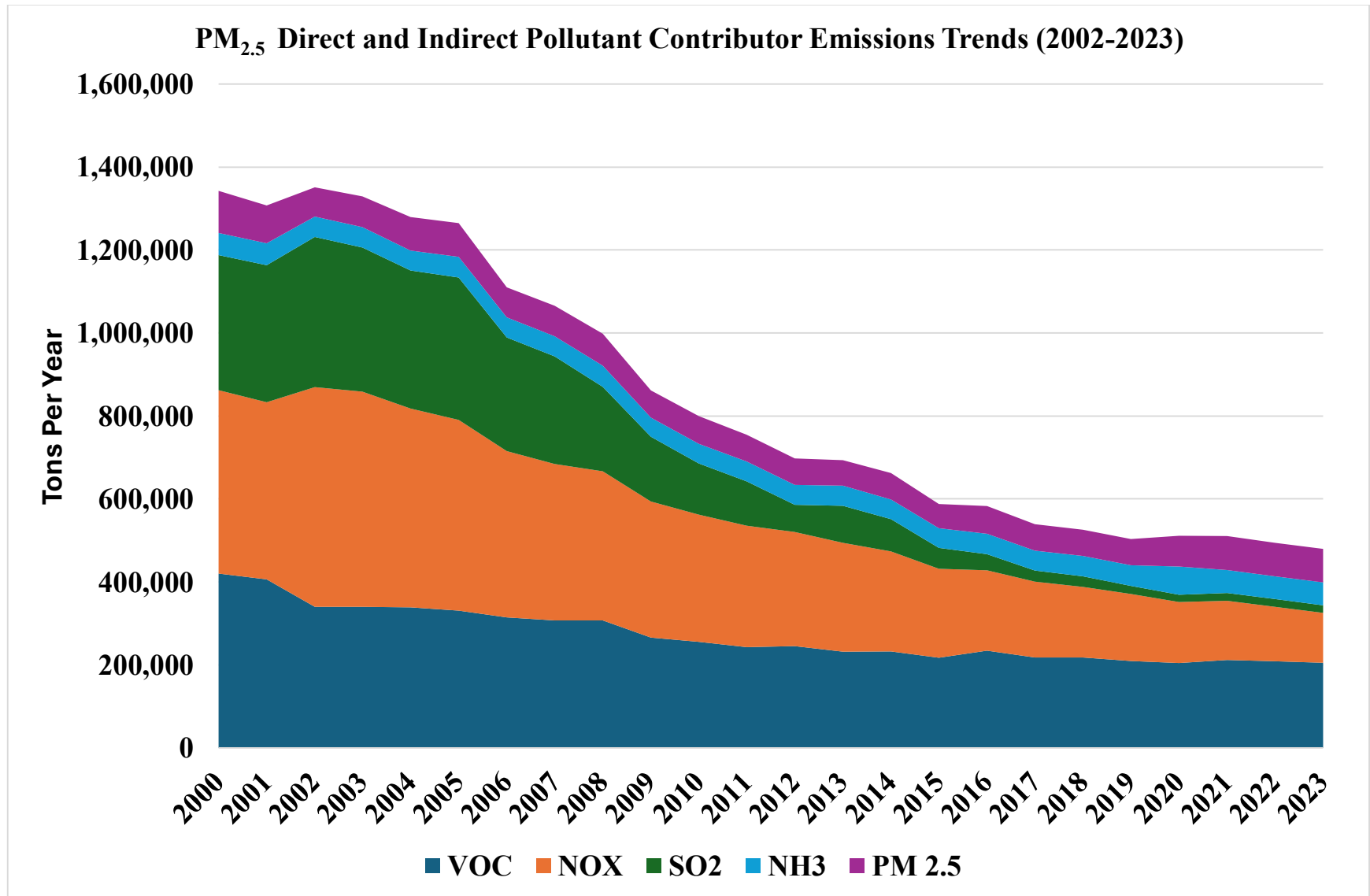
¹¹ U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

X. Virginia 2022 Statewide Anthropogenic Emissions (Sulfur Dioxide)¹²
Anthropogenic Virginia 2022 v1 (hc) SO₂ Emissions



¹² U.S. Environmental Protection Agency. 2022 Air Emissions Modeling State Sector Report (v1), Updated January 17, 2025. Retrieved January 21, 2025 from <https://gaftp.epa.gov/Air/emismod/2022/v1/reports/>.

XI. Virginia PM_{2.5} Direct and Indirect Pollutant Contributor Emissions Trends (2002-2023)¹³



¹³ U.S. Environmental Protection Agency. 2023 Air Pollutant Emissions Trends Data. Updated January 17, 2025. Retrieved January 21, 2025 from <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data>.