

# Air Quality Forecast and Dispersion Outlook of Allegheny County, Pennsylvania for 4/15/2022

**Air Quality Forecast:** This is the daily forecasted Air Quality Index (AQI) for each area provided by the PA Department of Environmental Protection. The AQI is based on PM2.5 or Ozone, whichever is forecasted to be higher.




Forecast Period	Pittsburgh Area	Liberty-Clairton Area
<b>Today</b> Friday 4/15/22	PM2.5 <b>Good</b> 48 AQI	PM2.5 <b>Moderate</b> 52 AQI
<b>Tomorrow</b> Saturday 4/16/22	PM2.5 <b>Good</b> 42 AQI	PM2.5 <b>Good</b> 44 AQI

**Today's Forecast:** PM2.5 will be highest Friday morning (20-25 µg/m<sup>3</sup>), but increasing mixing heights and brisk southwest winds will create good dispersion most of the day. Therefore, overall averages for PM2.5 will end up in the upper good range (8-12 µg/m<sup>3</sup>). Liberty-Clairton will end up in the lower moderate range (13-18 µg/m<sup>3</sup>).

See Page 2 for the Air Quality Index guide

[Data provided by the PA Department of Environmental Protection](#)

**ACHD Air Dispersion 36-Hour Forecast:** This is the dispersion forecast for Allegheny County starting from this morning through tomorrow afternoon. The atmospheric dispersion index is a rating of the atmosphere's ability to transport pollution away from its source and is based on emissions and weather. Better atmospheric dispersion can improve air quality.

Forecast Period		Atmospheric Dispersion Index	Surface Inversion Strength	Wind (dir, mph)
<b>Today</b>	Morning 	Very Good – 158	Weak	SSW 8-9 to SW 11-16 Gust 21-30
	Afternoon	Very Good – 172	--	SW 10-18 Gust 20-46
<b>Tonight</b>	Evening 	Fair – 33	--	SW 9 to WSW 9
	Overnight	Generally Poor – 13	--	WSW 10 to SW 6-8 Gust 21-23
<b>Tomorrow</b>	Morning 	Generally Poor – 20	None	SW 6 to WSW 8-9
	Afternoon	Generally Good - 49	--	W 9 to NW 9-10 Gust 20

See page 2 for the Atmospheric Dispersion Index guide and the daily Surface Temperature Inversion Report.

**ACHD Remarks:** Rain tomorrow. Also, the sounding data from the National Weather Service was unavailable, so I had to use an alternative source.

Data provided by the National Weather Service (NWS) [Fire Weather Planning Forecast](#) and [PIT NWS Products](#)

## Guide to the Air Quality Index (AQI)

Color	Description	Meaning	AQI
Red	Unhealthy	Everyone should limit exertion outdoors.	151 - 200
Orange	Unhealthy for Sensitive Groups	Sensitive people should limit exertion outdoors.	101 - 150
Yellow	Moderate	Extremely sensitive people may wish to limit outdoor exertion.	51 - 100
Green	Good	No health impacts are expected in this range.	0 - 50

## Guide to the Atmospheric Dispersion Index

Very Poor	Poor	Generally Poor	Fair	Generally Good	Good	Very Good
1 - 6	7 - 12	13 - 20	21 - 40	41 - 60	61 - 100	> 100

### ACHD Surface Temperature Inversion Report:

*This is the 7 AM surface-based temperature inversion report for Allegheny County.*

This morning's surface inversion of  $\geq 1.28^{\circ}\text{C}$  with a depth of  $\geq 120\text{ m}$  is estimated to break at N/A. This surface inversion can be characterized as: None / Slight / Weak / Moderate / Strong.

No upper inversion starting below ~1000 m is reported.

### What does the Surface Temperature Inversion Report mean?

A surface temperature inversion is a weather pattern that stops mixing of the air near the ground, and pollution released into the air tends to remain at higher concentrations.

Surface temperature inversion conditions include how strong the surface inversion is (in  $^{\circ}\text{C}$ ), how high the inversion is above the surface (in meters), and when the inversion is expected to break (in Eastern Standard Time). Also included is whether an upper-level inversion or inversions exist, starting at about 1,000 meters.

#### Surface Temperature Inversion Characterization

- 0-0.9  $^{\circ}\text{C}$ : Slight
- 1-2.9  $^{\circ}\text{C}$ : Weak
- 3-4.9  $^{\circ}\text{C}$ : Moderate
- $\geq 5$   $^{\circ}\text{C}$ : Strong

