

## Background Ambient Air Quality Monitoring Data For Use in Air Quality Impact Evaluations<sup>1</sup>

### Carbon Monoxide (CO)

Site	Standard*		Concentrations By Year in Units of ppm**			Value to be used in Air Quality Impact Evaluation***
			2013	2014	2015	
Burlington	1-hour	35 ppm	1.7	2.0	0.8	1.5
	8-hour	9 ppm	1.0	0.6	0.5	0.7
Rutland	1-hour	35 ppm	3.6	4.0	3.7	3.8
	8-hour	9 ppm	1.4	1.0	1.4	1.3
Underhill	1-hour	35 ppm	0.6	0.8	0.4	0.6
	8-hour	9 ppm	0.5	0.6	0.3	0.5

\* For an area to attain the 1-hour and 8-hour CO primary standards, the respective standard may not be exceeded more than once per year.

\*\* To convert ppm values to units of mg/m<sup>3</sup> multiply ppm value by 1.145

\*\*\* This value is an average of the three years.

### Sulfur Dioxide (SO<sub>2</sub>)

Site	Standard*		Concentrations By Year in Units of ppb**			Value to be used in Air Quality Impact Evaluation***
			2013	2014	2015	
Rutland	1-hour	75 ppb	10	14	2	9
	3-hour	500 ppb	12	13	2.4	9
	24-hr	140 ppb	7	4	2	4
	annual	30 ppb	1.0	0.8	0.5	0.8

\* The 1-hour SO<sub>2</sub> primary standard became effective June 22, 2010. The reported 1-hour value for each respective year is the 99th percentile value of the daily maximums (typically the 4<sup>th</sup> high value of the daily maximum if all days are monitored), not the overall maximum 1-hour value. See 40CFRPart 50 Appendix T. For an area to attain the 1-hour SO<sub>2</sub> primary standard, the 99th percentile of 1-hour daily maximum concentrations for each year, averaged over 3 years, must not exceed the standard. For an area to attain the 3-hour SO<sub>2</sub> secondary standard, the respective standard may not be exceeded more than once per year. The 140 ppb 24-hour and the 30 ppb annual standards were revoked June 22, 2010 but remain in effect for one year after the new attainment designation. Those designations are not expected until 2015.

\*\* To convert ppb values to units of ug/m<sup>3</sup> multiply ppb value by 2.618

\*\*\* This value is an average of the three years.

## Nitrogen Dioxide (NO<sub>2</sub>)

Site	Standard*		Concentrations By Year in Units of ppb**			Value to be used in Air Quality Impact Evaluation***
			2013	2014	2015	
Burlington	1-hour	100 ppb	31	39	32	34
	Annual	53 ppb	6.6	6.9	6.9	6.8
Rutland	1-hour	100 ppb	36	38	38	37
	Annual	53 ppb	7.3	7.3	7.5	7.4

\* The 1-hour primary NO<sub>2</sub> standard became effective April 12, 2010. The reported 1-hour value for each respective year is the 98th percentile value of the daily maximums (typically the 8<sup>th</sup> high value of the daily maximums if all days are monitored) , not the overall maximum 1-hour value. See 40 CFR Part 50 Appendix N. For an area to attain the 1-hour NO<sub>2</sub> primary standard, the 98th percentile 1-hour value for each year, averaged over 3 years, must not exceed the standard. For an area to attain the annual NO<sub>2</sub> primary and secondary standard, the annual mean of the 1-hour values must not exceed the standard.

\*\* To convert ppb values to units of ug/m<sup>3</sup> multiply ppb value by 1.881

\*\*\* This value is an average of the three years.

## Particulate Matter PM<sub>2.5</sub>

Site	Standard* (ug/M <sup>3</sup> )		Concentrations By Year in Units of ug/M <sup>3</sup>			Value to be used in Air Quality Impact Evaluation**
			2013	2014	2015	
Bennington	24-hour	35 µg	14.7	13.2	16.2	14.7
	Annual	12 µg	6.0	6.3	7.4	6.6
Burlington (Cherry Street)	24-hour	35 µg	13.9	16.6	16.9	15.8
	Annual	12 µg	6.3	6.7	7.3	6.77
Underhill	24-hour	35 µg	12.7	14.3	12.7	13.23
	Annual	12 µg	4.8	5.0	5.7	5.17
Rutland	24-hour	35 µg	20.5	22.0	30.1	24.2
	Annual	12 µg	7.9	9.0	9.8	8.9

\*The 24-hour PM<sub>2.5</sub> standard was revised from 65 ug/M3 downward to 35 ug/M3 effective December 18, 2006. The annual primary PM<sub>2.5</sub> standard was revised from 15 ug/M3 downward to 12 ug/M<sup>3</sup> effective March 18, 2013. The reported 24-hour value for each respective year is the 98th percentile value (typically the 3<sup>rd</sup> high value if all of the every-third-day periods are monitored), not the maximum 24-hour value. For an area to attain the 24-hour PM<sub>2.5</sub> primary and secondary standard, the 98th percentile 24-hour value for each year, averaged over 3 years, must not exceed the standard. For an area to attain the annual PM<sub>2.5</sub> primary and secondary standard, the annual mean of the 24-hour values, averaged over 3 years, shall not exceed the standard.

\*\* This value is an average of the three years.

## Particulate Matter PM<sub>10</sub>

Site	Standard* (ug/M <sup>3</sup> )		Concentrations By Year in Units of ug/M <sup>3</sup>			Value to be used in Air Quality Impact Evaluation**
			2013	2014	2015	
Burlington (MainStreet/So.Win ooski Ave)	24-hour	150 µg	34	32	29	31.7
Rutland	24-hour	150 µg	31	56	36	41.0
Underhill	24-hour	150 µg	19	20	21	20.0

\*The annual PM<sub>10</sub> National Ambient Air Quality Standard (NAAQS) was eliminated effective December 18, 2006. The 24-hour PM<sub>10</sub> NAAQS was retained as the new primary and secondary standard for coarse particulates. For an area to attain the 24-hour PM<sub>10</sub> primary and secondary standard, the standard must not be exceeded more than once per year on average over 3 years.

\*\*This value is an average of the three years. ND signifies 'no data'

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All monitored values reported above are the maximum measured values from the respective monitoring stations, except where noted for SO<sub>2</sub> (1-hour), NO<sub>2</sub> (1-hour), and PM<sub>2.5</sub>. These values are based on 99<sup>th</sup> or 98<sup>th</sup> percentile value as established by the standard. The background value to use in modeling analyses is an average of the reported monitored values over the three years. The appropriate background value to use for modeling analyses for locations in the state not having its own monitoring station will be determined by the Agency. The selected background value should be used with the appropriate source impact predicted by the air pollutant dispersion model.

The above monitored values need to be added to the modeled source impact from the dispersion model for comparison to the ambient air quality standard. Only the modeled source impact alone is used for comparison to Prevention of Significant Deterioration (PSD) increments. The appropriate source impact from the dispersion model to use for determining compliance with the standards or increments depends on the type of standard, the averaging time of the standard being analyzed and the number of years of meteorological data being modeled. Please consult 40 CFR Part 51 Appendix W.