

Alaska Department of Environmental Conservation



Amendments to:
State Air Quality Control Plan

Volume II: III.L

Interstate Transport of Pollution

Public Review Draft

October 15, 2015

Bill Walker
Governor

Larry Hartig
Commissioner

Amendments to State Air Quality Control Plan, Volume II:

Section III.L. Interstate Transport of Air Pollutants, a new section to be inserted after section K:

L. PROVISIONS PROHIBITING REGIONAL TRANSPORT OF AIR POLLUTANTS

The 1990 Clean Air Act (CAA) Amendments, Sections 110(a)(2)(D)(i) (I)&(II), require Alaska’s State Implementation Plan (SIP) to “contain adequate provisions prohibiting ...any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—

I. Contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard;

or

II. Interfere with measures required to be included in the applicable implementation plan for any other State... to prevent significant deterioration of air quality or to protect visibility.

DEC demonstrates compliance with NAAQS interstate transport infrastructure requirements by submitting a new and separate table for each promulgated NAAQS as shown in Table 1. These tables provide a chronological history of DEC’s CAA §110 interstate transport SIP submittals.

Table 1: Alaska’s State Air Quality Control Plan CAA Interstate Transport Certifications

NAAQS Element	NAAQS Federal Register Date and Number	State of Alaska NAAQS Effective Date of Regulation	State of Alaska Interstate Transport Regulation Certification Effective Date	Table Number	Note
2006 PM_{2.5} Annual & 24-hour	10/17/2006 71 FR 61144	04/01/2010	08/01/2012	N/A	See: Volume II, Section III.D.VI
2008 Ozone Primary & Secondary	03/27/2008 73 FR 16436	04/01/2010	08/01/2012	N/A	See: Volume II, Section III.D.VI
2008 Lead Primary & Secondary	11/12/2008 73 FR 66964	04/01/2010	08/01/2012	N/A	See: Volume II, Section III.H.4
2010 SO₂ Primary 1-hour	06/22/2010 75 FR 35520	09/17/2011	[insert effective date of regulation]	2	
2010 NO₂ Primary 1-hour	02/09/2010 75 FR 6474	01/04/2013	[insert effective date of regulation]	3	
2012 PM_{2.5} Primary Annual	01/15/2013 78 FR 3086	[insert effective date of regulation]	[insert effective date of regulation]	4	

Table 2. Interstate Transport: 2010 NO₂ Primary 1-hour NAAQS

CAA §110 Interstate Transport Requirement	How Requirement is Addressed in Alaska’s SIP																				
<p>2010 NO₂ NAAQS</p> <p>110(a)(2)(D)(i)(I) Contributions to nonattainment or maintenance of NAAQS in other states</p>	<p>Alaska does not contribute to nonattainment or interfere with maintenance of the 2010 NO₂ NAAQS in any other state. This statement is based on the following:</p> <p>EPA has not classified any area of the US as not attaining the 2010 NO₂ NAAQS, all areas have been identified as “unclassifiable/attainment” (77 FR 9532, February 17, 2012);</p> <p>Alaska was not subject to the “Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (CAIR)” (70 FR 25162 May 12, 2005) and is not subject to the “Cross-State Air Pollution Rule” (Transport Rule), (76 FR 48208, August 8, 2011);</p> <p>Emissions of NO_x in Alaska are relatively small in comparison to national levels. Data from the 2011 NEI presented in Table 2a show that total NO_x emissions in Alaska are approximately 0.9 percent of national emissions. Anthropogenic sources account for about 87% of emissions. Approximately 750 permitted sources with approximately 6,100 emission units account for 48% of total NO_x emissions in Alaska;</p> <p>Table 2a: 2011 NEI Summary Alaska - NO_x</p> <table border="1" data-bbox="571 982 1178 1365"> <thead> <tr> <th>Source Sector</th> <th>NO_x (tpy)</th> </tr> </thead> <tbody> <tr> <td>Area, Excluding Wildfires</td> <td>2,056</td> </tr> <tr> <td>Non-Road</td> <td>4,075</td> </tr> <tr> <td>On-Road</td> <td>14,971</td> </tr> <tr> <td>Commercial Marine Vessels</td> <td>29,925</td> </tr> <tr> <td>Aviation (Aircraft & GSE)</td> <td>4,747</td> </tr> <tr> <td>Point</td> <td>68,344</td> </tr> <tr> <td>Wildfires, Prescribed</td> <td>318</td> </tr> <tr> <td>Wildfires, Natural</td> <td>18,774</td> </tr> <tr> <td>TOTAL - All Sources</td> <td>143,209</td> </tr> </tbody> </table> <p>Alaska is geographically isolated from the contiguous 48 states, making significant pollutant transport</p>	Source Sector	NO_x (tpy)	Area, Excluding Wildfires	2,056	Non-Road	4,075	On-Road	14,971	Commercial Marine Vessels	29,925	Aviation (Aircraft & GSE)	4,747	Point	68,344	Wildfires, Prescribed	318	Wildfires, Natural	18,774	TOTAL - All Sources	143,209
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Table 2. 2010 Primary 1-hr NO₂ NAAQS

<p>2010 NO₂ NAAQS</p> <p>110(a)(2)(D)(i)(I) (continued)</p>	<p>to other states unlikely. Approximately 600 miles of mountainous terrain in Canada’s Province of British Columbia separate the southeastern border of Alaska from the nearest state, Washington. The highest emissions of regulated air pollutants occur even further away from the contiguous 48 states in the Municipality of Anchorage (1,435 miles from Seattle, WA) and the Fairbanks North Star Borough (2,244 miles from Seattle, WA); and</p> <p>Weather patterns make long range transport of air pollutants from Alaska to the 48 contiguous states very unlikely. Regional, predominant low pressure, wind patterns emanate from the western Gulf of Alaska and travel inland towards the east, circulating in a counterclockwise direction.</p>
<p>2010 NO₂ NAAQS</p> <p>110(a)(2)(D)(i)(II) Prevention of significant deterioration of air quality and protection of visibility in other states</p>	<p>Alaska’s PSD/NSR program was originally approved by EPA on February 16, 1995 [60 FR 8943]. Amendments to Alaska’s PSD/NSR program were more recently approved by EPA on February 9, 2011 [76 FR 7116] and January 7, 2015 [80 FR 832].</p> <p>DEC adopted an NO₂ SIL level of 8 ppb into Table 5 “Significant Impact Levels (SILs)” at 18 AAC 50.215(d) on December 5, 2012; the NO₂ SIL regulation became effective on January 4, 2013. Also on this date, DEC adopted new regulatory language at 18 AAC 50.215(d) regarding how to compare modeled impacts to the NO₂ and SO₂ SIL. These regulations are found here:</p> <ul style="list-style-type: none"> •18 AAC 50.215(b) (1). EPA’s AERMOD, adopted by reference. •18 AAC 50.215 (d). Table 5 Significant Impact Levels for NO₂ & SO₂ adopted; new language regarding how to compare modeled impacts to SILs adopted. <p>On February 14, 2013, EPA approved Alaska’s Regional Haze Plan submitted on April 4, 2011, as meeting the requirements set forth in sections 169A and 169B of the CAA and in 40 CFR 51.308 regarding Regional Haze [78 FR 10546].</p>

Table 3: Interstate Transport: 2010 SO₂ Primary 1-hour NAAQS

CAA §110 Interstate Transport Requirement	How Requirement is Addressed in Alaska’s SIP																				
<p>2010 SO₂ NAAQS</p> <p>110(a)(2)(D)(i)(I) Contributions to nonattainment or maintenance of NAAQS in other states</p>	<p>Alaska does not contribute to nonattainment or interfere with maintenance of the 2010 SO₂ NAAQS in any other state. This statement is based on the following:</p> <p>Alaska was not subject to the “Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (CAIR)” (70 FR 25162 May 12, 2005) and is not subject to the “Cross-State Air Pollution Rule” (Transport Rule), (76 FR 48208, August 8, 2011);</p> <p>Emissions of SO₂ in Alaska are relatively small in comparison to national levels. Data from the 2011 NEI presented in Table 3a show that total SO₂ emissions in Alaska are approximately 0.4 percent of national emissions. Anthropogenic sources account for about 54% of emissions. Approximately 750 permitted sources with approximately 6,100 emission units account for 20% of total SO₂ emissions in Alaska;</p> <p>Table 3a: 2011 NEI Summary Alaska – SO₂</p> <table border="1" data-bbox="571 836 1176 1372"> <thead> <tr> <th>Source Sector</th> <th>SO₂ (tpy)</th> </tr> </thead> <tbody> <tr> <td>Area, Excluding Wildfires</td> <td>1,728</td> </tr> <tr> <td>Non-Road</td> <td>65</td> </tr> <tr> <td>On-Road</td> <td>51</td> </tr> <tr> <td>Commercial Marine Vessels</td> <td>7,148</td> </tr> <tr> <td>Aviation (Aircraft & GSE)</td> <td>429</td> </tr> <tr> <td>Point</td> <td>5,795</td> </tr> <tr> <td>Wildfires, Prescribed</td> <td>203</td> </tr> <tr> <td>Wildfires, Natural</td> <td>13,095</td> </tr> <tr> <td>TOTAL - All Sources</td> <td>28,513</td> </tr> </tbody> </table>	Source Sector	SO₂ (tpy)	Area, Excluding Wildfires	1,728	Non-Road	65	On-Road	51	Commercial Marine Vessels	7,148	Aviation (Aircraft & GSE)	429	Point	5,795	Wildfires, Prescribed	203	Wildfires, Natural	13,095	TOTAL - All Sources	28,513
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Table 4. 2010 Primary 1-hr SO₂ NAAQS

<p>2010 SO₂ NAAQS</p> <p>110(a)(2)(D)(i)(I)</p> <p>(continued)</p>	<p>Alaska is geographically isolated from the contiguous 48 states, making significant pollutant transport to other states unlikely. Approximately 600 miles of mountainous terrain in Canada’s Province of British Columbia separate the southeastern border of Alaska from the nearest state, Washington. The highest emissions of regulated air pollutants occur even further away from the contiguous 48 states in the Municipality of Anchorage (1,435 miles from Seattle, WA) and the Fairbanks North Star Borough (2,244 miles from Seattle, WA). The nearest 2010 SO₂ NAAQS nonattainment area is in Billings, MT. No areas have been redesignated from nonattainment to maintenance; and</p> <p>Weather patterns make long range transport of air pollutants from Alaska to the 48 contiguous states very unlikely. Regional, predominant low pressure, wind patterns emanate from the western Gulf of Alaska and travel inland towards the east, circulating in a counterclockwise direction.</p>
<p>2010 SO₂ NAAQS</p> <p>110(a)(2)(D)(i)(II)</p> <p>Prevention of significant deterioration of air quality and protection of visibility in other states</p>	<p>Alaska’s PSD/NSR program was originally approved by EPA on February 16, 1995 [60 FR 8943]. Amendments to Alaska’s PSD/NSR program were more recently approved by EPA on February 9, 2011 [76 FR 7116] and January 7, 2015 [80 FR 832].</p> <p>DEC adopted an SO₂ SIL level of 8 ppb into Table 5 “Significant Impact Levels (SILs)” at 18 AAC 50.215(d) on August 3, 2011; the NO₂ SIL regulation became effective on January 4, 2013. Also on this date, DEC adopted new regulatory language at 18 AAC 50.215(d) regarding how to compare modeled impacts to the NO₂ and SO₂ SIL. These regulations are found here:</p> <ul style="list-style-type: none"> •18 AAC 50.215(b) (1). EPA’s AERMOD, adopted by reference. •18 AAC 50.215 (d). Table 5 Significant Impact Levels for NO₂ & SO₂ adopted; new language regarding how to compare modeled impacts to SILs adopted. <p>On February 14, 2013, EPA approved Alaska’s Regional Haze Plan submitted on April 4, 2011, as meeting the requirements set forth in sections 169A and 169B of the CAA and in 40 CFR 51.308 regarding Regional Haze [78 FR 10546].</p>

Table 4: Interstate Transport: 2012 Primary Annual PM-2.5 NAAQS

CAA §110 Interstate Transport Requirement	How Requirement is Addressed in Alaska’s SIP																				
<p>2012 PM_{2.5} NAAQS</p> <p>110(a)(2)(D)(i)(I) Contributions to nonattainment or maintenance of NAAQS in other states</p>	<p>Alaska does not contribute to nonattainment or interfere with maintenance of the 2012 PM_{2.5} NAAQS in any other state. This statement is based on the following:</p> <p>Alaska was not subject to the “Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (CAIR)” (70 FR 25162 May 12, 2005) and is not subject to the “Cross-State Air Pollution Rule” (Transport Rule), (76 FR 48208, August 8, 2011);</p> <p>Emissions of NO_x in Alaska are relatively small in comparison to national levels. Data from the 2011 NEI presented in Table 4a show that total PM_{2.5} emissions in Alaska are approximately 3.3 percent of national emissions. Anthropogenic sources account for only 9% of emissions, the majority of PM_{2.5} emissions occur due to natural wildfires. Emissions of PM_{2.5} precursors, NO₂ and SO₂, are shown in tables 2 and 3 of this section.</p> <p>Table 4a: 2011 NEI Summary Alaska – PM_{2.5}</p> <table border="1" data-bbox="571 873 1201 1390"> <thead> <tr> <th>Source Sector</th> <th>PM_{2.5} (tpy)</th> </tr> </thead> <tbody> <tr> <td>Area, Excluding Wildfires</td> <td>9,672</td> </tr> <tr> <td>Non-Road</td> <td>609</td> </tr> <tr> <td>On-Road</td> <td>604</td> </tr> <tr> <td>Commercial Marine Vessels</td> <td>1,448</td> </tr> <tr> <td>Aviation (Aircraft & GSE)</td> <td>218</td> </tr> <tr> <td>Point</td> <td>3,051</td> </tr> <tr> <td>Wildfires, Prescribed</td> <td>2,643</td> </tr> <tr> <td>Wildfires, Natural</td> <td>181,161</td> </tr> <tr> <td>TOTAL - All Sources</td> <td>199,407</td> </tr> </tbody> </table>	Source Sector	PM _{2.5} (tpy)	Area, Excluding Wildfires	9,672	Non-Road	609	On-Road	604	Commercial Marine Vessels	1,448	Aviation (Aircraft & GSE)	218	Point	3,051	Wildfires, Prescribed	2,643	Wildfires, Natural	181,161	TOTAL - All Sources	199,407
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Table 4. 2012 24-hr PM_{2.5} NAAQS

<p>2012 PM_{2.5} NAAQS</p> <p>110(a)(2)(D)(i)(I) (continued)</p>	<p>Alaska is geographically isolated from the contiguous 48 states, making significant pollutant transport to other states unlikely. Approximately 600 miles of mountainous terrain in Canada’s Province of British Columbia separate the southeastern border of Alaska from the nearest state, Washington. The highest emissions of regulated air pollutants occur even further away from the contiguous 48 states in the Municipality of Anchorage (1,435 miles from Seattle, WA) and the Fairbanks North Star Borough (2,244 miles from Seattle, WA). The nearest 2012 PM_{2.5} NAAQS nonattainment area is located in Shoshone County, Idaho; and</p> <p>Weather patterns make long range transport of air pollutants from Alaska to the 48 contiguous states very unlikely. Regional, predominant low pressure, wind patterns emanate from the western Gulf of Alaska and travel inland towards the east, circulating in a counterclockwise direction.</p>
<p>2012 PM_{2.5} NAAQS</p> <p>110(a)(2)(D)(i)(II) Prevention of significant deterioration of air quality and protection of visibility in other states</p>	<p>Alaska’s PSD/NSR program was originally approved by EPA on February 16, 1995 [60 FR 8943]. Amendments to Alaska’s PSD/NSR program were more recently approved by EPA on February 9, 2011 [76 FR 7116] and January 7, 2015 [80 FR 832]. On August 3, 2011, DEC adopted the PM_{2.5} Significant Impact Levels (SILs) published in the Federal Register on October 20, 2010 [75 FR 64902]; DEC also adopted the PM_{2.5} source testing requirements as specified in Appendix M to 40 C.F.R. Part 51. The PM_{2.5} SILs and source test requirement regulations became effective on September 17, 2011. A copy of these regulations and SIP amendment were forwarded to EPA Region 10 via a transmittal letter dated October 17, 2011.</p> <p>On February 14, 2013, EPA approved Alaska’s Regional Haze Plan submitted on April 4, 2011, as meeting the requirements set forth in sections 169A and 169B of the CAA and in 40 CFR 51.308 regarding Regional Haze [78 FR 10546].</p>