



pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Air Quality



Overview of EPA's Final 2015 Ozone National Ambient Air Quality Standards

Citizens Advisory Committee Meeting

November 17, 2015

Harrisburg, PA

Agenda

- EPA's 2008 8-hour Ozone National Ambient Air Quality Standard (NAAQS)
- EPA's October 2015 Ozone NAAQS
- Conclusions

➤ Ozone National Ambient Air Quality Standards

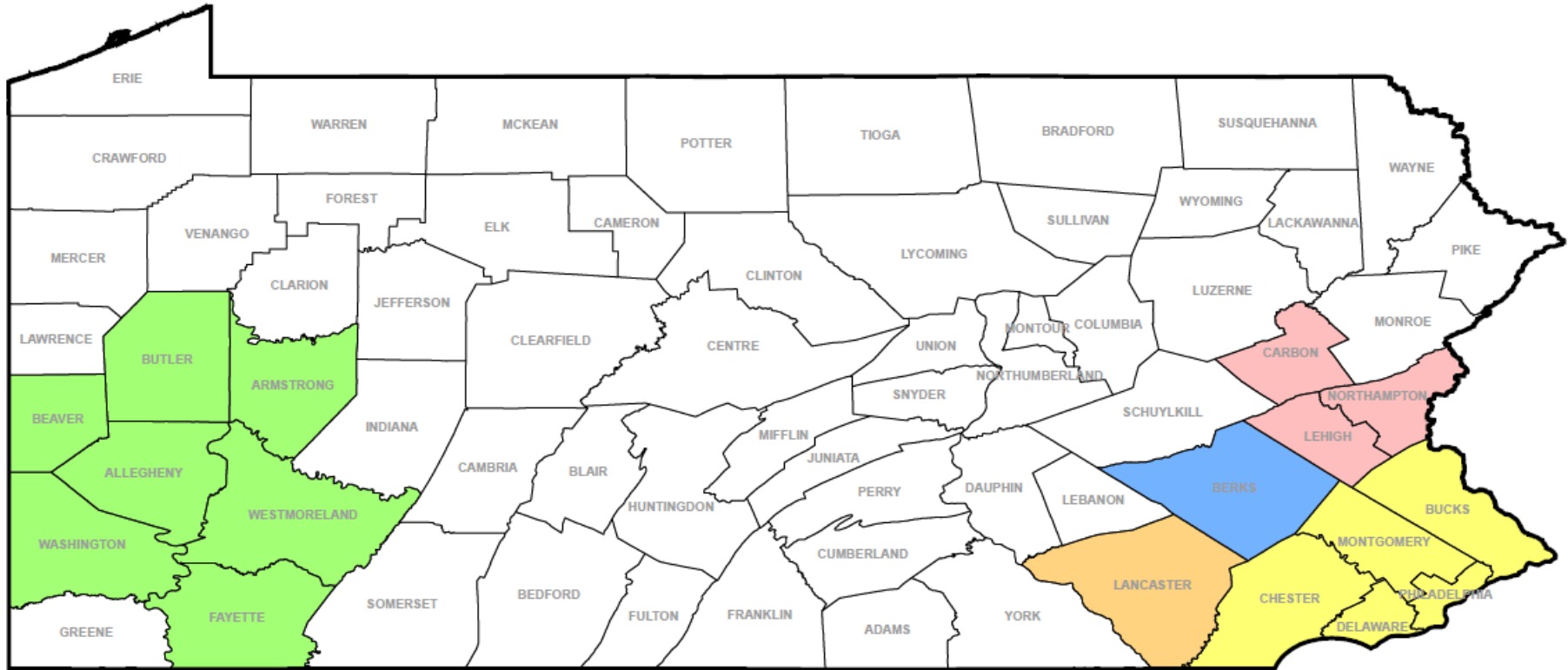
- The Federal Clean Air Act (CAA) mandates that the Administrator of the U.S. Environmental Protection Agency (EPA) review the National Ambient Air Quality Standards (NAAQS) for each of the six criteria pollutants (carbon monoxide, lead, nitrogen oxide, ozone, particulate matter, and sulfur dioxide) every five years.
- In March 2008, EPA lowered the 1997 8-hour ozone standard from 0.08 parts per million (ppm) to 0.075 ppm.
- In April 2012, EPA issued final designations for the 2008 ozone NAAQS based 2009-2011 air quality data.

Ozone National Ambient Air Quality Standards







- EPA designated 17 counties in five areas of Pennsylvania as “nonattainment” for the 2008 8-hour ozone National Ambient Air Quality Standard.
 - Allentown-Bethlehem-Easton, PA: (Carbon, Lehigh and Northampton Counties)
 - Lancaster, PA: (Lancaster County)
 - Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE: (Bucks, Chester, Delaware, Montgomery and Philadelphia Counties)
 - Pittsburgh-Beaver Valley Area, PA: (Allegheny, Armstrong, Beaver, Butler, Fayette, Washington and Westmoreland Counties)
 - Reading, PA: (Berks County)
- EPA granted a one-year extension of the July 20, 2015 attainment date for the Philadelphia and Pittsburgh-Beaver Valley Areas. Based on preliminary 2015 ambient ozone data, all monitored areas of the Commonwealth have attained the 2008 ozone standard.

Pennsylvania 8-Hour Ozone Nonattainment Areas

Areas are Shaded Based on EPA's April 30, 2012 Designations

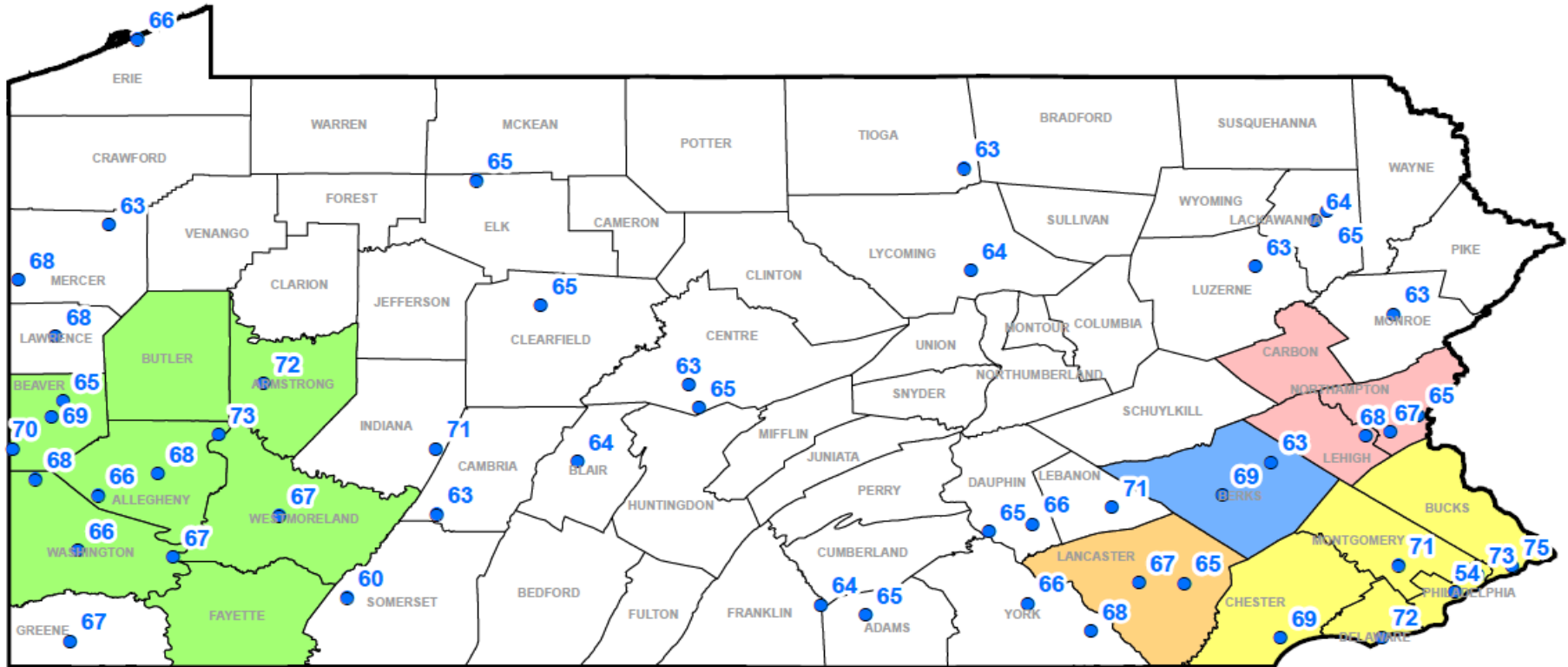


8-Hour Ozone Nonattainment Areas (Based on 2008 Ozone Standard)

- | | |
|--|--|
|  Allentown-Bethlehem-Easton, PA |  Pittsburgh-Beaver Valley, PA |
|  Lancaster, PA |  Reading, PA |
|  Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ |  Attainment Counties |

Projected 2015 Pennsylvania 8-Hour Ozone Design Values

Data Available Through October 31, 2015 (Not Completely QA/QC'd)
 Areas are Shaded Based on EPA's April 30, 2012 Designations



8-Hour Ozone Nonattainment Areas (Based on 2008 Ozone Standard)

- Allentown-Bethlehem-Easton, PA
- Pittsburgh-Beaver Valley, PA
- Lancaster, PA
- Reading, PA
- Philadelphia-Wilmington-Atlantic City, PA-DE-MD-NJ
- Attainment Counties

Appearing in Red - Projected 2015 8-Hour Ozone Design Value is Exceeding 2008 Ozone Standard
 Appearing in Blue - Projected 2015 8-Hour Ozone Design Value in Attainment of 2008 Ozone Standard

Summary of 2015 Ozone Standards

Changes to the level of the ozone standard

- On October 1, 2015, EPA lowered the 8-hour ozone primary (health-based) standard from 0.075 ppm to 0.070 ppm (80 FR 65292, October 26, 2015).
- The primary standard was lowered because, based on science, the EPA Administrator determined that the 2008 standard was no longer adequate to protect public health.
- In addition, the 8-hour ozone secondary (welfare-based) standard was also strengthened to 0.070 ppm
- The secondary standard was also lowered because of scientific evidence to the impact of ozone on growth processes of plants and trees.

Summary of 2015 Ozone Standards

Changes to the Air Quality Index (AQI) scale

- The AQI is EPA's color-coded tool that is used to inform the general public about air pollution.
- The index AQI converts ozone concentrations to a number on a scale from 0 to 500.
- EPA has updated the "breakpoints" for each AQI category for the 2015 ozone standard.

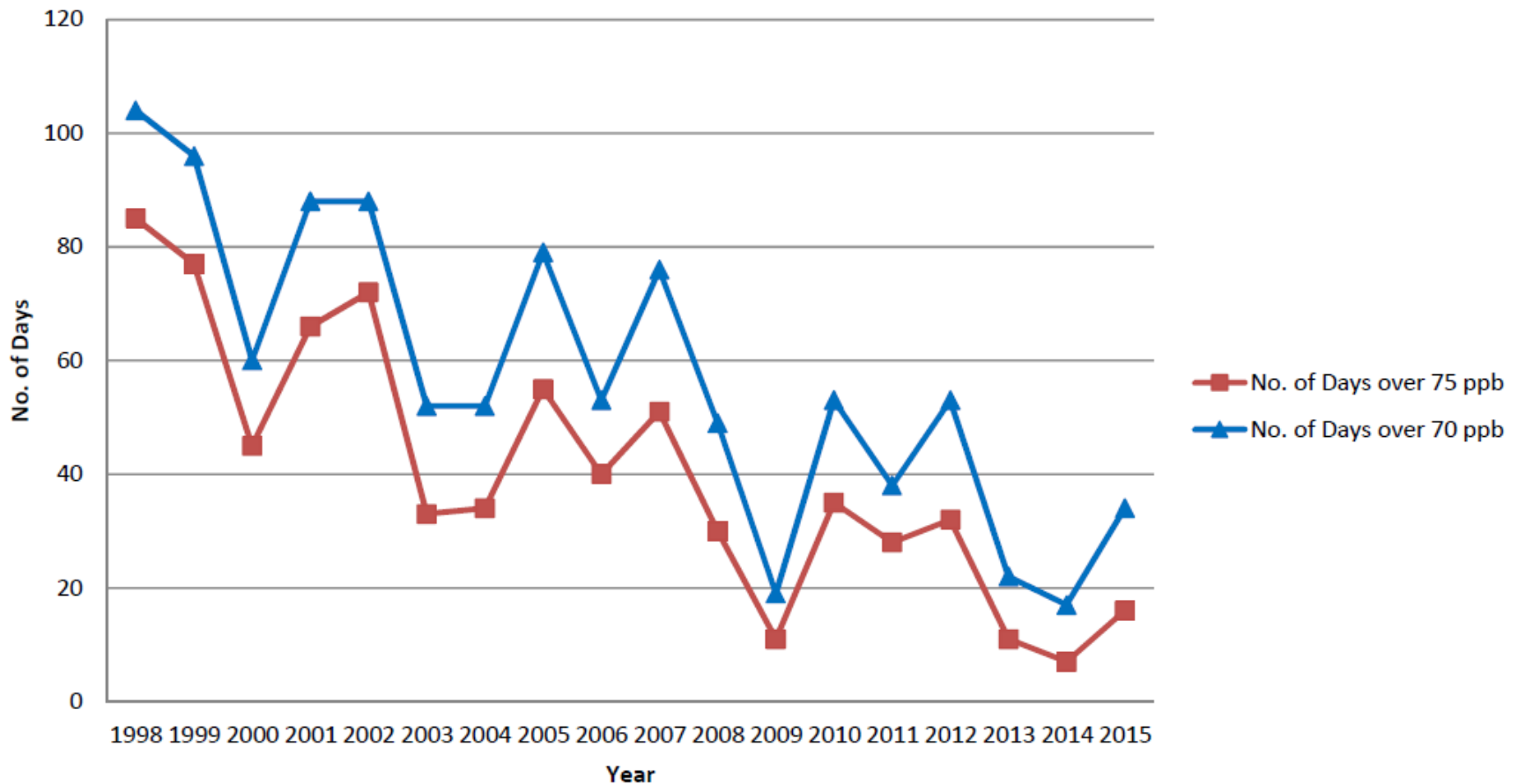
Summary of 2015 Ozone Standard

AQI Category	Index Values	2008 Breakpoints (ppb, 8-hour average)	2015 Breakpoints (ppb, 8-hour average)
Good	0 - 50	0 - 59	0 - 54
Moderate	51 - 100	60 - 75	55 - 70
Unhealthy for Sensitive Groups	101 - 150	76 - 95	71 - 85
Unhealthy	151 - 200	96 - 115	86 - 105
Very Unhealthy	201 - 300	116 - 374	106 - 200
Hazardous	301 - 500	375 - Significant Harm Level*	201 - Significant Harm Level*

* The Significant Harm Level for ozone is 600 ppb (based on a 2-hour average).

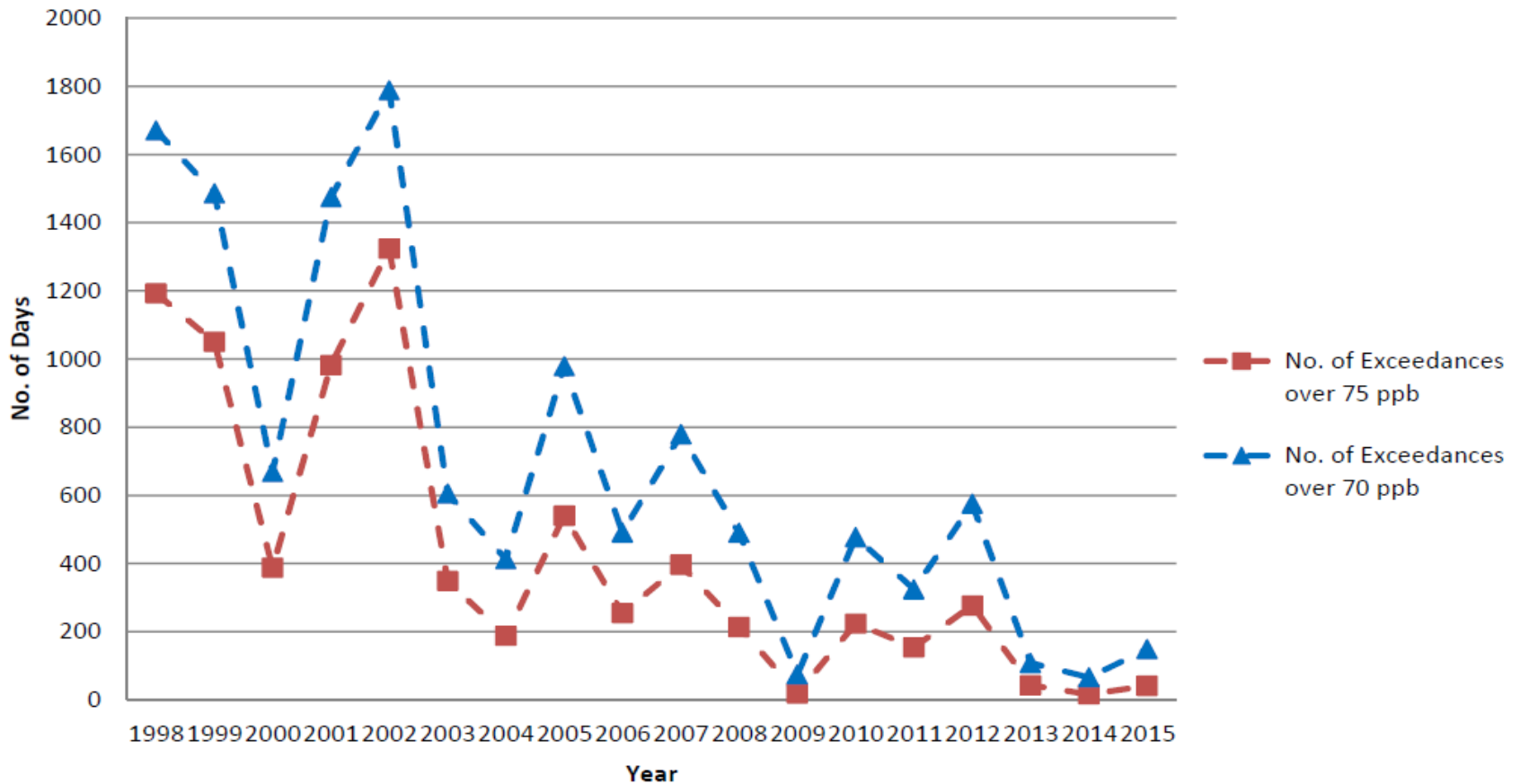
Summary of PA's 2015 Ozone Standard Data

No. of Days above 70 and 75 ppb, by Year



Summary of PA's 2015 Ozone Standard Data

No. of Exceedances above 70 and 75 ppb, by Year



Updates for the 2015 Ozone Standards

Changes to the Monitoring Network

- Updates to the Photochemical Assessment Monitoring Stations (PAMS)
 - Extension of the ozone monitoring season for 32 states
 - Approved additional Federal Reference Method monitor
 - New data handling procedure for determining compliance with revised standards
- Updates to the PAMS network include additional PAMS (which measure ozone, nitrogen oxides and volatile organic compounds) at the following:
 - NCore sites (currently in major metro areas, including Philadelphia and Pittsburgh)
 - Areas where nonattainment area is classified as moderate or higher (develop an Environmental Monitoring Plan to address).

Updates for the 2015 Ozone Standards

- The ozone monitoring season in Pennsylvania is currently April to October.
- EPA's final rule for the 2015 ozone standards requires an extension of the ozone monitoring season in Pennsylvania from March to October, starting January 1, 2017.
 - PADEP is already monitoring ozone concentrations year-round to assess the impact of natural gas operations during the winter.

Updates for the 2015 Ozone Standards

- The addition of a new ozone Federal Reference Monitor (FRM), based on advanced technology and monitoring methods, will be used with currently existing FRM and Federal Equivalent Monitors (FEMs) to meet EPA requirements.
- EPA has also issued new data handling procedures for determining compliance with the 2015 ozone standards. The procedures include the following:
 - Revisions for determining daily maximum 8-hour average concentrations
 - Addition of a new procedure for combining data when two or more monitoring instruments are operating at the same monitoring site.

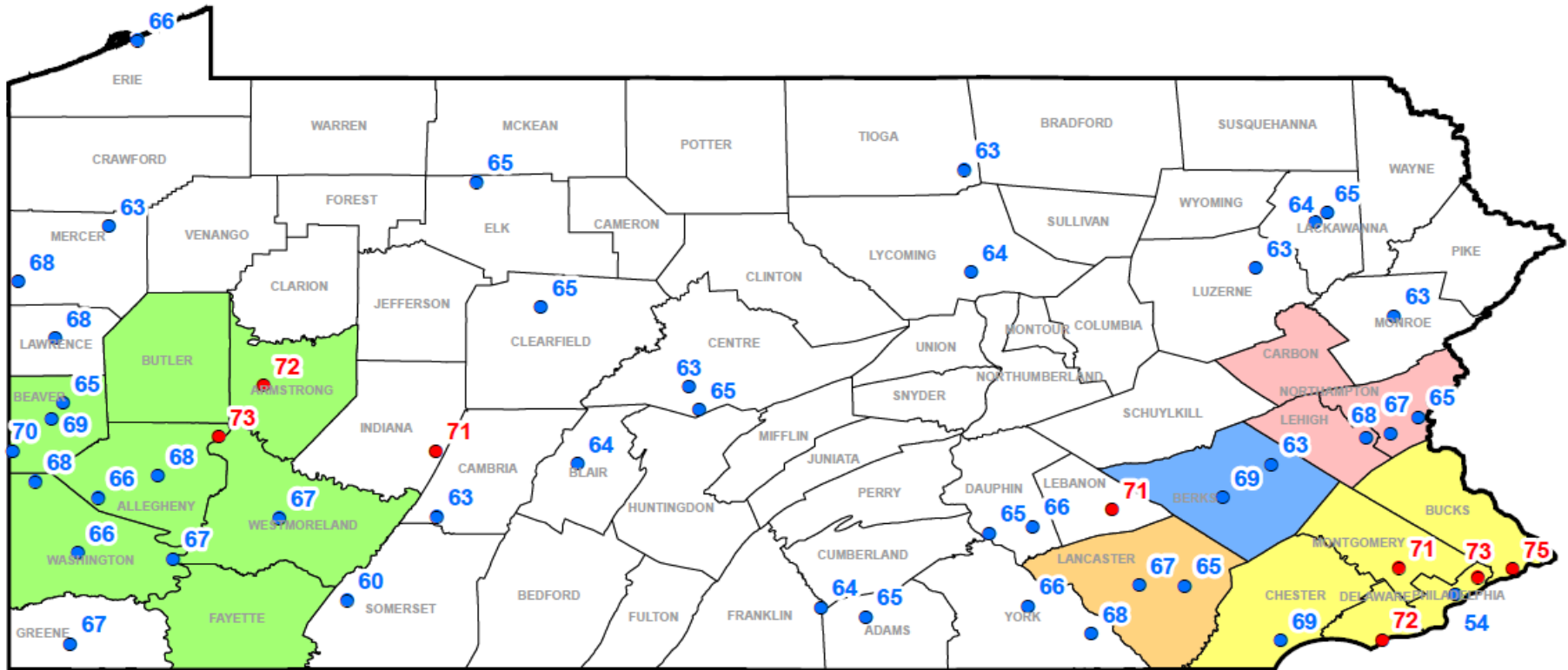
Summary of 2015 Ozone Standards

Designation Recommendations







- PADEP must submit Pennsylvania's designation recommendations to EPA Region 3 by October 2016 for attainment and nonattainment areas.
 - EPA Region 3 will issue a 120-day letter to states in June 2017, outlining any modifications to Pennsylvania's designation recommendations.
 - States will have an opportunity to comment on EPA's proposal and to submit supplemental information including certified ambient air data.
 - Final designations, based on 2014-2016 ozone data, will be due in October 2017; designations would take effect in December 2017.
- Based on preliminary 2013-2015 ozone design values, eight samplers in the Commonwealth are monitoring nonattainment of the 2015 8-hour ozone NAAQS.

Projected 2015 Pennsylvania 8-Hour Ozone Design Values

Data Available Through October 31, 2015 (Not Completely QA/QC'd)
 Areas are Shaded Based on EPA's April 30, 2012 Designations



8-Hour Ozone Nonattainment Areas (Based on 2008 Ozone Standard)

- | | |
|--|--|
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Appearing in Red - Projected 2015 8-Hour Ozone Design Value is Exceeding 2015 Ozone Standard
 Appearing in Blue - Projected 2015 8-Hour Ozone Design Value in Attainment of 2015 Ozone Standard

Conclusions

- The new ozone standards were promulgated in October 2015. The new ozone rule outlines the following:
 - Changes to the level of the ozone standards
 - Changes to the AQI scale
 - Changes to the monitoring network
 - Nonattainment /attainment designation timeline
- Based on the preliminary 2015 ozone data:
 - All monitors in the Commonwealth are attaining the 2008 8-hour ozone NAAQS (0.075 ppm)
 - Eight monitors in the Commonwealth are not attaining the 2015 8-hour ozone NAAQS (0.070 ppm)



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