





# Air Quality Update

**Richmond Regional Transportation Planning Organization  
Technical Advisory Committee**

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Air Quality Planner

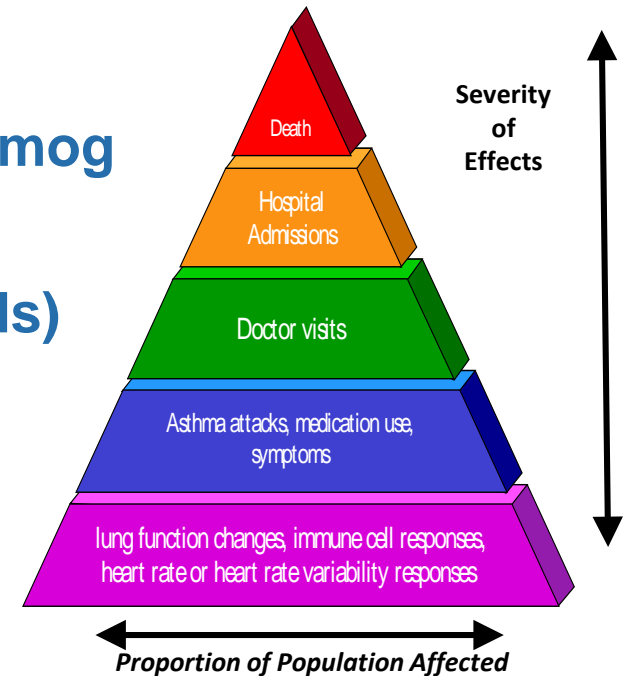
October 8, 2019

# Ozone Background

• **Formation:**  $\text{VOC} + \text{NO}_x + \text{Sunlight} = \text{Ozone}$

(volatile organic compounds + oxides of nitrogen + sunlight = ozone)

- **Mainly a summertime pollutant**
- **Lung irritant: primary component of smog**
- **Heavily regulated by the Clean Air Act (National Ambient Air Quality Standards)**
- **Affected populations:**
  - **Children**
  - **Elderly**
  - **People with lung diseases**
  - **Heavy exposure/outdoor workers**



# Evolution of Federal Health-Based Ozone Requirements

- **1991 Standard**

- 0.12 ppm (124 ppb)
- Averaged over one hour

- **1997 Standard**

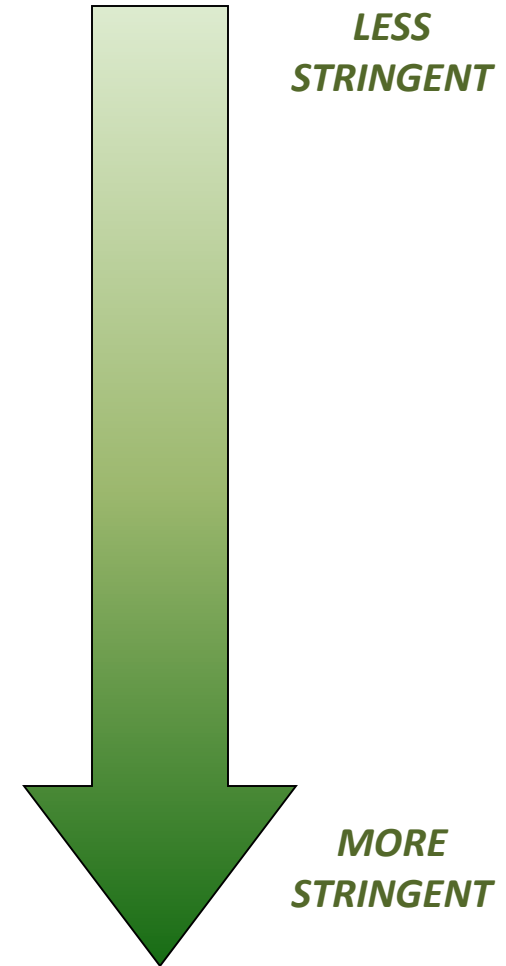
- 0.08 ppm (84 ppb)
- Averaged over eight hours

- **2008 Standard**

- 0.075 ppm (75 ppb)
- Averaged over eight hours

- **2015 Standard**

- 0.070 ppm (70 ppb)
- Averaged over eight hours



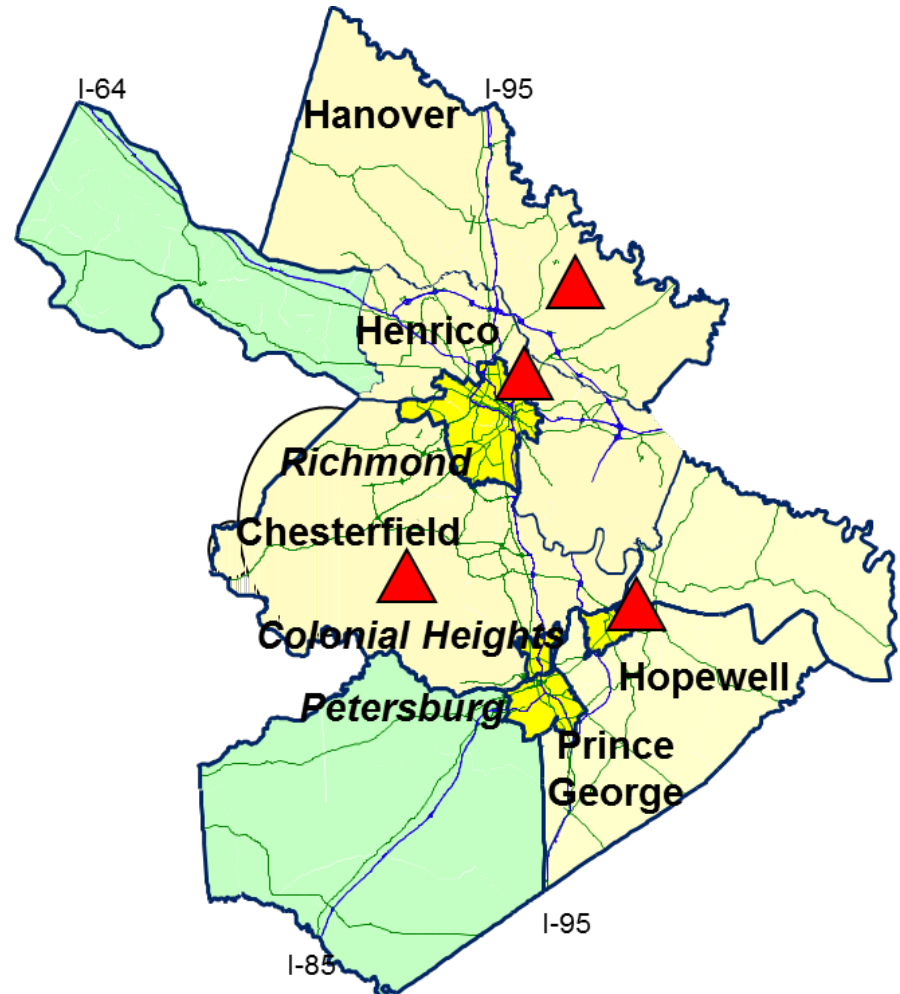
# CAA Ozone History: Richmond-Petersburg

Standard	Richmond-Petersburg's Obligations
1991 Ozone NAAQS (124 ppb)	»1991-Moderate Nonattainment Area <ul style="list-style-type: none"><li>• Transportation Conformity, Stringent New Source Permitting, RACT</li></ul> »1997-Redesignated to Attainment
1997 Ozone NAAQS (84 ppb)	»2004-Moderate Nonattainment Area <ul style="list-style-type: none"><li>• Transportation Conformity, Stringent New Source Permitting</li></ul> »2007-Redesignated to Attainment
2008 Ozone NAAQS (75 ppb)	»2012-Designated Attainment Area »2013-Ozone Advance Action Plan
2015 Ozone NAAQS (70 ppb)	»2017-Designated Attainment Area »Monitoring data is well below the standard

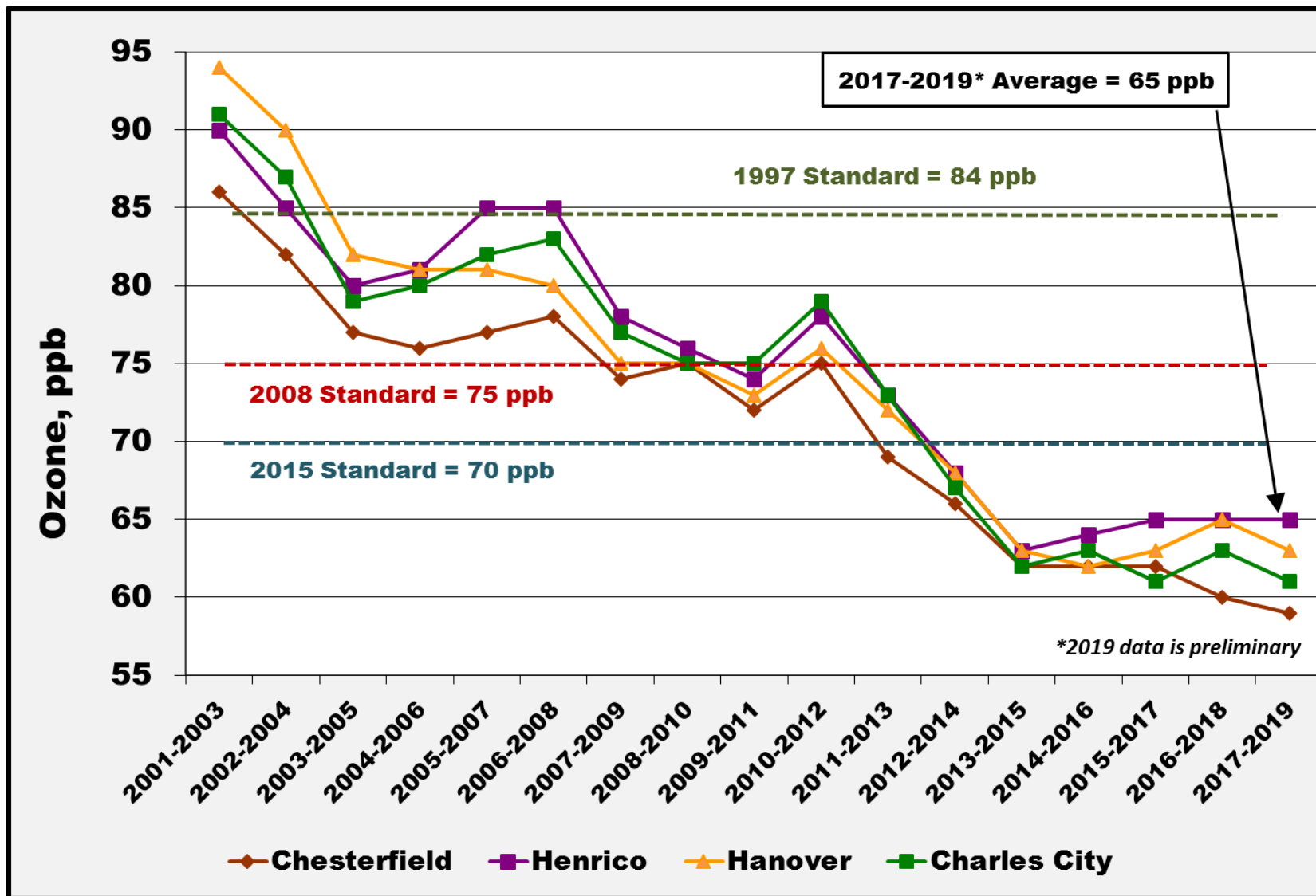
# Ozone Air Quality

- Air quality has been good/in the healthy range
- No Code Red alert days recorded this summer to date
- Control programs
  - Industry
  - Power Plants
  - On Road Engines
  - Off Road Engines
- Improvements are expected to continue

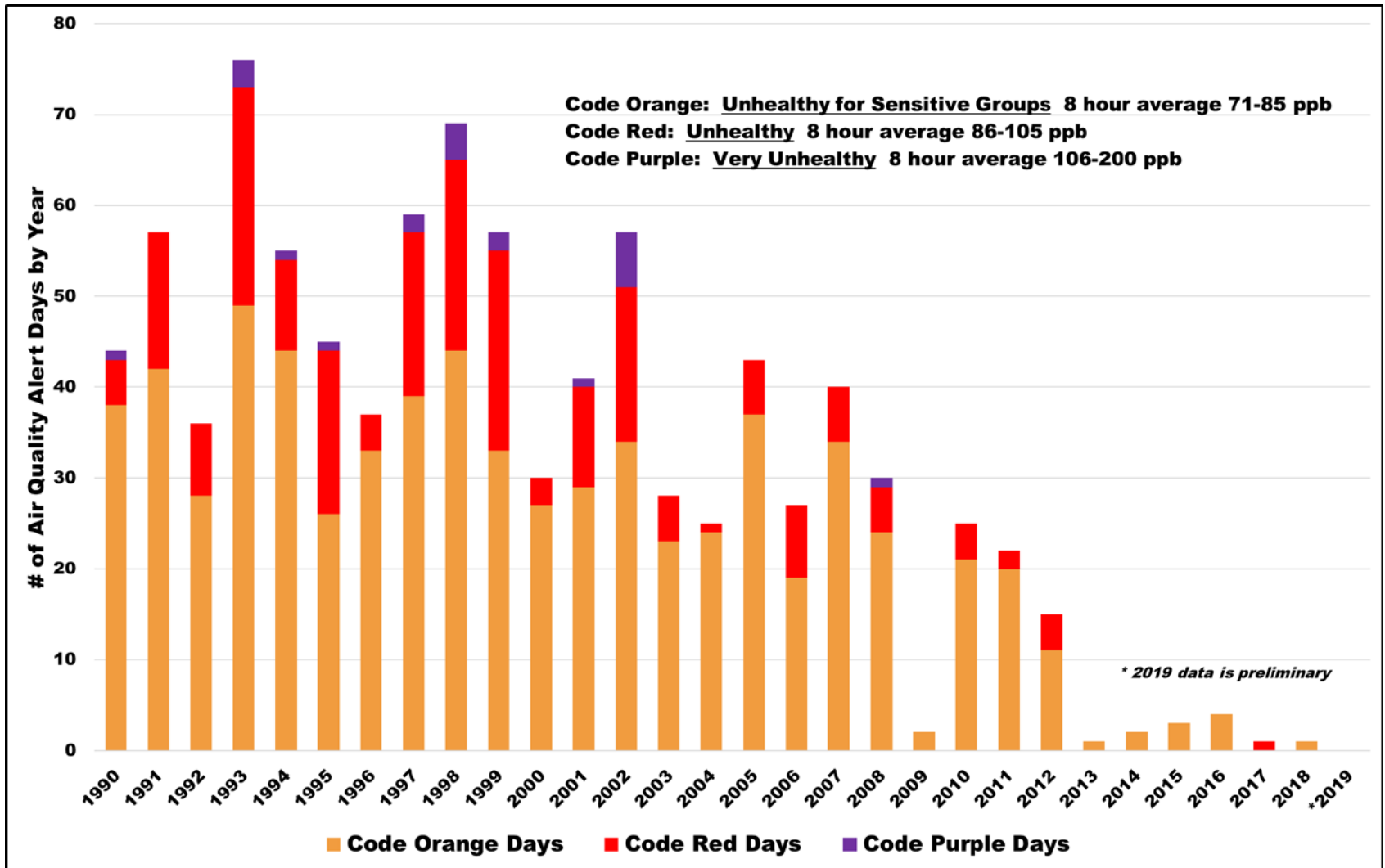
## *Ozone Monitoring Sites*



# Air Quality Data – Metro Richmond

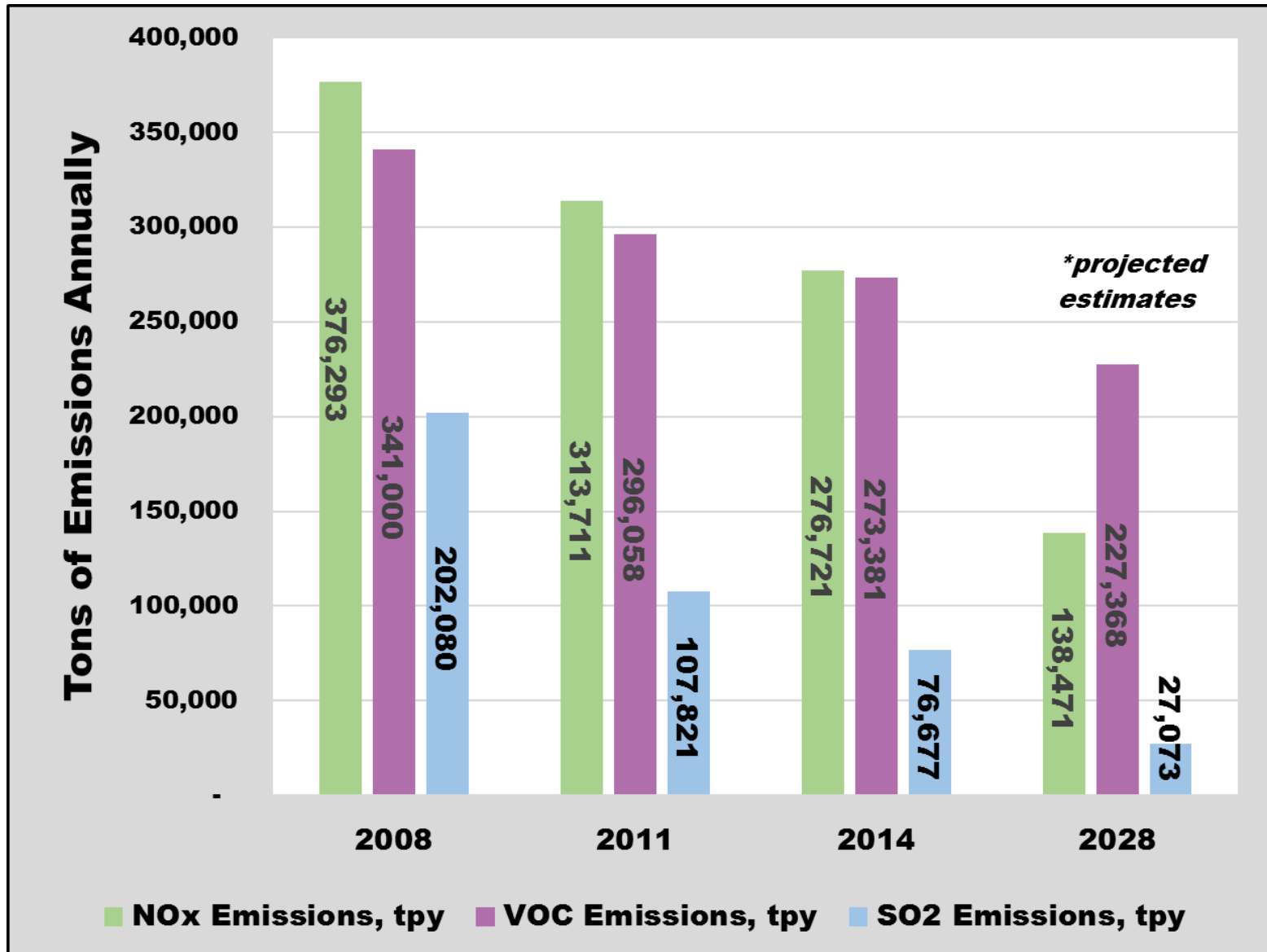


# Air Quality Alert Days, Richmond-Petersburg

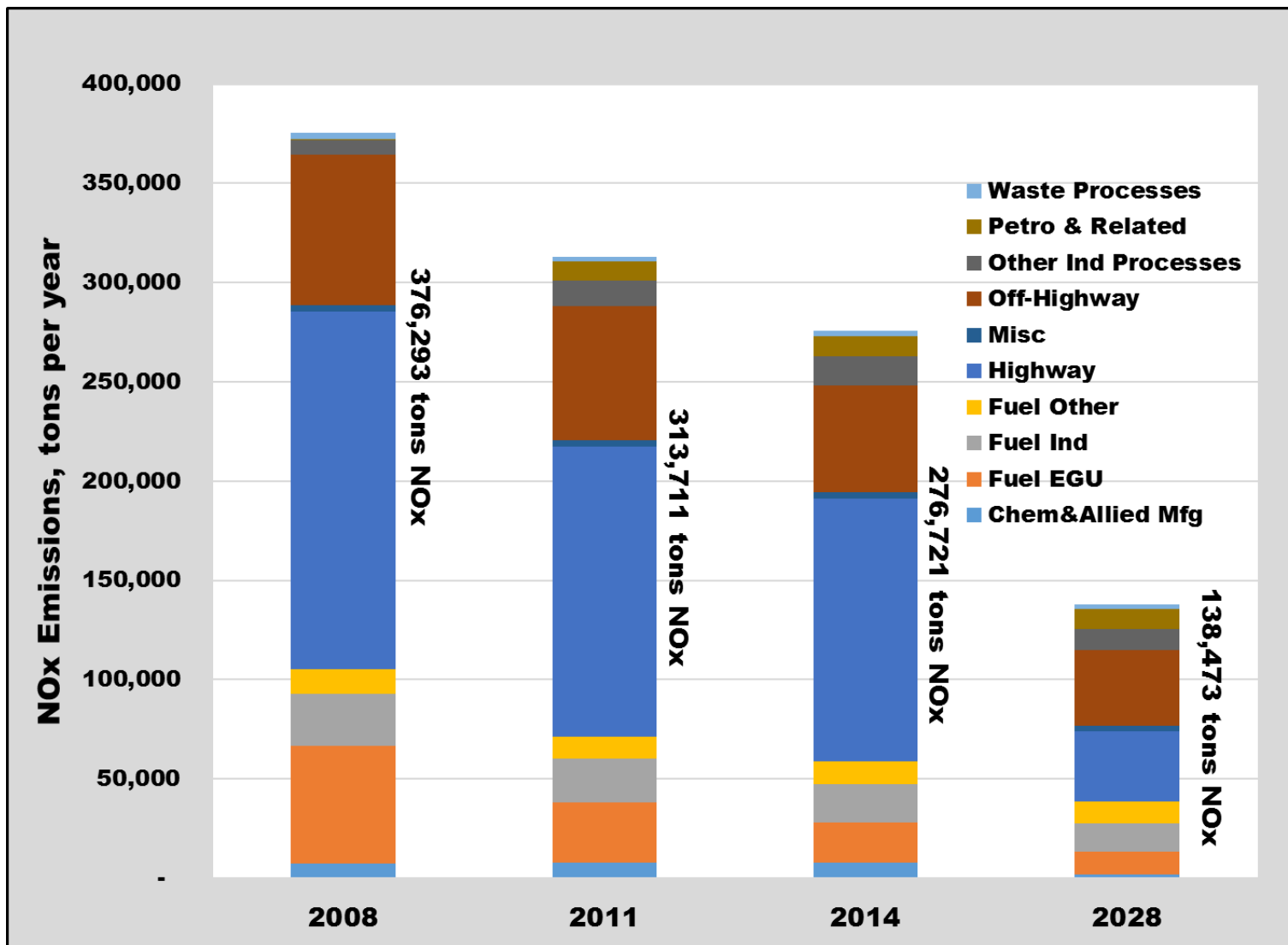




# Emission Reductions in Virginia



# Virginia NOx Reductions by Sector



# Ozone Advance Action Plan Update

- **Plan to improve air quality**
- **Developed in 2012 and early 2013**
  - Submitted to EPA in April 2013
  - 2010-2012 ozone average value was 79 ppb (standard was 75 ppb)
  - 2017-2019 ozone average value is 65 ppb (standard is 70 ppb)
- **DEQ submitted five annual updates**
  - Fifth and final update went to EPA 4/30/2018
  - Due to improvement in air quality, plan was closed out
- **Plan and updates are published on EPA's website:**  
**[www.epa.gov/advance](http://www.epa.gov/advance)**

## Transportation Conformity

- **Full Transportation Conformity Process – 1997 Ozone NAAQS**
- **Federal regs for the 2008/2015 ozone NAAQS for areas like Richmond-Petersburg (under a maintenance plan for the 1997 standard but attaining the 2008/2015 standards) did not require transportation conformity**
  - Federal lawsuit (*South Coast II* court ruling)
  - EPA reinstated these requirements nationwide
  - Latest transportation conformity determination approved 10/29/2018
- **Subsequent EPA guidance eliminated modeling/regional emissions analysis requirements**
- **Remaining conformity criteria: latest planning assumptions, fiscal constraint, and interagency consultation**

# Questions?

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## Contact Information

Stationary Source Permitting Questions	James Kyle, Air Permitting Manager <a href="mailto:James.Kyle@deq.virginia.gov">James.Kyle@deq.virginia.gov</a> 804-527-5047
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