8. CLIMATE AND AIR QUALITY

This chapter describes climate and air quality in the project area and potential impacts to climate and air quality from implementation of the proposed action. Section 8.1.1 identifies applicable regulations. Section 8.2 describes the existing climate and air quality along the proposed Northern Rail Extension (NRE). Section 8.3, describes potential impacts of emissions from proposed rail line construction and operations. Section 8.4 describes potential greenhouse gas emissions and their effects on climate associated with rail line construction and operations.

8.1 Applicable Regulations

This section describes Federal, State of Alaska, and local regulatory requirements related to air quality, and identifies the regulating agencies responsible for air quality management and the regulations relevant to the air quality analysis. There are no regulatory requirements for greenhouse gas emissions.

8.1.1 Federal Regulations

Section of Environmental Analysis's (SEA) regulations (49 Code of Federal Regulations [CFR] 1105.7[e][5]) set thresholds for analysis of anticipated effects on air quality. When a case before the Surface Transportation Board (STB or the Board) would result in an increase in rail traffic of at least eight trains per day on any segment of rail line affected by a project, SEA quantifies the anticipated effect on air emissions. The proposed action would increase train traffic on the proposed new rail line and on approximately 20 miles of the existing Eielson Branch by ten trains per day. Therefore, SEA analyzed potential air quality impacts for all alternative segments. SEA used conformity thresholds to determine whether estimated increases in emissions would be *de minimus*.[1]

U.S. Environmental Protection Agency (USEPA) regulations specify the maximum acceptable ambient concentration level for six air pollutants. As defined by the Clean Air Act (CAA) Amendments of 1990 (42 U.S.C. 7409), there are two types of National Ambient Air Quality Standards (NAAQS) for these air pollutants—primary NAAQS set limits to protect public health, and secondary standards set limits to protect public welfare. The USEPA Office of Air Quality Planning and Standards has set NAAQS for six primary, or "criteria" pollutants, as follows: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), respirable particulate matter (PM), and lead (Pb). The Alaska Department of Environmental Conservation (ADEC) has adopted the same standards for Alaska (Alaska Administrative Code [AAC] Title 18, Chapter 50.010 Ambient Air Quality Standards). Table 8-1 lists and summarizes the primary and secondary standards.

[1] Although U.S. Environmental Protection Agency's General Conformity Rule is not directly applicable to STB actions, it nevertheless provides useful thresholds for measuring impacts to air quality from a proposed project before the Board. The General Conformity Rule defines a "conforming" project as one that conforms to the approved State Implementation Plan's (SIP's) overall objective of eliminating or reducing the severity and number of air quality violations in a state, and achieving expeditious attainment of the NAAQS; does not cause or contribute to new NAAQS violations in the area; and does not increase the frequency or severity of existing NAAQS or impede required progress toward attainment. The General Conformity Rule establishes emissions thresholds, or *de minimis* levels, for use in evaluating the conformity of a project. If the net emission increases due to a project would be less than these thresholds, the project is presumed to conform and no further conformity evaluation is warranted. The General Conformity Rule is codified at 40 CFR Part 51, Subpart W.

Table 8-1
National and Alaska Ambient Air Quality Standards[a]

Pollutant	Primary Standard (Public Health)			Secondary Standard (Public Welfare)		
	Level[b]	Averaging Time	Form	Level	Averaging Time	Form
Ozone (O_3)	80 ppb	8 hours	3-year average of annual fourth highest daily maximums	Same as primary standard		
Particulate Matter less than 10 microns (PM_{10})	150 $\mu g/m^3$	24 hours	Not to be exceeded more than once per year on average over 3 years	Same as primary standard		
Particulate Matter less than 2.5 microns ($PM_{2.5}$)	35 $\mu g/m^3$	24 hours	3-year average of the 98th percentile 24-hour concentrations	Same as primary standard		
	15 $\mu g/m^3$	Annual	3-year average of annual averages			
Carbon Monoxide (CO)	35 ppm	1 hour	No more than once per year	No secondary standard		
	9 ppm	8 hours	No more than once per year			
Sulfur Dioxide (SO_2)	140 ppb	24 hours	No more than once per year	0.5 ppm	3-hour	No more than once per year
	30 ppb	Annual	Not to be exceeded			
Nitrogen Dioxide (NO_2)	53 ppb	Annual	Not to be exceeded	Same as primary standard		
Lead (Pb)	1.5 $\mu g/m^3$	Quarterly	Not to be exceeded	Same as primary standard		

[a] Source: 40 CFR Part 50.
[b] ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

USEPA has designated certain lands as mandatory Federal Class I areas because air quality was considered a special feature of the area. These Federal Class I areas have special protection under the CAA Prevention of Significant Deterioration (PSD) program. In general, if a new stationary source within 62 miles of a Class I area, its impacts on the Class I area must be determined. The nearest Class I area to the proposed NRE is Denali National Park, at a distance of 80 miles. Because the NRE would not be a stationary source and would be beyond more than 62 miles from Denali National Park, SEA did not analyze potential impacts to that Class I area.

8.1.2 State Regulations

The proposed NRE would be in an attainment area[2] for all criteria air pollutants. However, the NRE would result in additional train traffic over 1.2 miles of the existing Eielson Branch within the North Pole CO maintenance area[3] and 7.2 miles within the Fairbanks CO maintenance area (the Fairbanks urban area and Fort Wainwright), which are designated as CO maintenance areas (AAC Title 18, Chapter 50.015, Air quality designations, classifications and control regions).

These areas have recently met the CO air quality standard and currently have a 10-year maintenance plan for continuing to meet and maintain air quality standards. To continue to maintain attainment status and meet the CO standard, ADEC must have in place a CO maintenance strategy as part of the SIP (AAC Title 18, Chapter 50, Section 030, State Air Quality Control Plan). ADEC submitted a maintenance plan on June 21, 2004, and USEPA approved the plan on July 27, 2004 (69 *Federal Register* [*FR*] 44601). The plan's goals and objectives focus on enhancements to the existing vehicle Inspection & Maintenance (I/M) program, including technical improvements through vehicle equipment upgrades, support of ADEC enforcement efforts, implementation of onboard motor vehicle diagnostic checks, electrical plug-ins to facilitate the use of block heaters for employee parking spaces, and public awareness campaigns to boost public transit ridership.

8.1.3 Local Regulations

There are no local air quality regulations or plans that would directly or indirectly affect rail line construction or operations.

8.2 Affected Environment

Existing Climate and Air Quality

SEA relied on current climate characterizations along the proposed NRE for information on existing conditions. Two principal sources of climate information are available for the project area. Near the northern end of the project area, data are available for Fairbanks. For the southern portion of the project area, climate information is available at Big Delta, which is approximately 9 miles northwest of Delta Junction.

Big Delta has the northern continental climate of Interior Alaska, which is characterized by short, moderate summers; long, cold winters; and low precipitation and humidity. Average monthly temperatures in Delta Junction (Western Regional Climate Center [WRCC], 2008) over the 71-year period 1937 through 2007 ranged from -3 degrees Fahrenheit (ºF) in January to 60 ºF in July, with an average annual temperature of 28 ºF. The all-time low temperature recorded was -63 ºF and the highest was 92 ºF. Thunderstorms are infrequent and occur only during the summer. Average annual precipitation is approximately 12 inches, most of which falls during summer and early fall. The average monthly precipitation ranges from a low of 0.24 inch in March and April to a high of 2.6 inches in July. Average annual snowfall is approximately 44

[2] An attainment area is any area, other than a non-attainment area, that meets the national primary or secondary ambient air quality standard for the pollutant. A non-attainment area is any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

[3] A maintenance area is an area that was previously designated as a non-attainment area, has attained the national air quality standards, and has an approved maintenance plan that provides for maintenance of the national primary ambient air quality standard for the air pollutant in the area for at least 10 years.

inches, but more than twice this amount falls some years. For example, a record 92.7 inches fell in 1994. Heavy fog is relatively common during December and January. Ice fog can occur at temperatures below -20 °F when water vapor is emitted to the atmosphere and forms into tiny ice particles. Ice fog typically forms from water vapor generated by human activity such as motor vehicle emissions.

Average monthly temperatures in Fairbanks (WRCC, 2008) over the 30-year period 1961 to 1990 ranged from -10.1 ºF in January to 62.5 ºF in July, yielding a yearly average temperature of 26.9 ºF. The all-time low temperature recorded was -62 ºF and the highest was 96 ºF. Average monthly precipitation ranges from 0.32 inch in April to 1.96 inches in August. The annual average precipitation was 10.9 inches. Most precipitation falls during the summer months, with some additional rainfall during the fall months. During the 20 years from 1987 through 2006, monthly temperatures were higher, with an average January temperature of -8.3 ºF and an average July temperature of 63.0 ºF, with an average yearly temperature of 28.4 ºF. Annual average precipitation for the same period was 10.6 inches per year. Average snowfall over the past 59 winters (1948 through 2007) was 66.9 inches, with a maximum of 147.3 inches during the winter of 1990–1991. Heavy ice fog occurs during December through January, with 3 to 4 days each month having a quarter-mile or less visibility.

Prevailing winds during June and July are from the southwest. During the other months, prevailing winds are from the north, with an average speed of about 5.3 miles per hour. The highest average wind speeds occur during the spring months, May being the windiest with an average speed of 7.7 mph. Wind speeds are 5 miles per hour or less approximately 60 percent of the time. Thunderstorms are infrequent and typically occur in June and July, with an average of three in June and two in July.

Air quality in the project area is influenced by a combination of flow channelized along the Tanana River valley, low winds and strong, shallow temperature inversions during the winter months. During these winter periods, emissions from human activities are trapped within the shallow temperature inversions that lead to increased concentrations of CO and $PM_{2.5}$.

Available data on air quality in the project area are limited to the greater Fairbanks area. Locations that are beyond the greater Fairbanks area would be expected to have lower air pollutant concentrations because emissions associated with human activities would be much lower.

Fort Wainwright, just east of Fairbanks, conducted ambient air quality monitoring to establish a baseline air quality database in support of construction projects envisioned for the U.S. Army units. Fort Wainwright ambient air monitoring was conducted for a 1-year period from February 3, 2003, to February 2, 2004 (Air Sciences, 2007).[4] Table 8-2 lists the highest, second highest, and annual average concentrations of selected criteria pollutants measured over the monitoring period in relation to the NAAQS. During the monitoring period, neither station showed an exceedance of the NAAQS. There was no monitoring for $PM_{2.5}$. These data are representative of the likely maximum existing ambient levels of the monitored air pollutants along the proposed NRE.

[4] The air monitoring was conducted in the vicinity of Fort Wainwright's coal-fired Central Heat and Power Plant (CHPP). The CHPP accounts for 97 percent of the aggregate air emissions from sources operated at Fort Wainwright. Two sites were monitored—one about 1,650 feet north-northeast of the CHPP and the other approximately 4,900 feet south-southwest of the CHPP. These locations were chosen based on air quality modeling, which indicated that maximum pollutant concentrations should occur in these vicinities.

Table 8-2
Measured Ambient Air Concentrations – Fort Wainwright, Alaska
(February 2, 2003, to February 2, 2004)[a]

			Concentration					
			Northern Station			Southern Station		
Pollutant	Averaging Period	NAAQS[b]	Highest	2nd High	Annual Average	Highest	2nd High	Annual Average
SO_2	3 hours[c]	500 ppb	186	166	N/A[d]	47.4	46.5	N/A
	24 hours	140 ppb	107	47.0	N/A	29.5	20.2	N/A
	Annual	30 ppb	N/A	N/A	5.6	N/A	N/A	3.0
CO	1 hour	35 ppm	5.15	4.92	N/A	4.71	4.63	N/A
	8 hours	9 ppm	3.85	3.41	N/A	3.77	3.48	NA
NO_2	Annual	53 ppb	N/A	N/A	11.1	N/A	N/A	9.7
PM_{10}	24 hours	150 µg/m^3	77.4	71.2	N/A	100.0	85.9	N/A

[a] Monitoring data source: Air Sciences, 2007.
[b] Concentrations are expressed in either parts per million, (ppm), parts per billion (ppb), or micrograms per cubic meter (µg/m3), consistent with the NAAQS.
[c] Secondary air quality standard only.
[d] N/A = not applicable.

Alaska has three CO monitoring sites in Fairbanks—the Old Post Office, Hunter Elementary School, and U.S. Army National Guard building. The Old Post Office is at 2nd and Cushman in downtown Fairbanks, two blocks south of the Chena River. Hunter Elementary School is at 17th and Gilliam Way. The school is on the edge of a residential neighborhood. The National Guard building is at 202 Wien Street in a downtown residential community west of the Old Post Office and just south of the Chena River. None of these monitoring sites exceeded the ambient CO standard from 2004 through 2006 (USEPA, 2008a).

In the late 1980s, monitoring sites for particulate matter less than 10 microns in size (PM_{10}) were installed in Fairbanks to investigate wood smoke concerns (ADEC, 2008a). Despite monitoring at several locations, the monitoring program did not find significant levels of either wood smoke or elevated levels of PM_{10}. While monitoring focused on road corridors and subdivisions with higher woodstove use, the city's program to pave roads and lower home heating fuel costs might have helped keep PM_{10} levels below the standard. The last ADEC monitor was uninstalled in the late 1990s based on low PM_{10} measurements and the need to switch focus to $PM_{2.5}$ (ADEC, 2008a).

Fairbanks has consistently experienced the highest $PM_{2.5}$ values measured in the state (ADEC, 2008a). Fairbanks has a single $PM_{2.5}$ monitor at the State Office Building in downtown Fairbanks. During the winter months, Fairbanks' strong winter inversions concentrate local $PM_{2.5}$ emissions. Fairbanks has had many days each year that exceed the new 24-hour $PM_{2.5}$ standard (35 µg/m^3). Emissions of SO_2, NO_2, O_3, and Pb have not been recently monitored by ADEC for reasons similar to PM_{10} (*i.e.*, historically low monitored values). Thus, the only pollutants ADEC routinely monitors in the area are CO and $PM_{2.5}$. Table 8-3 lists monitoring data for 2005 through 2007 for the vicinity of the existing rail line over which the proposed NRE would travel through Fairbanks.

Table 8-3
Measured Ambient Air Concentrations — Fairbanks, Alaska (2004–2006)[a,b]

Station Location	1-Hour CO Maximum (ppm)			8-Hour CO Maximum (ppm)		
	2005	2006	2007	2005	2006	2007
Old Post Office	7.8	6.9	7.5	4.7	4.0	3.4
Hunter Elementary School	6	6	5.6	4.9	3.8	3.3
U.S. Army National Guard	4.7	3.9	2.8	3.2	2.6	2.3
	24-Hour $PM_{2.5}$ 98th percentile (µg/m^3)			**Annual Average $PM_{2.5}$ (µg/m^3)**		
	2005	2006	2007	2005	2006	2007
State Office Building	40.6	42.2	29.7	14.0	11.2	10.2

[a] Source: USEPA, 2008a.
[b] ppm = parts per million; µg/m3 = micrograms per cubic meter.

8.3 Environmental Consequences

8.3.1 Methodology

SEA evaluated the potential impacts of increased emissions of NAAQS air pollutants in three steps. First, SEA identified and characterized the emission sources that would result from project construction and operation. Second, SEA aggregated these emission sources to obtain estimated total emissions per year for rail line construction and estimated total emissions per year for rail line operations for each NAAQS air pollutant. Third, SEA compared the increase in emissions with the Fairbanks North Star Borough (FNSB) emissions inventory and *de minimus* conformity thresholds.

Chapter 20 of the EIS describes proposed mitigation for impacts to air quality.

8.3.2 Common Impacts

SEA developed an emissions estimate for construction of the proposed rail line. Because the length of new rail line would be similar under all of the alternatives, the estimated emissions would be expected to be similar. To be conservative, SEA based the emissions analysis on the alternative segment requiring the most rail construction (82 miles, the longest potential route). Because only limited preliminary engineering information was available for the types of construction equipment to be used and their associated activity levels, SEA estimated construction-related emissions based on construction emission estimates developed in the detailed analysis conducted for the Eielson Branch Realignment Air Quality Assessment Study (Sierra Research, 2007).

Table 8-4 lists the results of the estimated construction emissions in comparison with the most recently available (USEPA 2001b) FNSB total emissions inventory. As shown, construction-related emissions would be expected to be a small fraction of the Borough's total annual emissions during the construction period. Estimated nitrogen oxides (NO_x), PM_{10}, and $PM_{2.5}$ construction-related emissions range from 0.6 to 0.9 percent of FNSB total emissions for each pollutant. These emissions would be spread out across the 82 miles of new rail line and approximately half of the rail line would be outside FNSB. None of the construction would occur in the Fairbanks and North Pole CO maintenance areas. In addition, the estimated emissions are well below the *de minimus* conformity thresholds (100 tons per year for each pollutant). Furthermore, estimated construction emissions would be temporary (that is, limited to the construction period). The fugitive dust emission rates include the use of watering during the summer season to limit fugitive dust emissions during construction.

Table 8-4
Estimated Construction Emissions along the Proposed NRE[a] and the Fairbanks North Star Borough 2001 Emission Inventory

Emission Sources	VOCs (mton/yr) [b]	CO (mton/yr)	NO_x (mton/yr)	PM_{10} (mton/yr)	$PM_{2.5}$ (mton/yr)	SO_2 (mton/yr)
Northern Rail Extension						
Construction Exhaust	4.8	33.6	52.6	5.9	5.9	0.03
Construction Fugitive Dust				22.2	8.3	
Total Construction	**5**	**34**	**53**	**28**	**14**	**0.03**
Fairbanks North Star Borough						
Off Highway (2001)	995	15,787	1,728	46	35	59
Highway Vehicles (2001)	1,393	5,831	482	65	59	63
Other Sources (Point and Area)	1,317	24,886	6,788	3,331	1,447	4,203
Total North Star Borough	**3,705**	**46,503**	**8,998**	**3,442**	**1,541**	**4,325**

[a] Based on Eielson Branch Realignment Air Quality Assessment conducted by Sierra Research 2006, Report No. SR2006-11-01(Sierra Research, 2007); most similar construction as segment "B."

[b] VOCs = volatile organic compounds; mton/yr = metric tons per year. Measurements are in metric tons per year. Totals assume construction takes place over a 3-year period and that the length of the new rail construction would be no more than 82 miles.

SEA also developed a conservative emissions estimate for the proposed NRE operations based on the longest rail line alternative. SEA estimated emissions assuming an average of one round trip freight rail train per day (this includes military and commercial freight) and four round trip passenger trains per day. Freight trains were assumed to have a total average length of 35 cars using one locomotive and an operational start year of 2012[5] or later using ultra low-sulfur diesel (effective December 1, 2010, all diesel fuel sold in Alaska is required to be ultra low sulfur diesel).

All base emission factors (grams per brake-horsepower-hour) were obtained from USEPA's Regulatory Support Document, Appendix O (USEPA, 1998) for line-haul Class I locomotives, with the exception of SO_2, which was not available in the support document. SEA obtained the SO_2 factor from a Sierra Research Study on the Development of Railroad Emission Inventory Methodologies (Sierra Research, 2004). SEA also used the Sierra report to identify appropriate mixed freight use fuel efficiency—710.6 ton-miles per gallon—for a rail line operating over similar grades (1 percent or less).

It is expected that passenger service would be provided using either one diesel motorized unit or a locomotive with two passenger cars. To be conservative, SEA estimated emissions based on the higher emitting configuration—the conventional passenger train using a single locomotive and two passenger railcars with a total passenger capacity of 185 seats operating on average at four times per day or a total of eight one-way trips per day.

Table 8-5 lists the estimated annual average operations emissions. These estimated operations emissions are small fractions in comparison to FNSB's annual highway vehicle emissions (see Table 8-4). In addition, the estimated emissions would occur over more than 100 miles of rail line (approximately 20 miles of existing Eielson Branch rail line and approximately 80 miles of proposed new rail line). Emissions of NO_x represent the largest fraction in comparison with the highway vehicle emissions at approximately 10 percent when only the NRE emissions within FNSB are included. Additionally, the emission totals for each of the pollutants are well below the *de minimis* conformity thresholds of 100 tons per year for each pollutant.

[5] Assuming construction would require 3 years.

Table 8-5
Estimated Annual Average Operations Emissions along the Proposed NRE[a]

Emission Sources	VOCs (mton/yr[b])	CO (mton/yr)	NO_x (mton/yr)	PM_{10} (mton/yr)	$PM_{2.5}$ (mton/yr)	SO_2 (mton/yr)
Freight Train Operation	3.1	10.3	55.1	2.0	2.0	0.2
Passenger Service Operation	1.2	3.9	20.6	0.8	0.7	0.1
Total Operations	**4.3**	**14.2**	**75.7**	**2.8**	**2.7**	**0.3**

[a] Based on the operation of eight one-way passenger (two diesel multiple units per trip) trains and an average of one freight train (each way) per day.
[b] mton/yr = metric tons per year

To further compare the relative increase in emissions, SEA estimated the current highway traffic emissions along Richardson Highway between Balch Way and Old Richardson Highway (a distance of 18 miles) and compared those emissions with the estimated emissions from proposed rail line operations over the same distance. SEA obtained the average number of vehicle miles traveled over this section of highway from the Alaska Department of Transportation and Public Facilities (ADOT&PF, 2007a) for 2006 at 73,480 vehicle miles traveled (VMT) with a projected arterial growth rate of 0.6 percent per year (Federal Highway Administration [FHWA], 2007a) so that by 2012, the total VMT is estimated at 76,160. ADOT&PF also provided information on the truck fraction along this portion of the highway at 12 percent.

SEA estimated highway traffic emissions along this segment of the highway using the vehicle traffic information volume information above and emission factors (grams per mile) from USEPA's MOBILE6.2[6] for the year 2012. The emission factors used were based on Fairbanks-specific mobile emission inputs and an average of the winter and summer seasons' vehicle registration information (USEPA, 2003). Table 8-6 lists the estimated annual emissions from rail line operations over an 18-mile segment of the proposed NRE in comparison with estimated vehicle emissions along a comparable length of Richardson Highway between Balch Way and Old Richardson Highway. These results show that the estimated rail emissions would be a small fraction of the highway emissions, with the exception of NO_x and particulate matter. This is due to the fairly high NO_x and PM emission rates for diesel-fueled locomotives.

Table 8-6
Comparison of Estimated Annual Proposed NRE Operations and Highway Emissions[a]

Emission Sources	VOCs (mton/yr[b])	CO (mton/yr)	NO_x (mton/yr)	PM_{10} (mton/yr)	$PM_{2.5}$ (mton/yr)	SO_2 (mton/yr)
Freight Train Operation	0.54	1.8	9.7	0.36	0.35	0.03
Passenger Train Service Operation	0.20	0.68	3.6	0.13	0.13	0.01
Total Operations	**0.74**	**2.5**	**13.3**	**0.49**	**0.48**	**0.04**
Traffic along Richardson Highway	19.0	369.8	46.9	1.4	0.9	0.3

[a] Annual average traffic projected for 2012 along Richardson Highway between Balch Way and Old Richardson Highway and rail traffic along 18-mile segment of the NRE.
[b] mton/yr = metric tons per year.

[6] A model that estimates emission rates for the on-road fleet of vehicles taking into consideration such factors as fleet age, miles driven, type of fuel, vehicle engine size, engine technology and ambient temperature

It is expected that emissions from the current highway activity would decrease as a result of the proposed NRE to the extent that transportation activity by car or truck would be shifted to rail.

Based on the findings presented above, SEA has concluded that estimated increase in emissions from construction and operation of the proposed NRE would be minimal in the context of existing conditions.

8.3.3 Greenhouse Gas Emissions

Greenhouse gas emissions associated with the proposed action would be overwhelmingly carbon dioxide (CO_2) emissions. Table 8-7 lists estimated CO_2 emissions associated with construction and operation of the proposed NRE. Construction emissions would be limited to the construction period, conservatively assumed to be 3 years, and operations emissions would occur in subsequent years. In comparison, the 2005 annual CO_2 emissions from rail operations for all of Alaska are estimated at 120,000 metric tons per year (ADEC, 2008b).

Table 8-7
Annual Average Emissions of Greenhouse Gases Associated with Construction[a] and Operations of the Proposed Northern Rail Extension

Emission Sources	CO_2 (metric tons per year)
Freight Train Operation	4,261
Passenger Service Operation	3,186
Total Operations	**7,447**
Construction	3,733

[a] Construction is assumed to take place over 3 years.

The proposed action would represent a 6.3-percent increase in Alaska rail CO_2 emissions. For the state as a whole, this would represent an increase in CO_2 emissions of less than 0.02 percent (ADEC, 2008b). Rail line operations would represent about 0.0001-percent increase in the U.S. annual (2006) average emission rate of 5,983,100,000 metric tons of CO_2 (USEPA, 2008b).

The U.S. emission rate represents about 24 percent of the total global CO_2 emission rate. Also, CO_2 emissions from current highway activity would be expected to decrease as a result of the proposed action to the extent that transportation activity by car or truck would be shifted to rail. Therefore, the incremental emissions and climate change impacts of the proposed NRE are considered very small.

8.3.4 No-Action Alternative

Under the No-Action Alternative, any increases in air emissions in the area would not be attributed to the proposed NRE. Current emissions associated with traffic from passenger vehicles, military, and commercial trucks are anticipated to remain the same.