

Ambient Air Quality Standards in Washington State

Ambient (outdoor) air quality standards exist to prevent air pollution from reaching levels that are harmful to public health and the environment. There are both national and state ambient air quality standards. At least one local clean air agency has also set a standard for its jurisdiction.

Pollutants with standards

Standards exist for the following pollutants that can harm health and the environment:

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO_x)
- Fine particles smaller than 10 microns in size (PM₁₀)
- Fine particles smaller than 2.5 microns in size (PM_{2.5})
- Total suspended particulates (TSP)
- Ozone (O₃)
- Sulfur dioxide (SO_x)

Measuring pollutants

Each standard requires the pollutant to be measured in one of the following ways:

- Parts per million (ppm) by volume
- Parts per billion (ppb) by volume
- Milligrams per cubic meter of air (mg/m³)
- Micrograms per cubic meter of air (µg/m³)

National Ambient Air Quality Standards

The federal Clean Air Act requires EPA to set [National Ambient Air Quality Standards](#). EPA has set standards for the air pollutants listed above. These standards, found in 40 CFR Part 50, are called National Ambient Air Quality Standards (NAAQS). EPA sets two types of NAAQS:

1. **Primary standards** set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly.
2. **Secondary standards** set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

Washington State and Local Ambient Air Quality Standards

Washington State has established Washington Ambient Air Quality Standards (WAAQS) that apply throughout Washington State. At least one local clean air agency has also set a standard for its jurisdiction. Washington State and local standards are *primary standards only*.

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Pollutant	Averaging Period	National Standards		Washington State Standards	Details
		Primary	Secondary		
Ozone	8-hour	0.075 ppm	0.075 ppm		The 3-year average of the annual 4 th highest daily 8-hour maximum is not to be above this level.
	1-hour (Daily Maximum)			0.12 ppm (235 mg/m ³)	Not to be above this level on more than 1 day in a calendar year.
Particulate Matter (PM _{2.5})	Annual (Arithmetic Mean)	15.0 µg/m ³	15.0 µg/m ³		The 3-year average from a community-oriented monitor is not to be above this level.
	24-hour	35 µg/m ³	35 µg/m ³		The 3-year average of the annual 98 th percentile for each population-oriented monitor within an area is not to be above this level.
Particulate Matter (PM ₁₀)	Annual (Arithmetic Mean)			50 µg/m ³	The 3-year average of annual arithmetic mean concentrations at each monitor within an area is not to be above this level.
	24-hour	150 µg/m ³	150 µg/m ³	150 µg/m ³	Not to be above this level on more than three days over 3 years with daily sampling.
Carbon Monoxide	8-hour	9 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)	Not to be above this level more than once in a calendar year.
	1-hour	35 ppm (40 mg/m ³)		35 ppm (40 mg/m ³)	Not to be above this level more than once in a calendar year.
Nitrogen Dioxide	Annual (Arithmetic Mean)	0.053 ppm (100 µg/m ³)	0.053 ppm (100 µg/m ³)	0.05 ppm (100 µg/m ³)	Not to be above this level in a calendar year.
	1-hour	0.100 ppm			The 3-year average of the 98 th percentile of the daily maximum 1-hour average at each monitor is not to be above this level.
Sulfur Dioxide	Annual (Arithmetic Mean)	0.03 ppm		0.02 ppm	Not to be above this level in a calendar year.
	24-hour	0.14 ppm		0.10 ppm	Not to be above this level more than once in a calendar year.
	3-hour		0.5 ppm (1300 µg/m ³)		Not to be above this level more than once in a calendar year.
	1-hour			0.40 ppm	Not to be above this level more than once in a calendar year.
	1-hour			0.25 ppm	Not to be above this level more than twice in a consecutive 7-day period.
	1-hour	75 ppb			The 3-year average of the annual 99 th percentile of daily maximum 1-hour averages is not to be above this level.
	5-minute			0.80 ppm	This is the Northwest Clean Air Agency's standard, which applies in Island, Skagit, and Whatcom counties.
Lead	Rolling 3-Month Average	0.15 µg/m ³	0.15 µg/m ³		Not to be above this level.
	Quarterly Average	1.5 µg/m ³	1.5 µg/m ³		
Total Suspended Particulate	Annual (Geometric Mean)			60 µg/m ³	Not to be above this level.
	24-hour			150 µg/m ³	Not to be above this level more than once in a calendar year.