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Virginia Air Quality and Planning Issues

CIBO Conference

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Agenda

- Overview of air quality monitoring data in Virginia
- Wildfire impacts
- Emission trends
- Virginia's permitting program
- Air quality planning topics
  - Ozone (O_3)
  - Sulfur dioxide (SO_2)
  - Fine particulate ($PM_{2.5}$) – 2024 $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS)
  - Regional haze program
- Future NAAQS and new or upcoming rulemakings
- Questions/discussion

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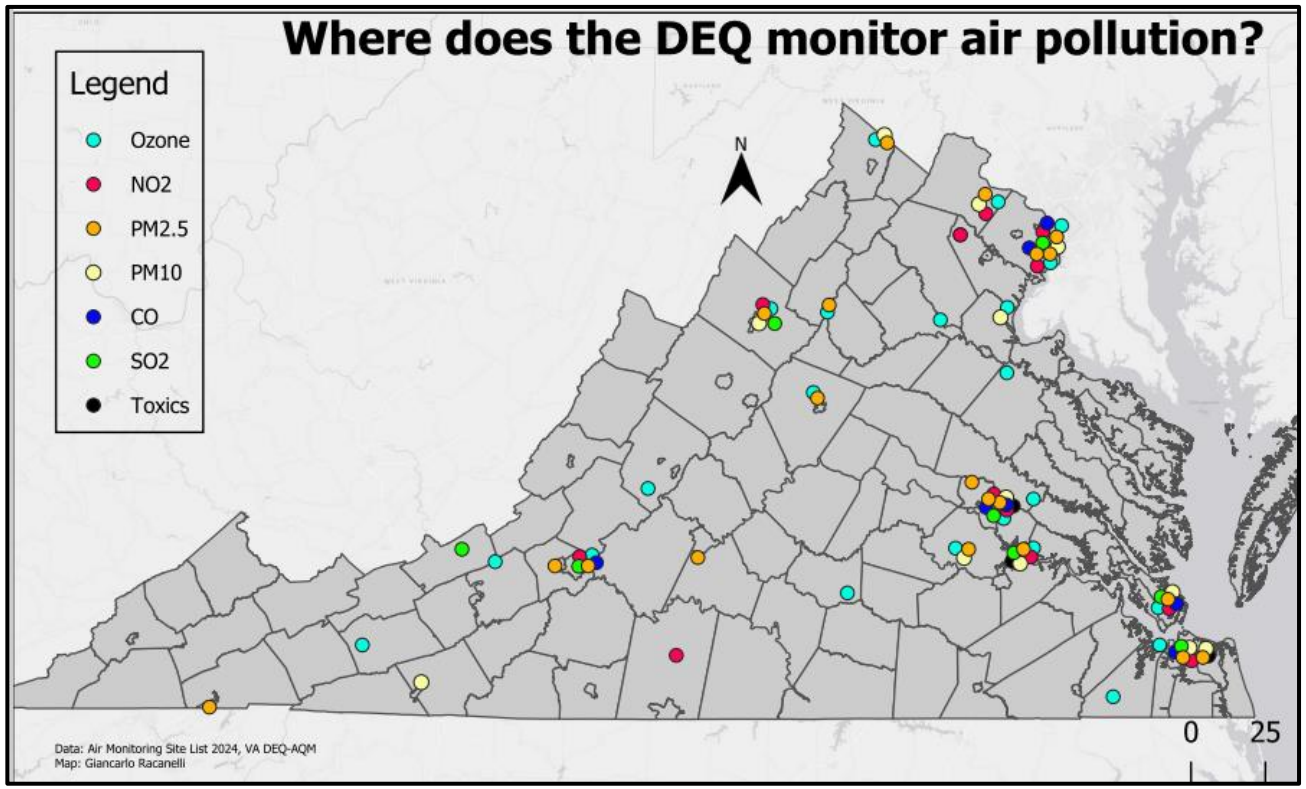
Virginia's Air Quality
Data and Trends

Virginia's Air Quality Monitoring Network



- 100 instruments at 34 monitoring sites
  - Criteria pollutants: SO_2, O_3, CO, NO_2, lead, PM*
  - $PM_{2.5}$ Speciation Monitor – Henrico County
  - Air toxics
  - Five monitoring sites for acid rain precipitation (National Acid Deposition Program)
- Nearly all instruments are federally required
- Tidewater Air Monitoring Evaluation Project (TAME) is studying health risks from coal storage and transport facilities
- Three federal Clean Air Status and Trends Network (CASTNET) ozone monitors: Prince Edward County, Giles County, Shenandoah National Park
- Two federal Interagency Monitoring of Protected Visual Environment (IMPROVE) sites for measurements of visibility range: James River Face Wilderness Area, Shenandoah National Park
- Data summaries published annually; Near real-time data available

**CO=carbon monoxide, NO_2=nitrogen dioxide, O_3=ozone, PM=particulate matter, VOC=volatile organic compounds*

How Are Monitoring Data Used?

- NAAQS compliance
- NAAQS designations and classifications
- Air quality forecasting
- Permitting
- Risk-based modeling
- Trends analyses
- Information requests
- Special studies

Air Quality Index (0-500)	Levels of Health Concern	Meaning
(0-50)	Good	Air quality is considered satisfactory, and air pollution poses little or no risk.
(51-100)	Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
(101-150)	Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
(151-200)	Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
(201-300)	Very Unhealthy	Health warnings of emergency conditions. The entire population is more likely to be affected.
(301-500)	Hazardous	Health alert: everyone may experience more serious health effects.

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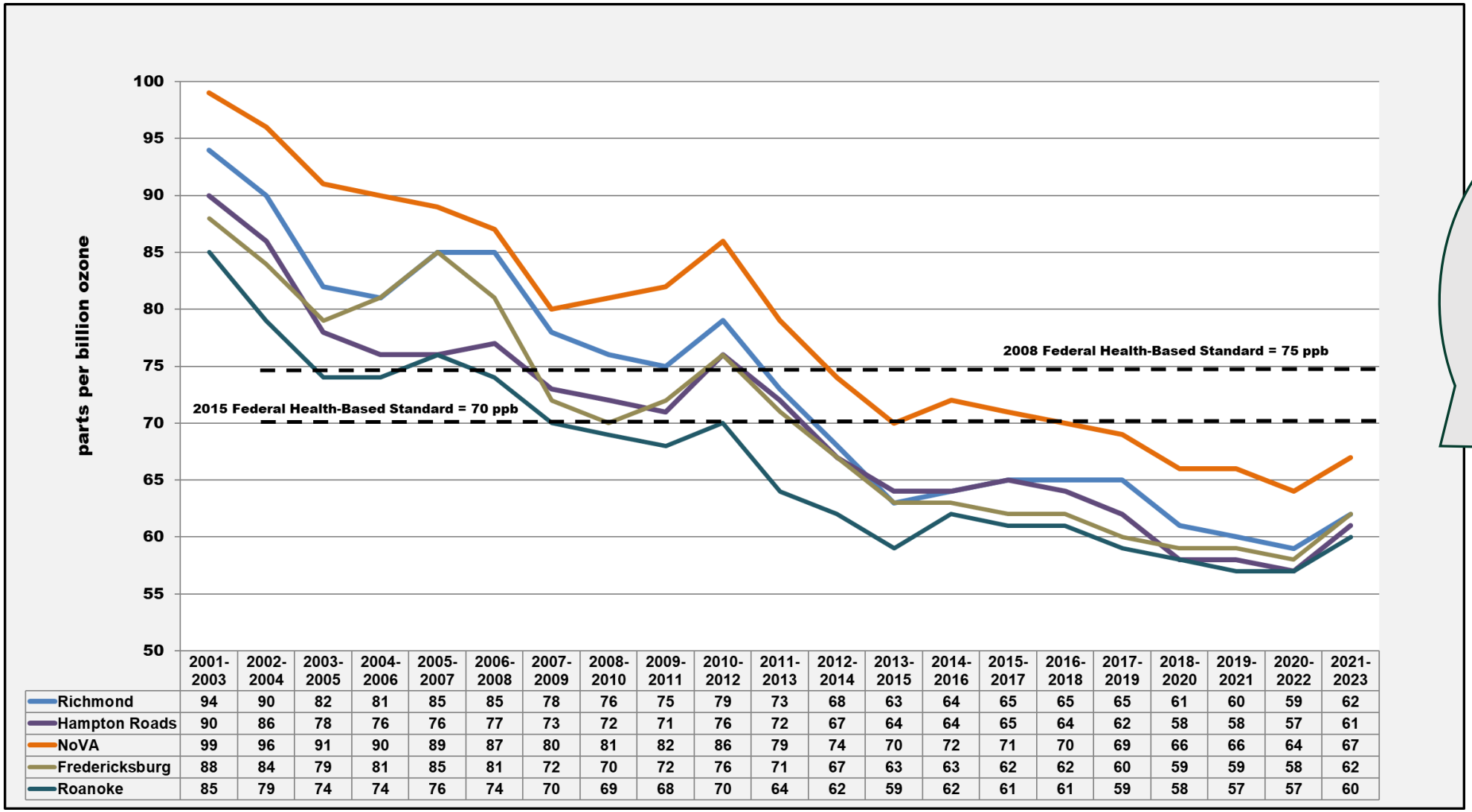
Virginia's Air Quality Trends – Ozone, parts per billion (ppb)



	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
Richmond	94	90	82	81	85	85	78	76	75	79	73	68	63	64	65	65	65	61	60	59	62
Hampton Roads	90	86	78	76	76	77	73	72	71	76	72	67	64	64	65	64	62	58	58	57	61
NoVA	99	96	91	90	89	87	80	81	82	86	79	74	70	72	71	70	69	66	66	64	67
Fredericksburg	88	84	79	81	85	81	72	70	72	76	71	67	63	63	62	62	60	59	59	58	62
Roanoke	85	79	74	74	76	74	70	69	68	70	64	62	59	62	61	61	59	58	57	57	60

Uptick in 2023 due to effects of out-of-state forest fires

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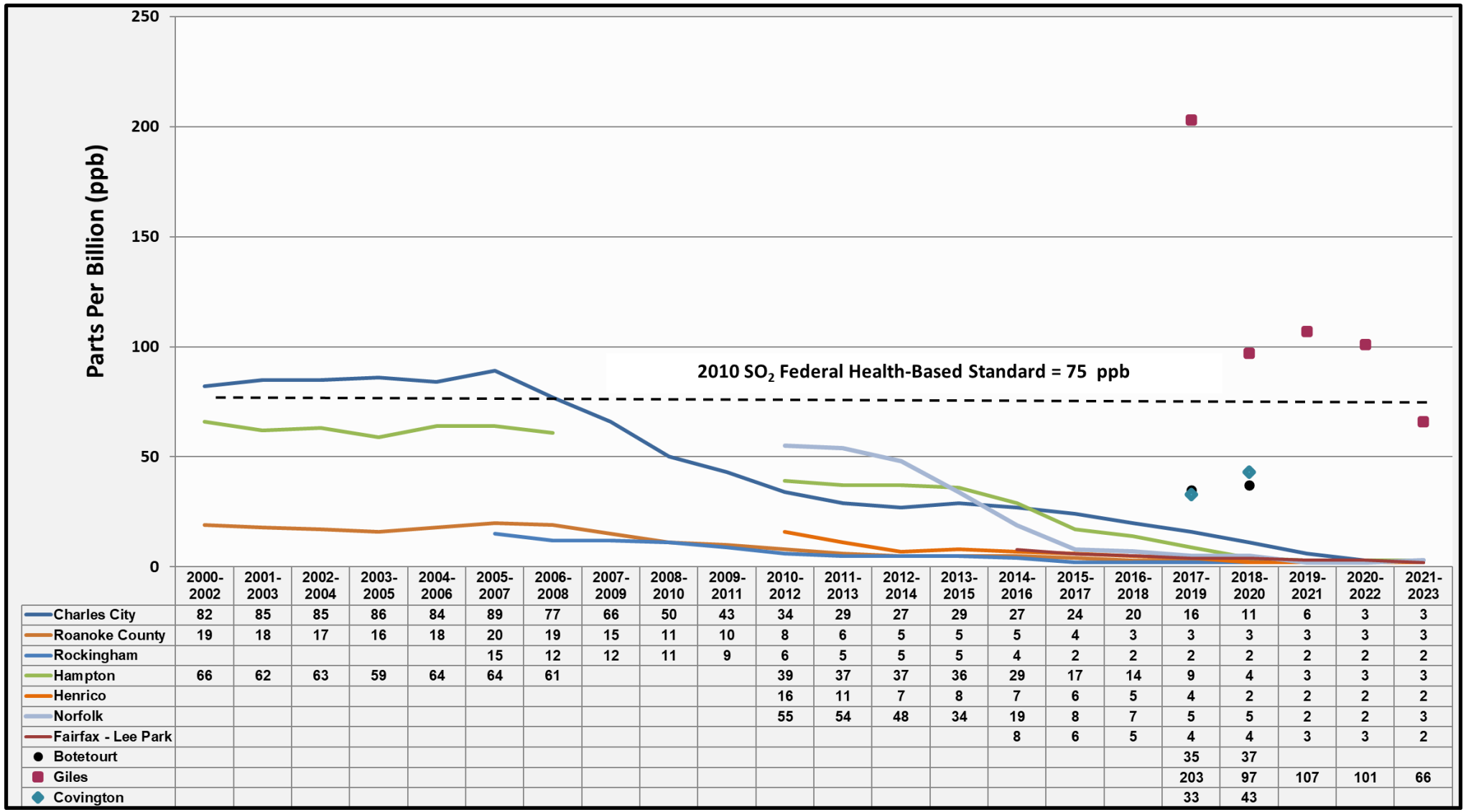
Virginia's Air Quality Trends – SO_2 (ppb)



	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
Charles City	82	85	85	86	84	89	77	66	50	43	34	29	27	29	27	24	20	16	11	6	3	3
Roanoke County	19	18	17	16	18	20	19	15	11	10	8	6	5	5	5	4	3	3	3	3	3	3
Rockingham						15	12	12	11	9	6	5	5	5	4	2	2	2	2	2	2	2
Hampton	66	62	63	59	64	64	61				39	37	37	36	29	17	14	9	4	3	3	3
Henrico											16	11	7	8	7	6	5	4	2	2	2	2
Norfolk											55	54	48	34	19	8	7	5	5	2	2	3
Fairfax - Lee Park															8	6	5	4	4	3	3	2
Botetourt																		35	37			
Giles																		203	97	107	101	66
Covington																		33	43			

**2018-2020 SO_2 data for Botetourt and Covington contain partial year values for 2020. Federal regulations allowed those monitors to be removed mid-2020.*

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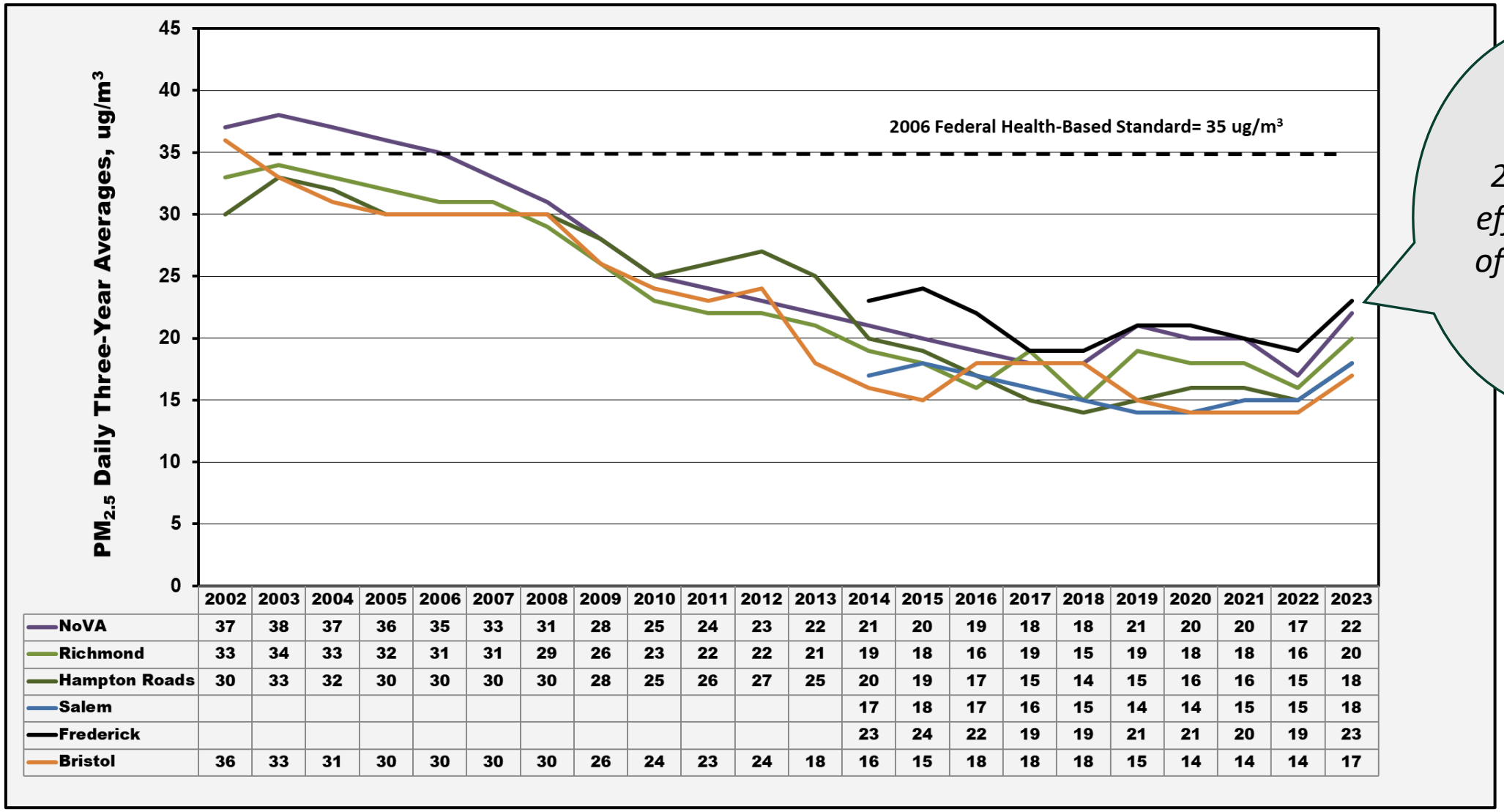
Virginia's Air Quality Trends – Daily $PM_{2.5}$



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
NoVA	37	38	37	36	35	33	31	28	25	24	23	22	21	20	19	18	18	21	20	20	17	22
Richmond	33	34	33	32	31	31	29	26	23	22	22	21	19	18	16	19	15	19	18	18	16	20
Hampton Roads	30	33	32	30	30	30	30	28	25	26	27	25	20	19	17	15	14	15	16	16	15	18
Salem													17	18	17	16	15	14	14	15	15	18
Frederick													23	24	22	19	19	21	21	20	19	23
Bristol	36	33	31	30	30	30	30	26	24	23	24	18	16	15	18	18	18	15	14	14	14	17

Uptick in 2023 due to effects of out-of-state forest fires

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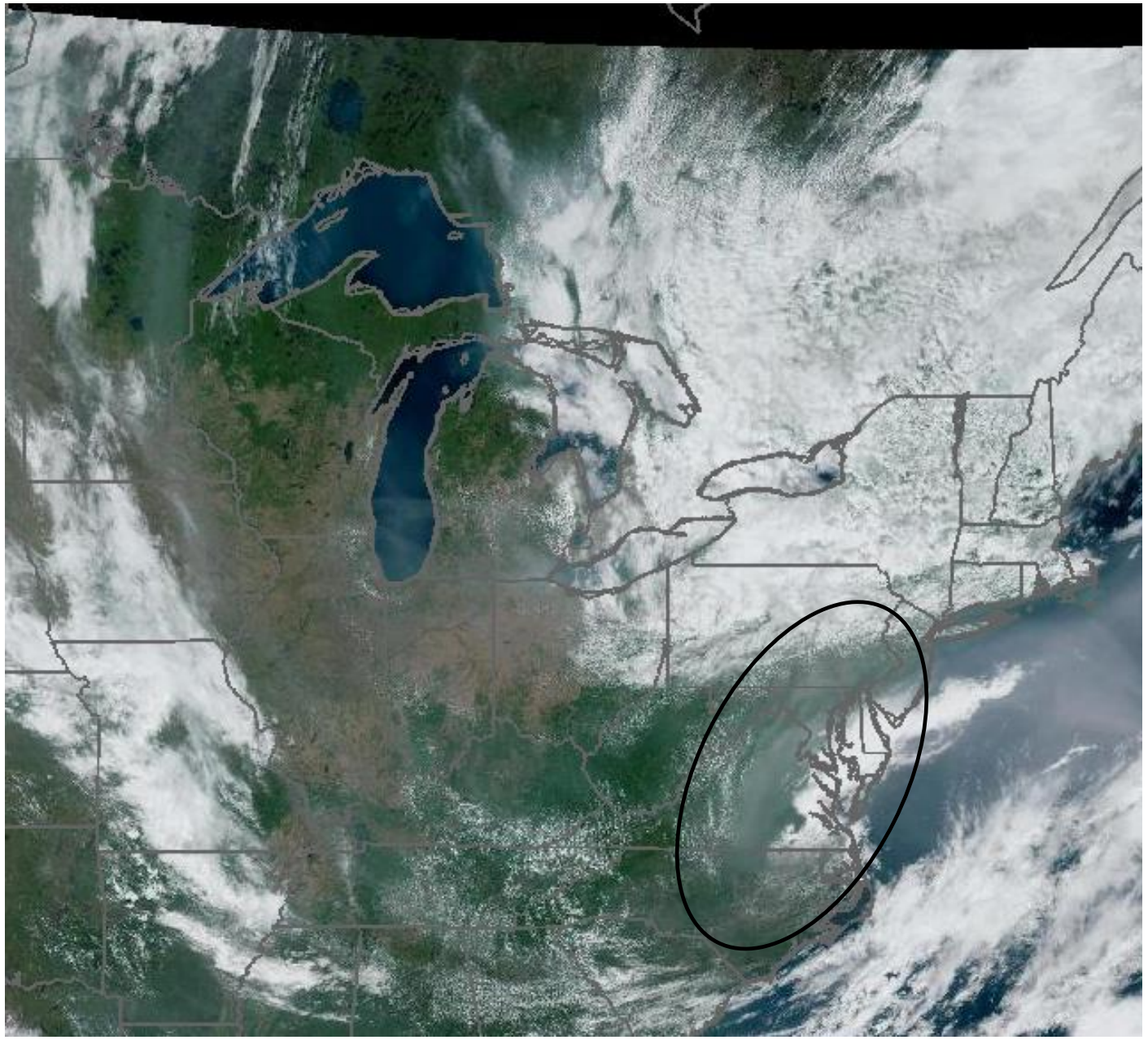
Impacts of 2023 Wildfires on Virginia Air Quality

Wildfire Smoke Impacts

- Wildfire smoke can impact PM and O_3
- Canadian wildfires had ***highly unusual*** impacts on Virginia in 2023, especially on $PM_{2.5}$



Satellite image from June 8, 2023

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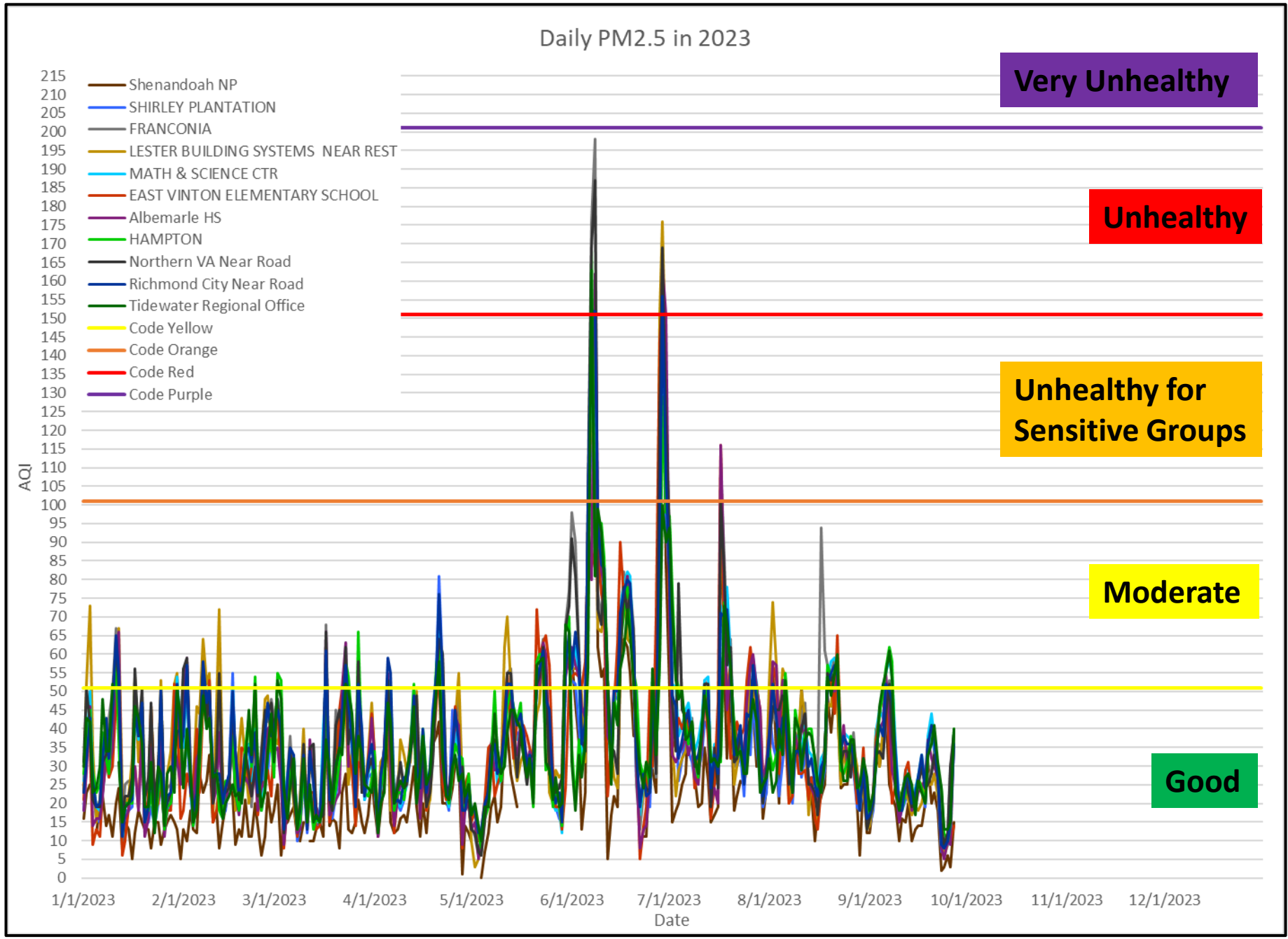
How Unusual is 2023 $PM_{2.5}$?

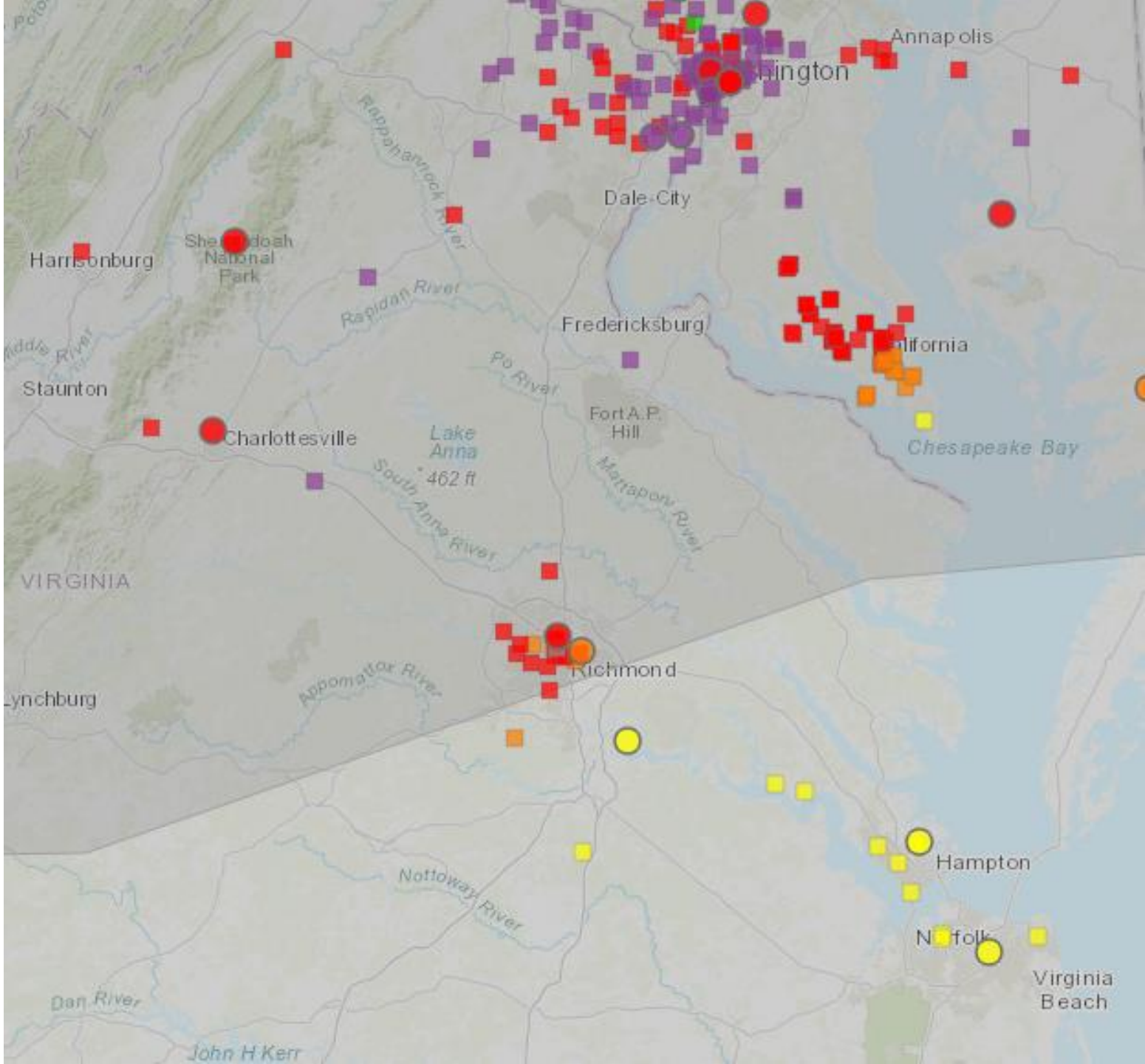
Poor $PM_{2.5}$ Days by Year

Year	Days
2019	0
2020	0
2021	2
2022	0
2023	7



AirNow Fire and Smoke Map – June 8, 2023

- Circles: official monitors
- Squares: air sensors purchased and owned by citizens (Purple Air)
- Layers of grey show satellite observed smoke plumes
- DEQ issued air quality alert for metro areas based on the worst conditions observed by official monitors
  - Richmond - Code Red
  - Northern VA - Code Purple



Wildfire Consequences

- Poor air quality even after implementation of unprecedented numbers of industrial and other control programs
- Affects permitting and transportation conformity by increasing background concentrations for air quality modeling and for hot spot analyses
- Impacts air quality monitoring networks such that additional monitoring sites may be federally required. Monitoring sites are costly.
- State must create exceptional events flag demonstrations
  - Only very limited amounts of data are currently being considered by EPA for exceptional event flag approvals.
  - Short turn-around times for states to submit exceptional event demonstrations for 2015 ozone and 2024 $PM_{2.5}$ NAAQS compliance

Figure 9a. June 2023 Quebec Wildfire.
Image showing wildfire and associated smoke at Lebel-sur-Quevillon in Quebec, Canada, on June 23, 2023. One of over 100 fires burning across the Quebec province at the time. https://www.cnn.com/2023/08/22/americas/canada-wildfires-climate-change-quebec/index.html

Year	# of Canadian Hotspots	Area Burned
2019	66,000	7,300 m^2
2020	12,000	669 m^2
2021	154,000	15,200 m^2 (larger than MD)
2022	49,000	5,600 m^2
2023 (thru Oct)	560,000+	>69,300 m^2 (larger than GA)

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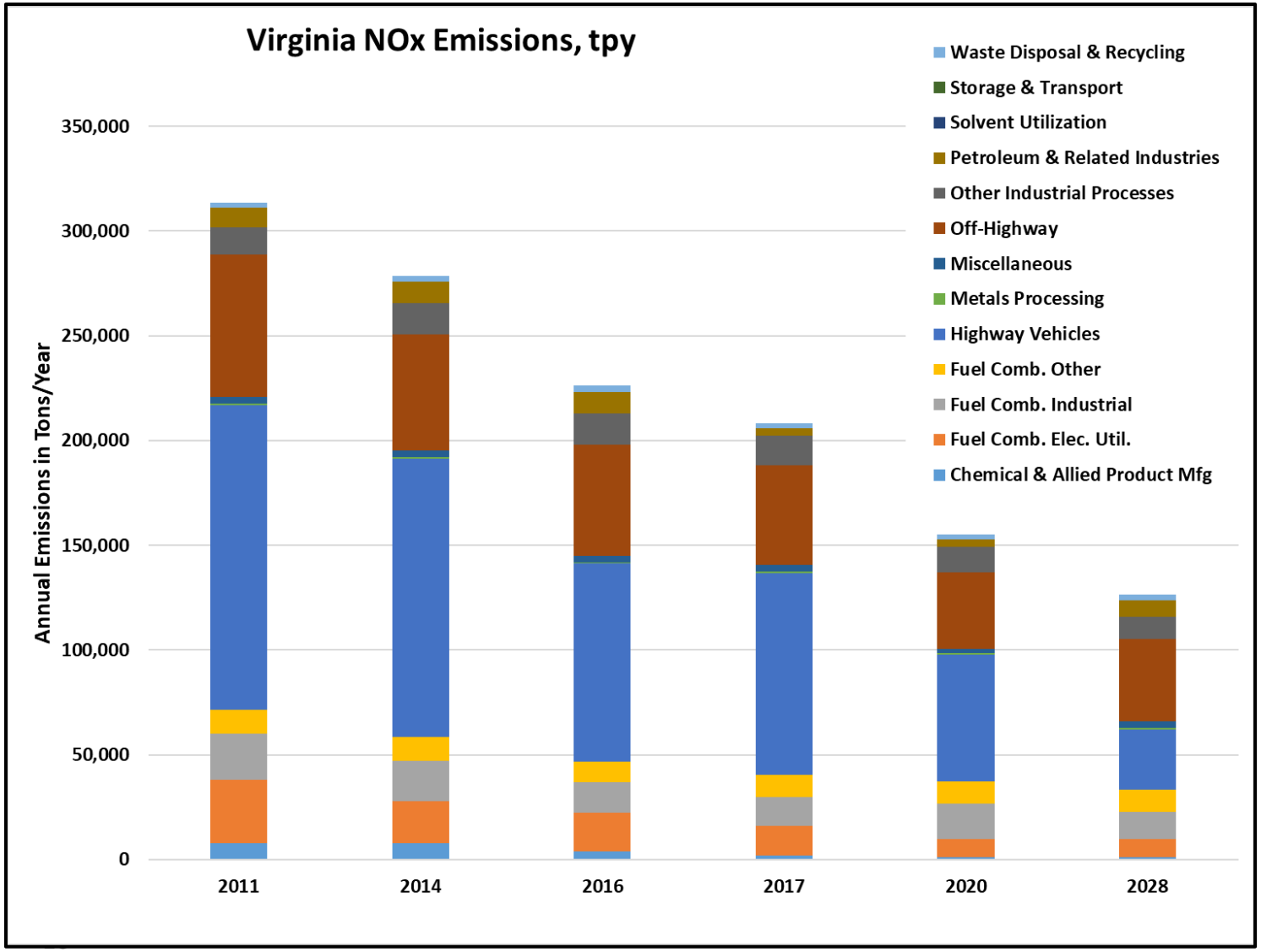
Virginia Air Pollution Emissions
Data, Projection, and Trends

Lower Emissions = Better Air Quality



- Actual emissions of nitrogen oxides (NOx) dropped about 158,000 tons between 2011 and 2020
- Off-road emissions expected to be 31% of total VA NOx emissions in 2028
- Industrial fuel combustion emissions were 7% of total VA NOx emissions in 2011 and about 11% of total VA NOx emissions in 2020.
- ***2020 NOx emissions are depressed due to effects of the pandemic. Passenger vehicle miles traveled and commercial aviation were much lower than normal due to the economy-wide shutdown, reducing NOx.***
- Industrial fuel combustion emissions expected to be 10% of total VA NOx emissions in 2028.

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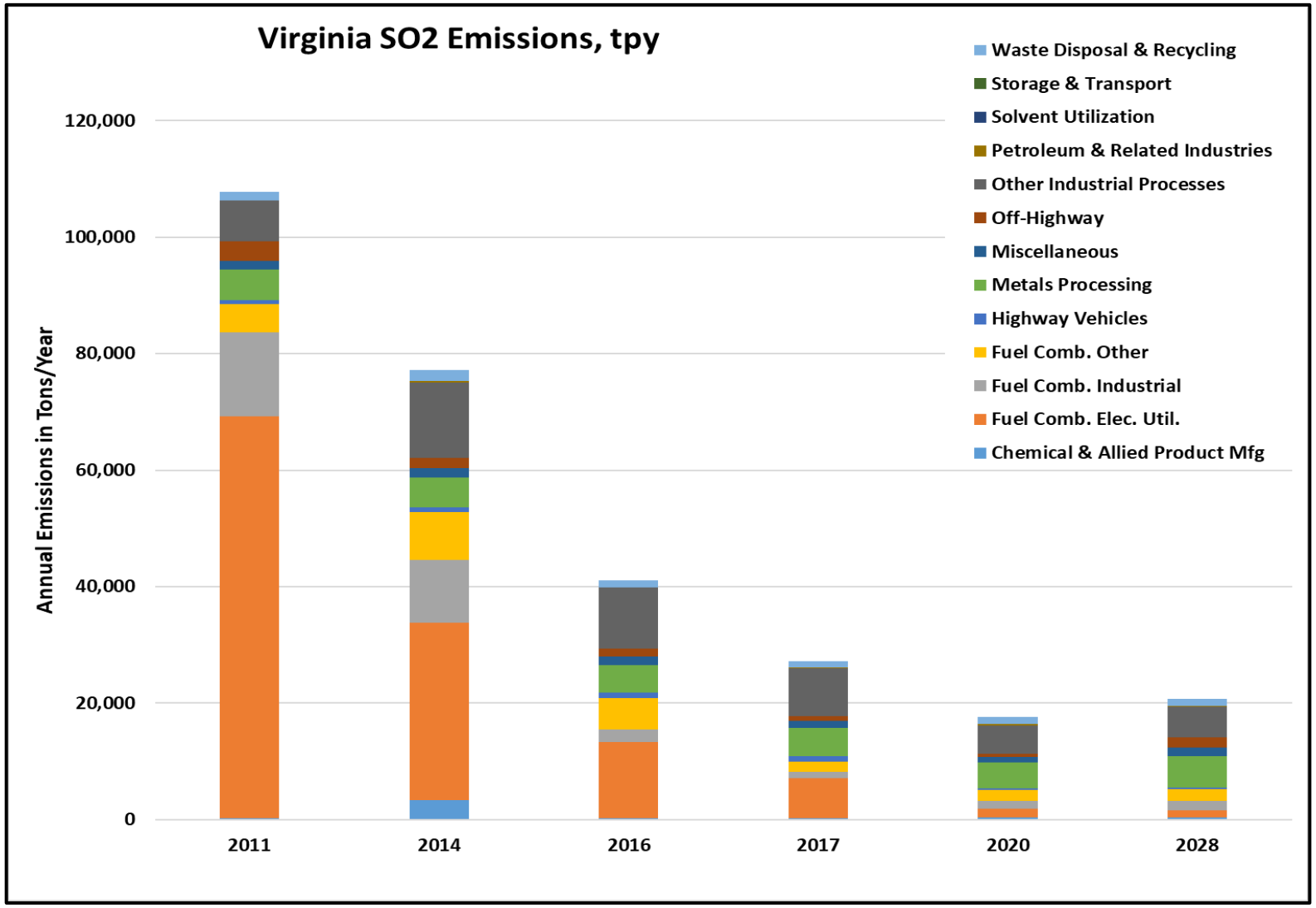
Lower Emissions = Better Air Quality



- Actual emissions of SO_2 dropped about 90,000 tons between 2011 and 2020.
- Emissions from electricity generation and industrial combustion account for most of the reductions.
- ***Impacts of the pandemic on 2020 SO_2 emissions are uncertain.***
- In 2028, metals processing and industrial processes are expected to account for just over 50% of VA SO_2 emissions.

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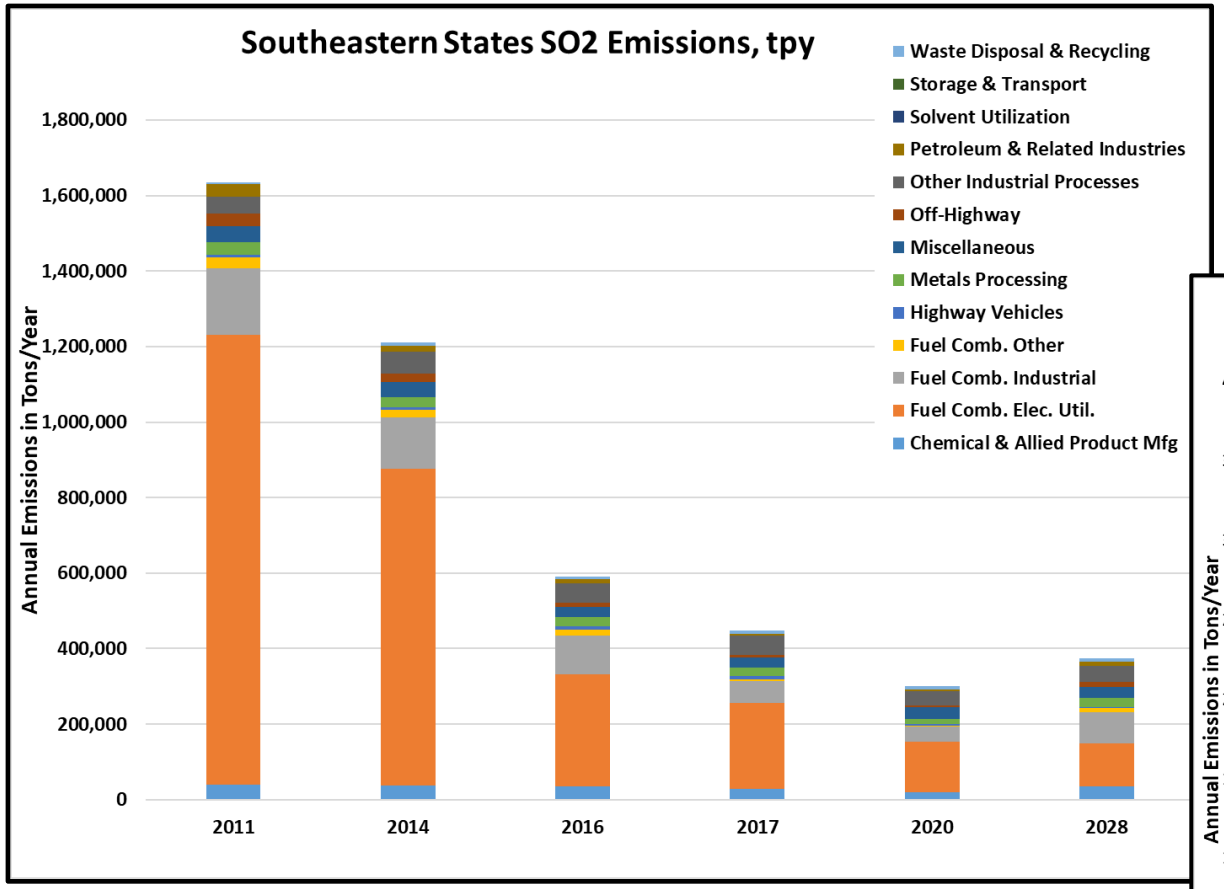
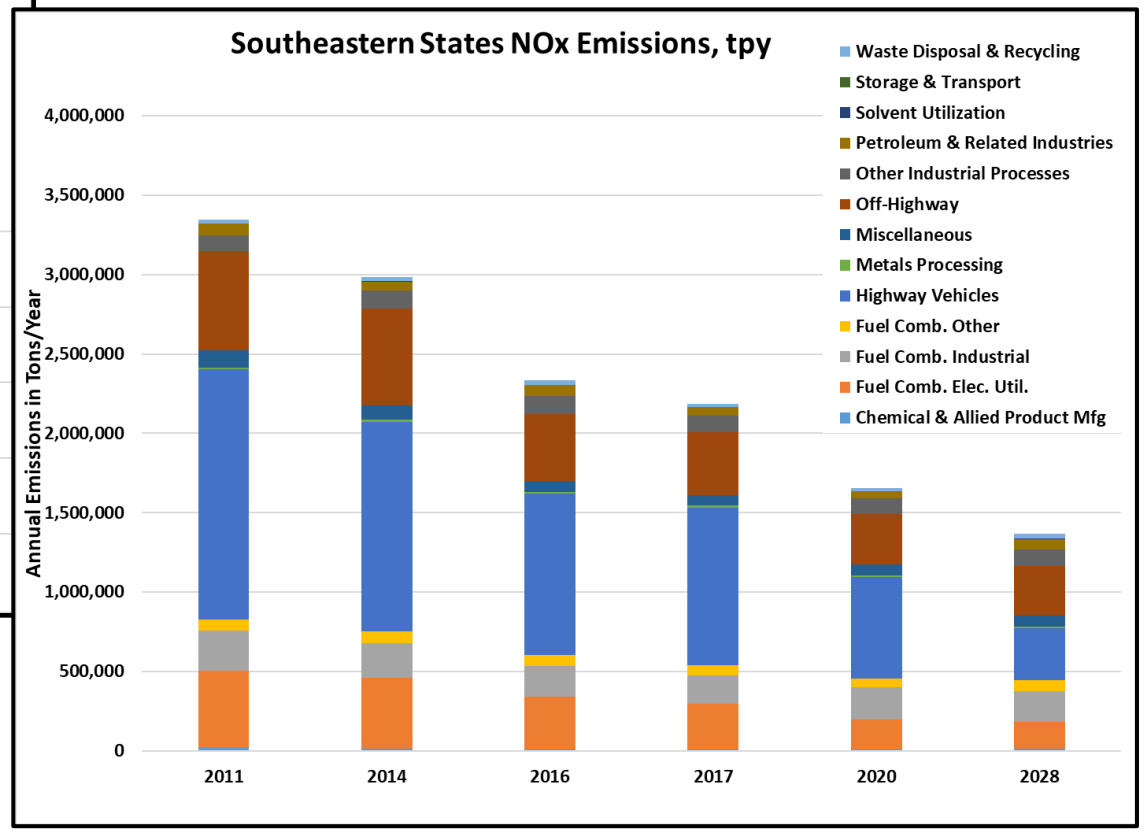
Lower Emissions = Better Air Quality



All southeastern states experienced similar trends and have similar projections.



Southeastern states: AL, FL, GA, KY, MS, NC, SC, TN, VA, and WV.

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Virginia's Air Permitting Program

Virginia's Air Permitting Program Overview

Permit Type	# of Regulated Facilities
Title V Major Sources	210
Synthetic Minor Sources	1,392
Minor Sources	2,196
Total	3,798

- *Source: Virginia's Comprehensive Environmental Data System as of 05/07/2024*
- *Totals do not include planned or sources under construction*

- **Preconstruction Review Programs**
  - Minor New Source Review
  - State Major New Source Review
  - Prevention of Significant Deterioration
  - Nonattainment
  - Major Hazardous Air Pollutant New Source Review
- **Operating Permit Programs**
  - Title V/Title IV Permits
  - State Operating Permits

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Virginia DEQ Air Permitting Activity 07/01/2022-06/30/2023

- DEQ processes ≈ 350-450 air permit actions annually
- DEQ issues ≈ 15 - 30 exemptions annually
- Air rules comprise between 275-300 regulations
- DEQ staff consists of:
  - 42 permit writers
  - Six (6) permit managers
  - Eight (8) Office of Air Permit Programs staff
  - Three (3) current vacancies (7%)

Permit Type	Quantity Issued in 2023
New Source Review (NSR) Exemptions	15
Minor NSR Permits	278
State Major NSR Permits	0
Major NSR Permits	1
General Permits	2
State Operating Permits	19
Title V Operating Permits	52
Title IV Operating Permits	2
Total	369

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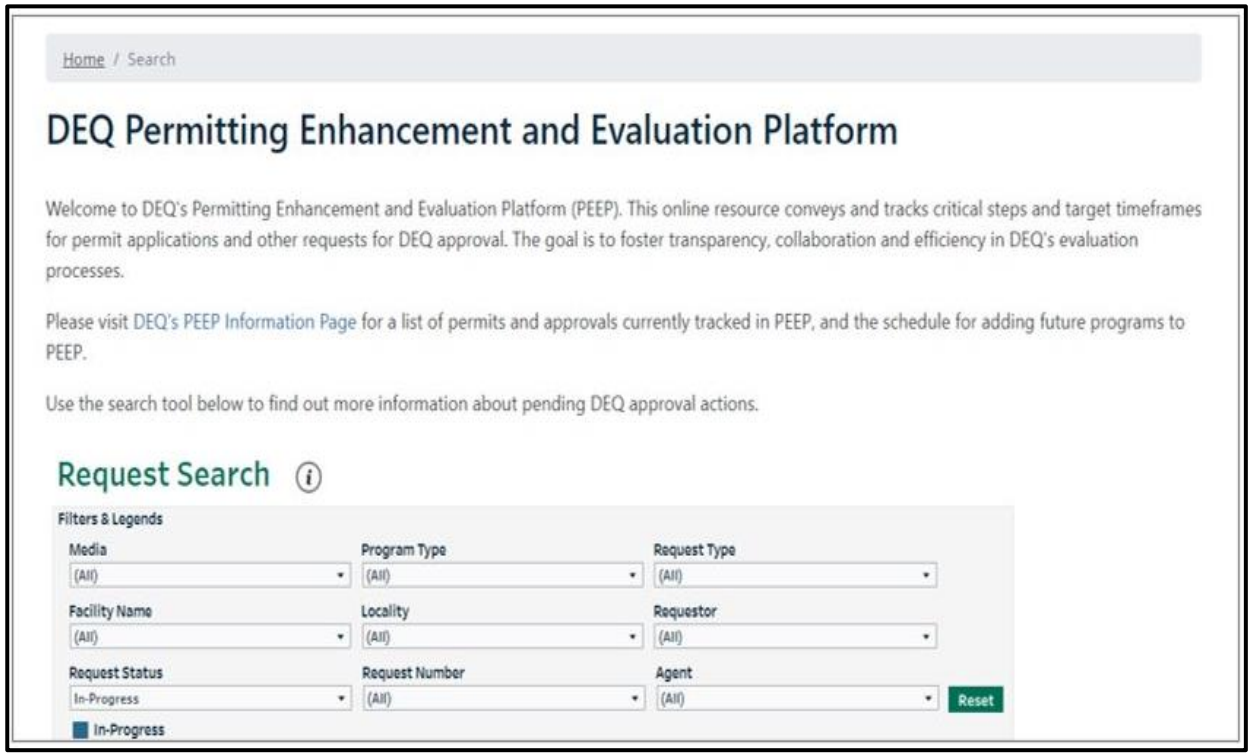
DEQ's Permitting Enhancement and Evaluation Platform (PEEP)

- PEEP provides the public with current information about the critical steps and permitting schedules needed for permit approval.
- Provides information on individual permitting applications as well as DEQ's overall performance.



https://portal.deq.virginia.gov/peep-search

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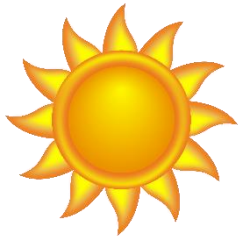
Air Quality Planning
Ozone

What is Ozone?

- Formation: VOC + NO_X +  = Ozone

(Volatile organic compounds and nitrogen oxides in the presence of sunlight will form ozone.)

- Primary component of smog
- Mainly a summertime (April through October) pollutant
- Impacts human lung function and health as well as vegetation
- Heavily regulated by the Clean Air Act

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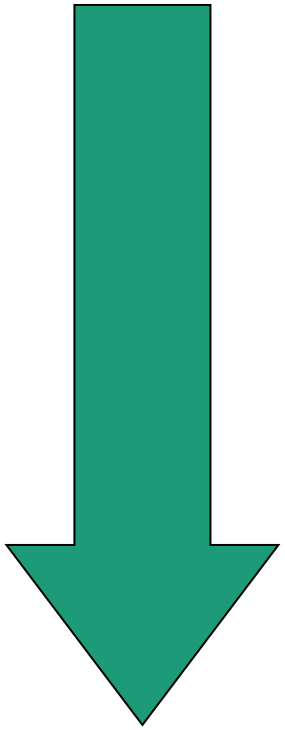
Federal Ozone Air Quality Standards

- **1979 Standard**
  - 0.12 ppm
  - Averaged over one hour
- **1997 Standard**
  - 0.08 ppm
  - Averaged over eight hours
- **2008 Standard**
  - 0.075 ppm
  - Averaged over eight hours
- **2015 Standard**
  - 0.070 ppm
  - Averaged over eight hours

LESS STRINGENT



MORE STRINGENT

On August 21, 2023, EPA released plans to initiate a full review of the 2015 ozone NAAQS rather than to reconsider the 2020 decision to retain the 2015 ozone NAAQS.

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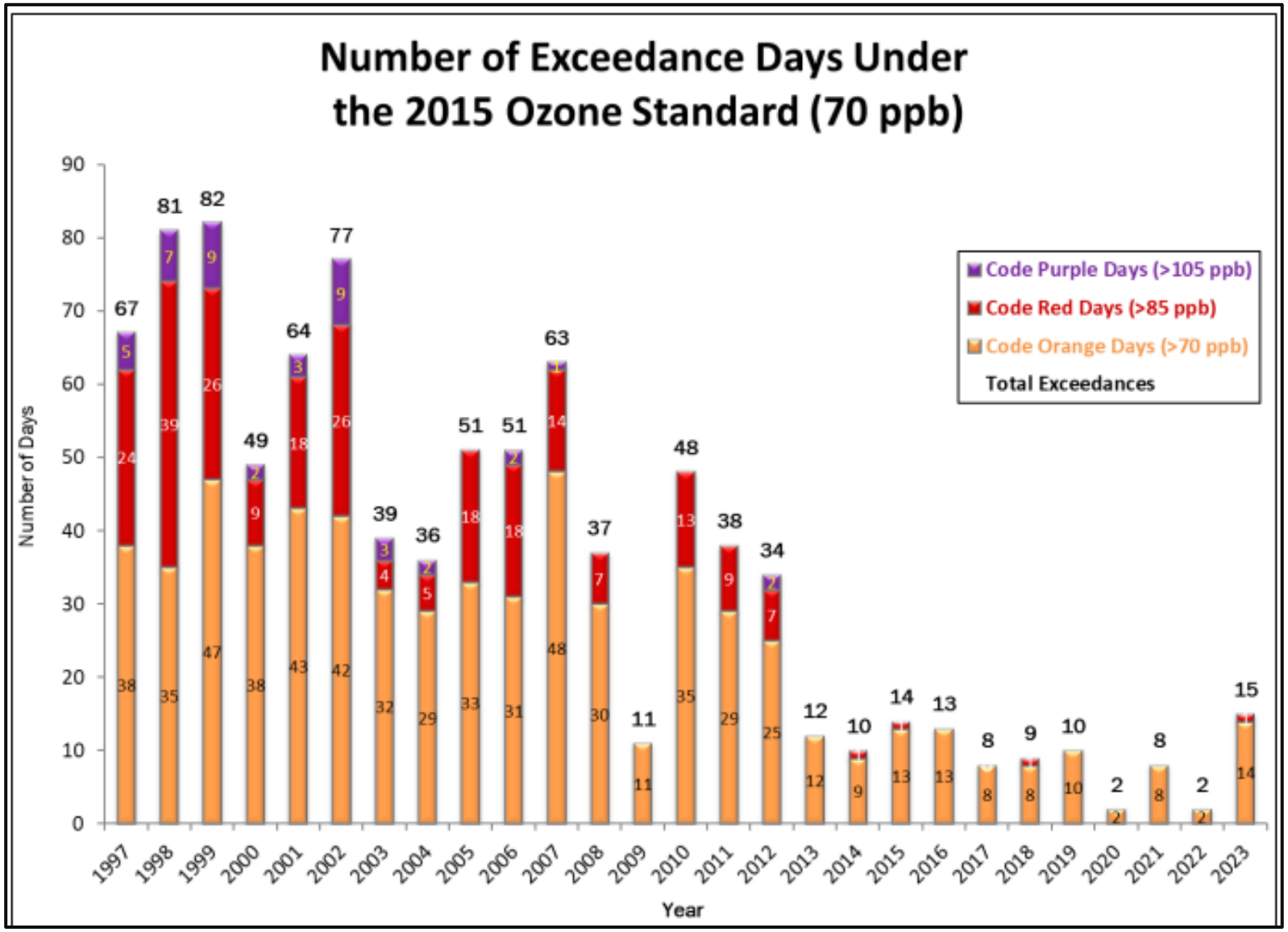
Metropolitan Washington, D.C. 2015 Ozone NAAQS Moderate Nonattainment Area

- Tri-state nonattainment area:
  - More than 5,800,000 people
  - District of Columbia, southern Maryland, northern Virginia
- All planning performed as part of tri-state §174(a) local planning organization - Metropolitan Washington Air Quality Committee
- Historic, persistent ozone problems
- Moderate bump up published Oct 7, 2022 (87 FR 60897)
- Current data shows compliance after approval of an exceptional events demonstration submitted by DC
- DC, MD, and VA are working on a redesignation request
- VA must also submit a reasonably available control technology evaluation and several Inspection and Maintenance program state implementation plan (SIP) revisions

Metro DC Ozone Exceedance Day Trend



Due to Canadian wildfire influences, in 2023 the Metro DC area experienced more Code Orange and Code Red days than in any other year since 2012.

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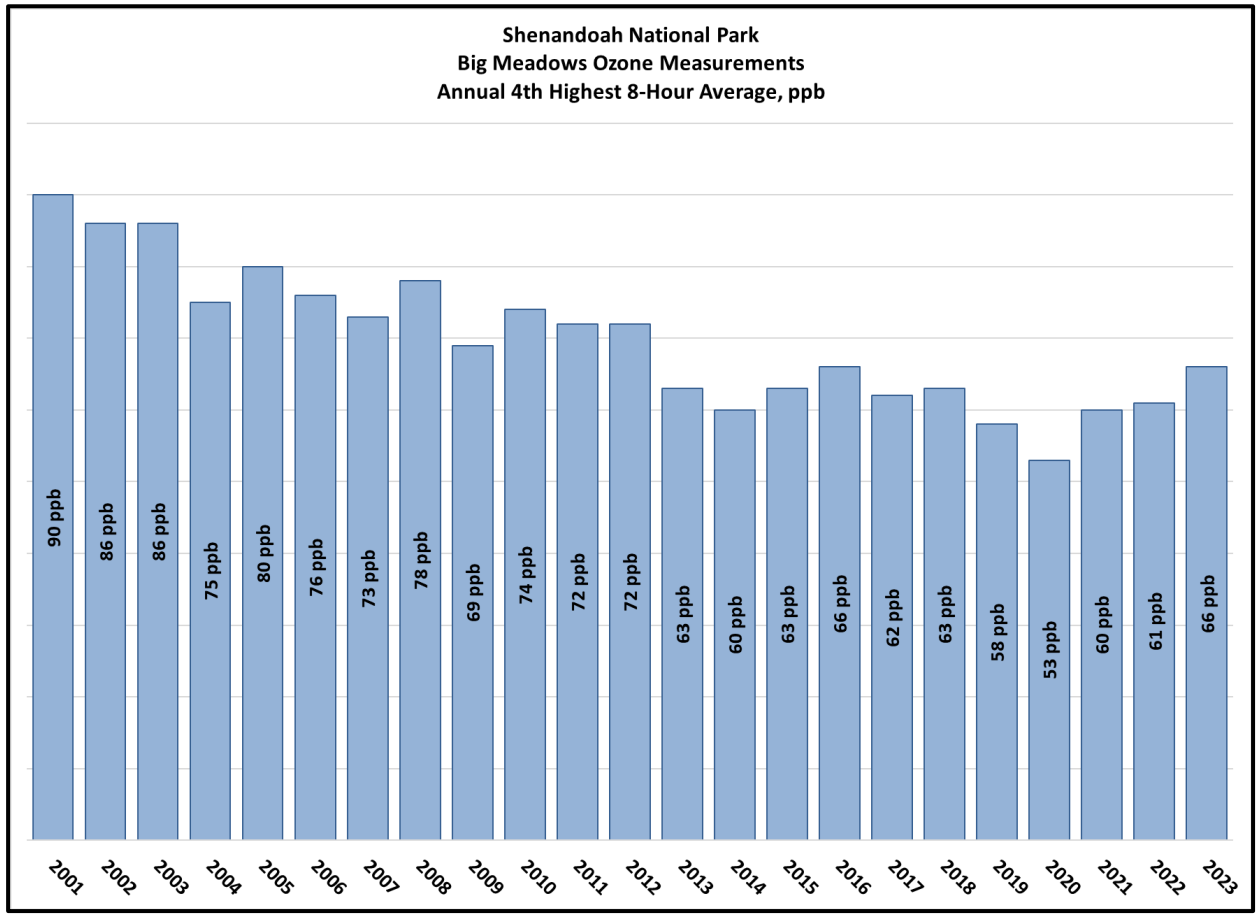
Metro DC Ozone Issues: Little Left to Control for NOx and VOC

- Few industrial sources in the Northern VA (NoVA) area
  - Municipal solid waste facilities subject to the most stringent NOx limitations in the Northeast/Mid-Atlantic.
  - Coal consumption for electricity generation has ceased. Remaining electricity generation units are generally well-controlled.
  - RACT applied multiple times for previous ozone standards.
- Institutional facilities (military, airports, education, etc) have upgraded/replaced equipment resulting in lower emissions for a variety of reasons:
  - Energy efficiency/cost to run
  - Sustainability
  - Strategic planning
- Enhanced I/M has been operating since early 1990's (car inspections)
- Multiple consumer product VOC control regulations implemented in NoVA (architectural and industrial coatings, personal care products, vehicle repair and refinishing, etc)

Metro DC Ozone Issues – Upwind/Regional Controls

- Upwind controls needed to attain/maintain the 2015 ozone NAAQS in Metro DC.
- Transported ozone remains a concern
  - Big Meadows monitoring site at 3,500 ft elevation in Shenandoah National Park (Luray, Virginia)
  - Considered an “ozone transport” monitor, indicative of pollution traveling into Virginia
  - Measured values hover around 60 ppb since 2013.
  - 2020 data shows impacts of the COVID-19 pandemic on ozone pollution transported into Virginia
  - 2023 data shows impact of wildfires on ozone transported into Virginia



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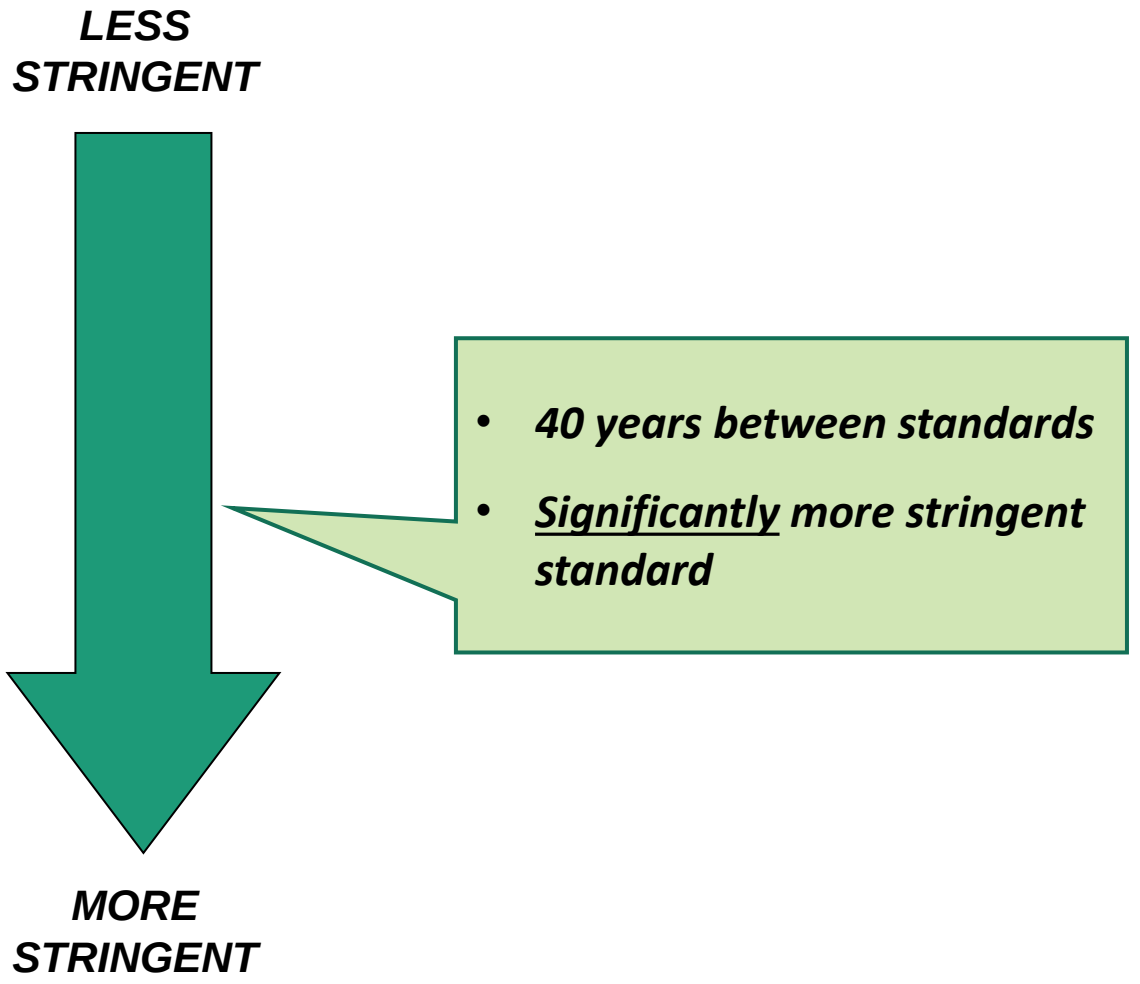
Air Quality Planning
Sulfur Dioxide

Federal SO_2 Air Quality Standards

- **1971 Standard**
  - Primary
    - 0.14 parts per million (ppm), 24-hour average
    - 0.030 ppm, annual mean
  - Secondary: 0.50 ppm, 3-hour average
- **2010 Standard**
  - 75 ppb, one-hour average
  - Revoked the 24-hour and annual standards
  - Secondary standard unchanged



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SO_2 Designations in Virginia

- EPA determined that SO_2 air quality issues were source-specific
- Multiple legal proceedings for the designation process
- All areas except the following in Virginia designated attainment:
  - Buchanan County: Designated “unclassifiable”
    - Jewell Coke Company
    - Extreme terrain
  - Giles County, Partial:
    - Lhoist North America – Kimballton Plant
    - Designated “nonattainment” on March 26, 2021
    - Attainment date is 2026
    - Attainment plan was due to EPA October 2022
    - Measured compliant data for the first time ever in 2023

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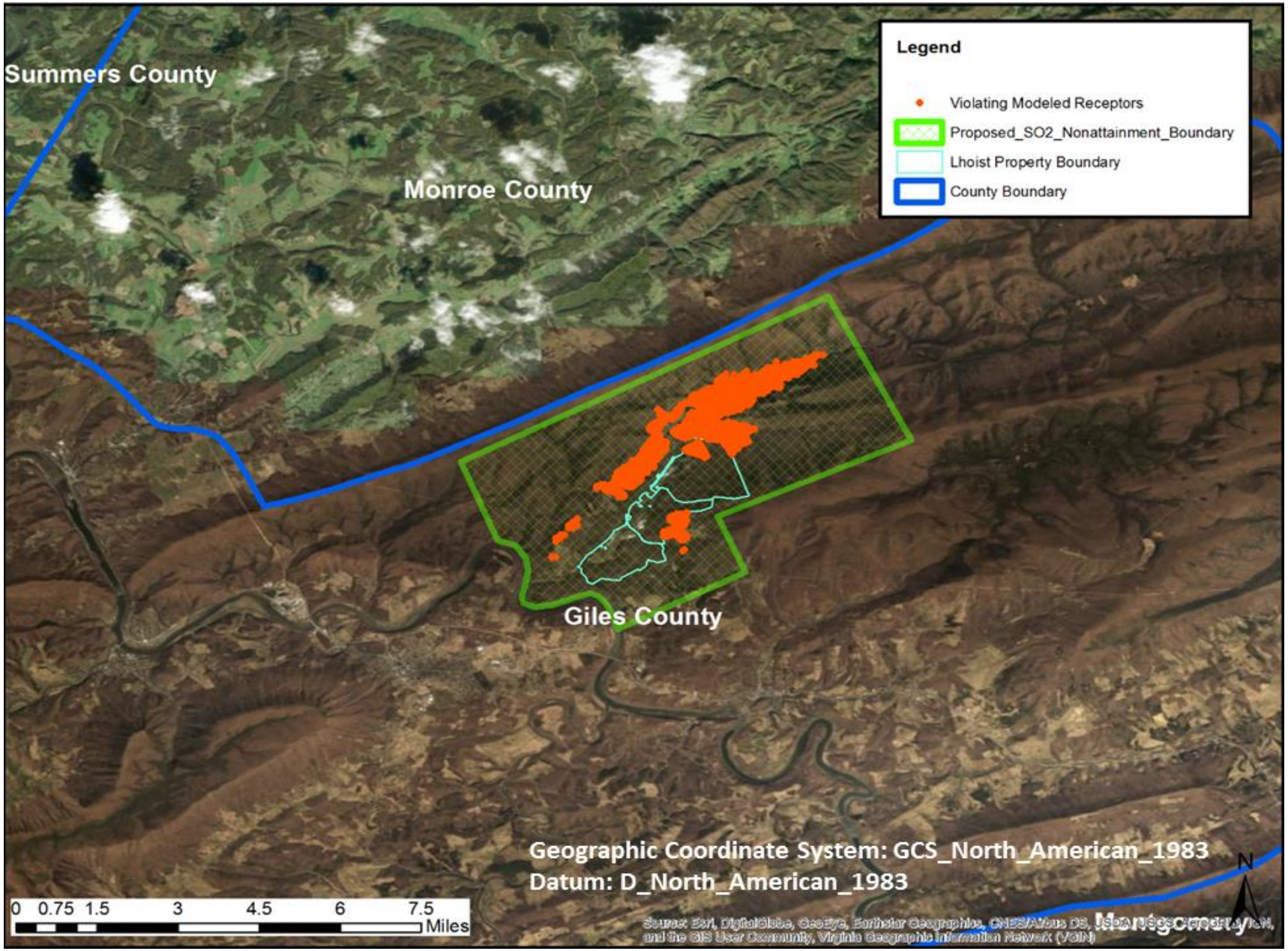

Giles County (Partial) 2010 SO_2 NAAQS Nonattainment Area

- < 6% of the total area of Giles County
- Surrounds Lhoist North America – Kimballton Plant
- DEQ expects to submit an attainment plan for the area by December 2024.
- Expect to submit a redesignation request for the area due to improved air quality by December 2025.

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Air Quality Planning - 2024 $PM_{2.5}$ NAAQS

2024 $PM_{2.5}$ NAAQS

- Final reconsideration and rule revision published March 6, 2024 (89 FR 16202)
- Effective date May 6, 2024
- Revised the annual standard from 12.0 micrograms per cubic meter ($\mu g/m^3$) to 9.0 $\mu g/m^3$
- Retained the daily standard - 35 $\mu g/m^3$
- Significant public health net benefits as high as $46 billion in 2032:
  - 4,500 avoided premature deaths
  - 800,000 avoided cases of asthma symptoms
  - 290,000 avoided lost workdays

New Standards				
Indicator	**Averaging Time**	**Primary/ Secondary**	**Level**	**Form**
$PM_{2.5}$	Annual	Primary	9.0 $\mu g/m^3$	Annual arithmetic mean, averaged over 3 years
		Secondary	15.0 $\mu g/m^3$	
	24-hour	Primary and Secondary	35 $\mu g/m^3$	98th percentile, averaged over 3 years
PM_{10}	24-hour	Primary and Secondary	150 $\mu g/m^3$	Not to be exceeded more than once per year on average over a 3-year period

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2024 $PM_{2.5}$ NAAQS Implementation Schedule

Action	Deadline	Applicable data years
Initial notifications for intent to submit exception events demonstrations	01/01/2025	2021, 2022, 2023
Exceptional Events demonstrations due to EPA	02/07/2025	2021, 2022, 2023
State initial area designation recommendations due	02/07/2025	2021, 2022, 2023
Initial notification and exceptional events demonstration submittal	09/30/2025	2024
EPA sends 120-day letter for initial area designations	10/9/2025	2022, 2023, 2024
EPA promulgates final 2024 PM2.5 NAAQS area designations	02/06/2026	2022, 2023, 2024

- Some states have between 50-100 data points that need exceptional events flags due to the 2023 Canadian wildfires.
- Litigation on exceptional events determinations is on going (*Sierra Club v. EPA).*
- This schedule assumes EPA will process the initial recommendations from the states in a two-year timeframe. The Clean Air Act allows a third year if more information is needed.

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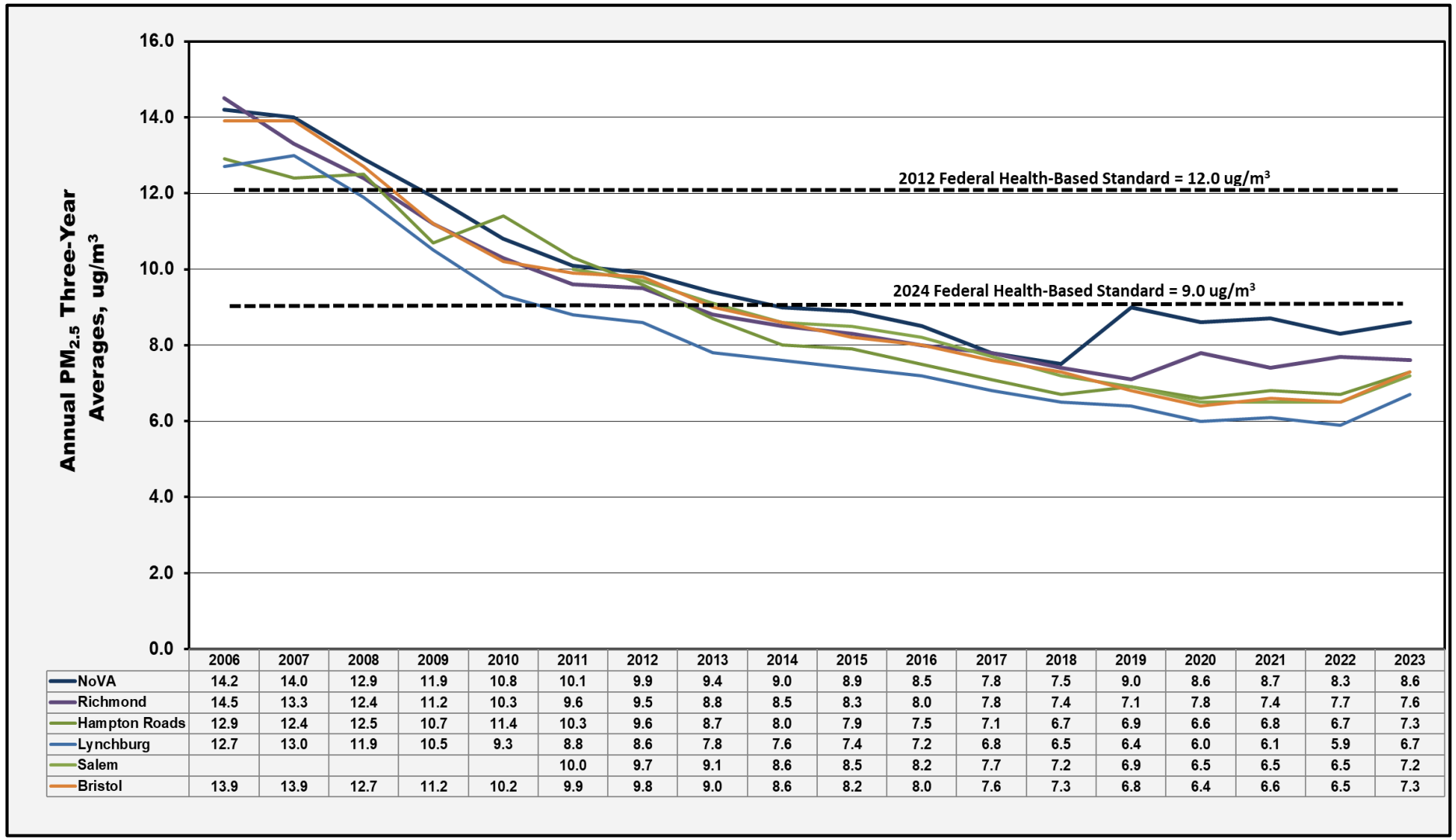
Virginia Annual $PM_{2.5}$ Monitoring Data



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
NoVA	14.2	14.0	12.9	11.9	10.8	10.1	9.9	9.4	9.0	8.9	8.5	7.8	7.5	9.0	8.6	8.7	8.3	8.6
Richmond	14.5	13.3	12.4	11.2	10.3	9.6	9.5	8.8	8.5	8.3	8.0	7.8	7.4	7.1	7.8	7.4	7.7	7.6
Hampton Roads	12.9	12.4	12.5	10.7	11.4	10.3	9.6	8.7	8.0	7.9	7.5	7.1	6.7	6.9	6.6	6.8	6.7	7.3
Lynchburg	12.7	13.0	11.9	10.5	9.3	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
Salem						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
Bristol	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

- Uptick in 2019 data due to near road monitors coming on line
- Uptick in 2023 data due to wildfires
- EPA is adjusting some $PM_{2.5}$ monitoring data to correct a positive bias seen in parts of the country for the T640 and T640X monitors. This chart reflects that adjustment for 2023 data. A few more years will be adjusted.

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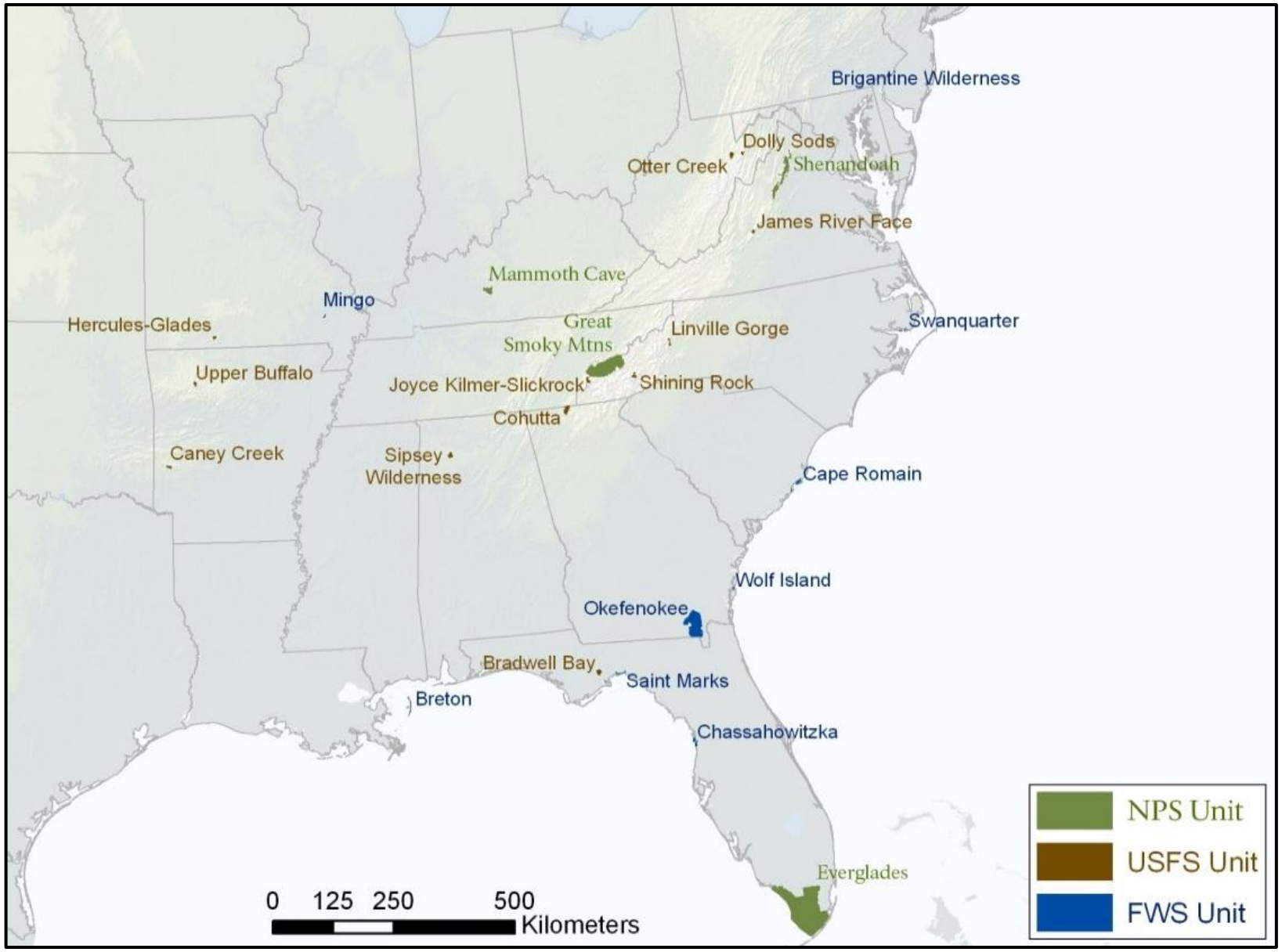
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Air Quality Planning
Regional Haze

Regional Haze Program

- Authorized under Section 169A of the CAA.
- The Regional Haze Rule (40 CFR Part 51 Subpart P) calls for states and federal agencies to work together to improve visibility in 159 national parks and wilderness areas.
- Virginia is home to two such areas:
  - James River Face Wilderness Area
  - Shenandoah National Park
- Virginia works with nine other southeastern states to develop regional haze plans.
- EPA has opened a non-regulatory docket as part of the early engagement process for potential rule revisions.
  - EPA-HQ-OAR-2023-0262
  - Closes June 28, 2024

Class I Areas of Interest to VISTAS States



Virginia Class I Areas:

- Shenandoah National Park
- James River Face Wilderness Area

Regional Haze Program – Visibility Impairing Pollutants

- Ammonium Sulfate
  - For VISTAS Class I Areas, has been most important contributor to visibility impairment/fine particulate mass on 20% most impaired days
  - Ammonia (NH_3) and SO_2 emissions impact ammonium sulfate levels.
- Particulate Organic Matter
  - Fire and wildfire impacts
  - Wood burning
- Ammonium Nitrate
  - Becoming more important as sulfate levels drop, high impairment days switch to colder months
  - Ammonia and NOx emissions impact ammonium nitrate levels (mainly ammonia).
- Elemental Carbon
  - Wildfires, prescribed fires
  - Incomplete combustion of fossil fuel
- Soil
  - Construction activities
  - Saharan dust/dust storms in the southwest
  - Small contribution to southeastern Class I areas
- Sea Salt-coastal sites
- Coarse Mass Particles
  - Construction activities, etc
  - Small contribution to southeastern Class I areas

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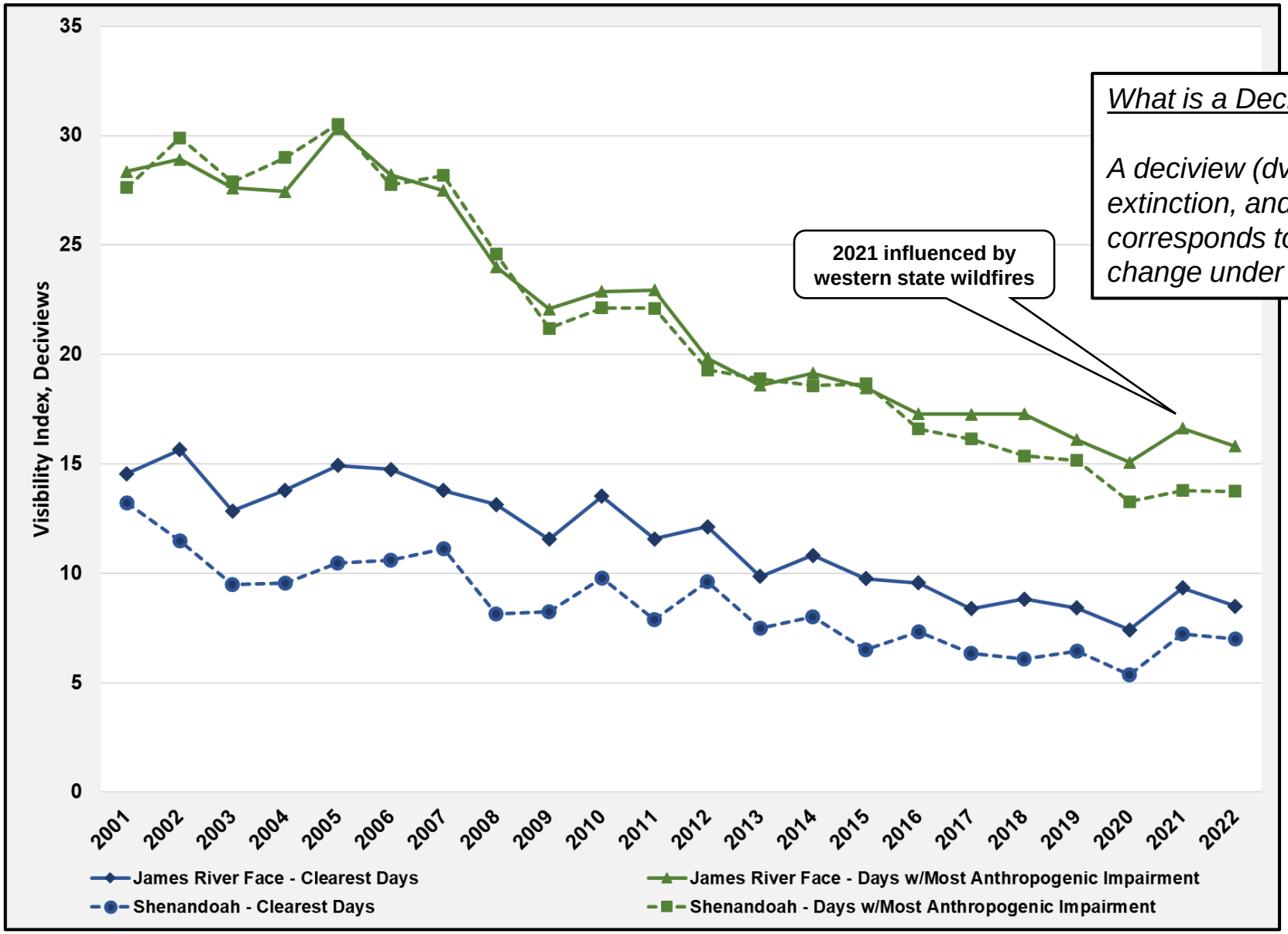
Visibility Improvements at Virginia Class I Areas



What is a Deciview?

A deciview (dv) is based on measured light extinction, and each deciview change corresponds to a perceptible visible scenic change under clean or polluted conditions.

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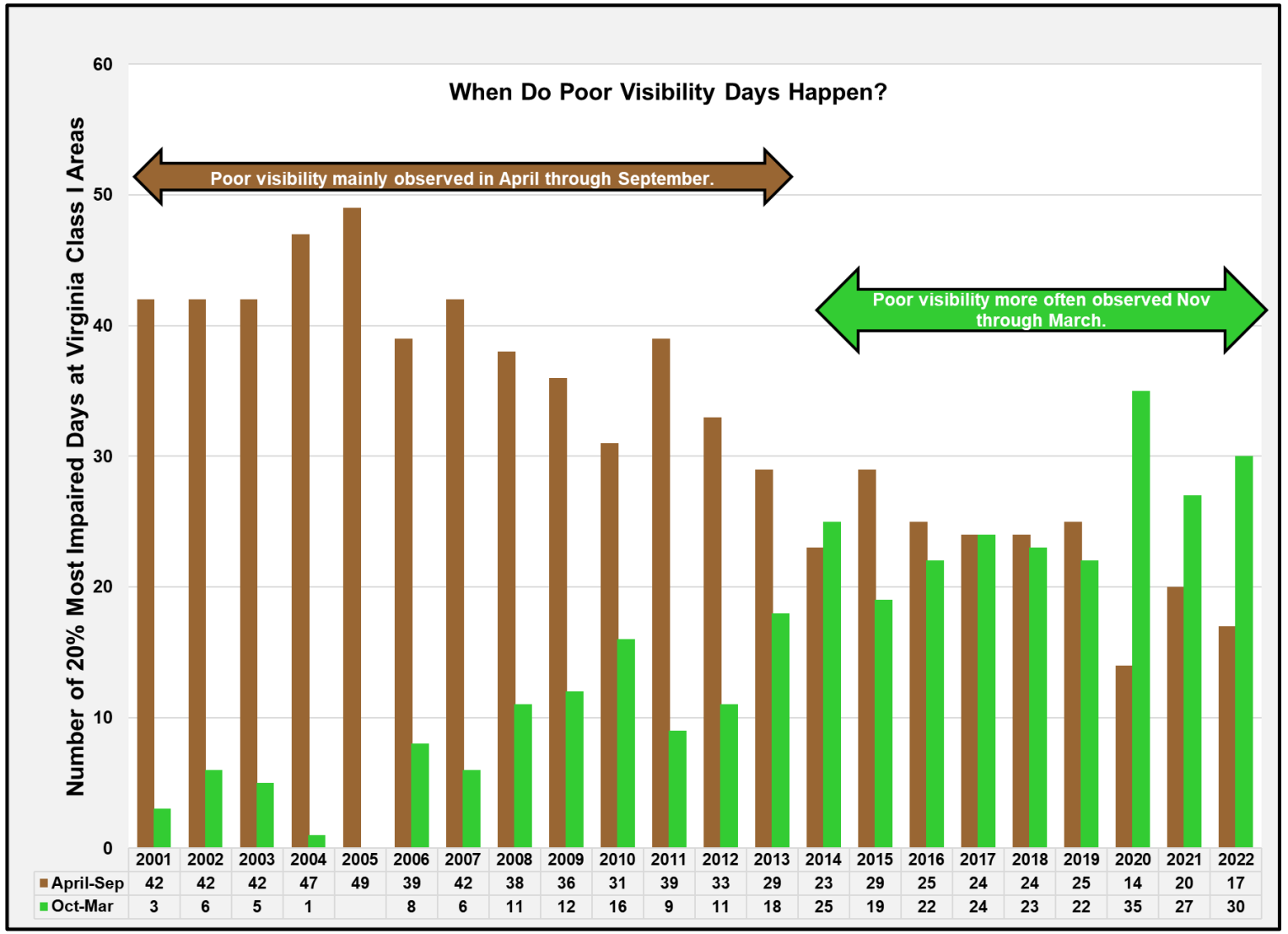
Atmospheric Chemistry at Class I Areas in Virginia



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
April-Sep	42	42	42	47	49	39	42	38	36	31	39	33	29	23	29	25	24	24	25	14	20	17
Oct-Mar	3	6	5	1		8	6	11	12	16	9	11	18	25	19	22	24	23	22	35	27	30

- Reductions in SO_2 emissions have changed atmospheric chemistry in Virginia and the Southeastern states.
- Poor visibility days are now more numerous in the colder months rather than the warmer months.
- Likely due to availability of more ammonium ion in the atmosphere/less ammonium sulfate production.
- May indicate more emphasis on NH_3 and NO_X reductions in the third round of regional haze planning.

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Dickey's Ridge, Shenandoah National Park: Improvements in Visibility

Future NAAQS and New/Upcoming Regulations

Secondary NOx, SOx, and PM NAAQS

- Consent decree requires EPA to publish a proposal by February 9, 2024, and a final determination or standard by December 10, 2024.
  - *Center for Biological Diversity et al v. Regan*
  - Requires EPA to complete a review of the secondary NAAQS for NOx, oxides of sulfur (SOx), and PM
  - Review centers on ecological effects rather than human health impacts
- On April 15, 2024 (89 FR 26620), EPA published a proposal to revise the existing secondary SO_2 standard to an annual average, averaged over three consecutive years, to a level in the range of 10 – 15 parts per billion (ppb).
  - Comment period closes June 14, 2024.
  - EPA estimates that no additional controls, beyond those required for compliance with the 2010 SO2 NAAQS, will be needed.
- Proposal suggests retaining the secondary standards for NOx and PM without revision.

EPA Air Actions-Fast and Furious Finalized

- Rule to strengthen standards for synthetic organic chemical plants and polymers and resins plants, signed April 9, 2024, not yet published.
- Updates to the Mercury and Air Toxics Rule for electricity generating units (EGUs), published May 7, 2024 (89 FR 38508)
- New source performance standards (NSPS) and guidelines for EGUs addressing greenhouse gas (GHG) emissions, published May 9, 2024 (89 FR 39798)
- GHG emission standards for Heavy Duty Vehicles – Phase 3, published April 22, 2024 (89 FR 29440)
- Multi-pollutant emission standards for model years 2027 later light duty and medium duty vehicles – published April 18, 2024 (89 FR 27842)
- Update to requirements for ethylene oxide sterilizers, published April 5, 2024 (89 FR 24090)
- Updates to Petroleum Refineries National Emission Standards for Hazardous Air Pollutants (NESHAPS), published April 4, 2024 (89 FR 23840)
- NSPS and existing source guidelines for the oil and gas sector, published March 8, 2024 (89 FR 16820)
- Federal "Good Neighbor Plan" for the 2015 O_3 NAAQS, published June 5, 2023 (88 FR 36654)

….and this is not the full listing……

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EPA Air Actions-Fast and Furious
Proposed or In Progress

- Proposed
  - Regulations related to project emissions accounting, published May 3, 2024 (89 FR 36870)
  - NESHAP updates for reconsideration to risk at petroleum refineries published April 4, 2024 (89 FR 23840)
  - Existing source large municipal waste combustor proposal, published Jan 23, 2024 (89 FR 4243)
  - Title V permit "applicable requirements" clarification, published Jan 9, 2024 (89 FR 1150)
  - NESHAP updates for rubber tire manufacturing, published Nov 16, 2023 (88 FR 78692)
  - NSPS updates to volatile organic liquid storage vessel standards, published Oct 4, 2023 (88 FR 68535)
  - Review of rule reclassification of major sources as area sources under Section 112, published Sep 27, 2023 (88 FR 66336)
  - Requirements for new hazardous air pollutant additions, published Sep 13, 2023 (88 FR 62711)
  - Revisions to the Air Emissions Reporting Requirements, published Aug 9, 2023 (88 FR 54118)
  - Draft contingency measure guidance - published March 23, 2023 (88 FR 17571)

- In progress, not yet proposed:
  - Updates to the Regional Haze Rule (40 CFR 51 Subpart P)
  - Docket (opened March 26, 2024) for forthcoming GHG existing turbine standards

….and this is not a full listing……

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Questions?