



Ambient Air Impacts Analyses

For use with Instructions for Notice of Construction Application, ECY 070-410a-g.

Why should I care about ambient air quality standards?

Ecology must find a project is in compliance with all ambient air quality standards and acceptable source impact levels before issuing a final air permit approving the project.

What are ambient air quality standards?

EPA sets National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. NAAQS are established for six pollutants:

- carbon monoxide,
- lead,
- nitrogen dioxide,
- sulfur dioxide,
- ozone, and
- particulate matter.

Washington State also maintains Washington Ambient Air Quality Standards (WAAQS) for five pollutants (see reverse side of this page) and Acceptable Source Impact Levels for 395 Toxic Air Pollutants, as listed in [Washington Administrative Code 173-460-150](#)¹.

How do I determine my project's ambient air quality impacts?

Take these steps to determine your project's ambient air quality impacts::

1. Identify the air pollutants released from each emission unit.
2. Calculate the potential emissions from each emissions unit.
3. If the potential emissions are below the pollutant's respective de minimis value and/or Small Quantity Emission Rate (SQER), no additional impacts analyses is needed for that pollutant.
4. If the potential emissions are equal to or greater than the pollutant's respective de minimis value and/or SQER, you must:
 - model the impacts of emissions for the pollutant and
 - compare the impacts to the respective AAQS and/or Acceptable Source Impact Level.

Applicants commonly hire a consultant to perform any necessary computer modeling.

What models are used?

Advanced air dispersion modeling ([AERMOD](#)²), or its simpler screening version ([AERSCREEN](#)³), are approved EPA models that are routinely used to make this demonstration.

Resources

- EPA's NAAQS website,⁴ which includes EPA Users Guide for the Screening Model
- Washington State Department of Ecology Permitting Office Contact identified on page 1 of the application.

¹ <http://apps.leg.wa.gov/WAC/default.aspx?cite=173-460-150>

² http://www.epa.gov/ttn/scram/dispersion_prefrec.htm#aermod

³ http://www.epa.gov/ttn/scram/dispersion_screening.htm#aerscreen

⁴ <http://www.epa.gov/air/criteria.html>



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National Ambient Air Quality Standards (NAAQS) Washington Ambient Air Quality Standards (WAAQS)

Last updated: 11/28/12

Pollutant	NAAQS Standards		Averaging Time	WAAQS + Local Air Standards
	Primary	Secondary		
Carbon Monoxide	9 ppm (10 mg/m ³)	No Standard	8-hour ⁽¹⁾	9 ppm
	35 ppm (40 mg/m ³)	No Standard	1-hour ⁽¹⁾	35 ppm
Lead	0.15 µg/m ³	Same as Primary	Rolling 3-Month Average ⁽²⁾	No Standard
Nitrogen Dioxide	0.053 ppm (100 µg/m ³)	Same as Primary	Annual (Arithmetic Mean)	0.05 ppm
	0.100 ppm (189 µg/m ³)		1-hour ⁽³⁾	No Standard
Particulate Matter (PM10)	No Standard	No Standard	Annual	50 µg/m ³
	150 µg/m ³	Same as Primary	24-hour ⁽⁴⁾	150 µg/m ³
Particulate Matter (PM2.5)	15.0 µg/m ³	Same as Primary	Annual ⁽⁵⁾ (Arithmetic Mean)	No Standard
	35 µg/m ³	Same as Primary	24-hour ⁽⁶⁾	No Standard
Total Suspended Particulate	No Standard	No Standard	Annual	60 µg/m ³
	No Standard	No Standard	24-hour ⁽¹⁾	150 µg/m ³
Ozone	0.075 ppm	Same as Primary	8-hour ⁽⁷⁾	No Standard
	No Standard	No Standard	1-hour ⁽⁸⁾	0.12 µg/m ³
Sulfur Dioxide	No Standard	No Standard	Annual (Arithmetic Mean)	0.02 ppm
	No Standard	No Standard	24-hour ⁽¹⁾	0.10 ppm
	0.5 ppm (1300 µg/m ³)	0.5 ppm (1300 µg/m ³)	3-hour ⁽¹⁾	No Standard
	0.075 ppm (µg/m ³)	No Standard	1-hour ⁽⁹⁾	0.40 ppm
	No Standard	No Standard	5-minute ⁽¹⁾	0.80 ppm

- (1) Not to be exceeded more than once per year.
- (2) Final rule signed October 15, 2008. Standard is not to be exceeded.
- (3) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm. Final primary standard published in FR on February 9, 2010, and is effective on April 12, 2010. Secondary standard under review.
- (4) Not to be exceeded more than once per year on average over 3 years.
- (5) To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.
- (6) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).
- (7) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008) EPA is in the process of reconsidering this standard.
- (8) (a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1.
- (9) 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years.