



Ambient Air Quality Update for 2019

**Air Quality Technical Advisory Committee
December 12, 2019
Harrisburg, PA**

Tom Wolf, Governor

Patrick McDonnell, Secretary

Agenda

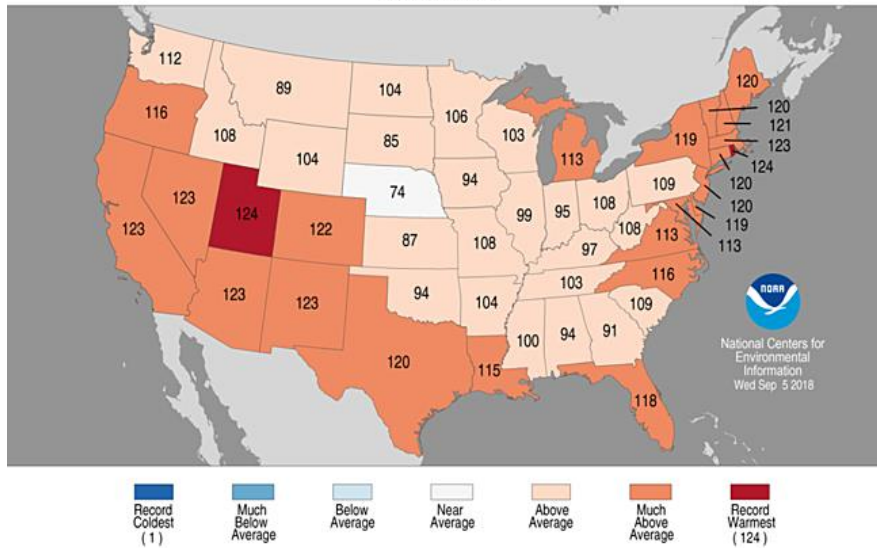
- Review of 2018-19 Weather and Air Quality
 - Ozone – 2019
 - Fine Particulate Matter (PM_{2.5}) – 2018
 - Sulfur Dioxide (SO₂) – 2018

Review of 2018-19 Weather and Air Quality

Meteorology - Summer 2018

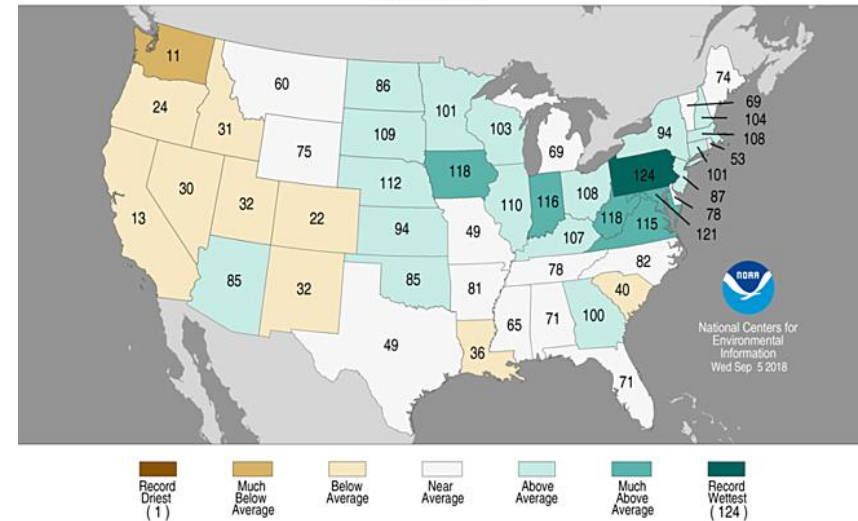
Temperature

Statewide Average Temperature Ranks
June–August 2018
Period: 1895–2018



Precipitation

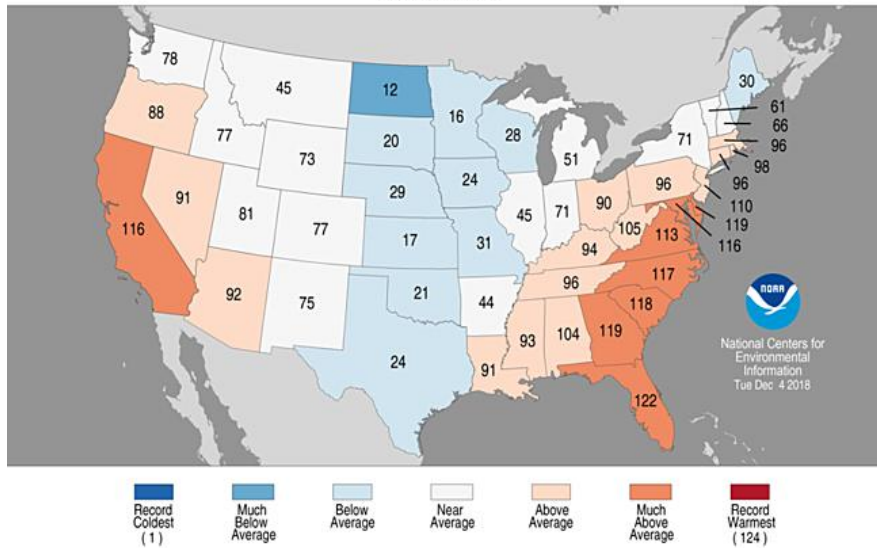
Statewide Precipitation Ranks
June–August 2018
Period: 1895–2018



Meteorology – Fall 2018

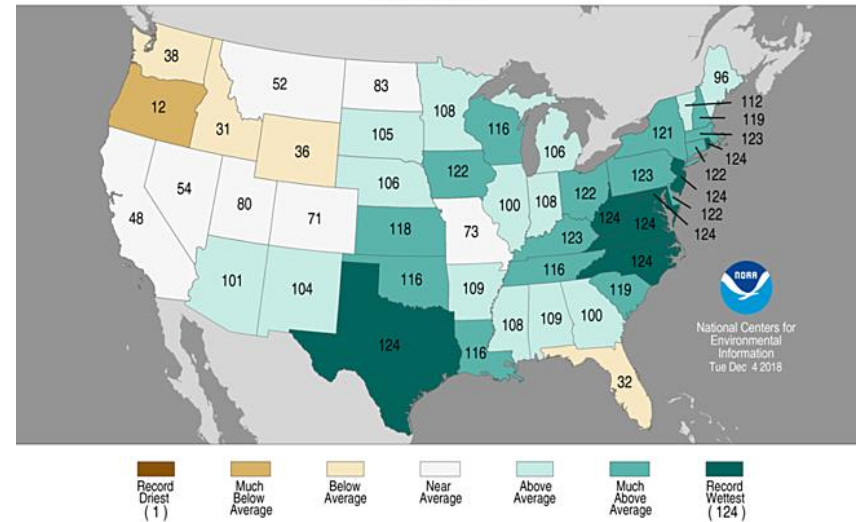
Temperature

Statewide Average Temperature Ranks
September–November 2018
Period: 1895–2018



Precipitation

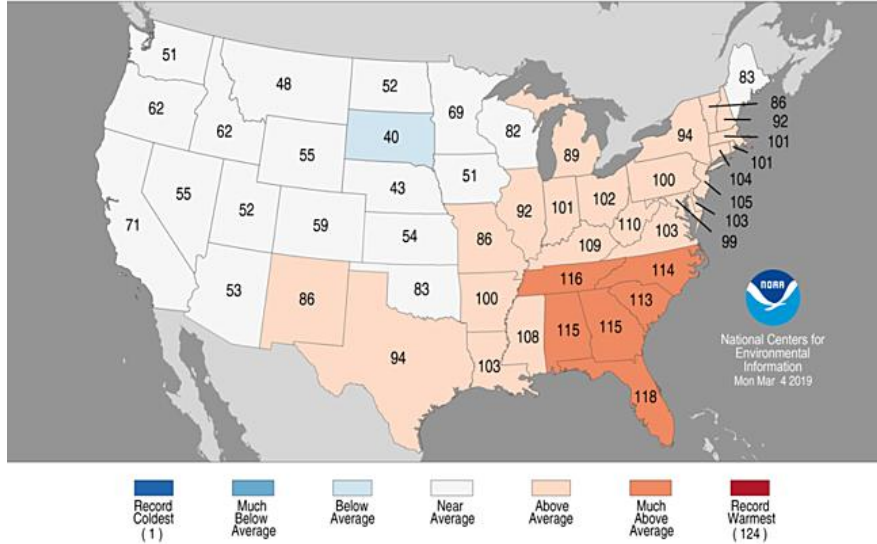
Statewide Precipitation Ranks
September–November 2018
Period: 1895–2018



Meteorology – Winter 2018/19

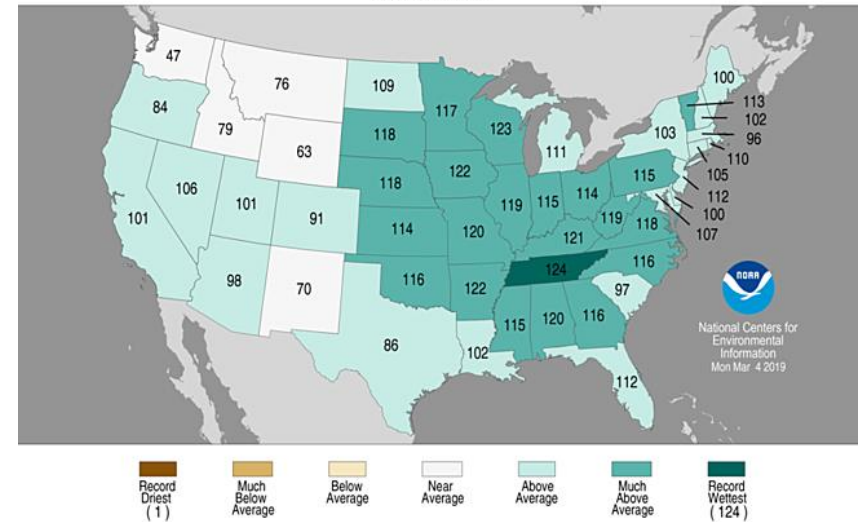
Temperature

Statewide Average Temperature Ranks
December 2018–February 2019
Period: 1895–2019



Precipitation

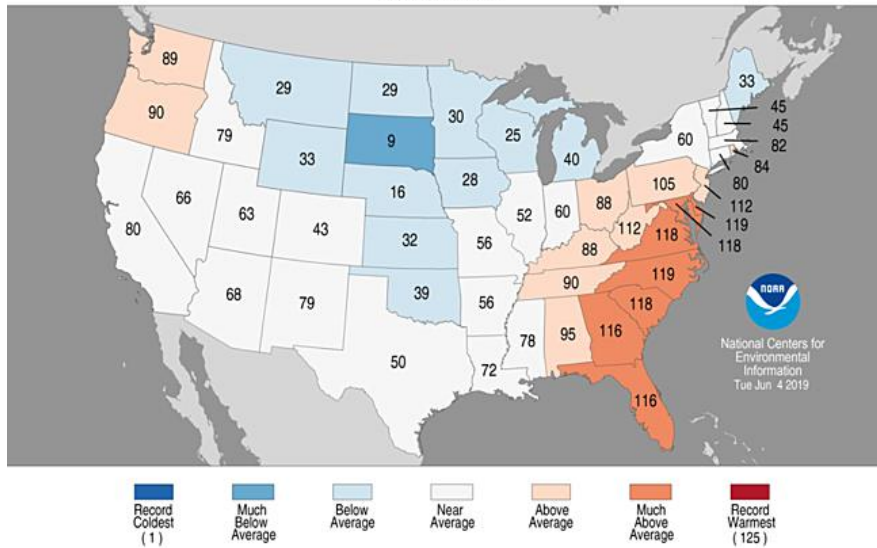
Statewide Precipitation Ranks
December 2018–February 2019
Period: 1895–2019



Meteorology - Spring 2019

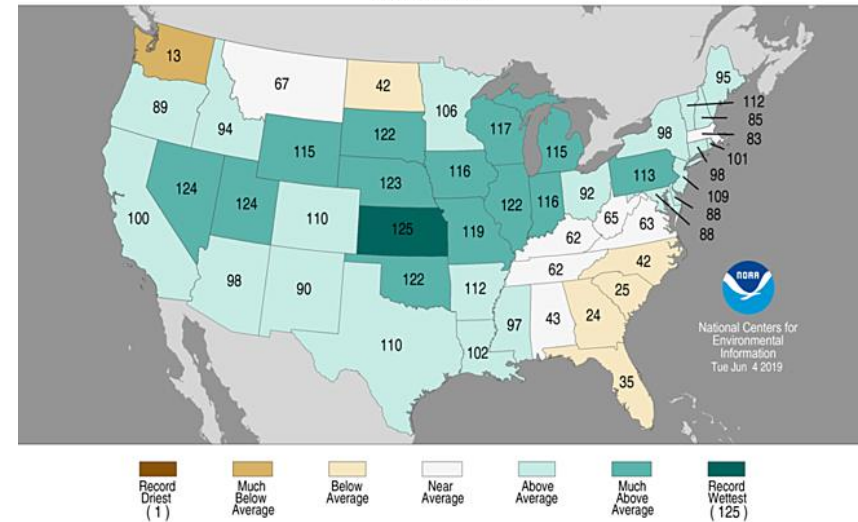
Temperature

Statewide Average Temperature Ranks
March–May 2019
Period: 1895–2019



Precipitation

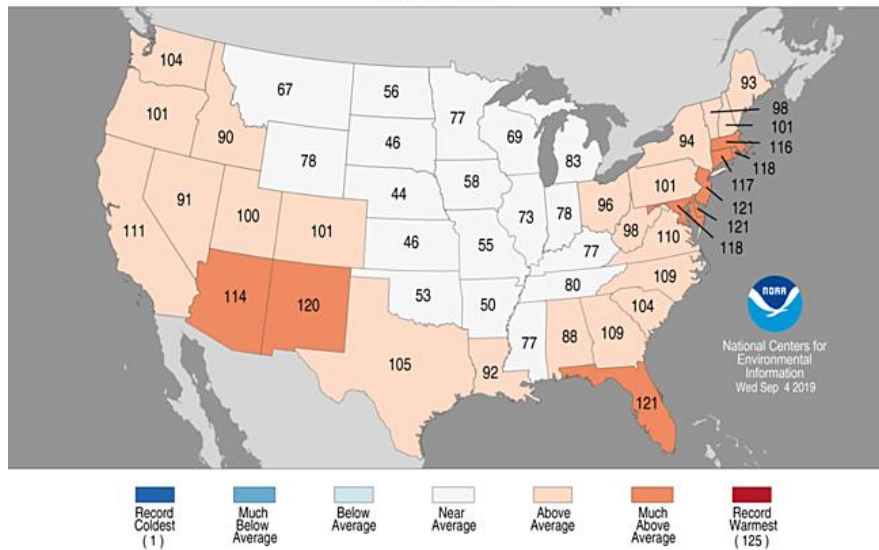
Statewide Precipitation Ranks
March–May 2019
Period: 1895–2019



Meteorology - Summer 2019

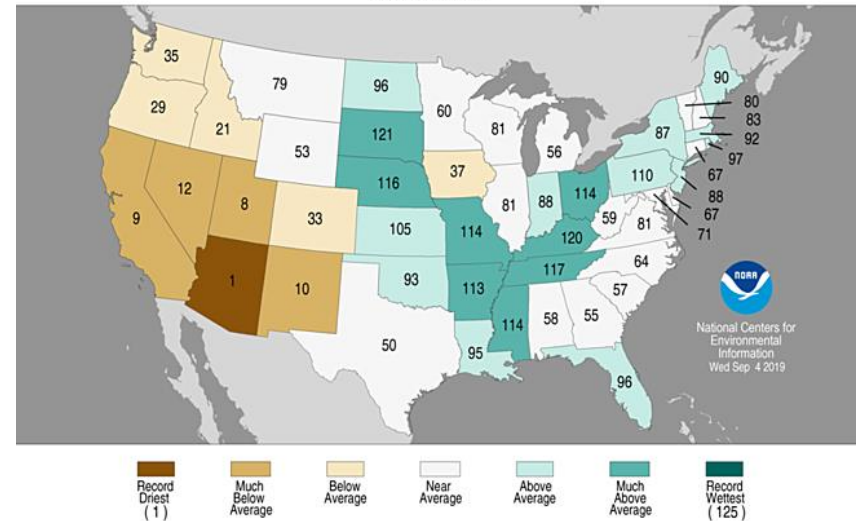
Temperature

Statewide Average Temperature Ranks
June–August 2019
Period: 1895–2019



Precipitation

Statewide Precipitation Ranks
June–August 2019
Period: 1895–2019



2018-19 Ozone Monitoring Summary

- Ozone monitoring season – March to October (PA monitors ozone year-round)
- Overview of the projected 2018-19 design values (DV) for the 8-hour ozone national ambient air quality standard (NAAQS)
- 2018 DV calculation – 4th high from 2016, 2017, and 2018 averaged over a 3-year period
- 2019 DV calculation – 4th high from 2017, 2018, and 2019 averaged over a 3-year period

Number of 8-hour Ozone Exceedances

- Number of 8-hour ozone exceedance days (of 2015 ozone NAAQS of 70 parts per billion) and total number of exceedances per year within Pennsylvania's monitoring network (51-53 ozone monitors):
 - 2017: 23 days | 70 total exceedances
 - 2018: 24 days | 104 total exceedances
 - 2019: 9 days | 24 total exceedances*

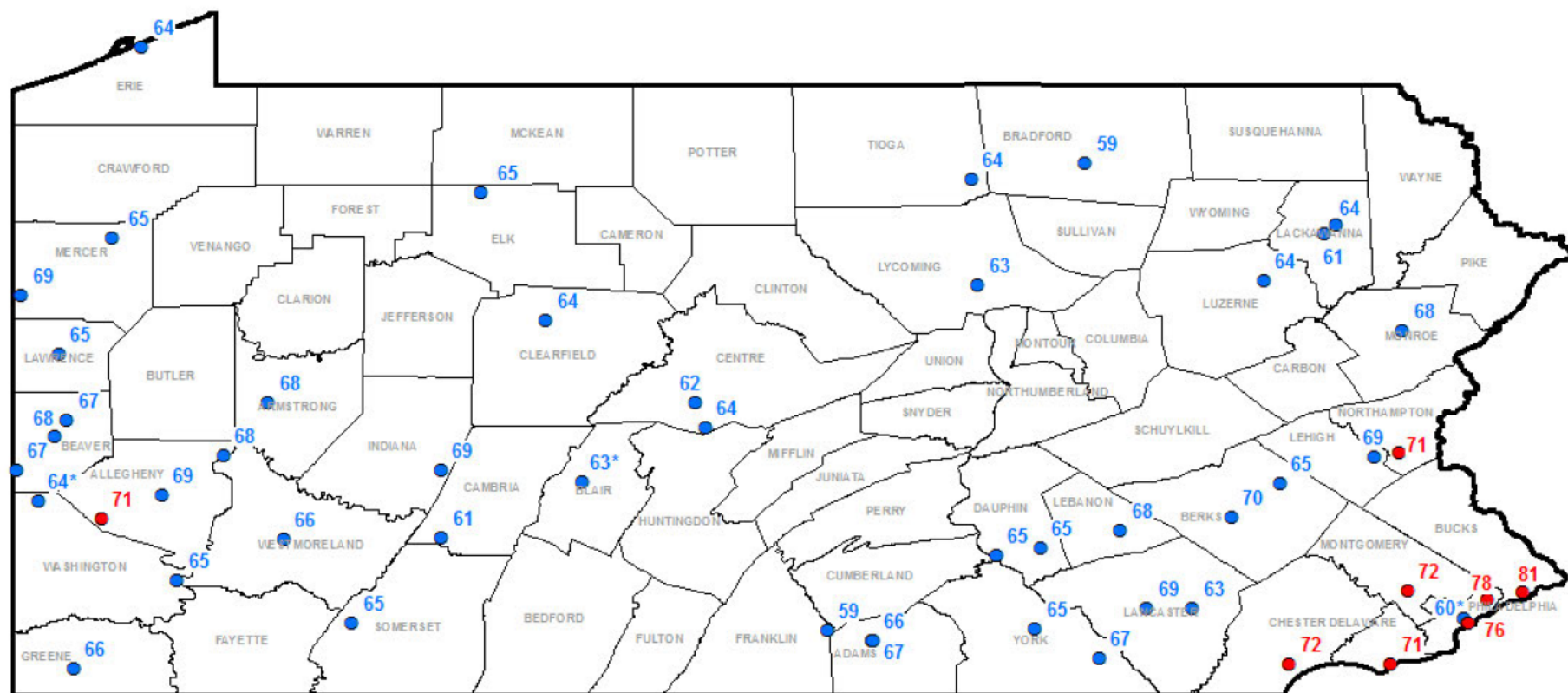
* 2019 Ozone Data has not been fully QA/QC'd

2018-19 8-Hour Ozone NAAQS Attainment Status

- In 2018, eight samplers in the Commonwealth monitored nonattainment of the 2015 8-hour ozone NAAQS (0.070 parts per million or 70 parts per billion).
- In 2019*, four samplers in the Commonwealth are monitoring nonattainment of the 2015 8-hour ozone NAAQS.

* 2019 Ozone Data has not been fully QA/QC'd

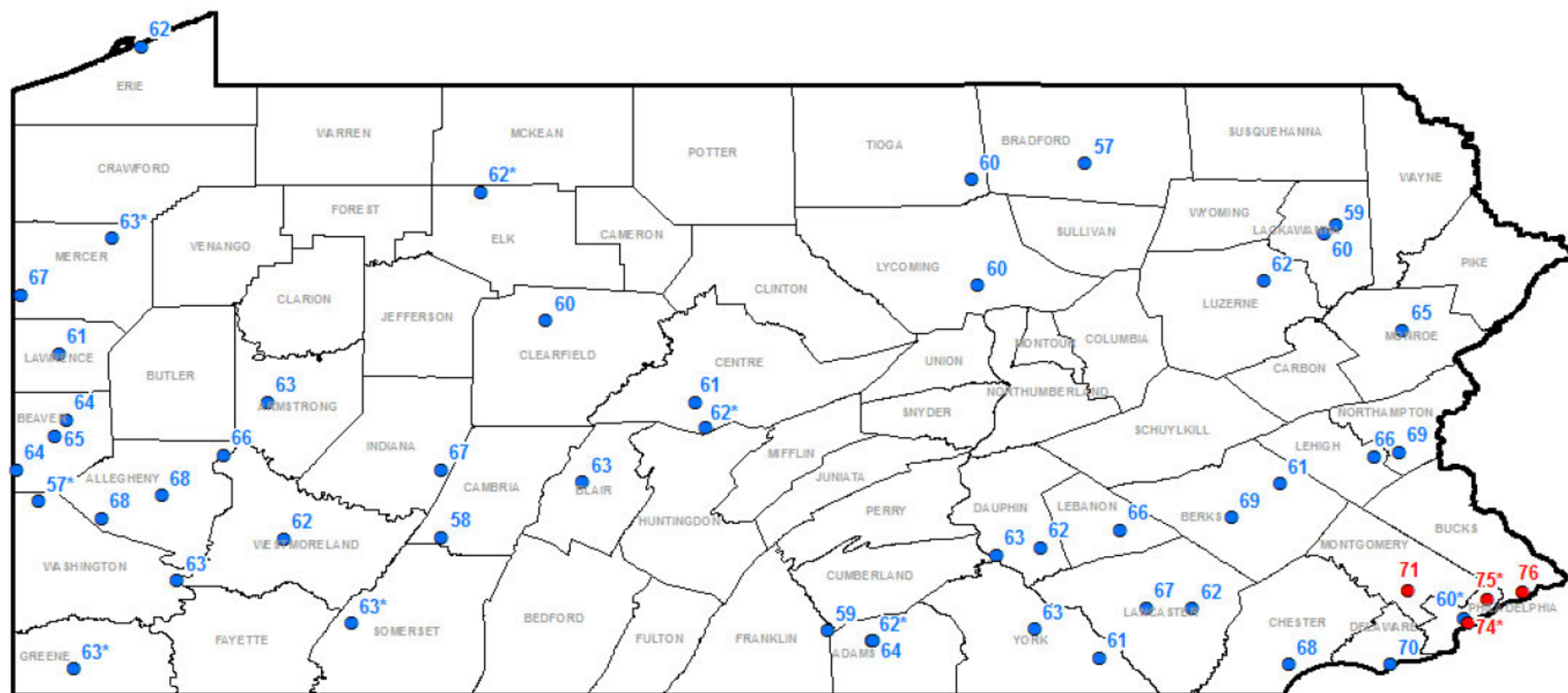
2018 8-Hour Ozone Design Values



Appearing in Red - 2018 8-Hour Ozone Design Value above 70 ppb (2015 Ozone Standard)

Appearing in Blue - 2018 8-Hour Ozone Design Value at or below 70 ppb (2015 Ozone Standard)

2019 8-Hour Ozone Design Values*



Appearing in Red - Projected 2019 8-Hour Ozone Design Value above 70 ppb (2015 Ozone Standard)

Appearing in Blue - Projected 2019 8-Hour Ozone Design Value at or below 70 ppb (2015 Ozone Standard)

* 2019 Ozone Data has not been fully QA/QC'd

2018 PM_{2.5} Monitoring Summary

- PM_{2.5} monitoring season – Year-round
- Overview of the 2018 design value (DV) for the 24-hour PM_{2.5} national ambient air quality standard (NAAQS) continuous monitors
- 2018 24-hour DV calculation – 98th percentile value from 2016, 2017, and 2018 averaged over a 3-year period

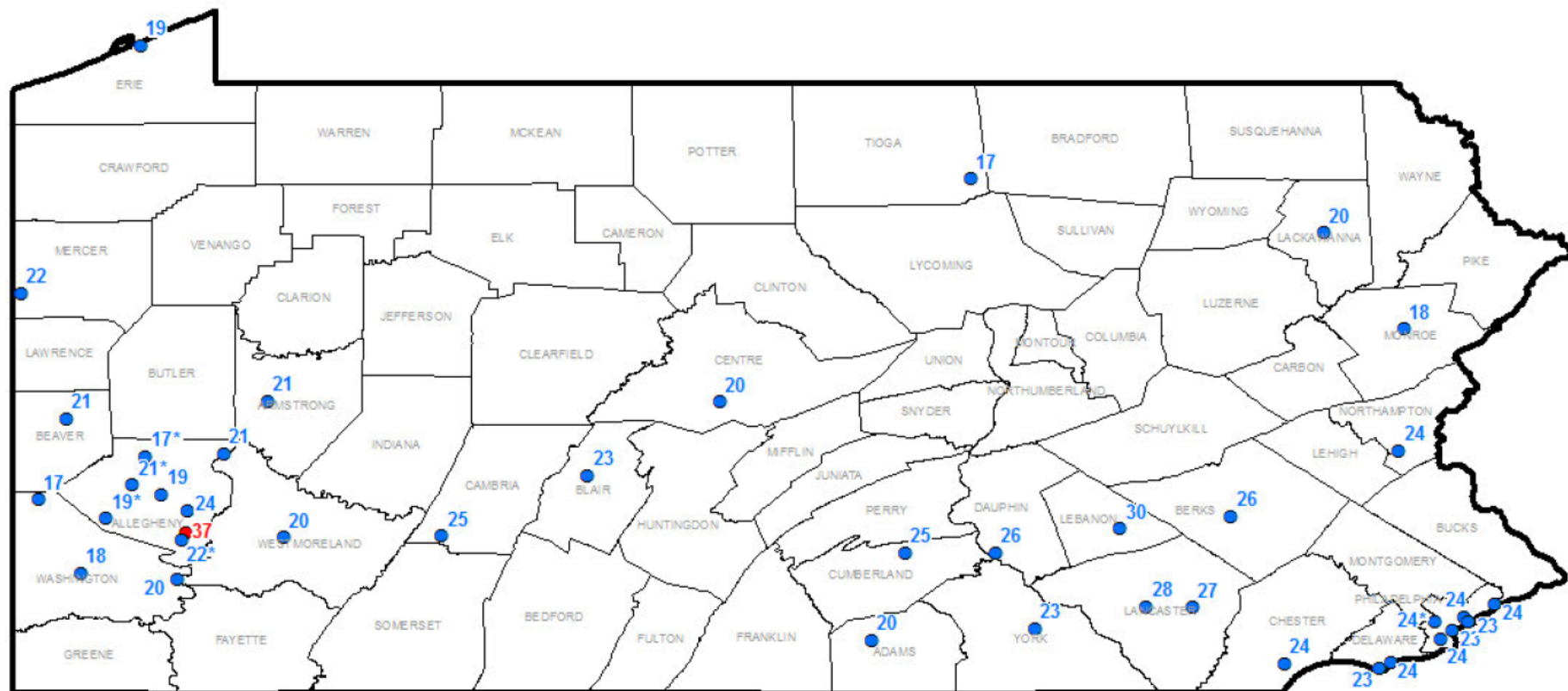
▶ Number of 24-hour PM_{2.5} Exceedances

- Number of PM_{2.5} exceedance days and total number of exceedances per year within Pennsylvania's PM_{2.5} monitoring network (40 total monitors):
 - 2016: 16 days | 24 total exceedances
 - 2017: 13 days | 20 total exceedances
 - 2018: 7 days | 7 total exceedances

➤ 2006 24-hour PM_{2.5} NAAQS Attainment Status

- In 2017, one PM_{2.5} sampler (Liberty) in Allegheny County was monitoring nonattainment of the 2006 24-hour PM_{2.5} standard (35 µg/m³).
- In 2018, no PM_{2.5} sampler was monitoring nonattainment of the 2006 24-hour PM_{2.5} standard (35 µg/m³) in Pennsylvania.

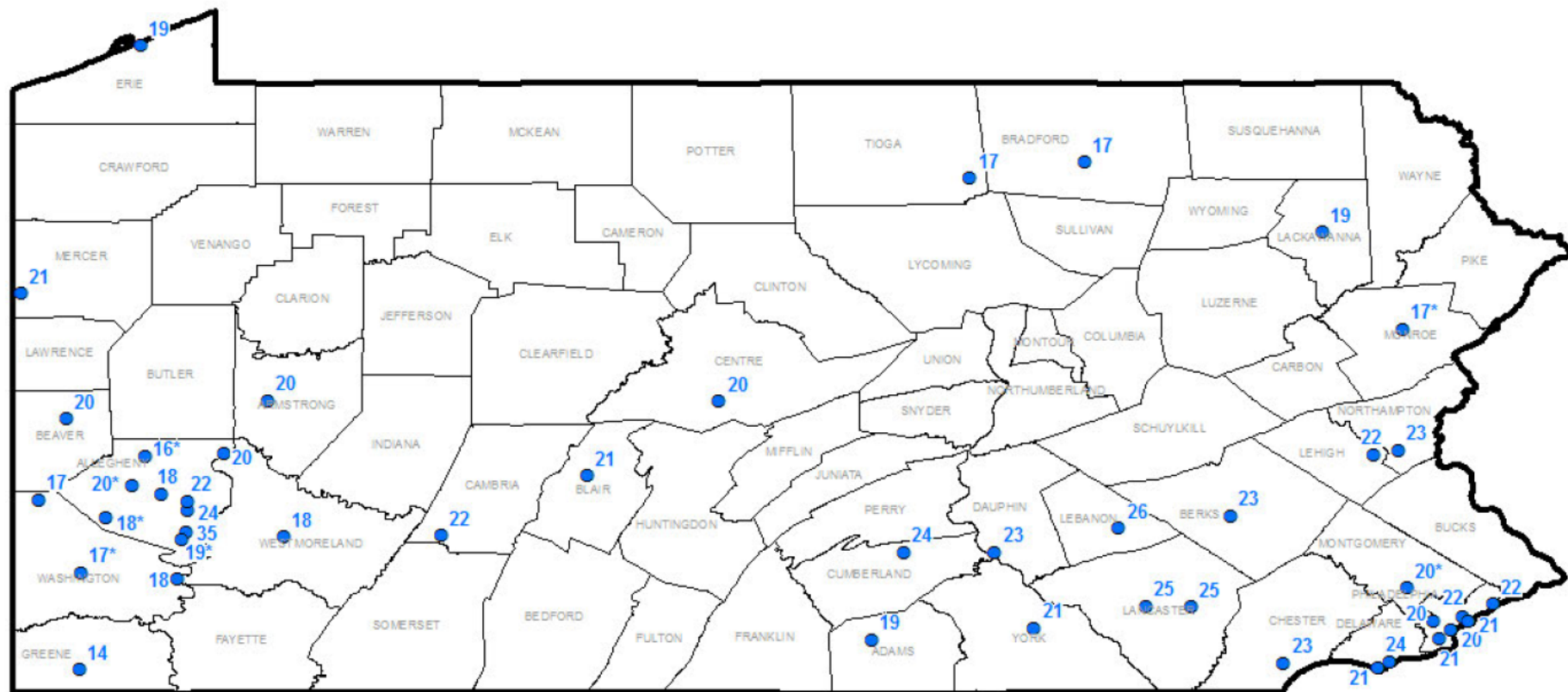
2017 24-hour PM_{2.5} Design Values



Appearing in Red - 2017 24-hour PM_{2.5} Design Values Above the Standard of 35 ug/m³

Appearing in Blue - 2017 24-hour PM_{2.5} Design Values Below the Standard of 35 ug/m³

2018 24-hour PM_{2.5} Design Values



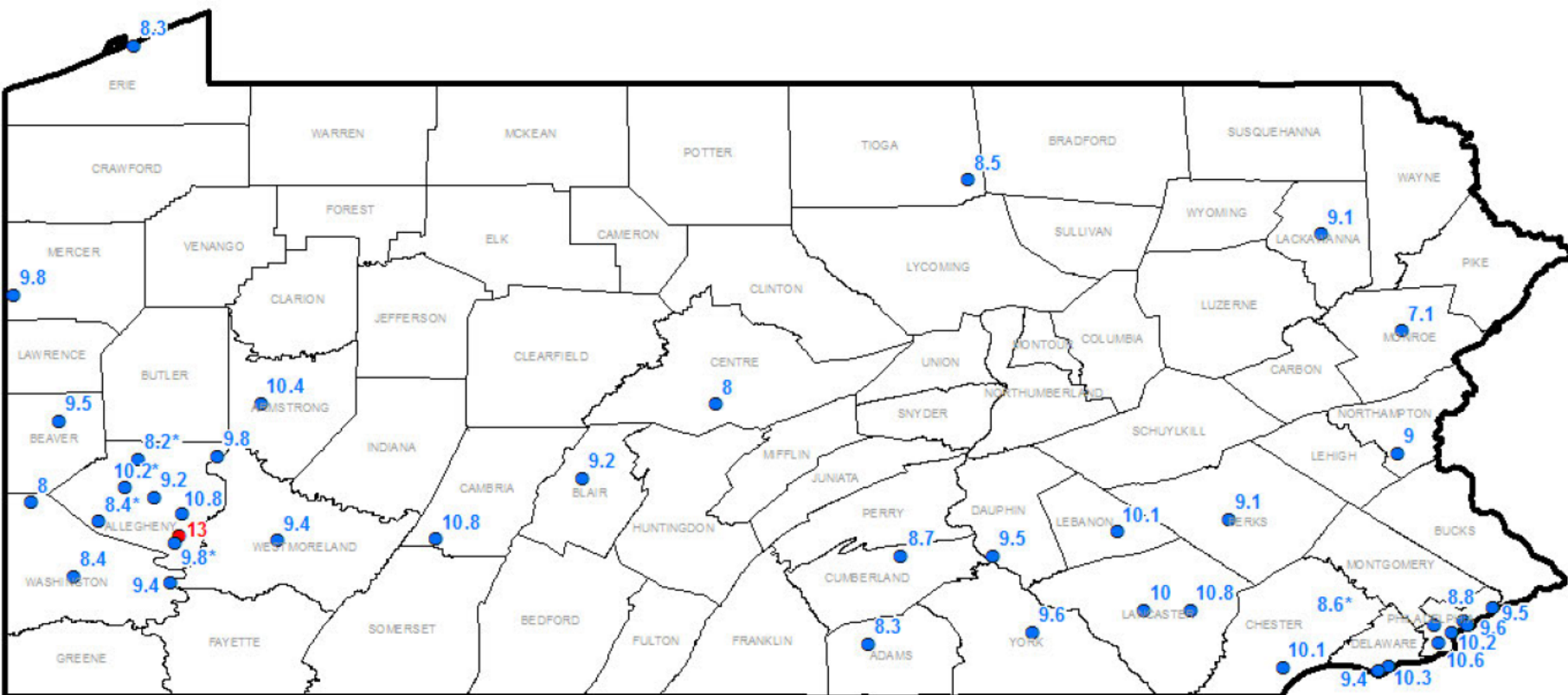
Appearing in Red - 2018 24-hour PM_{2.5} Design Values Above the Standard of 35 ug/m³

Appearing in Blue - 2018 24-hour PM_{2.5} Design Values Below the Standard of 35 ug/m³

➤ 2012 Annual PM_{2.5} NAAQS Attainment Status

- In 2017, one PM_{2.5} samplers (Liberty) in the Commonwealth was monitoring nonattainment of the 2012 annual PM_{2.5} standard (12.0 µg/m³).
- In 2018, one PM_{2.5} sampler (Liberty) was monitoring nonattainment of the 2012 annual PM_{2.5} standard (12.0 µg/m³) in Pennsylvania.

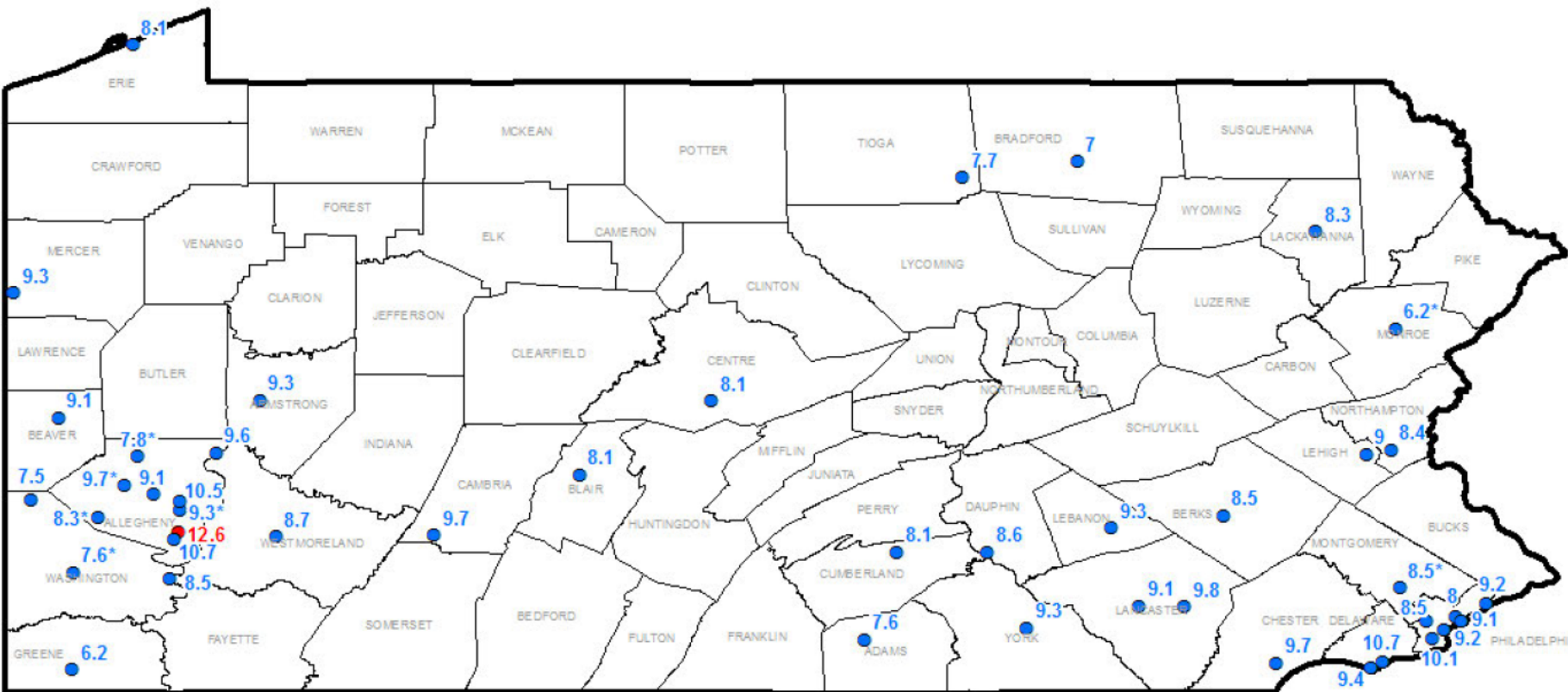
2017 Annual PM_{2.5} Design Values



Appearing in Red - 2017 Annual PM_{2.5} Design Values Above the Standard of 12.0 ug/m³

Appearing in Blue - 2017 Annual PM_{2.5} Design Values Below the Standard of 12.0 ug/m³

2018 Annual PM_{2.5} Design Values



Appearing in Red - 2018 Annual PM_{2.5} Design Values Above the Standard of 12.0 ug/m³

Appearing in Blue - 2018 Annual PM_{2.5} Design Values Below the Standard of 12.0 ug/m³

2018 SO₂ Monitoring Summary

- SO₂ monitoring season – Year-round
- Overview of the 2018 design values (DV) for the 1-hour SO₂ NAAQS of 75 parts per billion.
- 2018 DV calculation – 99th percentile from 2016, 2017, and 2018 averaged over a 3-year period

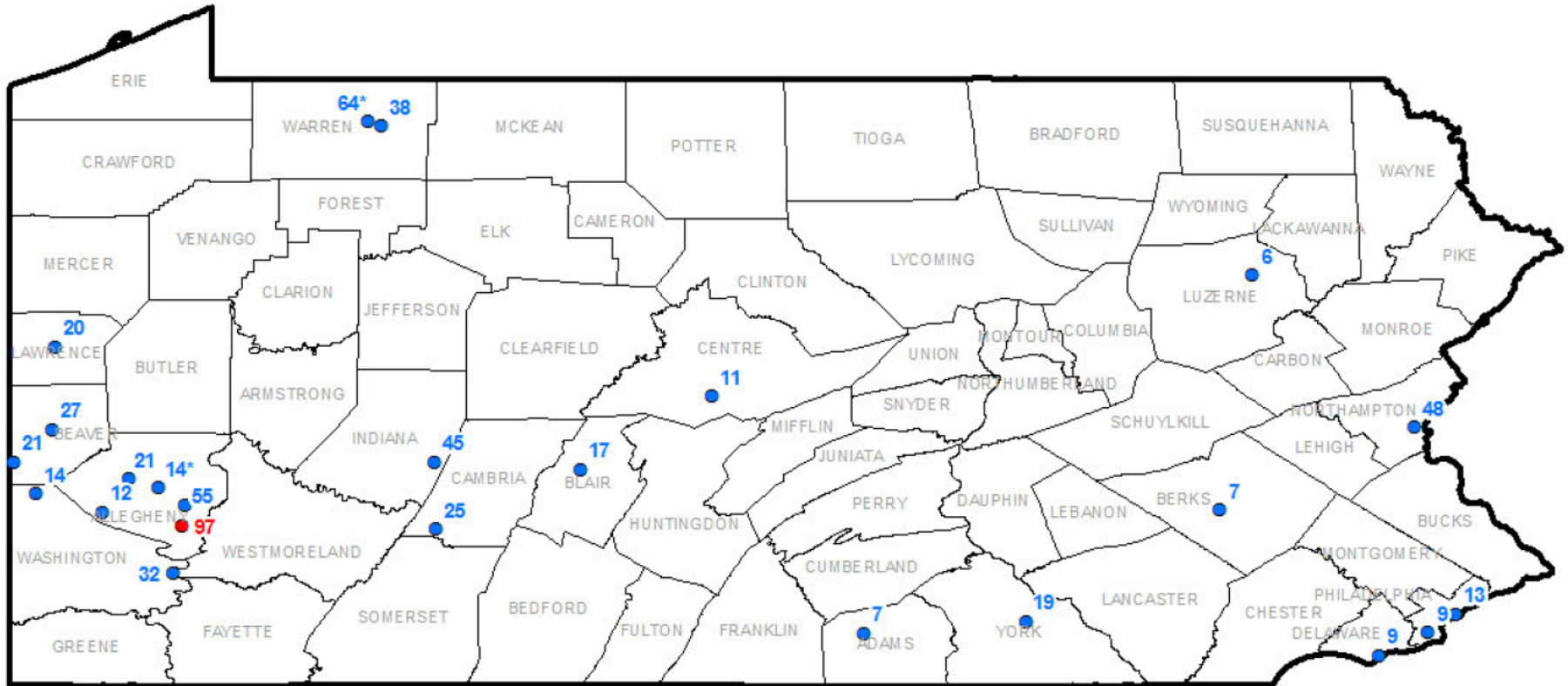
Number of 1-hour SO₂ Exceedances

- Number of SO₂ exceedance days and total number of exceedances per year within Pennsylvania's SO₂ monitoring network (24 total monitors):
 - 2016: 3 days | 3 total exceedances
 - 2017: 21 days | 21 total exceedances
 - 2018: 3 days | 12 total exceedances

▶ 2010 1-hour SO₂ NAAQS Attainment Status

- In 2017, one SO₂ sampler in the Commonwealth (Liberty) was monitoring nonattainment of the 2010 1-hour SO₂ standard (75 parts per billion).
- In 2018, one SO₂ sampler in Pennsylvania (Liberty) was monitoring nonattainment of the 2010 1-hour SO₂ NAAQS.

2017 1-hour SO₂ Design Values

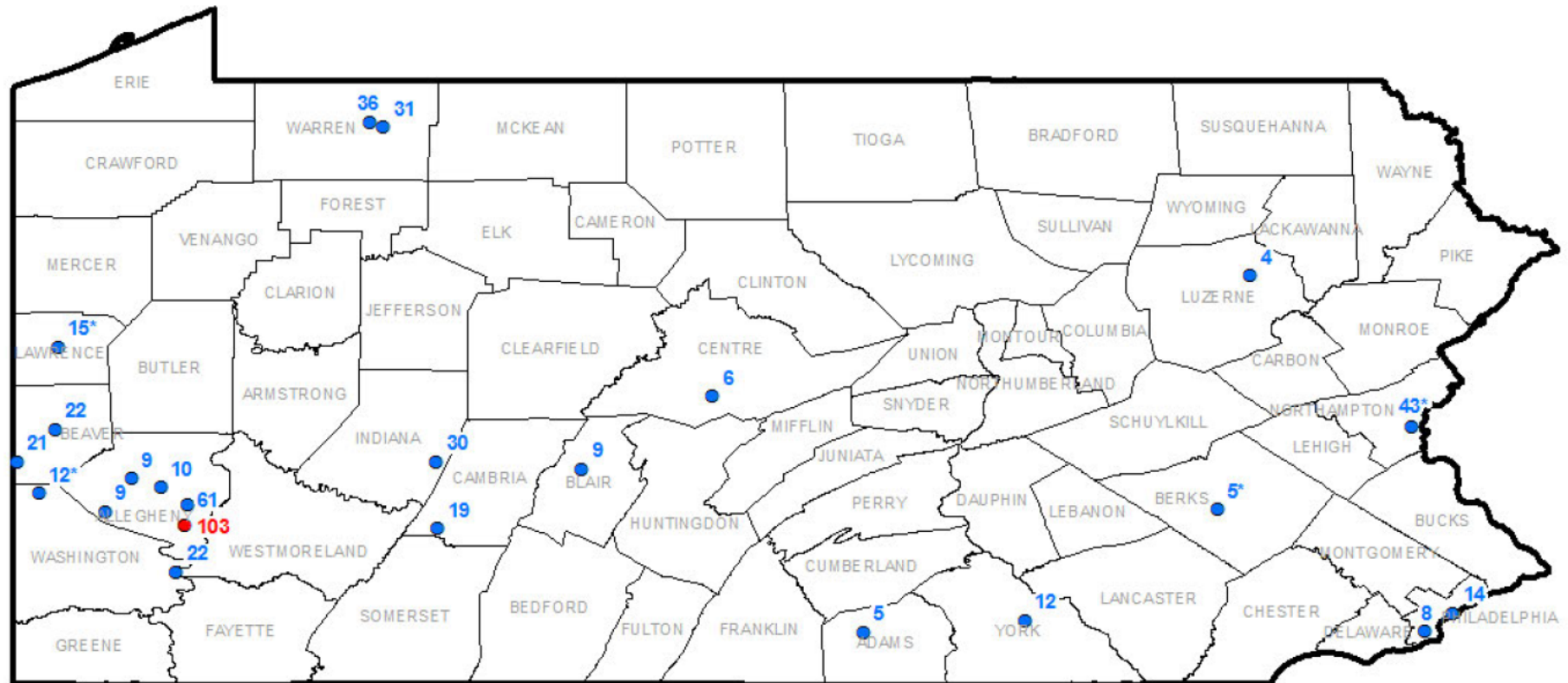


Appearing in Red - 2017 1-Hour SO₂ Design Value above 75 ppb (2010 SO₂ Standard)

Appearing in Blue - 2017 1-Hour SO₂ Design Value at or below 75 ppb (2010 SO₂ Standard)

Asterick (*) Appearing Behind the 2017 1-Hour SO₂ Design Value Means the Data is Incomplete During 3-Year Period

2018 1-hour SO₂ Design Values



Appearing in Red - 2018 1-Hour SO₂ Design Value above 75 ppb (2010 SO₂ Standard)

Appearing in Blue - 2018 1-Hour SO₂ Design Value at or below 75 ppb (2010 SO₂ Standard)

Asterisk (*) Appearing Behind the 2018 1-Hour SO₂ Design Value Means the Data is Incomplete During 3-Year Period



Bureau of Air Quality

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