

# Draft Supplemental Environmental Impact Statement

Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule III  
for Model Years 2022 to 2031 Passenger Cars and Light Trucks

Appendices

December 2025



U.S. Department of Transportation  
**National Highway Traffic Safety  
Administration**



# **APPENDIX A**

## **Quick Reference Guide**

# APPENDIX A      QUICK REFERENCE GUIDE

## Tables

---

	Page
Table S-1. Regulatory Alternatives Under Consideration for MY 2022–2031 Passenger Car and Light Truck Standards .....	S-5
Table S-2. Projected Average Required Fleet-Wide Fuel Economy (mpg) for Combined U.S. Passenger Cars and Light Trucks by Model Year and Alternative .....	S-6
Table S-3. Fuel Consumption (for the No-Action Alternative) and Change in Fuel Consumption by Alternative for all Light-Duty Vehicles (Passenger Cars and Light Trucks) (billion gasoline gallon equivalent total for calendar years 2024–2050) .....	S-9
Table S-4. Reasonably Foreseeable Impacts from the Proposed Action and Alternatives .....	S-18
Table 2.2.1-1. No-Action Alternative: Estimated Average Required U.S. Passenger Car and Light Truck Fleet-Wide Fuel Economy (mpg) by Model Year .....	2-4
Table 2.2.2-1. Regulatory Alternatives Under Consideration for MY 2022–2031 Passenger Car and Light Truck Standards .....	2-5
Table 2.2.2-2. Alternative 1: Estimated Average Required U.S. Passenger Car and Light Truck Fleet-Wide Fuel Economy (mpg) by Model Year .....	2-7
Table 2.2.2-3. Alternative 2: Estimated Average Required U.S. Passenger Car and Light Truck Fleet-Wide Fuel Economy (mpg) by Model Year .....	2-7
Table 2.2.2-4. Alternative 3: Estimated Average Required U.S. Passenger Car and Light Truck Fleet-Wide Fuel Economy (mpg) by Model Year .....	2-8
Table 3.1-1. CAFE Model Estimates of Energy Consumption for LD Vehicles for 2024 and 2050 .....	3-3
Table 3.3-1. Fuel Consumption Under the No-Action Alternative and Incremental Changes in Fuel Consumption by Action Alternative for all Light-Duty Vehicles (Passenger Cars and Light Trucks) (billion gasoline gallon equivalent total for calendar years 2024–2050) .....	3-5
Table 4.2.1-1. Nationwide Criteria Pollutant Emissions (tons per year) from U.S. Passenger Cars and Light Trucks for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts .....	4-6
Table 4.2.1-2. Nationwide Criteria Pollutant Emissions (tons per year) in 2035 from U.S. Passenger Cars and Light Trucks by Emissions Component for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts .....	4-8
Table 4.2.1-3. Maximum Changes in Criteria Pollutant Emissions (tons per year) from U.S. Passenger Cars and Light Trucks, Across All Nonattainment or Maintenance Areas, Alternatives, and Years, Proposed Action Impacts .....	4-11
Table 4.2.2-1. Nationwide Mobile Source Air Toxic Emissions (tons per year) from U.S. Passenger Cars and Light Trucks for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts .....	4-13
Table 4.2.2-2. Nationwide Mobile Source Air Toxic Emissions (tons per year) in 2035 from U.S. Passenger Cars and Light Trucks, by Emissions Component for the No-	

Action Alternative, and Change in Emissions by Action Alternative, Proposed  
Action Impacts..... 4-16

Table 4.2.2-3. Maximum Changes in Mobile Source Air Toxic Emissions (tons per year) from  
U.S. Passenger Cars and Light Trucks across All Nonattainment or Maintenance  
Areas, Alternatives, and Years, Proposed Action Impacts ..... 4-18

Table 4.2.3-1. Nationwide Changes in Health Effects (cases per year) from Criteria Pollutant  
Emissions from U.S. Passenger Cars and Light Trucks by Alternative, Proposed  
Action Impacts..... 4-19

Table 5.3.1-1. Carbon Dioxide Emissions and Emissions Increases (MMTCO<sub>2</sub>) from All Light-  
Duty Vehicles, 2027 to 2100, by Alternative ..... 5-3

Table 5.3.1-2. Emissions of Non-Criteria Emissions (MMTCO<sub>2e</sub> per year) from All Passenger  
Cars and Light Trucks for the No-Action Alternative, and Change in Emissions by  
Alternative ..... 5-5

Table 5.3.2-1. Changes in Carbon Dioxide Concentrations, Global Mean Surface  
Temperature, Sea-Level Rise, and Ocean pH by Alternative..... 5-7

Table 5.3.2-3. Rates of Global Mean Precipitation Increase over the 21st Century, per Shared  
Socioeconomic Pathways Emissions Scenario..... 5-10

Table 5.3.2-4. Changes in Carbon Dioxide Concentrations, Global Mean Surface  
Temperature, Sea-Level Rise, and Ocean pH for Varying Climate Sensitivities by  
Alternative ..... 5-12

Table 6.4-1. Summary of CAFE Model’s Highest Technology Penetration Rates for Passenger  
Car and Light Trucks in MY 2031 ..... 6-13

Table 8.1-1. Proposed Action Impacts of CAFE Standards and Alternatives ..... 8-2

# Figures

	Page
Figure S-1. Nationwide Percentage Changes in Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks for 2035 by Action Alternative Compared to the No-Action Alternative, Proposed Action Impacts .....	S-13
Figure S-2. Nationwide Percentage Changes in Mobile Source Air Toxic Emissions from U.S. Passenger Cars and Light Trucks for 2035 by Action Alternative Compared to the No-Action Alternative, Proposed Action Impacts .....	S-14
Figure S-3. Projected Annual Carbon Dioxide Emissions (MMTCO <sub>2</sub> ) from All U.S. Passenger Cars and Light Trucks by Alternative .....	S-17
Figure 4.2.1-1. Nationwide Percentage Changes in Criteria Pollutant Emissions from U.S. Passenger Cars and Light Trucks for 2035 by Action Alternative Compared to the No-Action Alternative, Proposed Action Impacts .....	4-7
Figure 4.2.2-1. Nationwide Percentage Changes in Mobile Source Air Toxic Emissions from U.S. Passenger Cars and Light Trucks for 2035 by Action Alternative Compared to the No-Action Alternative, Proposed Action Impacts.....	4-15
Figure 5.3.1-1. Carbon Dioxide Emissions and Emissions Increases (MMTCO <sub>2</sub> ) from All Light-Duty Vehicles, 2027 to 2100, by Alternative .....	5-4
Figure 5.3.1-2. Projected Annual Carbon Dioxide Emissions (MMTCO <sub>2</sub> ) from All Passenger Cars and Light Trucks by Alternative .....	5-5
Figure 5.3.2-1. Increases in Atmospheric Carbon Dioxide Concentrations (ppm) Compared to the No-Action Alternative .....	5-8

## Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
AEO	Annual Energy Outlook
AFLEET	Alternative Fuel Life-Cycle Environmental and Economic Transportation
ANL	Argonne National Laboratory
BEV	battery electric vehicle
CAA	Clean Air Act
CAFE	Corporate Average Fuel Economy
CAFE Model	CAFE Compliance and Effects Modeling System
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	carbon dioxide equivalent
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DPM	diesel particulate matter
E.O.	Executive Order
E10	10 percent ethanol blends
E85	ethanol
EIA	Energy Information Administration
EISA	Energy Independence and Security Act of 2007
EPA	U.S. Environmental Protection Agency
EPCA	Energy Policy and Conservation Act of 1975
ERF	effective radiative forcing
ESA	Endangered Species Act
EV	electric vehicle
FCV	fuel cell vehicle
FE	fuel efficiency
g	grams
REET	Greenhouse Gas, Regulated Emissions, and Energy Use in Transportation
GVWR	gross vehicle weight rating
HD	heavy-duty
HDPUV	heavy-duty pickup trucks and van
HEVs	hybrid electric vehicles
HVAC	heating, ventilation, and air conditioning
ICE	internal combustion engine
IEA	International Energy Agency

IPCC AR6	Sixth Assessment Report of the United Nations Intergovernmental Panel on Climate Change
kg	kilograms
LABs	lead-acid batteries
LCA	Life-cycle assessment
LD	light-duty
MDHD	medium- and heavy-duty
MMBtu	million British thermal units
MMTCO <sub>2</sub>	million metric tons of carbon dioxide
MOVES5	Motor Vehicle Emission Simulator
mpg	miles per gallon
MSAT	mobile source air toxic
MY	model year
N <sub>2</sub> O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCEs	non-criteria emissions
NEPA	National Environmental Policy Act
NHTSA	National Highway Traffic Safety Administration
NMC	lithium nickel manganese cobalt oxide
NO	nitric oxide
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NPRM	Notice of Proposed Rulemaking
OA	Operating Administration
OECD	Organisation for Economic Co-operation and Development
PHEV	plug-in hybrid electric vehicle
PHMSA	Pipeline and Hazardous Materials Safety Administration
PM	particulate matter
PM2.5	particulate matter with an aerodynamic diameter equal to or less than 2.5 microns
PM10	particulate matter with an aerodynamic diameter equal to or less than 10 microns
ppm	parts per million
PRIA	Preliminary Regulatory Impact Analysis
SAFE	Safer Affordable Fuel-Efficient
SEIS	Supplemental Environmental Impact Statement
SIP	State Implementation Plan
SLCF	short-lived climate forcer
SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SSP	Shared Socioeconomic Pathway
TSD	Technical Support Document

**Appendix A Quick Reference Guide**

---

U.S.C.	U.S. Code
VMT	vehicle miles traveled
VOC	volatile organic compound
Volpe	Volpe National Transportation Systems Center
W/m <sup>2</sup>	watts per square meter



## Glossary

The glossary provides the following definitions of technical and scientific terms, as well as plain English terms used differently in the context of this SEIS.

Term	Definition
adaptation	Measures to reduce the vulnerability of natural and human systems against actual or expected impacts of climate trends.
aerodynamic design	Features of vehicle design that can increase fuel efficiency by reducing drag.
anthropogenic	Resulting from or produced by human beings.
attribute-based standards	Each vehicle's performance standard (fuel economy or GHG emissions) is based on the model's attribute, which NHTSA classifies as the vehicle's footprint.
biofuel	Energy sources, such as biodiesel or ethanol, made from living things or the waste that living things produce.
black carbon (elemental carbon)	Most strongly light-absorbing component of particulate matter, formed by the incomplete combustion of fossil fuels, biofuels, and biomass.
CAFE Model	Model that estimates fuel consumption and tailpipe emissions under various technology, regulatory, and market scenarios.
carbon dioxide equivalent (CO <sub>2</sub> e)	Measure that expresses total greenhouse gas emissions in a single unit.
carbon storage, sequestration	The removal and storage of a greenhouse gas, an aerosol, or a precursor of a greenhouse gas or aerosol from the atmosphere.
compound events	Simultaneous occurrence of two or more events that collectively lead to extreme impacts.
conformity regulations, General Conformity Rule	Requirement that Federal actions do not interfere with a state's ability to implement its State Implementation Plan and meet the National Ambient Air Quality Standards (NAAQS).
criteria pollutants	Six common pollutants for which the U.S. Environmental Protection Agency (EPA) sets National Ambient Air Quality Standards (NAAQS): carbon monoxide (CO), nitrogen dioxide (NO <sub>2</sub> ), ozone (O <sub>3</sub> ), sulfur dioxide (SO <sub>2</sub> ), fine particulate matter (PM), and airborne lead. Potential impacts of an action on ozone are evaluated based on the emissions of the ozone precursors nitrogen oxides (NO <sub>x</sub> ) and volatile organic compounds (VOCs).
downstream emissions	Emissions related to vehicle life-cycle stages after vehicle production, including vehicle use and disposal.
electric vehicle (EV)	Vehicle that runs partially, primarily, or completely on electricity. These include hybrid electric vehicles (HEVs), battery-powered electric vehicles (BEVs), and plug-in hybrid electric vehicles (PHEVs).
energy intensity	Ratio of energy inputs to gross domestic product. Also a common term used in life-cycle assessment to express energy consumption per functional unit (e.g., kilowatt-hours per mile).
eutrophication	Enrichment of a waterbody with plant nutrients as a result of phosphorus and nitrogen inputs.
flex fuel or E85	An ethanol-gasoline fuel blend containing 51 to 83 percent ethanol fuel, depending on geography and season. (Source: <a href="https://www.fueleconomy.gov/feg/ethanol.shtml">https://www.fueleconomy.gov/feg/ethanol.shtml</a> )

**Appendix A Quick Reference Guide**

<b>Term</b>	<b>Definition</b>
fuel efficiency	Amount of fuel required to perform a certain amount of work. A vehicle is more fuel efficient if it can perform more work while consuming less fuel.
fuel pathway	Supply chain characteristics of refined gasoline and other transportation fuels, whether sourced or refined in the United States or elsewhere.
Greenhouse Gas Regulated Emissions, and Energy Use in Transportation (GREET) model	Model developed by Argonne National Laboratories that provides estimates of the life-cycle energy use, greenhouse gas emissions, and criteria air pollutant emissions of fuel production and vehicle use.
hazardous air pollutants	Pollutants that cause or may cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental and ecological effects. The U.S. Environmental Protection Agency (EPA) is required to control 188 hazardous air pollutants, also known as toxic air pollutants or air toxics.
heavy-duty pickup trucks and vans (HDPUV)	For purposes of this SEIS pickup trucks and vans with a gross vehicle weight rating (GVWR) between 8,501 pounds and 14,000 pounds (also referred to in the industry as Class 2b through 3 vehicles) and any vehicles that fall under the subcategories described in 49 CFR 523.7(b). Vehicles described under 49 CFR 523.7(c) are also considered HDPUVs but are regulated under the Medium and Heavy Duty Fuel Efficiency Improvement Program.
hydraulic fracturing	Method of releasing gas from shale formations by forcing water at high pressure into a well, thereby cracking the shale.
hydrocarbon	Organic compound consisting entirely of hydrogen and carbon.
life-cycle assessment (LCA)	Evaluation of all of the inputs and outputs over the lifetime of a product.
lithium-ion battery	Batteries that use lithium in cathode chemistries; a common battery technology for electric vehicles.
maintenance area	Former nonattainment area now in compliance with the National Ambient Air Quality Standards (NAAQS).
maximum feasible standard	Highest achievable fuel economy standard for a particular model year.
mitigation	Measures that avoid, minimize, rectify, reduce, or compensate for the impacts of an action.
mobile source air toxics (MSATs)	Hazardous air pollutants emitted from vehicles that are known or suspected to cause cancer or other serious health and environmental effects. MSATs included in this analysis are acetaldehyde, acrolein, benzene, 1,3-butadiene, diesel particulate matter, and formaldehyde.
morphology	Structural or anatomical features of a species, which may be affected by climate trends.
Motor Vehicle Emissions Simulator (MOVES) model	U.S. Environmental Protection Agency (EPA) model used to calculate tailpipe emissions.
National Ambient Air Quality Standards (NAAQS)	Standards for ambient concentrations of six criteria air pollutants established by the U.S. Environmental Protection Agency (EPA) pursuant to the Clean Air Act.
No-Action Alternative	Assumes that no action would be taken and provides the analytical baseline against which to compare the environmental impacts of the SAFE action alternatives.

Term	Definition
non-criteria emissions (NCEs)	Refers to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are not classified as criteria pollutants under the Clean Air Act.
nonattainment area	Regions where concentrations of criteria pollutants exceed National Ambient Air Quality Standards (NAAQS). These areas are required to implement plans to comply with the standards within specified periods.
ocean acidification	Decrease in the pH of sea water due to the uptake of anthropogenic carbon dioxide (CO <sub>2</sub> ).
ozone	Criteria pollutant formed by reactions among nitrogen oxides (NO <sub>x</sub> ) and volatile organic compounds (VOCs).
passenger cars and light trucks	Motor vehicles with a gross vehicle weight rating of less than 8,500 pounds and medium-duty passenger vehicles with a gross vehicle weight rating of less than 10,000 pounds. Also referred to as <i>light-duty vehicles</i> .
particulate matter (PM)	Discrete particles that include dust, dirt, soot, smoke, and liquid droplets directly emitted into the air.
Proposed Action and alternatives	NHTSA's three proposed action alternatives to set MY 2022–2031 SAFE standards for passenger cars and light trucks.
radiative forcing (RF)	Change in energy fluxes caused by a specific driver that can alter the Earth's energy budget. Positive radiative forcing leads to warming while a negative radiative forcing leads to cooling.
reasonably foreseeable impacts from the Proposed Action	Potential beneficial or adverse changes caused by the action that occur at the same time and place.
reasonably foreseeable impacts from other actions	Impacts caused by the action when added to other past, present, and reasonably foreseeable actions in the study area.
rebound effect	Situation in which improved fuel economy would reduce the cost of driving and, hypothetically, lead to additional driving, thus increasing emissions of air pollutants.
SAFE action alternatives	NHTSA's three proposed action alternatives to set MY 2022–2031 SAFE standards for passenger cars and light trucks.
thermal expansion (of water)	Change in volume of water in response to a change in temperature; a cause of sea-level rise.
unavoidable adverse impact	Impact of the action that cannot be mitigated.
upstream emissions	Emissions associated with crude-petroleum (feedstock) recovery and transportation, and with the production, refining, transportation, storage, and distribution of transportation fuels.
vehicle mass reduction	A means of increasing fuel efficiency by reducing vehicle weight (e.g., laser welding, hydroforming, tailor-welded blanks, aluminum casting and extrusion), and substituting lighter-weight materials for heavier materials.
vehicle miles traveled (VMT)	Total number of miles driven, typically reported annually.

## **APPENDIX B**

### **U.S. Passenger Car and Light Truck Results Reported Separately**

## APPENDIX B U.S. PASSENGER CAR AND LIGHT TRUCK RESULTS REPORTED SEPARATELY

### B.1 Energy—Fuel Consumption Impacts Reported Separately for Passenger Cars and Light Trucks

**Table B-1. Fuel Consumption and Change in Fuel Consumption by Alternative (billion gasoline gallon equivalent total for calendar years 2024–2050) <sup>a</sup>**

	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Fuel Consumption</b>		<b>Change in Fuel Use Compared to the No-Action Alternative</b>		
Cars	850	+574 (+67%)	+574 (+67%)	+575 (+68%)
Light trucks <sup>b</sup>	2,017	-497 (-25%)	-497 (-25%)	-504 (-25%)
All LD vehicles	2,867	+77 (+3%)	+77 (+3%)	+71 (+2%)

Notes: LD = light duty.

<sup>a</sup> Fuel consumption values for the No-Action Alternative are rounded for presentation purposes. As a result, differences calculated from these rounded values may not exactly match the differences shown for each action alternative, which are based on the original unrounded figures.

<sup>b</sup> The decreases shown for light truck fleet fuel consumption under the action alternatives (compared to the No-Action Alternative) are due to NHTSA’s proposed reclassification of light trucks as passenger cars starting in MY 2028, as discussed in Section VI of the proposed rule preamble and TSD Chapter 2.7.

### B.2 Air Quality—Nationwide Emissions Impacts Reported Separately for Passenger Cars and Light Trucks

**Table B-2. Nationwide Criteria Pollutant Emissions (tons per year) in 2035 from Passenger Cars and Light Trucks by Emissions Component for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts <sup>a,b,c</sup>**

Emissions Component	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Carbon monoxide (CO)</b>				
Cars tailpipe	2,383,338	614,572	614,572	615,320
Cars upstream	26,539	16,396	16,396	16,397
Trucks tailpipe	4,057,717	-560,204	-560,204	-563,203
Trucks upstream	55,378	-16,635	-16,635	-16,599
<i>Tailpipe subtotal (cars + trucks)</i>	<i>6,441,055</i>	<i>54,368</i>	<i>54,368</i>	<i>52,117</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>81,917</i>	<i>-239</i>	<i>-239</i>	<i>-202</i>
<b>Total (tailpipe + upstream)</b>	<b>6,522,972</b>	<b>54,129</b>	<b>54,129</b>	<b>51,915</b>
<b>Nitrogen oxides (NO<sub>x</sub>)</b>				
Cars tailpipe	46,842	11,968	11,968	11,983
Cars upstream	49,585	31,080	31,080	31,082
Trucks tailpipe	101,586	-10,941	-10,941	-10,996

**Appendix B U.S. Passenger Car and Light Truck Results Reported Separately**

<b>Emissions Component</b>	<b>No-Action (Total)</b>	<b>Alt. 1 (Change)</b>	<b>Alt. 2 (Change)</b>	<b>Alt. 3 (Change)</b>
Trucks upstream	107,327	-30,552	-30,552	-30,568
<i>Tailpipe subtotal (cars + trucks)</i>	<i>148,428</i>	<i>1,027</i>	<i>1,027</i>	<i>987</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>156,912</i>	<i>528</i>	<i>528</i>	<i>514</i>
<b>Total (tailpipe + upstream)</b>	<b>305,340</b>	<b>1,556</b>	<b>1,556</b>	<b>1,500</b>
<b>Particulate matter (PM2.5)</b>				
Cars tailpipe	2,834	504	504	504
Cars upstream	3,741	2,310	2,310	2,311
Trucks tailpipe	5,746	-461	-461	-463
Trucks upstream	7,953	-2,286	-2,286	-2,286
<i>Tailpipe subtotal (cars + trucks)</i>	<i>8,580</i>	<i>43</i>	<i>43</i>	<i>41</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>11,694</i>	<i>24</i>	<i>24</i>	<i>25</i>
<b>Total (tailpipe + upstream)</b>	<b>20,274</b>	<b>66</b>	<b>66</b>	<b>66</b>
<b>Sulfur oxides (SO<sub>2</sub>)</b>				
Cars tailpipe	1,321	935	935	935
Cars upstream	19,749	11,303	11,303	11,297
Trucks tailpipe	3,448	-766	-766	-780
Trucks upstream	37,610	-12,508	-12,508	-12,394
<i>Tailpipe subtotal (cars + trucks)</i>	<i>4,769</i>	<i>169</i>	<i>169</i>	<i>155</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>57,359</i>	<i>-1,205</i>	<i>-1,205</i>	<i>-1,097</i>
<b>Total (tailpipe + upstream)</b>	<b>62,128</b>	<b>-1,036</b>	<b>-1,036</b>	<b>-941</b>
<b>Volatile organic compounds (VOCs)</b>				
Cars tailpipe	201,953	36,879	36,879	36,932
Cars upstream	87,873	61,453	61,453	61,486
Trucks tailpipe	309,684	-33,892	-33,892	-34,066
Trucks upstream	224,177	-51,341	-51,341	-52,151
<i>Tailpipe subtotal (cars + trucks)</i>	<i>511,637</i>	<i>2,987</i>	<i>2,987</i>	<i>2,866</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>312,050</i>	<i>10,112</i>	<i>10,112</i>	<i>9,335</i>
<b>Total (tailpipe + upstream)</b>	<b>823,686</b>	<b>13,100</b>	<b>13,100</b>	<b>12,202</b>

Notes:

<sup>a</sup> Impacts have been rounded to the nearest whole number.

<sup>b</sup> Negative values indicate emissions decreases; positive values indicate emissions increases.

<sup>c</sup> Totals may not sum due to rounding.

**Table B-3. Nationwide Criteria Pollutant Emissions (tons per year) in 2050 from Passenger Cars and Light Trucks by Emissions Component for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts <sup>a,b,c</sup>**

<b>Emissions Component</b>	<b>No-Action (Total)</b>	<b>Alt. 1 (Change)</b>	<b>Alt. 2 (Change)</b>	<b>Alt. 3 (Change)</b>
<b>Carbon monoxide (CO)</b>				
Cars tailpipe	995,072	1,297,230	1,297,230	1,304,776
Cars upstream	19,137	24,387	24,387	24,354

**Appendix B U.S. Passenger Car and Light Truck Results Reported Separately**

<b>Emissions Component</b>	<b>No-Action (Total)</b>	<b>Alt. 1 (Change)</b>	<b>Alt. 2 (Change)</b>	<b>Alt. 3 (Change)</b>
Trucks tailpipe	2,542,981	-1,203,131	-1,203,131	-1,210,072
Trucks upstream	45,586	-23,287	-23,287	-23,380
<i>Tailpipe subtotal (cars + trucks)</i>	<i>3,538,053</i>	<i>94,099</i>	<i>94,099</i>	<i>94,704</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>64,723</i>	<i>1,100</i>	<i>1,100</i>	<i>974</i>
<b>Total (tailpipe + upstream)</b>	<b>3,602,777</b>	<b>95,198</b>	<b>95,198</b>	<b>95,678</b>
<b>Nitrogen oxides (NO<sub>x</sub>)</b>				
Cars tailpipe	14,431	20,640	20,640	20,761
Cars upstream	33,681	45,970	45,970	45,956
Trucks tailpipe	40,258	-19,142	-19,142	-19,247
Trucks upstream	86,445	-42,902	-42,902	-43,183
<i>Tailpipe subtotal (cars + trucks)</i>	<i>54,689</i>	<i>1,498</i>	<i>1,498</i>	<i>1,514</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>120,126</i>	<i>3,068</i>	<i>3,068</i>	<i>2,773</i>
<b>Total (tailpipe + upstream)</b>	<b>174,815</b>	<b>4,567</b>	<b>4,567</b>	<b>4,287</b>
<b>Particulate matter (PM2.5)</b>				
Cars tailpipe	421	279	279	280
Cars upstream	2,568	3,400	3,400	3,400
Trucks tailpipe	1,228	-256	-256	-257
Trucks upstream	6,390	-3,181	-3,181	-3,201
<i>Tailpipe subtotal (cars + trucks)</i>	<i>1,649</i>	<i>23</i>	<i>23</i>	<i>23</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>8,958</i>	<i>219</i>	<i>219</i>	<i>199</i>
<b>Total (tailpipe + upstream)</b>	<b>10,608</b>	<b>242</b>	<b>242</b>	<b>221</b>
<b>Sulfur oxides (SO<sub>2</sub>)</b>				
Cars tailpipe	773	1,453	1,453	1,459
Cars upstream	13,334	15,343	15,343	15,284
Trucks tailpipe	2,789	-1,228	-1,228	-1,251
Trucks upstream	28,531	-15,275	-15,275	-15,266
<i>Tailpipe subtotal (cars + trucks)</i>	<i>3,562</i>	<i>225</i>	<i>225</i>	<i>208</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>41,865</i>	<i>68</i>	<i>68</i>	<i>18</i>
<b>Total (tailpipe + upstream)</b>	<b>45,426</b>	<b>293</b>	<b>293</b>	<b>227</b>
<b>Volatile organic compounds (VOCs)</b>				
Cars tailpipe	87,463	94,257	94,257	94,700
Cars upstream	52,385	95,182	95,182	95,568
Trucks tailpipe	228,067	-86,964	-86,964	-87,502
Trucks upstream	181,879	-81,177	-81,177	-82,581
<i>Tailpipe subtotal (cars + trucks)</i>	<i>315,530</i>	<i>7,293</i>	<i>7,293</i>	<i>7,198</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>234,264</i>	<i>14,005</i>	<i>14,005</i>	<i>12,987</i>
<b>Total (tailpipe + upstream)</b>	<b>549,795</b>	<b>21,296</b>	<b>21,296</b>	<b>20,184</b>

Notes:

<sup>a</sup> Impacts have been rounded to the nearest whole number.

<sup>b</sup> Negative values indicate emissions decreases; positive values indicate emissions increases.

<sup>c</sup> Totals may not sum due to rounding.

**Table B-4. Nationwide Mobile Source Air Toxic Emissions (tons per year) in 2035 from Passenger Cars and Light Trucks by Emissions Component for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts<sup>a,b,c</sup>**

Emissions Component	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Acetaldehyde</b>				
Cars tailpipe	755	332	332	332
Cars upstream	17	12	12	12
Trucks tailpipe	1,457	-299	-299	-301
Trucks upstream	44	-9	-9	-10
<i>Tailpipe subtotal (cars + trucks)</i>	<i>2,212</i>	<i>33</i>	<i>33</i>	<i>31</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>61</i>	<i>3</i>	<i>3</i>	<i>2</i>
<b>Total (tailpipe + upstream)</b>	<b>2,273</b>	<b>35</b>	<b>35</b>	<b>33</b>
<b>Acrolein</b>				
Cars tailpipe	41	17	17	17
Cars upstream	2	2	2	2
Trucks tailpipe	79	-15	-15	-15
Trucks upstream	6	-1	-1	-1
<i>Tailpipe subtotal (cars + trucks)</i>	<i>120</i>	<i>2</i>	<i>2</i>	<i>2</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>8</i>	<i>1</i>	<i>1</i>	<i>1</i>
<b>Total (tailpipe + upstream)</b>	<b>128</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Benzene</b>				
Cars tailpipe	2,570	956	956	957
Cars upstream	311	221	221	221
Trucks tailpipe	4,646	-869	-869	-873
Trucks upstream	808	-181	-181	-184
<i>Tailpipe subtotal (cars + trucks)</i>	<i>7,216</i>	<i>87</i>	<i>87</i>	<i>84</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>1,119</i>	<i>40</i>	<i>40</i>	<i>37</i>
<b>Total (tailpipe + upstream)</b>	<b>8,335</b>	<b>127</b>	<b>127</b>	<b>120</b>
<b>1,3-Butadiene</b>				
Cars tailpipe	290	132	132	132
Cars upstream	2	1	1	1
Trucks tailpipe	550	-120	-120	-120
Trucks upstream	4	-1	-1	-1
<i>Tailpipe subtotal (cars + trucks)</i>	<i>840</i>	<i>12</i>	<i>12</i>	<i>12</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>6</i>	<i>0</i>	<i>0</i>	<i>0</i>
<b>Total (tailpipe + upstream)</b>	<b>846</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>Diesel particulate matter (DPM)</b>				
Cars tailpipe	9	0	0	0
Cars upstream	16,677	11,030	11,030	11,034
Trucks tailpipe	45	1	1	1
Trucks upstream	38,960	-10,082	-10,082	-10,153



Emissions Component	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<i>Tailpipe subtotal (cars + trucks)</i>	54	1	1	1
<i>Upstream subtotal (cars + trucks)</i>	55,637	948	948	881
<b>Total (tailpipe + upstream)</b>	<b>55,690</b>	<b>949</b>	<b>949</b>	<b>882</b>
<b>Formaldehyde</b>				
Cars tailpipe	449	176	176	176
Cars upstream	123	88	88	88
Trucks tailpipe	868	-159	-159	-160
Trucks upstream	323	-72	-72	-73
<i>Tailpipe subtotal (cars + trucks)</i>	<i>1,317</i>	<i>17</i>	<i>17</i>	<i>16</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>446</i>	<i>16</i>	<i>16</i>	<i>15</i>
<b>Total (tailpipe + upstream)</b>	<b>1,763</b>	<b>33</b>	<b>33</b>	<b>31</b>

Notes:

<sup>a</sup> Impacts have been rounded to the nearest whole number.

<sup>b</sup> Negative values indicate emissions decreases; positive values indicate emissions increases.

<sup>c</sup> Totals may not sum due to rounding.

**Table B-5. Nationwide Mobile Source Air Toxic Emissions (tons per year) in 2050 from Passenger Cars and Light Trucks by Emissions Component for the No-Action Alternative, and Change in Emissions by Action Alternative, Proposed Action Impacts <sup>a,b,c</sup>**

Emissions Component	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Acetaldehyde</b>				
Cars tailpipe	370	539	539	542
Cars upstream	10	19	19	19
Trucks tailpipe	1,004	-501	-501	-504
Trucks upstream	36	-16	-16	-16
<i>Tailpipe subtotal (cars + trucks)</i>	<i>1,374</i>	<i>38</i>	<i>38</i>	<i>38</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>46</i>	<i>3</i>	<i>3</i>	<i>3</i>
<b>Total (tailpipe + upstream)</b>	<b>1,420</b>	<b>41</b>	<b>41</b>	<b>42</b>
<b>Acrolein</b>				
Cars tailpipe	19	28	28	29
Cars upstream	1	3	3	3
Trucks tailpipe	53	-26	-26	-26
Trucks upstream	5	-2	-2	-2
<i>Tailpipe subtotal (cars + trucks)</i>	<i>72</i>	<i>2</i>	<i>2</i>	<i>2</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>6</i>	<i>1</i>	<i>1</i>	<i>1</i>
<b>Total (tailpipe + upstream)</b>	<b>78</b>	<b>2</b>	<b>2</b>	<b>2</b>
<b>Benzene</b>				
Cars tailpipe	1,220	1,677	1,677	1,687
Cars upstream	183	343	343	345
Trucks tailpipe	3,248	-1,554	-1,554	-1,563

**Appendix B U.S. Passenger Car and Light Truck Results Reported Separately**

<b>Emissions Component</b>	<b>No-Action (Total)</b>	<b>Alt. 1 (Change)</b>	<b>Alt. 2 (Change)</b>	<b>Alt. 3 (Change)</b>
Trucks upstream	657	-290	-290	-295
<i>Tailpipe subtotal (cars + trucks)</i>	<i>4,468</i>	<i>123</i>	<i>123</i>	<i>124</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>840</i>	<i>53</i>	<i>53</i>	<i>50</i>
<b>Total (tailpipe + upstream)</b>	<b>5,309</b>	<b>175</b>	<b>175</b>	<b>173</b>
<b>1,3-Butadiene</b>				
Cars tailpipe	144	210	210	212
Cars upstream	1	2	2	2
Trucks tailpipe	386	-196	-196	-197
Trucks upstream	4	-2	-2	-2
<i>Tailpipe subtotal (cars + trucks)</i>	<i>530</i>	<i>14</i>	<i>14</i>	<i>15</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>0</i>
<b>Total (tailpipe + upstream)</b>	<b>534</b>	<b>15</b>	<b>15</b>	<b>16</b>
<b>Diesel particulate matter (DPM)</b>				
Cars tailpipe	0	0	0	0
Cars upstream	13,154	18,533	18,533	18,533
Trucks tailpipe	14	0	0	0
Trucks upstream	34,861	-17,154	-17,154	-17,282
<i>Tailpipe subtotal (cars + trucks)</i>	<i>14</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>48,015</i>	<i>1,379</i>	<i>1,379</i>	<i>1,251</i>
<b>Total (tailpipe + upstream)</b>	<b>48,030</b>	<b>1,380</b>	<b>1,380</b>	<b>1,251</b>
<b>Formaldehyde</b>				
Cars tailpipe	209	299	299	301
Cars upstream	72	136	136	137
Trucks tailpipe	566	-279	-279	-280
Trucks upstream	261	-115	-115	-117
<i>Tailpipe subtotal (cars + trucks)</i>	<i>775</i>	<i>20</i>	<i>20</i>	<i>21</i>
<i>Upstream subtotal (cars + trucks)</i>	<i>333</i>	<i>21</i>	<i>21</i>	<i>20</i>
<b>Total (tailpipe + upstream)</b>	<b>1,108</b>	<b>42</b>	<b>42</b>	<b>41</b>

Notes:

<sup>a</sup> Impacts have been rounded to the nearest whole number.

<sup>b</sup> Negative values indicate emissions decreases; positive values indicate emissions increases.

<sup>c</sup> Totals may not sum due to rounding.

### B.3 Non-Criteria Emissions—Reasonably Foreseeable Impacts From the Proposed Action, Modeling Results Reported Separately for Passenger Cars and Light Trucks

**Table B-6. Carbon Dioxide Emissions and Emissions Changes (MMTCO<sub>2</sub>) from All Passenger Cars, 2027–2100 by Alternative, Proposed Action Impacts <sup>a</sup>**

Alternative	Total Emissions	Emissions Changes Compared to No-Action	Percent Emissions Changes Compared to No-Action Alternative Emissions
No-Action	17,200	-	0.00%
Alt. 1	-	23,400	136.05%
Alt. 2	-	23,400	136.05%
Alt. 3	-	23,500	136.63%

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

MMTCO<sub>2</sub> = million metric tons of carbon dioxide.

**Table B-7. Carbon Dioxide Emissions and Emissions Changes (MMTCO<sub>2</sub>) from All Light Trucks, 2027–2100 by Alternative, Proposed Action Impacts <sup>a,b</sup>**

Alternative	Total Emissions	Emissions Changes Compared to No-Action	Percent Emissions Changes Compared to No-Action Alternative Emissions
No-Action	52,300	-	0.00%
Alt. 1	-	-20,000	-38.24%
Alt. 2	-	-20,000	-38.24%
Alt. 3	-	-20,400	-39.01%

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

<sup>b</sup> The decreases in carbon dioxide emissions shown for the light truck fleet under the action alternatives (compared to the No-Action Alternative) are due to NHTSA's proposed reclassification of a large proportion of light trucks as passenger cars starting in MY 2028, as discussed in Section VI of the proposed rule preamble and TSD Chapter 2.7.

MMTCO<sub>2</sub> = million metric tons of carbon dioxide.

**Table B-8. Emissions of Non-Criteria Emissions<sup>1</sup> (MMTCO<sub>2</sub>e per year) from All Passenger Cars for the No-Action Alternative, and Changes in Emissions by Alternative, Proposed Action Impacts<sup>a,b</sup>**

Year	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Carbon dioxide (CO<sub>2</sub>)</b>				
2020	629	-	-	-
2040	268	318	318	319
2060	200	355	355	356
2080	198	352	352	353
2100	184	327	327	329
<b>Methane (CH<sub>4</sub>)</b>				
2020	23	-	-	-
2040	10	12	12	12
2060	8	13	13	13
2080	8	13	13	13
2100	7	12	12	12
<b>Nitrous oxide (N<sub>2</sub>O)</b>				
2020	7	-	-	-
2040	3	4	4	4
2060	2	4	4	4
2080	2	4	4	4
2100	2	4	4	4
<b>Total (all NCEs)</b>				
2020	659	-	-	-
2040	281	334	334	334
2060	209	372	372	373
2080	208	369	369	370
2100	193	343	343	345

Notes:

<sup>a</sup> Emissions from 2051–2100 were scaled using the rate of change for the U.S. transportation fuel consumption from the global emissions reference scenario. These assumptions project a slight decline over this period.

<sup>b</sup> Values reported as ‘-’ indicate zero. Values reported as 0 represent amounts greater than 0 but less than 0.5. The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

MMTCO<sub>2</sub>e = million metric tons carbon dioxide equivalent; NCEs = non-criteria emissions.

<sup>1</sup> In this SEIS, the term *non-criteria emissions* (NCEs) refers specifically to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are not classified as criteria pollutants under the Clean Air Act.

**Table B-9. Emissions of Non-Criteria Emissions (MMTCO<sub>2</sub>e per year) from All Light Trucks for the No-Action Alternative, and Changes in Emissions by Alternative, Proposed Action Impacts**  
a,b

Year	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Carbon dioxide (CO<sub>2</sub>)</b>				
2020	859	-	-	-
2040	776	-269	-269	-273
2060	679	-305	-305	-310
2080	674	-302	-302	-307
2100	627	-281	-281	-286
<b>Methane (CH<sub>4</sub>)</b>				
2020	32	-	-	-
2040	29	-10	-10	-10
2060	25	-11	-11	-12
2080	25	-11	-11	-11
2100	23	-11	-11	-11
<b>Nitrous oxide (N<sub>2</sub>O)</b>				
2020	10	-	-	-
2040	8	-3	-3	-3
2060	7	-3	-3	-4
2080	7	-3	-3	-3
2100	7	-3	-3	-3
<b>Total (all NCEs)</b>				
2020	901	-	-	-
2040	813	-282	-282	-287
2060	711	-319	-319	-325
2080	706	-317	-317	-322
2100	657	-295	-295	-300

Notes:

<sup>a</sup> Emissions from 2051–2100 were scaled using the rate of change for the U.S. transportation fuel consumption from the global emissions reference scenario. These assumptions project a slight decline over this period.

<sup>b</sup> Values reported as ‘-’ indicate zero. Values reported as 0 represent amounts greater than 0 but less than 0.5. The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

MMTCO<sub>2</sub>e = million metric tons carbon dioxide equivalent; NCEs = non-criteria emissions.

**Table B-10. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise, and Ocean pH (SSP3-7.0) from Passenger Cars by Alternative, Proposed Action Impacts <sup>a,b</sup>**

	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature Increase (°C) <sup>c</sup>			Sea-Level Rise (cm) <sup>c</sup>			Ocean Acidification (pH)		
	2040	2060	2100	2040	2060	2100	2040	2060	2100	2040	2060	2100
No-Action <sup>d</sup>	-0.00	-0.01	-0.02	-0.000	-0.000	-0.000	-0.00	-0.00	-0.00	0.0000	0.0000	0.0000
Alt. 1	0.22	0.85	2.00	0.000	0.003	0.009	0.00	0.02	0.14	-0.0002	-0.0006	-0.0013
Alt. 2	0.22	0.85	2.00	0.000	0.003	0.009	0.00	0.02	0.14	-0.0002	-0.0006	-0.0013
Alt. 3	0.22	0.86	2.01	0.001	0.003	0.009	0.00	0.02	0.14	-0.0002	-0.0006	-0.0013

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values might not reflect the exact difference between the values in all cases. This analysis was simulated using the same methodology as reported in Appendix E, Sections E.3.2, *Methods for Modeling Emissions*, and E.3.3, *Methods for Estimating Non-Criteria Emissions Impacts*; however, it includes only emissions changes for passenger cars.

<sup>b</sup> Values reported as 0.0000 are more than zero but less than 0.0001. Values reported as -0.0000 are less than zero but more than -0.0001.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values for the No-Action Alternative represent the difference between the Preferred Alternative (PC2LT002) and the No-Action Alternative in the *Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond*, and *Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond* (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two datasets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>e</sup> °C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million; SSP = Shared Socioeconomic Pathway.

**Table B-11. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise, and Ocean pH (SSP3-7.0) from Light Trucks by Alternative, Proposed Action Impacts <sup>a,b</sup>**

	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature Increase (°C) <sup>c</sup>			Sea-Level Rise (cm) <sup>c</sup>			Ocean Acidification (pH)		
	2040	2060	2100	2040	2060	2100	2040	2060	2100	2040	2060	2100
No-Action <sup>d</sup>	-0.01	-0.01	-0.02	-0.000	-0.000	-0.000	-0.00	-0.00	-0.00	-0.0000	-0.0000	-0.0000
Alt. 1	0.19	0.75	1.92	0.000	0.003	0.007	0.00	0.03	0.14	-0.0001	-0.0005	-0.0009
Alt. 2	0.19	0.75	1.92	0.000	0.003	0.007	0.00	0.03	0.14	-0.0001	-0.0005	-0.0009
Alt. 3	0.19	0.76	1.93	0.000	0.003	0.007	0.00	0.02	0.13	-0.0001	-0.0005	-0.0009

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values might not reflect the exact difference between the values in all cases. This analysis was simulated using the same methodology as reported in Appendix E, Sections E.3.2 *Methods for Modeling Emissions* and E.3.3 *Methods for Estimating Non-Criteria Emissions Impacts*; however, it includes only emissions changes for light trucks.

<sup>b</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero. Low (2.4 °C), medium (3.0 °C), and high (3.9 °C) climate sensitivities were assessed, corresponding to the 5<sup>th</sup>, 50<sup>th</sup>, and 95<sup>th</sup> percentiles of the probability distribution of climate sensitivity values from IPCC AR6. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values for the No-Action Alternative represent the difference between the Preferred Alternative (PC2LT002) and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>e</sup> C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million; SSP = Shared Socioeconomic Pathway.

Tables showing CO<sub>2</sub> emissions and NCE increases (MMTCO<sub>2</sub>) from the separate vehicle categories (passenger cars and light trucks) for purposes of the Draft SEIS’s reasonably foreseeable impacts from other actions analysis are not presented here because this information was already presented in Chapter 5, Section 5.3.1, *Reasonably Foreseeable Impacts from the Proposed Action* (Tables 5.3.1-1 and 5.3.1-2). CO<sub>2</sub> emissions and emissions increases do not change between Proposed Action impacts and other action impacts because they are not affected by the modeling reference scenario.

**Table B-12. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise, and Ocean pH (SSP2-4.5) from Passenger Cars and Light Trucks by Alternative, Other Action Impacts <sup>a,b</sup>**

	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature Increase (°C) <sup>c</sup>			Sea-Level Rise (cm) <sup>c</sup>			Ocean pH		
	2040	2060	2100	2040	2060	2100	2040	2060	2100	2040	2060	2100
No-Action <sup>d</sup>	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	-0.00	-0.00	0.0000	0.0000	0.0000
Alt. 1	0.03	0.13	0.29	0.000	0.001	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002
Alt. 2	0.03	0.13	0.29	0.000	0.001	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002
Alt. 3	0.03	0.12	0.27	0.000	0.000	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values might not reflect the exact difference between the values in all cases. This analysis was simulated using the same methodology as reported in Appendix E, Sections E.3.2 *Methods for Modeling Emissions* and E.3.3 *Methods for Estimating Non-Criteria Emissions Impacts*; however, it includes only emissions changes for passenger cars.

<sup>b</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values for the No-Action Alternative represent the difference between the Preferred Alternative (PC2LT002) and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>e</sup> C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million; SSP = Shared Socioeconomic Pathway.

**Table B-13. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise, and Ocean pH for SSP2-4.5 for Varying Climate Sensitivities by Action Alternative, Other Action Impacts <sup>a</sup>**

Alternative	Climate Sensitivity	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature Increase (°C) <sup>b,c</sup>			Sea Level Rise (cm) <sup>c</sup>	Ocean pH <sup>c</sup>
		2040	2060	2100	2040	2060	2100	2100	2100
<b>Changes Under the No-Action Alternative <sup>d</sup></b>									
No-Action	Low	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	0.0000
	Medium	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	0.0000
	High	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.01	0.0000
<b>Changes Under Alternative 1 Compared to the No-Action Alternative</b>									
Alt. 1	Low	0.03	0.12	0.26	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.13	0.29	0.000	0.001	0.001	0.02	-0.0002
	High	0.03	0.13	0.29	0.000	0.001	0.002	0.03	-0.0002
<b>Changes Under Alternative 2 Compared to the No-Action Alternative</b>									
Alt. 2	Low	0.03	0.12	0.26	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.13	0.29	0.000	0.001	0.001	0.02	-0.0002
	High	0.03	0.13	0.29	0.000	0.001	0.002	0.03	-0.0002
<b>Changes Under Alternative 3 Compared to the No-Action Alternative</b>									
Alt. 3	Low	0.03	0.11	0.24	0.000	0.000	0.001	0.02	-0.0002
	Medium	0.03	0.12	0.27	0.000	0.000	0.001	0.02	-0.0002
	High	0.03	0.12	0.27	0.000	0.001	0.002	0.03	-0.0002

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact difference of the values. Low (2.4 °C), medium (3.0 °C), and high (3.9 °C) climate sensitivities were assessed, corresponding to the 5<sup>th</sup>, 50<sup>th</sup>, and 95<sup>th</sup> percentiles of the probability distribution of climate sensitivity values from IPCC AR6. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>b</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986 through 2005.

<sup>c</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero.

<sup>d</sup> Values for the No-Action Alternative represent the difference between the Preferred Alternative (PC2LT002) and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA's Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA's proposed fleet reclassification.

°C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million.



## **APPENDIX C**

### **CAFE Model Analysis Methods**

## **APPENDIX C    CAFE MODEL ANALYSIS METHODS**

This appendix is a repository of technical information related to the Draft SEIS analysis. The main chapters of the SEIS capture the impacts and results of the Draft SEIS analysis, whereas this appendix provides additional technical details related to inputs and assumptions that accompany the Draft SEIS analysis.

This appendix supplements and mirrors the Technical Support Document (TSD). Readers are encouraged to review the technical information in the TSD regarding the standard-setting analysis and review the sections herein for related technical details pertaining to the Draft SEIS analysis.

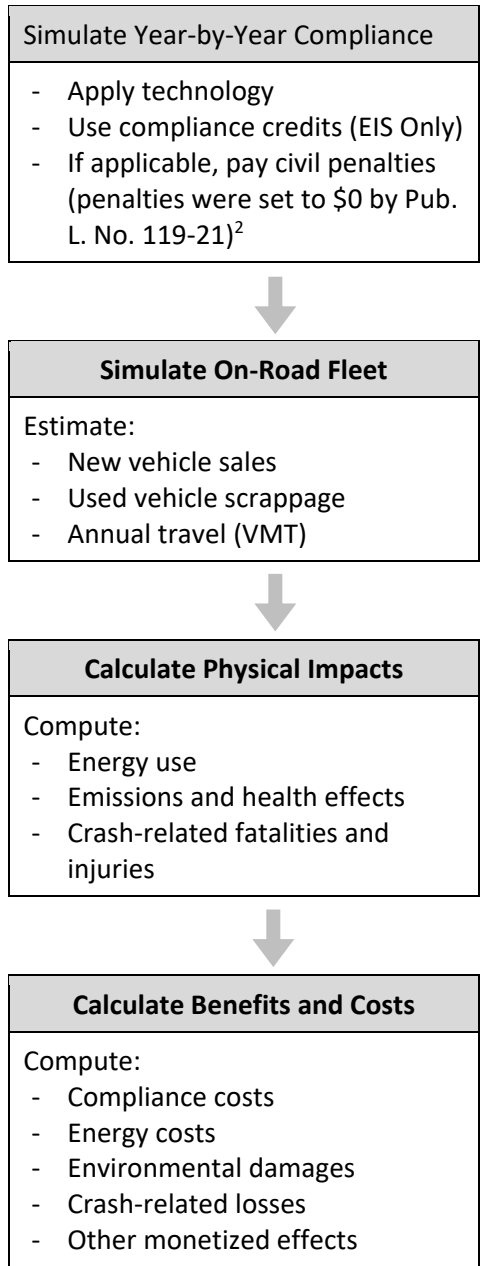
### **C.1    What Inputs Does the Compliance Analysis Require?**

NHTSA uses the CAFE Model for both the standard-setting analysis and the Draft SEIS analysis used for CAFE rulemakings. When used for the standard-setting analysis, the Model is “constrained” to not consider alternative fueled vehicles like battery electric vehicles (BEVs) and fuel cell electric vehicles (FCEVs). NHTSA uses “unconstrained” CAFE Model runs to simulate SEIS scenarios, to evaluate, as required by NEPA, the reasonably foreseeable environmental impacts of its Proposed Action and a reasonable range of alternatives that meet the purpose and need for the Proposed Action.<sup>1</sup> SEIS simulations are not constrained by the statutory limits that apply to the standard-setting analysis and, therefore, the simulations are more representative of “real-world” responses because they consider the adoption of technologies or other actions that are not considered in the standard-setting analysis. The TSD and other documents discuss how certain inputs or assumptions are used in the CAFE Model for the standard-setting (“constrained”) analysis, the SEIS (“unconstrained”) analysis, or both when discussing results.

---

<sup>1</sup> 42 U.S.C. 4332.

Figure C.1-1. CAFE Model Procedures and Logical Flow



## C.1.1 Overview of Analysis Inputs and Assumptions

### C.1.1.1 Market Data Input File

The Market Data Input File contains the detailed description of the vehicle model and model configurations each manufacturer produces for sale in the United States based on 2024 mid-

---

<sup>2</sup> One Big Beautiful Bill Act (OB3), Pub. L. No. 119-21, 139 Stat. 72 (July 4, 2025).

model year compliance data. The file also contains a range of other inputs specific to individual manufacturers but not to individual vehicle models.

The file contains a set of worksheets, as follows:

**Manufacturers worksheet:** Lists specific manufacturers, indicates preference for manufacturers to paying CAFE penalties over applying technologies that would not be cost effective (for years where there is an applicable penalty),<sup>3</sup> indicates what “payback period” defines buyers’ willingness to pay for fuel economy improvements, and enumerates CAFE credits banked from model years prior to those represented explicitly. The CAFE credit banks are used only in the Draft SEIS analysis.

### **C.1.1.2 Parameters Input File**

The Parameters Input File contains a variety of input data and assumptions used to estimate various impacts of the simulated response of the industry to CAFE standards. This file contains a series of worksheets, the contents of which are summarized below.

**Economic Values worksheet:** Specifies a variety of inputs, including social and consumer discount rates to be applied, the “base year” from which to discount social benefits and costs (i.e., the reference years for present value analysis), the elasticity of highway travel with respect to per-mile fuel costs (also referred to as the rebound effect), the gap between test (for certification) and on-road (i.e., real world) fuel economy, the fixed amount of time involved in each refueling event, the share of the tank refueled during an average refueling event, the value of travel time (in dollars per hour per vehicle), the values (in dollars per vehicle mile) of congestion and noise costs, costs of vehicle ownership and operation (e.g., sales tax), economic costs of oil imports, estimates of future macroeconomic measures (e.g., gross domestic product [GDP]), and rates of growth in overall highway travel (separately for low, reference, and high oil prices). The worksheet also includes the estimated average number of miles between mid-trip electric vehicle (EV) recharging events (separately for each BEV considered in the analysis), and the rate (in miles of capacity per hour of charging) at which EV batteries are recharged during such events, which is used only for the Draft SEIS analysis.

**Credit Trading Values worksheet:** Specifies whether various provisions related to compliance credits are to be simulated (currently limited to credit carry-forward and transfers) and specifies the maximum number of years’ credits may be carried forward to future model years. Also specifies the statutory limits on the quantity of credits that may be transferred between fleets, and the specifies amounts of lifetime mileage accumulation to be assumed when adjusting the value of transferred credits. Also accommodates a setting indicating the maximum number of model years to consider when using expiring credits. In the Draft SEIS analysis, manufacturer credit banks are taken into consideration and the compliance credit provisions are applied.

---

<sup>3</sup> Penalties were set to \$0 in OB3. For this analysis NHTSA has assumed that all manufacturers will attempt to meet the standards with a maximum practicable effort.

**C.1.1.3 Runtime Settings**

In addition to inputs contained in the above-mentioned files, the CAFE Model makes use of additional settings selected when operating the model. For a complete list and discussion of runtime settings, see the CAFE Model documentation (Table C.1.1-1). The settings discussed here include those used in the standard setting analysis. These settings include the range of model years to evaluate for analysis; the initial model year when technology application begins; the model years during which technology application and vehicle sales under each regulatory alternative remain unchanged from the No-Action Alternative (i.e., the reference baseline); whether the use of compliance credits is to be simulated; the assumed amount of accumulated driving (in miles) to use when estimating impacts on new vehicle sales and used vehicle scrappage; whether low, average, or high estimates are to be applied for fatality rates; the amount by which to scale benefits to consumers; and whether to calculate and report an implicit opportunity cost. Further settings include the ability to enable the dynamic economic models, along with various accompanying configuration options that specify the number of sales model iterations to be undertaken, the price elasticity multiplier, which dynamic fleet share models to use, and whether fleet shares from the No-Action Alternative are applied to each regulatory alternative. The runtime settings also support a selection of a dynamically computed or user-defined sales forecast for the No-Action Alternative, and the ability to adjust fleet shares from the No-Action Alternative prior to applying them in the regulatory alternatives. For this analysis, DOT uses a setting that allows the inclusion of alternative fuel vehicles, such as BEVs and FCEVs, only when performing an analysis in support of the SEIS.

**C.1.1.4 Simulation Inputs**

FE2\_Adjustments.csv: Specific to plug-in hybrid electric vehicles (PHEVs), defines a database of fuel consumption improvement estimates applicable to operation on electricity, specified in the same manner as those in the main database.

**C.1.1.5 Where to Find the Internal NHTSA Files**

**Table C.1.1-1. Internal NHTSA Files**

<b>NHTSA Internal File</b>	<b>File Location</b>
NHTSA CAFE Model Website	<a href="https://www.nhtsa.gov/corporate-average-fuel-economy/cape-compliance-and-effects-modeling-system">https://www.nhtsa.gov/corporate-average-fuel-economy/cape-compliance-and-effects-modeling-system</a>
CAFE Model documentation	NHTSA CAFE Model Website > Downloads > Model Documentation
CAFE Model Input Files	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip
Market Data Input File	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > market_data_ref.xlsx
Parameters Input File, Standard Setting Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > parameters_ref.xlsx
Parameters Input File, EIS Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > parameters_EIS.xlsx

NHTSA Internal File	File Location
Technologies Input File	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > input > technologies_ref.xlsx
Scenarios Input File, Standard Setting Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > scenarios_LD_ref.xlsx
Scenarios Input File, EIS Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > CAFE Model Inputs Zip > scenarios_LD_EIS.xlsx
CAFE Model Outputs File, Standard Setting Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > LD_ref.zip
CAFE Model Outputs File, EIS Analysis	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > LD_EIS.zip
Vehicle Report Output File	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > LD_ref.zip > reports-csv > vehicles_report.xlsx
CAFE Model Compliance Output File	NHTSA CAFE Model Website > Downloads > Central & EIS Analysis > LD_ref.zip > reports-csv > compliance_report.xlsx
CAFE Model Executable File	NHTSA CAFE Model Website > Downloads > Model Software > CAFE Model (installed directory)
CAFE Model Program Directory	
CAFE Model Battery Costs File	
CAFE Model Fuel Economy Adjustment Files	
CAFE Analysis Autonomie Documentation	Docket > Browse Documents > Argonne Autonomie Inputs and Documents (Supporting and Related Material)
Argonne National Laboratory Autonomie Results Dataset	
Autonomie Input and Assumptions Description Files	
Argonne National Laboratory Autonomie Results Data Dictionary	
BatPaC Assumptions Tab in the BatPaC Lookup Tables	
BatPaC Lookup Tables	
Argonne National Laboratory Autonomie Results Dataset	
BenMAP Health Incidence Files	
BenMAP EC/OC Health Incidence Files	

### C.1.2 Market Data Input File

The Market Data Input File contains information about manufacturer credit banks and fine payment preferences. This information appears on the Manufacturers tab of the Market Data Input File.

**C.1.2.1 Characterizing Vehicles and Their Technology Content**

**Fuel-Saving Technology Content**

Some technologies cannot appear together on one vehicle (defined as a single row in the Market Data Input File) in the analysis. For instance, a vehicle may only have one advanced engine at a time. Similarly, BEVs combine a fixed drive gear box with the electric motor and do not have an internal combustion engine (ICE) or a conventional transmission.<sup>4</sup>

**Table C.1.2-1. Fuel-Saving Technologies that the CAFE Model May Apply for the Light-Duty Fleet**

Technology Name	Abbreviation	Market Data Input File Location	Technology Group
Single Overhead Camshaft Engine with VVT	SOHC	Engines tab	Basic Engines
Double Overhead Camshaft Engine with VVT	DOHC	Engines tab	Basic Engines
Variable Valve Lift	VVL	Engines tab	Basic Engines
Stoichiometric Gasoline Direct Injection	SGDI	Engines tab	Basic Engines
Cylinder Deactivation	DEAC	Engines tab	Basic Engines
Turbocharged Engine	TURBO0	Engines tab	Advanced Engines
Turbocharged Engine with Cooled Exhaust Gas Recirculation	TURBOE	Engines tab	Advanced Engines
Turbocharged Engine with Cylinder Deactivation	TURBOD	Engines tab	Advanced Engines
Advanced Turbocharged Engine, Level 1	TURBO1	Engines tab	Advanced Engines
Advanced Turbocharged Engine, Level 2	TURBO2	Engines tab	Advanced Engines
DOHC Engine with Advanced Cylinder Deactivation	ADEACD	Engines tab	Advanced Engines
SOHC Engine with Advanced Cylinder Deactivation	ADEACS	Engines tab	Advanced Engines
High Compression Ratio Engine	HCR	Engines tab	Advanced Engines
High Compression Ratio Engine with Cooled Exhaust Gas Recirculation	HCRE	Engines tab	Advanced Engines
High Compression Ratio Engine with Cylinder Deactivation	HCRD	Engines tab	Advanced Engines
Variable Compression Ratio Engine	VCR	Engines tab	Advanced Engines
Variable Turbo Geometry Engine <sup>a</sup>	VTG	Engines tab	Advanced Engines
Variable Turbo Geometry Engine with eBooster	VTGE	Engines tab	Advanced Engines
Turbocharged Engine with Advanced Cylinder Deactivation	TURBOAD	Engines tab	Advanced Engines
Advanced Diesel Engine	ADSL	Engines tab	Advanced Engines
Advanced Diesel Engine with Improvements	DSLII	Engines tab	Advanced Engines
Compressed Natural Gas Engine	CNG	Engines tab	Advanced Engines

<sup>4</sup> See Section C.2.3.3, *Electrification Adoption Features*, for additional discussion on the BEV adoption features and cost considerations used for the Draft SEIS analysis. BEVs are not considered in the standard-setting analysis.

Technology Name	Abbreviation	Market Data Input File Location	Technology Group
5-Speed Automatic Transmission	AT5	Transmissions tab	Transmissions
6-Speed Automatic Transmission	AT6	Transmissions tab	Transmissions
7-Speed Automatic Transmission with Level 2 high efficiency gearbox (HEG)	AT7L2	Transmissions tab	Transmissions
8-Speed Automatic Transmission	AT8	Transmissions tab	Transmissions
8-Speed Automatic Transmission with Level 2 HEG	AT8L2	Transmissions tab	Transmissions
8-Speed Automatic Transmission with Level 3 HEG	AT8L3	Transmissions tab	Transmissions
9-Speed Automatic Transmission with Level 2 HEG	AT9L2	Transmissions tab	Transmissions
10-Speed Automatic Transmission with Level 2 HEG	AT10L2	Transmissions tab	Transmissions
10-Speed Automatic Transmission with Level 3 HEG	AT10L3	Transmissions tab	Transmissions
6-Speed Dual-Clutch Transmission	DCT6	Transmissions tab	Transmissions
8-Speed Dual-Clutch Transmission	DCT8	Transmissions tab	Transmissions
Continuously Variable Transmission <sup>b</sup>	CVT	Transmissions tab	Transmissions
Continuously Variable Transmission with Level 2 HEG <sup>b</sup>	CVTL2	Transmissions tab	Transmissions
Conventional Powertrain (Non-Electric)	CONV	Vehicles tab	Electrification
12V Micro Hybrid Start-Stop System	SS12V	Vehicles tab	Electrification
48V Belt Mounted Integrated Starter/Generator	BISG	Vehicles tab	Electrification
Parallel Strong Hybrid/Electric Vehicle with DOHC Engine	P2D	Vehicles tab	Electrification
Parallel Strong Hybrid/Electric Vehicle with DOHC+SGDI Engine	P2SGDID	Vehicles tab	Electrification
Parallel Strong Hybrid/Electric Vehicle with SOHC Engine	P2S	Vehicles tab	Electrification
Parallel Strong Hybrid/Electric Vehicle with SOHC+SGDI Engine	P2SGDIS	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with TURBO0 Engine	P2TRB0	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with TURBOE Engine	P2TRBE	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with TURBO1 Engine	P2TRB1	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with TURBO2 Engine	P2TRB2	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with HCR Engine	P2HCR	Vehicles tab	Electrification
Parallel Strong Hybrid Electric Vehicle with HCRE Engine	P2HCRE	Vehicles tab	Electrification
Power-Split Strong Hybrid/Electric Vehicle with Full Time Atkinson Engine	SHEVPS	Vehicles tab	Electrification



**Appendix C CAFE Model Analysis Methods**

<b>Technology Name</b>	<b>Abbreviation</b>	<b>Market Data Input File Location</b>	<b>Technology Group</b>
Plug-in Hybrid Vehicle with TURBO1 Engine and 20-miles of electric range <sup>e</sup>	PHEV20T	Vehicles tab	Electrification
Plug-in Hybrid Vehicle with TURBO1 Engine and 50-miles of electric range <sup>e</sup>	PHEV50T	Vehicles tab	Electrification
Plug-in Hybrid Vehicle with HCR Engine and 20-miles of electric range <sup>c</sup>	PHEV20H	Vehicles tab	Electrification
Plug-in Hybrid Vehicle with HCR Engine and 50-miles of electric range <sup>c</sup>	PHEV50H	Vehicles tab	Electrification
Plug-in Hybrid Vehicle with Full Time Atkinson Engine and 20 miles of electric range <sup>c</sup>	PHEV20PS	Vehicles tab	Electrification
Plug-in Hybrid Vehicle with Full Time Atkinson Engine and 50 miles of electric range <sup>c</sup>	PHEV50PS	Vehicles tab	Electrification
Battery Electric Vehicle with 200- miles of range <sup>d</sup>	BEV1	Vehicles tab	Electrification
Battery Electric Vehicle with 250- miles of range <sup>d</sup>	BEV2	Vehicles tab	Electrification
Battery Electric Vehicle with 300- miles of range <sup>d</sup>	BEV3	Vehicles tab	Electrification
Battery Electric Vehicle with 350- miles of range <sup>d</sup>	BEV4	Vehicles tab	Electrification
Fuel Cell Electric Vehicle <sup>d</sup>	FCEV	Vehicles tab	Electrification
Base Level Tire Rolling Resistance	ROLL0	Vehicles tab	Rolling Resistance
Tire Rolling Resistance, 10% Improvement	ROLL10	Vehicles tab	Rolling Resistance
Tire Rolling Resistance, 20% Improvement	ROLL20	Vehicles tab	Rolling Resistance
Tire Rolling Resistance, 30% Improvement	ROLL30	Vehicles tab	Rolling Resistance
Base Level Aerodynamic Drag Technology	AERO0	Vehicles tab	Aerodynamic Drag
Aerodynamic Drag, 5% Drag Coefficient Reduction	AERO5	Vehicles tab	Aerodynamic Drag
Aerodynamic Drag, 10% Drag Coefficient Reduction	AERO10	Vehicles tab	Aerodynamic Drag
Aerodynamic Drag, 15% Drag Coefficient Reduction	AERO15	Vehicles tab	Aerodynamic Drag
Aerodynamic Drag, 20% Drag Coefficient Reduction	AERO20	Vehicles tab	Aerodynamic Drag
Base Level Mass Reduction Technology	MR0	Platforms tab	Mass Reduction
Mass Reduction—5.0% of Glider	MR1	Platforms tab	Mass Reduction
Mass Reduction—7.5% of Glider	MR2	Platforms tab	Mass Reduction
Mass Reduction—10.0% of Glider	MR3	Platforms tab	Mass Reduction

Notes:

<sup>a</sup> Technology that enables Miller Cycle ICE.

<sup>b</sup> The CVT and CVTL2 technologies are not applicable to the Pickup and PickupHT technology classes.

<sup>c</sup> PHEV20T, PHEV50T, PHEV20H, PHEV50H, PHEV20PS, and PHEV50PS are only evaluated in charge sustaining mode (gasoline operation) for the standard-setting analysis.

<sup>d</sup> BEV1, BEV2, BEV3, BEV4, and FCEV are not evaluated in the standard-setting analysis and only available for the Draft SEIS analysis.

### **Engine Configurations**

Different engine configurations may affect the cost of the engine and hybrid vehicle technologies.<sup>5</sup> In the Market Data Input File, the engine technology class column on the vehicles tab identifies the representative engine classification for each vehicle model, allowing the CAFE Model to reference the appropriate powertrain costs in the Technologies Input File that most reasonably align with the observed vehicle (or row). DOT assigns engine technology classes for all vehicle models present in the analysis fleet, including vehicles that do not otherwise operate using an ICE (e.g., BEVs). However, BEVs and FCEVs are included only in the Draft SEIS analysis, and the standard-setting analysis considers PHEVs only in charge-sustaining mode. If an electric powertrain replaces an ICE, the electric motor specifications (and hence the associated costs) may be different depending on the capabilities of the engine that is being replaced. The costs in the Technologies Input File (on the engine tab) account for the power output and capability of the gasoline or electric drivetrain.

### **Product Design Cycles**

Manufacturers often introduce fuel-saving technologies at a major redesign of their product or adopt technologies at minor refreshes in between major product redesigns. In most cases, the CAFE Model may apply new fuel-saving technologies to a vehicle only in redesign years. If a vehicle shares an engine or transmission, and the shared powertrain part already has incorporated additional fuel-savings technology on other vehicle applications, the vehicle may inherit the upgraded shared engine or transmission at refresh or redesign.

To support the CAFE Model accounting for new fuel-saving technology introduction as it relates to product life cycle, the Market Data Input File includes a projection of redesign and refresh years (identified by the Redesign Years and Refresh Years columns) for each vehicle. DOT projects future redesign years and refresh years based on the historical cadence of that vehicle's product life cycle. For new nameplates, DOT considers the manufacturer's treatment of product life cycles for past products in similar market segments.

Redesigns are major investments and require coordination of product development, manufacturing, and marketing and sales. For their light-duty (LD) fleet, many manufacturers have redesigned a large portion of products sold in Model Year (MY) 2024 recently, as shown in Table C.1.2-2.

---

<sup>5</sup> See TSD Chapter 3.1.2 for a detailed discussion of engine classification based on cylinder count and configuration.

**Table C.1.2-2. Sales Distribution by Age of Vehicle Engineering Design for the Light-Duty Fleet<sup>6</sup>**

Most Recent Engineering Redesign Year of the Observed MY 2024 Vehicle	% of MY 2024 Fleet (Unit Sales) by Engineering Design Age	Age of Vehicle Engineering Design	Portion of MY 2024 New Vehicle Sales with Engineering Designs as New or Newer than "Age of Vehicle Engineering Design"
2009	0.2%	15	100%
2010	0.00%	14	99.8%
2011	0.43%	13	99.8%
2012	0.0%	12	99.4%
2013	0.0%	11	99.4%
2014	0.5%	10	99.4%
2015	1.2%	9	98.9%
2016	1.6%	8	97.7%
2017	3.3%	7	96.1%
2018	10.4%	6	92.8%
2019	16.1%	5	82.4%
2020	10.9%	4	66.3%
2021	13.6%	3	55.4%
2022	16.0%	2	41.8%
2023	13.3%	1	25.8%
2024	12.5%	0	12.5%

Manufacturers have different business strategies with respect to how frequently products are redesigned. Some manufacturers use shorter product cycles, and others use longer product cycles. Some manufacturers may use a shorter redesign cycle in one segment, and a longer redesign cycle in another. On average across the industry, manufacturers redesign vehicles every 6.7 years,<sup>7</sup> as shown in Table C.1.2-3. Note, however, that many manufacturers do not compete in the marketplace in every vehicle segment and with at least three relatively new entrants, NHTSA has yet to see redesigns.

<sup>6</sup> This table includes BEVs and is for informational purposes. This table does not have bearing on the standard-setting or Draft SEIS analysis because each nameplate in the market data file has its own redesign cadence and the CAFE Model can appropriately apply 329029(h) factors to the standard-setting analysis.

<sup>7</sup> See Market Data Input File.

**Table C.1.2-3. Sales-Weighted Average Time (Years) between Engineering Redesigns, by Manufacturer and Vehicle Technology Class, for the Light-Duty Fleet<sup>8</sup>**

Manufacturer	SmallCar	SmallCarPerf	MedCar	MedCarPerf	SmallSUV	SmallSUVPerf	MedSUV	MedSUVPerf	Pickup	PickupHT	All Classes
BMW	6.8	6.2	7.0	6.9	6.2	6.2	-	6.8	-	-	6.7
Ford	-	-	-	9.0	6.3	6.5	8.2	7.9	6.0	6.2	6.9
GM	-	6.0	9.8	6.6	5.5	-	7.8	6.6	7.7	7.0	6.8
Honda	5.5	5.0	5.0	5.2	5.1	6.0	6.9	6.9	7.2	-	5.7
Hyundai	6.0	6.0	6.0	6.0	5.9	5.0	5.9	6.0	6.0	-	5.9
Kia	5.0	5.0	4.0	4.0	5.0	5.0	7.0	5.9	-	-	5.3
JLR	-	12.0	9.0	9.0	7.8	9.0	9.0	8.7	-	-	8.7
Lucid	-	-	-	10.0	-	-	-	-	-	-	10.0
Mazda	7.0	7.4	-	-	7.0	-	7.0	7.0	-	-	7.0
Mercedes-Benz	-	-	7.0	7.4	7.0	7.0	7.0	6.9	-	-	7.0
Mitsubishi	7.0	-	-	-	7.6	-	-	-	-	-	7.5
Nissan	6.2	10	6.0	8.1	6.1	7.2	7.0	6.4	8.0	7.4	6.5
Rivian	-	-	-	-	-	-	-	6.0	-	6.0	6.0
Stellantis	8.0	-	-	8.6	7.5	9.6	7.4	7.1	8.8	9.2	7.7
Subaru	6.3	7.4	5.0	-	5.4	5.0	6.8	-	-	-	5.6
Tesla	-	-	9.3	9.2	-	-	-	9.0	-	-	9.1
Toyota	6.0	6.6	6.1	7.1	6.5	6.5	7.0	7.7	-	7.6	6.7
Volvo	-	4.0	72	6.7	7.0	7.0	9.1	9.1	-	-	8.1
VWA	6.2	6.4	6.6	7.5	6.4	7.4	9.0	8.6	-	-	7.2
Industry Average	5.9	6.4	6.5	7.7	6.0	6.7	7.5	7.3	6.9	7.2	6.7

Even for manufacturers with similar times between redesigns that offer vehicles in similar segments, the expected vehicle redesigns would often occur at different times. When considering year-by-year analysis of standards, the timing of redesigns and the timing between redesigns often affect projected compliance pathways. As shown in Table C.1.2-4, many manufacturers have very recently redesigned significant products and will have some time before they are expected to redesign these products again. The timing of redesigns and the duration between redesigns affect how quickly manufacturers may respond to standards.

<sup>8</sup> This table includes BEVs and is for informational purposes. This table does not have bearing on the standard-setting or Draft SEIS analysis because each nameplate in the market data input file has its own redesign cadence and the CAFE Model can appropriately apply 329029(h) factors to the standard-setting analysis.

**Table C.1.2-4. Sales-Weighted Average Age (Years) of Engineering Design in MY 2024, by Manufacturer and Vehicle Technology Class, for the Light-Duty Fleet<sup>9</sup>**

Manufacturer	SmallCar	SmallCarPerf	MedCar	MedCarPerf	SmallSUV	SmallSUVPerf	MedSUV	MedSUVPerf	Pickup	PickupHT	All Classes
BMW	4.2	6.4	2.4	2.8	5.2	4.9	-	4.4	-	-	4.2
Ford	-	-	-	0.0	3.5	3.5	5.3	4.6	1.8	2.8	3.4
GM	-	4.0	7.8	4.8	3.4	-	2.3	2.4	2.1	4.8	3.6
Honda	1.6	1.5	1.0	1.8	1.0	5.0	2.7	2.5	7.0	-	1.8
Hyundai	3.0	3.0	3.5	3.1	1.5	0.0	3.4	3.0	2.0	-	2.3
Kia	1.2	0.0	3.0	3.0	1.8	3.0	1.9	3.3	-	-	2.1
JLR	-	10.0	9.0	9.0	6.5	4.0	5.8	2.8	-	-	4.1
Lucid	-	-	-	2.0	-	-	-	-	-	-	2.0
Mazda	5.0	5.7	-	-	1.6	-	0.5	0.0	-	-	1.7
Mercedes-Benz	-	-	1.7	2.3	1.9	1.6	3.7	4.8	-	-	3.1
Mitsubishi	8.9	-	-	-	4.9	-	-	-	-	-	6.0
Nissan	4.1	1.0	5.0	10.4	4.1	5.1	2.0	1.4	2.0	8.0	3.8
Rivian	-	-	-	-	-	-	-	2.0	-	2.0	2.0
Stellantis	0.0	-	-	2.1	7.0	2.8	5.4	4.1	7.7	6.7	5.0
Subaru	4.0	6.1	1.0	-	2.1	1.0	1.0	-	-	-	2.1
Tesla	-	-	7.0	6.6	-	-	-	4.2	-	-	5.0
Toyota	4.8	1.7	5.7	6.4	3.6	3.3	1.5	0.9	-	0.9	3.1
Volvo	-	0.0	5.0	4.1	5.0	4.0	7.0	7.1	-	-	5.9
VWA	4.9	3.7	6.5	4.6	4.9	5.2	6.0	4.9	-	-	5.1
Industry Average	3.3	3.4	4.3	3.9	3.0	3.3	3.2	3.6	2.5	3.5	3.3

Table C.1.2-5 shows the resultant portion of each manufacturer’s MY 2024 total LD vehicle production volume (for the U.S. market) expected to be redesigned in each MY through 2031.

<sup>9</sup> This table includes BEVs and is for informational purposes. This table does not have bearing on the standard-setting or Draft SEIS analysis because each nameplate in the market data input file has its own redesign cadence and the CAFE Model can appropriately apply 329029(h) factors to the standard-setting analysis.

**Table C.1.2-5. Portion of Production Redesigned in each MY through 2031 for the Light-Duty Fleet<sup>10</sup>**

Manufacturer	2024	2025	2026	2027	2028	2029	2030	2031
BMW	12%	27%	18%	19%	15%	5%	5%	34%
Ford	11%	16%	8%	36%	15%	0%	20%	0%
GM	19%	18%	43%	0%	11%	11%	18%	16%
Honda	5%	11%	19%	3%	45%	11%	5%	8%
Hyundai	19%	0%	20%	19%	39%	22%	0%	0%
JLR	0%	5%	22%	6%	0%	30%	0%	37%
Kia	18%	29%	19%	0%	31%	21%	24%	19%
Lucid	0%	0%	0%	0%	0%	0%	0%	0%
Mazda	52%	2%	8%	21%	0%	17%	0%	52%
Mercedes-Benz	4%	3%	39%	5%	3%	19%	27%	7%
Mitsubishi	0%	13%	41%	0%	0%	0%	46%	13%
Nissan	0%	28%	6%	37%	0%	17%	10%	26%
Rivian	0%	0%	0%	0%	100%	0%	0%	0%
Stellantis	3%	3%	4%	45%	24%	18%	0%	0%
Subaru	0%	3%	2%	31%	54%	10%	0%	0%
Tesla	0%	4%	0%	28%	0%	66%	2%	0%
Toyota	22%	10%	38%	2%	4%	17%	11%	45%
Volvo	2%	28%	32%	39%	2%	0%	0%	0%
VWA	1%	42%	15%	21%	13%	7%	17%	18%
Industry Average	13%	15%	22%	16%	18%	14%	11%	17%

**C.1.2.2 Characterizing Safety, Economic, and Compliance Positions**

In addition to characterizing technologies, some information in the Market Data Input File supports economic calculations in the CAFE Model.

**Credit Banks**

In the Draft SEIS analysis, NHTSA considers the values manufacturers have in their “credit banks” when running the compliance simulation. Under the Energy Policy and Conservation Act of 1975 (EPCA) and NHTSA’s regulations, manufacturers earn CAFE compliance credits in each compliance category when they exceed the applicable CAFE standard. When CAFE credits are earned, they are placed into a manufacturer’s “bank” and are associated with the particular model year and compliance fleet in which they were earned. Manufacturers may apply these credits to resolve a deficit (carrying the credits back three model years and carrying them

<sup>10</sup> This table includes BEVs and is for informational purposes. This table does not have bearing on the standard-setting or Draft SEIS analysis because each nameplate in the file has its own redesign cadence and the CAFE Model can appropriately apply 32902(h) factors to the standard-setting analysis.

forward five model years) or allow them to expire. Credits may be transferred across fleets, subject to a statutory cap, and credits earned prior to MY 2028 may be traded between manufacturers. NHTSA proposed the elimination of credit trading among manufacturers beginning in MY 2028. Further discussion of this aspect of the proposal can be found in Section VI.B.2 of the proposed rule preamble.

For the Draft SEIS analysis, the CAFE Model does not explicitly trade credits between and among manufacturers. Instead, analysts have adjusted starting credit banks to reflect trades likely to happen when the simulation begins (in MY 2024). Considering information manufacturers have reported regarding compliance credits, and considering recent manufacturers' compliance positions, DOT estimates manufacturers' potential use of compliance credits in earlier model years. The outcome of these efforts attempts to capture manufacturers' choices to deplete their credit banks rather than producing high-volume vehicles with fuel-saving technologies in earlier model years. This, in turn, reduces the simulation of unrealistic application of technologies in early analysis years for manufacturers that have historically depleted their credit banks first. Credit banks are not considered in the standard-setting analysis.

To estimate the size and potential disposition of manufacturer's CAFE compliance credit banks, NHTSA uses data available in NHTSA's CAFE Public Information Center (PIC), which provides public access to a range of information regarding the CAFE program,<sup>11</sup> including manufacturers' credit balances. Compliance data reported in the CAFE PIC is not published in real time, and a gap exists between a given manufacturer's current credit bank status and the data available in the PIC; this lag varies by manufacturer and can be on the order of weeks to years. To address the limitations of the publicly available data, DOT examines preliminary compliance data for each manufacturer's fleets in recent model years, as well as verified credit transactions between manufacturers that have been reported to NHTSA. From these sources, NHTSA estimates compliance deficits or surpluses for each fleet based on fuel economy performance and combined those estimates with credits either acquired from another manufacturer or traded from a model year fleet's surplus.

When CAFE credits that have been traded between manufacturers or transferred between compliance categories are applied to a credit deficit, they are adjusted to preserve the gallons saved that each credit represents.<sup>12</sup> It is important to emphasize that this adjustment occurs at the time of application rather than at the time the credits are traded or transferred. This means that a manufacturer that has acquired credits through trade, but has not yet applied them, may show a credit balance that is either considerably higher or lower than the value of the credits when they are applied. For example, a manufacturer that buys 40 million credits from Tesla may show a credit balance greater than 40 million credits. However, when those credits are applied, they may be worth only 1/10 as much, making that manufacturer's true credit balance closer to 4 million than 40 million. In this example, such a large discrepancy between the initial and actual credit balances occurs because of the adjustment that is applied

---

<sup>11</sup> NHTSA. CAFE: Corporate Average Fuel Economy, Public Information Center. Available at: <https://www.nhtsa.gov/corporate-average-fuel-economy/cale-public-information-center> (Accessed: July 23, 2025).

<sup>12</sup> See 49 U.S.C. 32903(f), which requires the credit trading program preserve total oil savings.

to Tesla's credits. This adjustment attempts to preserve the total number of consumed gallons by taking into account the CAFE ratings and standards of both manufacturers at the time those credits are applied. Considering that the CAFE rating of an all-electric manufacturer, such as Tesla, ranges between 100 and 700 miles per gallon (mpg) (depending on the model year being evaluated), when compared to a more typical manufacturer with CAFE ratings in the 30 to 60 mpg range, Tesla's original credits are likely to be devalued by as much as 10 times.

To accurately determine each manufacturer's current credit position, including, acquired credits that have not yet been applied, or transferred credits that have not yet been applied, DOT adjusts each credit transaction to reflect the true value of the credit in the current model year and fleet where it resides.<sup>13</sup> DOT reevaluates existing compliance positions for MYs 2021–2023 after adjusting credit values and uses analyst judgment to resolve deficits in those years. Credits can then be applied to any remaining deficit between the domestic car fleet CAFE and the calculated standard. Credits expire five model years after the model year in which they were earned. For example, CAFE credits earned in MY 2013 can no longer be used to comply with CAFE standards after MY 2018. Manufacturers typically find trading partners for expiring credits, and NHTSA lets no expiring credits go unused if there were opportunities to resolve deficits in model years leading up to MY 2024.

Some manufacturers faced deficits prior to MY 2023 that had not yet been resolved, despite holding positive credit balances (of mostly traded credits). These credits were also applied, where appropriate to resolve compliance deficits—including transfers between fleets and credits carried forward from older model years. All these transactions were required to estimate credit banks in MYs 2019–2023 across the industry because all those credits can be carried forward into the analysis—beginning with MY 2019 credits that expire in MY 2024 and can be used to offset compliance deficits in the first year of the simulation.

NHTSA reviews credit balances, estimates the potential that some manufacturers could trade credits based on their projected compliance positions in the No-Action Alternative, and develops inputs that make carried-forward credits available in each of MYs 2024–2028. As part of developing the inputs, NHTSA subtracts credits assumed to be traded to other manufacturers, adds credits assumed to be acquired from other manufacturers through such trades, and adjusts any traded credits (up or down) to reflect their true value for the fleet and model year into which they were traded.<sup>14</sup> When identifying trading partners for credit transactions, NHTSA examines hundreds of individual credit transactions that have occurred over the last decade and attempted to avoid trading credits between manufacturers that have not previously traded. While the specific transactions are considered confidential business information, manufacturers report to NHTSA the fleet and model year in which the credits were

---

<sup>13</sup> Because compliance credits are specific to the model year and fleet in which they are earned, even if they are traded between manufacturers, traded credits must be traded into a specific model year and fleet.

<sup>14</sup> The adjustments, which are based upon the CAFE standard and model year of both the party originally earning the credits and the party applying them, were implemented assuming the credits would be applied to the model year in which they were set to expire. For example, credits traded into a domestic passenger car fleet for MY 2017 were adjusted assuming they would be applied in the domestic passenger car fleet for MY 2022.



earned, the fleet and model year into which they are traded, and the (unadjusted) quantity of traded credits.

Manufacturers’ estimated credit banks for the domestic car, imported car, and light truck fleets are shown in Tables C.1.2-6, C.1.2-7, and C.1.2-8. While the CAFE Model transfers expiring credits into another fleet (e.g., moving expiring credits from the domestic passenger automobile credit bank into the non-passenger automobile fleet), NHTSA moves some of these credits into the initial banks to improve the efficiency of application and better reflect both the projected shortfalls of each manufacturer’s regulated fleets and represent observed behavior. For context, a manufacturer that produces one million vehicles in a given fleet and experiences a shortfall of 2 mpg would need 20 million credits, adjusted for fuel savings, to completely offset the shortfall.

**Table C.1.2-6. Estimated Domestic Car CAFE Credit Banks**

<b>Manufacturer</b>	<b>MY 2019</b>	<b>MY 2020</b>	<b>MY 2021</b>	<b>MY 2022</b>	<b>MY 2023</b>
BMW	-	-	-	-	-
Mercedes-Benz	-	-	-	-	-
Stellantis	5,028,000	5,132,000	8,544,000	9,027,000	8,153,000
Ford	2,484,000	4,950,000	1,852,000	2,924,000	5,653,000
GM	3,209,000	1,271,000	1,025,000	1,540,000	1,766,000
Honda	1,500,000	2,016,000	-	1,228,000	2,372,000
Hyundai	-	408,000	168,000	1,170,000	-
Kia	-	-	239,000	1,809,000	-
JLR	-	-	-	-	-
Mazda	-	-	-	-	-
Mitsubishi	-	-	-	-	-
Nissan	-	1,854,000	-	605,000	1,112,000
Subaru	-	-	-	-	-
Tesla	-	-	-	-	-
Toyota	16,900,000	5,156,000	1,718,000	9,224,000	7,229,000
Volvo	-	-	851,000	450,000	531,000
VWA	2,032,000	2,284,000	1,434,000	1,825,000	1,079,000

Table C.1.2-7. Estimated Imported Car CAFE Credit Banks

Manufacturer	MY 2019	MY 2020	MY 2021	MY 2022	MY 2023
BMW	1,320,000	994,000	2,103,000	1,455,000	2,716,000
Mercedes-Benz	1,564,000	1,043,000	2,491,000	-	3,042,000
Stellantis	-	1,065,000	-	-	421,000
Ford	-	394,000	469,000	-	-
GM	4,253,000	2,896,000	4,945,000	1,021,000	5,526,000
Honda	-	435,000	1,731,000	2,574,000	-
Hyundai	-	-	119,000	673,000	375,000
Kia	3,363,000	4,448,000	2,293,000	4,407,000	4,963,000
JLR	2,036,000	4,129,000	5,938,000	2,820,000	1,570,000
Mazda	-	-	-	253,000	-
Mitsubishi	-	-	1,928,000	-	387,000
Nissan	-	-	171,000	217,000	368,000
Subaru	7,228,000	5,162,000	12,492,000	4,852,000	5,716,000
Tesla	-	-	-	-	-
Toyota	1,336,000	1,899,000	1,312,000	2,044,000	1,905,000
Volvo	-	250,000	677,000	284,000	336,000
VWA	-	-	-	-	-

Table C.1.2-8. Estimated Light Truck CAFE Credit Banks

Manufacturer	MY 2019	MY 2020	MY 2021	MY 2022	MY 2023
BMW	1,553,000	2,363,000	1,654,000	426,000	2,049,000
Mercedes-Benz	-	-	-	477,000	710,000
Stellantis	230,000	1,450,000	1,585,000	-	2,514,000
Ford	-	3,719,000	-	3,227,000	-
GM	2,514,000	793,000	-	980,000	1,781,000
Honda	-	-	-	-	-
Hyundai	-	651,000	-	510,000	1,566,000
Kia	-	-	-	-	-
JLR	2,750,000	2,736,000	2,471,000	1,798,000	1,934,000
Mazda	640,000	1,232,000	-	721,000	409,000
Mitsubishi	-	1,022,000	136,000	436,000	1,270,000
Nissan	-	1,231,000	482,000	-	-
Subaru	4,087,000	1,591,000	1,860,000	4,415,000	2,934,000
Tesla	-	-	-	-	-
Toyota	11,300,000	5,766,000	6,344,000	11,591,000	10,222,000
Volvo	993,000	-	2,265,000	3,997,000	1,696,000
VWA	4,616,000	2,849,000	3,836,000	3,093,000	2,828,000

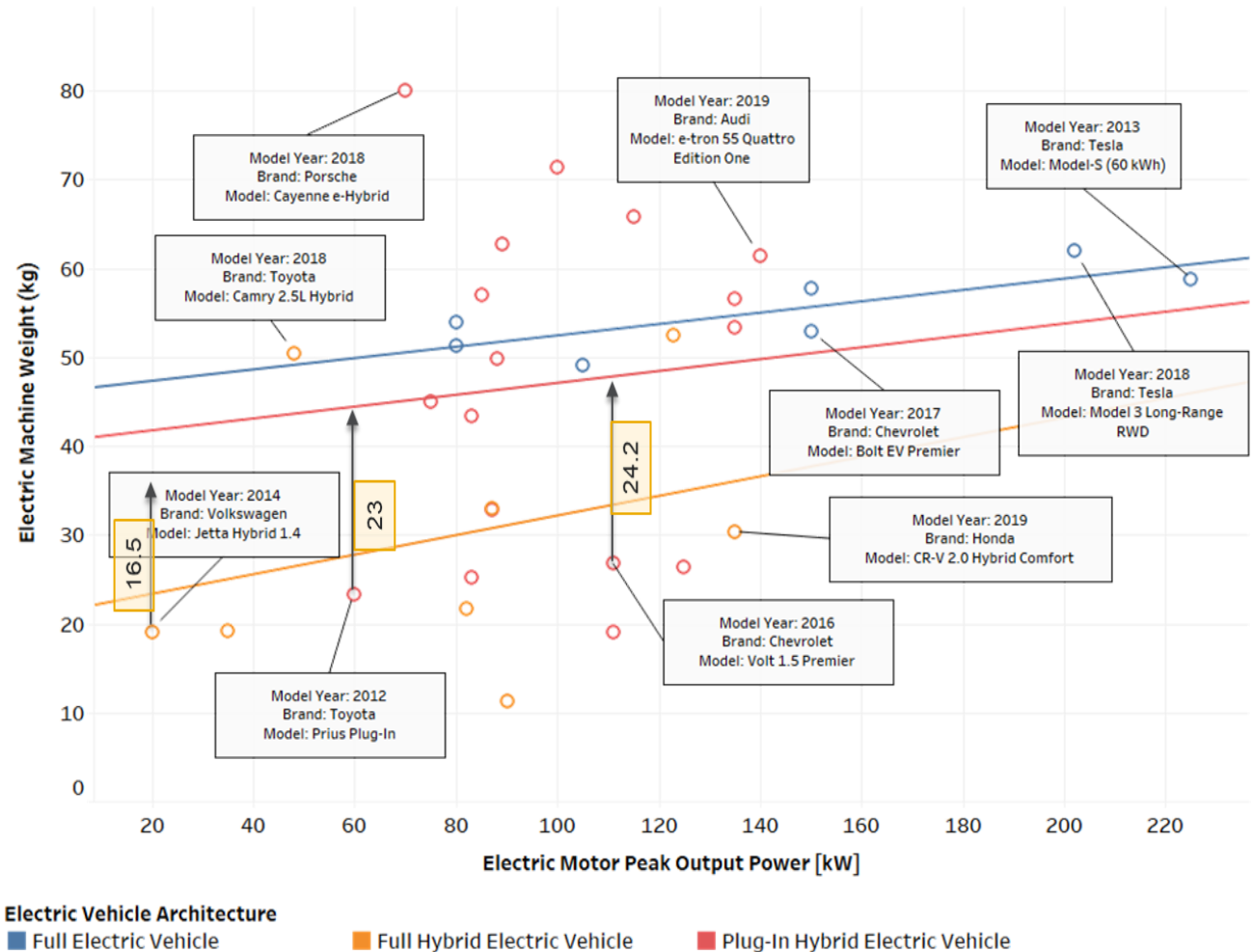
While the CAFE Model does not simulate the ability to trade credits between manufacturers, it does simulate the strategic accumulation and application of CAFE credits, as well as the ability to transfer them between fleets to improve the compliance position of a less-efficient fleet by leveraging credits earned by a more-efficient fleet. The Model prefers to hold on to earned CAFE credits within a given fleet, carrying them forward into the future to offset potential future deficits. As mentioned above, credits are only considered in the Draft SEIS analysis.

### C.1.3 Technology Effectiveness Values

#### C.1.3.1 Building Representative Vehicles and Vehicle Optimization

Figure C.1.3-1. Electric Motor Mass Determination as Function of Peak Power

Electric Machine Weight (kg) vs. Peak Power (kW)



kg = kilogram; kW = kilowatt.

### C.1.3.2 *Simulating the Built Vehicles on Test Cycles*

Autonomie simulates vehicles using a very similar process to the test procedures and energy consumption calculations that manufacturers must use for CAFE and fuel efficiency compliance.<sup>15,16,17</sup> Argonne simulates each vehicle model across several test cycles to evaluate technology effectiveness. For vehicles with conventional powertrains (CONVs) and micro hybrids, Autonomie simulates the vehicles per EPA 2-cycle test procedures and guidelines.<sup>18</sup> For mild and full hybrid electric vehicles (HEVs) and FCEVs, Autonomie simulates the vehicles using the same EPA 2-cycle test procedure and guidelines, and the drive cycles repeat until the initial and final state of charge (SOC) are within a Society of Automotive Engineers (SAE) J1711 tolerance. For PHEVs, Autonomie simulates vehicles per similar procedures and guidelines as prescribed in SAE J1711.<sup>19</sup> For BEVs, Autonomie simulates vehicles per similar procedures and guidelines as prescribed in SAE J1634.<sup>20</sup> Note that BEVs and FCEVs are not considered in the central analysis but are included in the Draft SEIS analysis.

While the Autonomie model produces a large amount of information about each simulation run—for a single technology combination, in a single technology class—the CAFE Model uses only two elements of that information: battery costs and fuel consumption on the city and highway cycles. NHTSA combines the fuel economy information from the two cycles to produce a composite fuel economy value for each vehicle, and on each fuel for dual-fueled LD vehicles. PHEVs are the only dual-fuel vehicles in the Autonomie simulation, and they require efficiency estimates for operation on both gasoline and electricity, as well as an estimate of the utility factor, or the number of miles driven on each fuel. For the central analysis, only the gasoline fuel economy for PHEVs is considered. The Draft SEIS analysis, however, uses both the gasoline and electricity efficiency estimates and the utility factor. The fuel economy information for each technology combination within each technology class is converted into a single number for use in the CAFE Model.

The formula for calculating a vehicle’s fuel economy after application of each successive technology represented in the database is defined as the ratio of the fuel economy

---

<sup>15</sup> EPA. 2023. How Vehicles are Tested. Available at: [https://www.fueleconomy.gov/feg/how\\_tested.shtml](https://www.fueleconomy.gov/feg/how_tested.shtml). (Accessed: July 23, 2025).

<sup>16</sup> Chapter “Test Procedures and Energy Consumption Calculations” of the CAFE Analysis Autonomie Documentation.

<sup>17</sup> EPA. 2017. Test Procedures for Electric Vehicles and Plug-in Hybrids. Draft Summary. Available at: <https://www.fueleconomy.gov/feg/pdfs/EPA%20test%20procedure%20for%20EVs-PHEVs-11-14-2017.pdf>. (Accessed: July 23, 2025).

<sup>18</sup> 40 CFR 600.116-12 Special procedures related to EVs and HEVs.

<sup>19</sup> PHEV testing is broken into several phases based on SAE J1711: charge-sustaining on the city cycle, charge-sustaining on the HWFET cycle, charge-depleting on the city and HWFET cycles.

<sup>20</sup> SAE International. 2017. Battery Electric Vehicle Energy Consumption and Range Test Procedure. SAE International. J1634. Available at: [https://saemobilus.sae.org/content/j1634\\_201707](https://saemobilus.sae.org/content/j1634_201707). (Accessed: July 23, 2025).

improvement factor associated with the technology state vector before application of a candidate technology and after the application of a candidate technology.<sup>21</sup>

## **C.1.4 Simulating Existing Incentives**

### **C.1.4.1 Overview of Tax Credits**

Importantly, due to EPCA's constraints on considering the fuel economy of dedicated alternative fuel automobiles in determining maximum feasible standards, BEVs and FCEVs have been removed from the standard-setting analysis in their entirety. HEVs are assumed to be ineligible for the tax credits. The Clean Vehicle Credits and Advanced Manufacturing Production Credit (AMPC) are only applied to PHEVs in the standard-setting analysis. Dual-fueled vehicles such as PHEVs may still be added only in the gas operation and only during the standard-setting years if they are cost effective when considering their operation solely on gasoline or charge sustaining mode. The effect of the tax credits on BEV adoption in NHTSA's Draft SEIS analysis will be to add those vehicles if cost effective.

NHTSA explicitly models several tax credits when simulating the behavior of manufacturers and consumers. NHTSA includes these incentives in modeling the pre-standard-setting years for all alternatives only for MYs 2024 and 2025 in both the standard-setting analysis and the Draft SEIS. The first aspect modeled is the AMPC from the Inflation Reduction Act (IRA). This provision of the IRA provides a \$35 per kilowatt-hour (kWh) tax credit for manufacturers of battery cells and an additional \$10 per kWh for manufacturers of battery modules manufactured in the United States.<sup>22</sup> To qualify to for the \$35 per kWh credit, battery cells must store at least 12 watt-hours of energy. Battery modules must have an aggregate capacity of at least 7 kWh for BEVs and 1 kWh for FCEVs to qualify for the \$10 per kWh module credit. As a result, the CAFE Model assumes batteries only for PHEVs, BEVs, and FCEVs qualify and excludes HEVs for MYs 2024 and 2025. The One Big Beautiful Bill Act (Pub. L. No. 119-21) updated restrictions for foreign entity of concern and American component threshold percentages.

---

<sup>21</sup> For more discussion of how the CAFE Model calculates a vehicle's fuel economy where the vehicle switches from one type of fuel to another, for example, from gasoline operation to diesel operation or, as may occur in the Draft SEIS analysis, from gasoline operation to PHEV/EV operation, refer to S4.6 of the CAFE Model documentation.

<sup>22</sup> 26 U.S.C. 45X. If a manufacturer produces a battery module without battery cells, they are eligible to claim up to \$45 per kWh for the battery module. Two other provisions of the AMPC are not modeled at this time: (i) a credit equal to 10 percent of the manufacturing cost of electrode active materials and (ii) a credit equal to 10 percent of the manufacturing cost of critical minerals for battery production. NHTSA is not modeling these credits directly because of how the agency estimates battery costs and to avoid the potential to double-count the tax credits if they are included in other analyses that feed into NHTSA's inputs. NHTSA chose not to model these components for several reasons. Unlike the Clean Vehicle Credit critical mineral requirements, which allows vehicles whose minerals are produced or processed in foreign nations with free trade agreements with the United States to qualify, the AMPC requires eligible components to be produced within the United States. The preponderance of component materials are mined outside of the United States. While NHTSA suspects the AMPC, coupled with other incentives, will induce some development domestically, it will take years for the full impact of these efforts to come to fruition in regard to mineral production. Even when these capabilities are realized, the amount produced domestically is projected to be a minority of the total minerals produced. Given the growing demand for these minerals will continue to increase globally as the demand for electrified vehicles and other clean energy products increases, the timing and impact of the AMPC on domestic EV prices is highly uncertain.

**C.1.4.2 Implementation of the AMPC and the Clean Vehicle Credits**

**Table C.1.4-1. Assumed Vehicle Battery Capacities for AMPC in kWh**

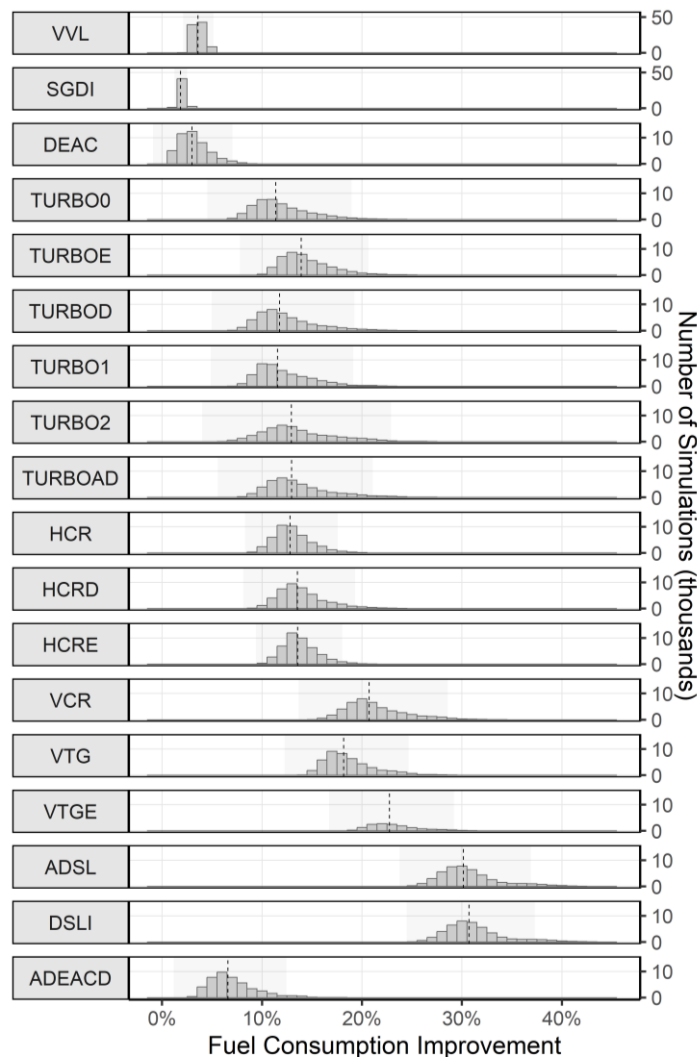
Powertrain Type	Passenger Car	Light Truck
PHEV	21	34
BEV	83	121
FCEV	1	1

**C.2 Technology Pathways, Effectiveness, and Cost**

**C.2.1 Engine Paths**

**C.2.1.1 Engine Effectiveness**

**Figure C.2.1-1. Engine Technology Effectiveness Values for All LD Vehicle Technology Classes (Unconstrained)**



**C.2.1.2 Engine Costs**

NHTSA uses absolute costs to ensure the full cost of the ICE is removed when the Model applies hybrid technologies. Electrification technologies are applied, specifically for the transition to BEVs in the case of the Draft SEIS analysis; the Draft SEIS analysis models the cost of adopting BEV technology by first removing the costs associated with internal combustion powertrain systems, then applying the BEV system costs.

**C.2.2 Transmission Paths**

**C.2.2.1 Transmission Technologies**

In this analysis, NHTSA models only automatic transmissions (AT). ATs are characterized by automatically selecting and shifting between transmission gears for the driver during vehicle operation. NHTSA subdivided LD ATs into four subcategories: traditional ATs, dual-clutch transmissions, continuously variable transmissions (CVT and eCVT), and direct drive transmissions (DD). These transmissions are further discussed in the subsequent TSD subchapters.

DD transmissions, only considered in the Draft SEIS analysis, are also not discussed in detail and are not specifically shown in the technology pathways. DD transmissions are classified as ATs but have a direct connection between the wheels and an electric drive motor. In a DD transmission, the ratio between wheel speed and motor speed remains constant. DD transmissions are considered integral parts of electric drivetrains (such as in BEVs) and are not applied as a standalone technology. Section C.2.2.2, *Assigning Transmission Technologies in the Analysis Fleet*, discusses how NHTSA assigns the DD transmission in the initial fleet.

**C.2.2.2 Assigning Transmission Technologies in the Analysis Fleet**

***Transmission Characteristics Considered in Analysis Fleet Assignments***

**Table C.2.2-1. LD Transmission Technologies**

Transmission	Name
5-speed automatic	AT5
6-speed automatic	AT6
7-speed automatic level 2 HEG	AT7L2
8-speed automatic	AT8
8-speed automatic level 2 HEG	AT8L2
8-speed automatic level 3 HEG	AT8L3
9-speed automatic level 2 HEG	AT9L2
10-speed automatic level 2 HEG	AT10L2
10-speed automatic level 3 HEG	AT10L3
6-speed dual-clutch	DCT6
8-speed dual-clutch	DCT8

Transmission	Name
Continuously variable transmission	CVT
Continuously variable transmission level 2 HEG	CVTL2
Direct drive	DD

Vehicles in the analysis fleet that have a fully electric powertrain are assigned a DD transmission.

**C.2.2.3      *Transmission Adoption Features***

When hybrid electrification technologies are adopted, the transmissions associated with those technologies supersede the existing transmission on a vehicle. The transmission technology is superseded if the model applies strong hybrid or plug-in hybrid, or, in the case of the Draft SEIS analysis, BEV technologies. For more information, see Section C.2.3.3, *Electrification Adoption Features*.

**C.2.2.4      *Transmission Effectiveness***

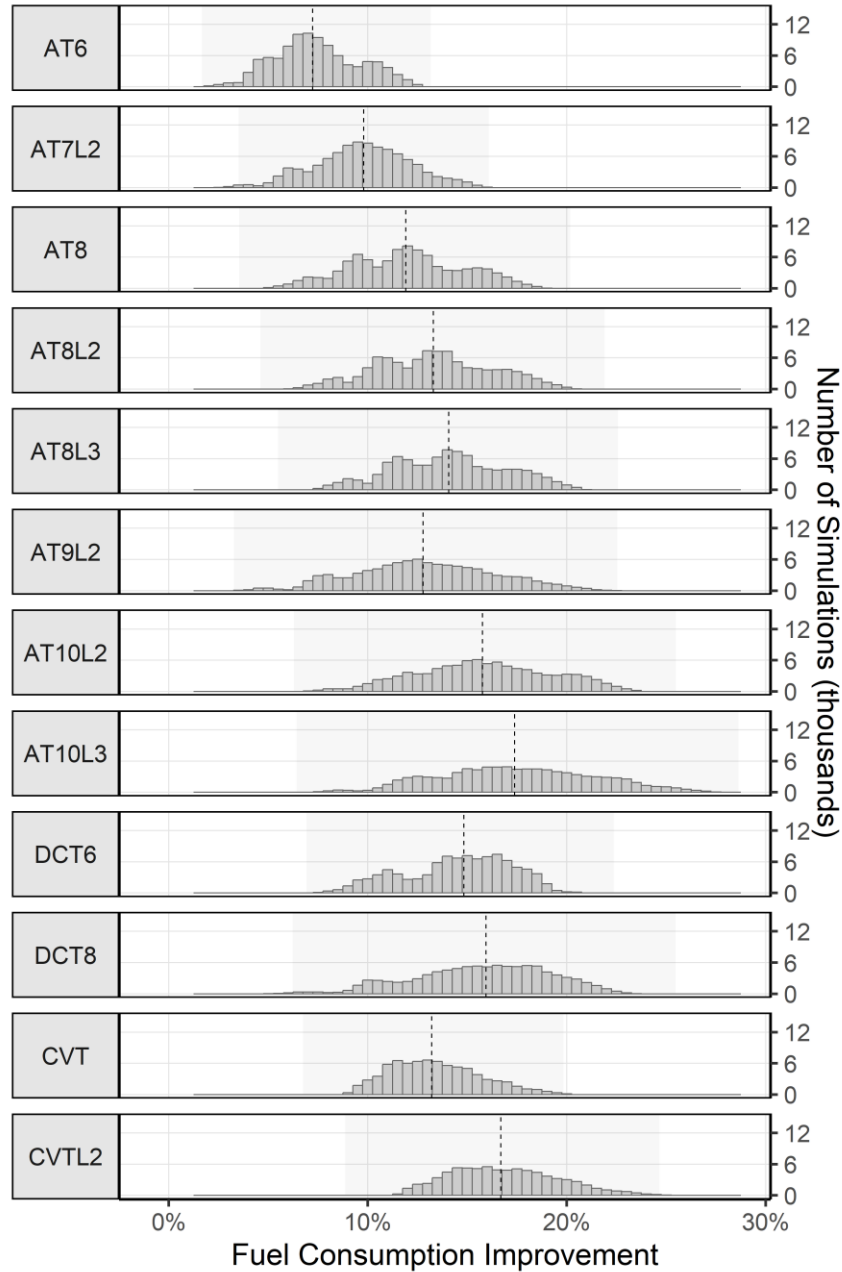
The effectiveness values for the AT5, eCVT, and DD technologies are not shown. The DD<sup>23</sup> and eCVT transmissions do not have a standalone effectiveness because those technologies are only implemented as part of electrified powertrains. The AT5 has no effectiveness values because it is a basic level technology against which all other TRANS are compared.

---

<sup>23</sup> Direct drive transmissions and EVs are not considered in the central analysis, only the Draft SEIS analysis.



Figure C.2.2-1. Light-Duty Transmission Technology Effectiveness Values for All Vehicle Technology Classes (Unconstrained)



**C.2.2.5 Transmission Costs**

This analysis uses absolute costs instead of relative costs, which were used in prior rulemaking analyses. NHTSA uses absolute costs to ensure the full cost of the transmission is removed when the Model applies electrification technologies. The cost of adoption of strong hybrid electric vehicle (SHEV) technology is modeled by first removing the costs associated with

existing powertrain systems, then applying the SHEV system costs. An interested reader can still determine relative costs by comparing the absolute costs for the initial technology combination to the new technology combination.

### **C.2.3 Electrification Paths (Formerly TSD Chapter 3.3)**

Outside of the standard-setting analysis, NHTSA models the extent to which manufacturers could produce EVs in the Draft SEIS analysis, to model more “real-world” results. Per NEPA, NHTSA considers the effects of EV adoption in the CAFE Model under a “real-world” scenario without the EPCA/EISA restrictions on the agency’s decision-making. Based on NHTSA’s NEPA analysis, the agency can consider the modeled environmental impacts of its actions in the decision-making process, subject to EPCA’s constraints.<sup>24</sup>

For those reasons, NHTSA models EVs in its analysis. That said, PHEVs, BEVs, and FCEVs represent only a portion of the electrified technologies that NHTSA includes in the Draft SEIS analysis. NHTSA discusses the range of modeled electrified technologies below and in detail in Section C.2.3.1, *Electrification Technologies*.

NHTSA implements these restrictions in the CAFE Model by using gasoline-only<sup>25</sup> PHEV fuel economy values assuming the PHEV operates on gasoline only<sup>26</sup> and by restricting technologies that would convert ICE vehicles in a manufacturer’s fleet to a BEV or a FCEV from being applied in the constrained analysis.<sup>27</sup> The CAFE Model restricts the application of alternative fuel vehicles like BEV technology in the runs used for the standard setting analysis. The runs used for the Draft SEIS analysis, however, are not restricted in this way. The following discussion includes details on how NHTSA models BEVs for purposes of the unconstrained runs used for the Draft SEIS analysis, including a discussion of the range of considered electrified technologies.

BEVs have an all-electric powertrain and use only batteries for the source of propulsion energy, which is charged by an external source, like the electric grid. BEVs with ranges of 200 to more than 350 miles are used in the Draft SEIS analysis (but not the standard-setting analysis). Like BEVs, FCEVs also have a fully electric powertrain but use a fuel cell system to convert hydrogen fuel into electrical energy.

---

<sup>24</sup> 42 U.S.C. 4332.

<sup>25</sup> NHTSA receives two databases of effectiveness values from the Autonomie modeling, including one with PHEV fuel economy values when operating on gasoline only (“charge sustaining” mode).

<sup>26</sup> NHTSA receives two databases of FCIV from the Autonomie modeling, including one with PHEV fuel economy values when operating on gasoline only (“charge sustaining” mode).

<sup>27</sup> CAFE Model Documentation at 36.

**Table C.2.3-1. Overview of Electrification Technologies Used in the CAFE Model in this Draft SEIS Analysis**

Electric System	Technology Assignment
Micro-Hybrid <sup>a</sup>	SS12V
Mild-Hybrid <sup>b</sup>	BISG
Strong Hybrid	SHEVPS and SHEVP2
Plug-In Hybrid <sup>c</sup>	PHEV in 20- and 50-mile range variants
Battery Electric <sup>d</sup>	BEV1, BEV2, BEV3, and BEV4
Fuel Cell Electric <sup>d</sup>	FCEV

<sup>a</sup> This system does not have engine assist or regenerative braking capabilities.

<sup>b</sup> Mild Hybrid uses an engine-mounted belt integrated starter generator (BISG).

<sup>c</sup> PHEVs in this analysis include both power-split (PS) and parallel (P2) hybrid architecture. For the standard-setting analysis, PHEVs are restricted to gasoline-only function (i.e., “charge sustaining” mode).

<sup>d</sup> EVs (BEVs and FCEVs) are not considered in the standard-setting analysis but are used for SEIS purposes.

See Table C.2.3-2 for further splits within each technology class.

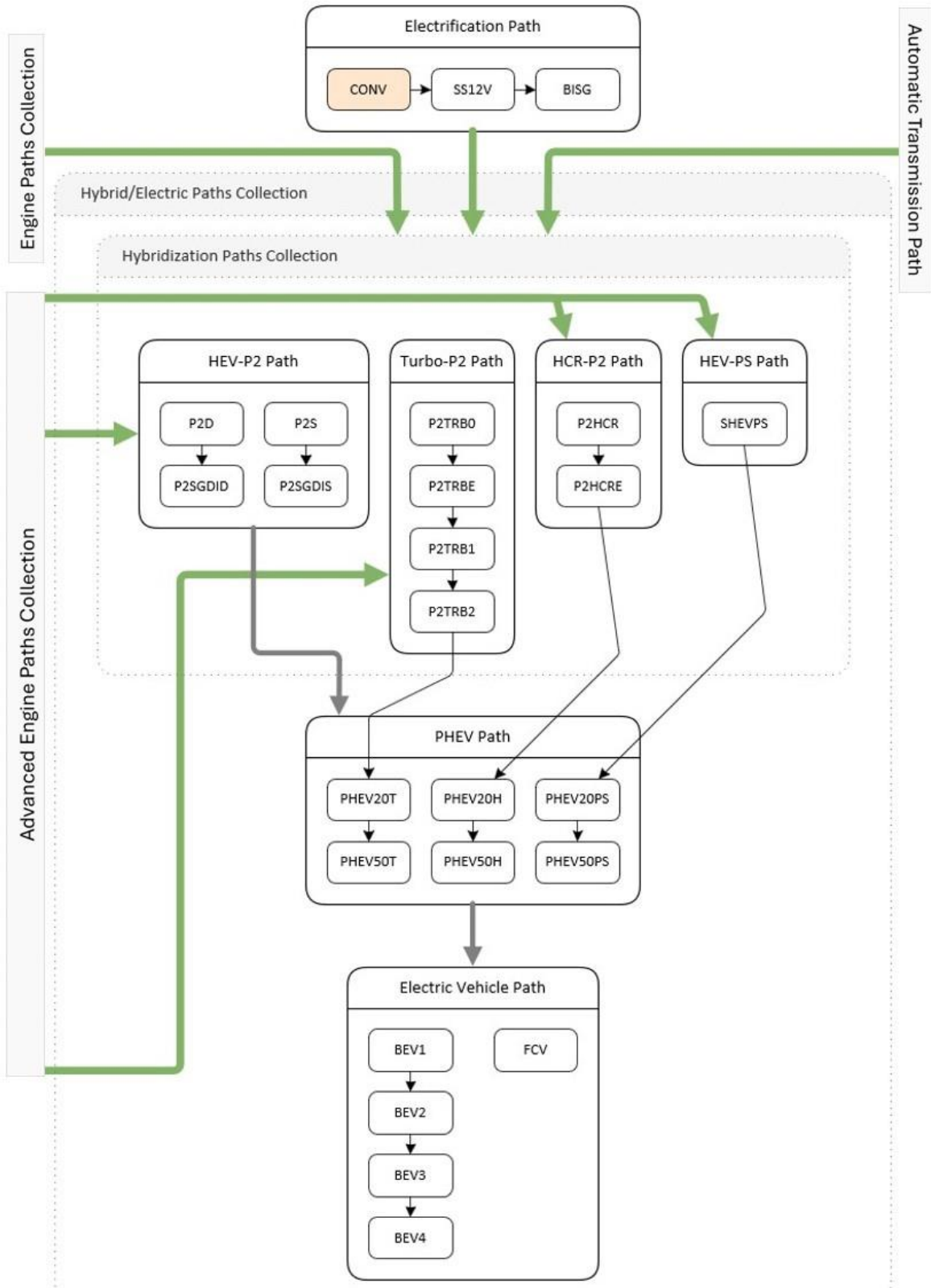
Non-battery electrification components also include power electronics that process and route electric power between the energy storage and propulsion components. More specifically, power electronic components that NHTSA includes in the analyses, as applicable, are motor controllers, which issue complex commands to control torque and speed of the electric motors precisely; power inverters and rectifiers, which convert and manage direct current (DC) and alternating current (AC) between the battery and the propulsion components; on-board battery chargers, for charging the BEV or PHEV battery from AC line power; and DC/DC converters, to allow for different DC voltages within system circuitry. In addition, off-board chargers are charging devices that, when plugged into a plug-in electric vehicle (PEV, i.e., a BEV or PHEV), allow charging from the electric grid. Some off-board chargers, in the case of AC Level 1 charging, travel with the vehicle and are distinct from stationary charging equipment. AC Level 1 chargers, used to charge both BEVs and PHEVs, are powered by a standard household 120-volt (V) AC power outlet and can deliver approximately 5 miles of range for every 1 hour of charging for BEVs, assuming 1.9 kilowatts (kW) charging power. AC Level 2 chargers, also used to charge both BEVs and PHEVs, can be installed residentially, at a workplace, or publicly, and generally charge using between 208V and 240V AC, although some can charge using as high as 277V AC. Although there is a range of charging power installed today, assuming 6.6 kW charging power, AC Level 2 chargers can deliver approximately 25 miles per 1 hour of charging for BEVs. DC fast chargers, found almost exclusively in public settings and strictly used for BEV charging, charge at a rapid rate beyond Level 2—typically operating on voltages between 480V and 1,000V DC and providing output power between 50 and 350 kW (up to 500 kW in some cases). Depending on the vehicle and its battery, DC fast chargers are capable of delivering 100–200+ miles of range after 30 minutes of charging. As discussed further below, the Draft SEIS analysis assumes that BEVs are capable of up to 50 kW of DC fast charging, and NHTSA includes the cost of an off-board charger in PEV costs.

**C.2.3.1 Electrification Technologies**

**Table C.2.3-2. CAFE Model Electric Paths Light-Duty Vehicle Technologies**

Technology	Description
SS12V	Micro Hybrid-Electric Vehicle, 12-Volt Stop-Start
BISG	Mild Hybrid-Electric Vehicle, 48-Volt Belt Mounted Integrated Starter/Generator
SHEV-P2SGDID	Strong Hybrid-Electric Vehicle, P2 Powertrain with a Dual Over-Head Cam Engine and Gasoline Direct Injection
SHEV-P2SGDIS	Strong Hybrid-Electric Vehicle, P2 Powertrain with a Single Over-Head Cam Engine and Gasoline Direct Injection
SHEV- P2TRB1	Strong Hybrid-Electric Vehicle, P2 with a TURBO1 Powertrain
SHEV- P2TRB2	Strong Hybrid-Electric Vehicle, P2 with a TURBO2 Powertrain
SHEV- P2TRBE	Strong Hybrid-Electric Vehicle, P2 with a TURBOE Powertrain
SHEV-P2HCR	Strong Hybrid-Electric Vehicle, P2 with a High Compression Ratio Powertrain
SHEV-P2HCRE	Strong Hybrid-Electric Vehicle, P2 with an E-High Compression Ratio Powertrain
SHEV-PS	Strong Hybrid-Electric Vehicle, Power-Split (PS) Powertrain
PHEV20PS	Plug-In Hybrid-Electric Vehicle, Power-Split Powertrain and 20-mile All Electric Range
PHEV50PS	Plug-In Hybrid-Electric Vehicle, Power-Split Powertrain and 50-mile All Electric Range
PHEV20T	Plug-In Hybrid-Electric Vehicle, Turbo Engine and 20-mile All Electric Range
PHEV50T	Plug-In Hybrid-Electric Vehicle, Turbo Engine and 50-mile All Electric Range
PHEV20H	Plug-In Hybrid-Electric Vehicle, High Compression Ratio Engine and 20-mile All Electric Range
PHEV50H	Plug-In Hybrid-Electric Vehicle, High Compression Ratio Engine and 50-mile All Electric Range
BEV1	Battery Electric Vehicle, ~200-mile Range BEV1 <sub>LD</sub> ≤ 225 miles
BEV2	Battery Electric Vehicle, ~250-mile Range 225 miles < BEV2 <sub>LD</sub> ≤ 275 miles
BEV3	Battery Electric Vehicle, ~300-mile Range 275 miles < BEV3 <sub>LD</sub> ≤ 350 miles
BEV4	Battery Electric Vehicle, ~400-mile Range 350 miles < BEV4 <sub>LD</sub>
FCEV	Fuel Cell Electric Vehicle

Figure C.2.3-1. Electrification Paths in CAFE Model for LD



### **Plug-In Hybrids**

For CAFE compliance, NHTSA measures PHEV gasoline equivalent fuel economy in two ways per EPA regulations: first in a “charge depleting mode” with the vehicle operating on electricity with a fully charged battery, and second in a “charge sustaining mode” with the battery depleted and the vehicle propulsion system operating exclusively on gasoline. The overall fuel economy is calculated by weighting the two measured values. As of MY 2020, manufacturers use the EPA “utility factor” method for weighting the two measured values for calculating PHEV fuel economy. The “utility factor” weighting is based on the vehicle’s all-electric range (AER). The utility factor method follows SAE-recommend practice J1711.<sup>28,29,30,31</sup> As discussed in TSD Chapter 2.3, the Autonomie full-vehicle model simulates powertrains accounting for these compliance procedures. Figure C.2.3-2 shows the fuel economy ratings from the Monroney label<sup>32</sup> that provides both the combined fuel economy (charge sustaining and charge depleting) value as well as the gasoline (charge sustaining only) fuel economy.

---

<sup>28</sup> EPA. 2017. EPA Test Procedure for Electric Vehicles and Plug-in Hybrids. DRAFT Summary. Available at: <https://fueleconomy.gov/feg/pdfs/EPA%20test%20procedure%20for%20EVs-PHEVs-11-14-2017.pdf>. (Accessed: February 9, 2024).

<sup>29</sup> 76 FR 39477, 39504-39505 (Jul. 6, 2011).

<sup>30</sup> 40 CFR 600.116-12(b).

<sup>31</sup> For more detailed information on the development of this SAE utility factor approach, see <http://www.SAE.org>, specifically SAE J2841. Utility Factor Definitions for Plug-In Hybrid Electric Vehicles Using Travel Survey Data. Sept. 2010. Available at: [https://www.sae.org/standards/content/j2841\\_201009/](https://www.sae.org/standards/content/j2841_201009/).

<sup>32</sup> A Monroney Label is a reproduction of the original factory window sticker. U.S. law requires a window sticker, known as a Monroney label, to be displayed on all new cars. These stickers contain mandatory information about the car.

Figure C.2.3-2. Fuel Economy Label for the 2024 Jeep Wrangler 4xe Plug-in Hybrid Showing the Electricity and Gasoline Miles-per-Gallon Equivalent (MPGe)<sup>33</sup>



### Battery Electric Vehicles

BEVs are equipped with all-electric drive systems powered by energy-optimized batteries, charged primarily from the electric grid. BEVs do not have a combustion engine or traditional transmission—instead, BEVs rely on all-electric powertrains and are typically equipped with one-speed transmissions.

For the Draft SEIS analysis, NHTSA simulates BEVs in the CAFE Model with ranges that span from below 200 miles to greater than 350 miles; BEV range is measured according to EPA test procedures and guidance.<sup>34</sup> The CAFE Model assumes that BEV transmissions are unique to each vehicle (i.e., the transmissions are not shared by any other vehicle) and that no further transmission-related improvements are available. Table C.2.3-3 outlines BEV range assignments used for the Draft SEIS analysis, which are reflective of the analysis fleet.<sup>35</sup> NHTSA does not include BEVs in the standard-setting analysis.

<sup>33</sup> EPA. 2025. Selling Your Vehicle? Advertise Its Fuel Economy! Available at: <https://www.fueleconomy.gov/feg/UsedCarLabel.jsp>. (Accessed: May 19, 2025).

<sup>34</sup> EPA. 2017. EPA Test Procedure for Electric Vehicles and Plug-in Hybrids. DRAFT Summary. Available at: <https://fueleconomy.gov/feg/pdfs/EPA%20test%20procedure%20for%20EVs-PHEVs-11-14-2017.pdf>. (Accessed: February 9, 2024).

<sup>35</sup> CAFE Model Documentation, Chapter 2.

**Table C.2.3-3. BEV Range Assignments**

BEV Assignment	BEV Range
BEV1	≤ 225 miles
BEV2	> 225 miles; ≤ 275 miles
BEV3	> 275 miles; ≤ 350 miles
BEV4	> 350 miles

An important note about the BEVs used in the Draft SEIS analysis is that the CAFE Model does not account for vehicle range when considering additional BEV technology adoption. That is, the CAFE Model does not have an incentive to build BEV3s or BEV4s; the BEV2 is just as efficient as those vehicles and counts the same toward compliance but at a significantly lower cost because of the smaller battery. The Draft SEIS analysis looks at adoption of technologies, where applicable, based on the percentage improvement in the 2-cycle fuel economy space. As a result, BEVs tend to be equally efficient when it comes to the percent improvement from conventional technology. Section C.2.3.4, *Electrification Effectiveness*, shows the effectiveness ranges for BEVs as considered for this analysis. Manufacturers stress that greater range is important for meeting the needs of consumers and to increase consumer demand. More recently, there have been trends towards manufacturers building higher range BEVs in the market, including crossover utility vehicles, sport utility vehicles (SUVs), and pickup trucks.<sup>36</sup> To simulate the potential relationship of BEV range to consumer demand, NHTSA includes several adoption features for BEVs in the Draft SEIS analysis, where EVs *can* be considered. These are discussed further in Section C.2.3.3, *Electrification Adoption Features*.

In Section C.2.3.2, *Assigning Electrification Technologies in the Analysis Fleet*, and Section C.2.3.3, *Electrification Adoption Features*, NHTSA discusses the analysis fleet assignments and adoption features for BEVs for the Draft SEIS analysis, how the agency relies on Argonne’s expertise and other sources to evaluate effectiveness and performance, and how the agency determines costs for both the battery and non-battery electrification components.

### **Fuel Cell Electric Vehicles**

Similar to BEVs, FCEVs are equipped with an all-electric drivetrain; however, unlike BEVs, FCEVs do not solely rely on batteries to store energy. Instead, electricity to run the FCEV’s electric motor is primarily generated by an on-board fuel cell system.<sup>37</sup> FCEV architectures are similar to series hybrids,<sup>38</sup> but with the engine and generator replaced by a fuel cell. Commercially available FCEVs consume hydrogen to generate electricity for the fuel cell system, with most automakers using high-pressure gaseous hydrogen storage tanks. FCEVs are currently

<sup>36</sup> Automotive News. More than 50 EVs to join next wave through ‘24. October 1, 2023. Available at: <https://www.autonews.com/future-product/here-are-more-50-evs-coming-market-end-2024>. (Accessed: Mar. 28, 2024).

<sup>37</sup> FCEVs use a propulsion system similar to that of EVs, where energy stored as hydrogen is converted to electricity by the fuel cell.

<sup>38</sup> Series hybrid architecture has a power-flow structure with the engine, electric motor, and transmission in series. In this architecture, the engine does not propel the vehicle; instead, it drives a generator to charge the battery.



produced in limited numbers and are available only in limited geographic areas where hydrogen refueling stations are accessible. For reference, in MY 2024, only four different FCEV models were offered for sale, and since 2014 only 18,706 FCEVs have been sold.<sup>39,40</sup>

For the Draft SEIS analysis, the CAFE Model simulates a FCEV with a range of 300 miles. In the Draft SEIS analysis, any type of powertrain could adopt a FCEV powertrain; however, to account for limited market penetration and unlikely increased adoption in the rulemaking timeframe,<sup>41</sup> technology phase-in caps were used to control how many FCEVs a manufacturer could build. The details of this concept are further discussed in Section C.2.3.3, *Electrification Adoption Features*. FCEVs are not considered in the standard-setting analysis.

### **C.2.3.2      *Assigning Electrification Technologies in the Analysis Fleet***

Table C.2.3-4 expands on these electrification technologies and gives the initial penetration rates of eligible electrification technologies in the unconstrained analysis fleet (i.e., the fleet used for the Draft SEIS analysis). Over half the LD fleet has some level of electrification, with the vast majority of these being micro-hybrids; BEV3 is the most common BEV technology.

---

<sup>39</sup> Argonne National Lab. 2025. Light Duty Electric Drive Vehicles Monthly Sales Update. Energy Systems Division. Available at: <https://www.anl.gov/esia/light-duty-electric-drive-vehicles-monthly-sales-updates>. (Accessed: May 14, 2025).

<sup>40</sup> Market Data Input File: Hyundai Nexo (Limited and Blue) and Toyota Mirai (XLE and Limited).

<sup>41</sup> Rho Motion subscription. EV & Battery Quarterly Outlook: Quarter 1, 2025. Available at: <https://rhomotion.com/>. (Accessed: May 14, 2025).

Table C.2.3-4. Penetration Rate of Electrification Technologies in the MY 2024 Light-Duty Fleet

Electrification Technology	Standard-Setting Analysis <sup>a</sup>		EIS Analysis <sup>b</sup>	
	Sales Volume with this Technology	Penetration Rate in 2024 Analysis Fleet	Sales Volume with this Technology	Penetration Rate in 2024 Analysis Fleet
Conventional Only	2,676,769	19.53%	2,676,769	18.12%
SS12V	8,630,909	62.97%	8,630,909	58.42%
BISG	582,001	4.25%	582,001	3.94%
SHEVP2	433,158	3.16%	433,158	2.93%
SHEVPS	992,567	7.24%	992,567	6.72%
PHEV20PS	11,248	0.08%	11,248	0.08%
PHEV20H	56,597	0.41%	56,597	0.38%
PHEV20T	267,743	1.95%	267,743	1.81%
PHEV50PS	15,027	0.11%	15,027	0.10%
PHEV50H	30,914	0.23%	30,914	0.21%
PHEV50T	9,287	0.07%	9,287	0.06%
BEV1	0	0%	62,338	0.42%
BEV2	0	0%	261,145	1.77%
BEV3	0	0%	694,023	4.70%
BEV4	0	0%	48,762	0.33%
FCEV	0	0%	694	0.00%
TOTAL	13,706,220	100%	14,773,182	100%

Notes:

<sup>a</sup> EVs (BEVs and FCEVs) removed from the central analysis fleet.<sup>b</sup> EVs (BEVs and FCEVs) remain in the fleet for the Draft SEIS analysis.

### Plug-In Hybrids

NHTSA calculates individual gasoline and electric fuel economy values as part of characterizing PHEVs in the Draft SEIS analysis fleet<sup>42</sup> using both charge sustaining (gasoline) and charge depleting (electric) fuel economy for the Draft SEIS analysis runs. Separating out the fuel economy values for the Draft SEIS analysis runs is necessary because the fuel economy values for PHEVs reported in compliance data are a single value that combines both types of fuel economies.

<sup>42</sup> Calculating PHEV fuel economy is determined for the purpose of fuel economy compliance for the effects on the Draft SEIS analysis.

To calculate PHEV gas fuel economy (charge sustaining), NHTSA scales values derived from fueleconomy.gov<sup>43</sup> by a factor of 1.3.<sup>44</sup> These scaled gas fuel economy values are used in the Market Data Input file that is used for the CAFE Model runs for both the standard-setting analysis and the Draft SEIS analysis.

To compute electric (charge depleting) fuel economy, NHTSA calculates utility factors, which define the proportion of miles traveled by PHEVs using electricity according to mathematical curves defined by SAE.<sup>45</sup> These curves use each vehicle's AER as the input, which are, like the values for the gas fuel economy values, derived from fueleconomy.gov and are also scaled by a factor of 1.3. Although there are other possible scaling factors, such as analyst-defined utility factors or a default value of 0.5,<sup>46</sup> NHTSA applies the greatest value.

NHTSA then uses the SAE standard for calculating the utility factor-weighted electric fuel economy<sup>47</sup> while defining a functional relationship to calculate it from known values, which is given in Equation C.2.3-1. The equation is divided by the petroleum equivalency factor (PEF) finalized in 2000 for MYs 2022–2026.<sup>48</sup> Starting in MY 2027, the equation is divided by a new value based on DOE's 2024 PEF.<sup>49</sup> The 2024 PEF was recently vacated by the D.C. Circuit, *Iowa v. Wright*, Case No. 24-1721 (Sept. 5, 2025). NHTSA will update its analysis for the final rule but, due to timing constraints, was unable to do so in advance of issuing the proposed rule.<sup>50</sup>

#### Equation C.2.3-1. Electric Fuel Economy

$$\text{Electric Fuel Economy} = \frac{(\text{Certification FE}) \times (\text{Scaled Gas FE}) \times (\text{Utility Factor})}{(\text{Scaled Gas FE} - \text{Certification FE}) \times (1 - \text{Utility Factor})} \times \frac{1}{\text{PEF}}$$

---

<sup>43</sup> FuelEconomy.gov is Federal Government website that helps consumers make informed fuel economy choices when purchasing a vehicle and helps them achieve the best fuel economy possible from the cars they own. FuelEconomy.gov is maintained by the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy with data provided by EPA. The site helps fulfill DOE and EPA's responsibility under the Energy Policy Act of 1992 to provide accurate fuel economy information to consumers.

<sup>44</sup> The 1.3 scalar value accounts for the adjustment procedure used by EPA when deriving the Monroney fuel economy label ("window sticker") values, which are calculated by multiplying measured fuel economies by a factor of 0.7. More information can be found at <https://www.fueleconomy.gov/feg/pdfs/EPA%20test%20procedure%20for%20EVs-PHEVs-11-14-2017.pdf>. (Accessed: Feb. 9, 2024).

<sup>45</sup> SAE International. 2010. Utility Factor Definitions for Plug-In Hybrid Electric Vehicles Using Travel Survey Data. Available at: [www.sae.org/standards/content/j2841\\_201009](http://www.sae.org/standards/content/j2841_201009). (Accessed: Jul. 1, 2025).

<sup>46</sup> A utility factor of 0.5 indicates that exactly half of a PHEV's miles traveled are on gas fuel, while the other half are on electric power.

<sup>47</sup> SAE International. 2010. Recommended Practice for Measuring the Exhaust Emissions and Fuel Economy of Hybrid-Electric Vehicles, Including Plug-in Hybrid Vehicles. Available at: [www.sae.org/standards/content/j1711\\_201006](http://www.sae.org/standards/content/j1711_201006). (Accessed: Feb. 9, 2024).

<sup>48</sup> Equation 26 the petroleum equivalency factor of electricity discussed in the CAFE Model Documentation S5.1.1. The scalar term, used in the CAFE Model Documentation equation, is 82,049 Wh/gal through MY 2026 and updated to new values starting in MY 2027.

<sup>49</sup> See Petroleum-Equivalent Fuel Economy Calculation, 89 FR 22041 (Mar. 29, 2024).

<sup>50</sup> DOE justified using MY 2027 to align with the first model year of the fleet of vehicles sold during the expected regulatory period for the 2024 CAFE Final Rule for MYs 2027–2031.

This approach has some limitations. In some cases, the electric fuel economy values or utility factors are not reported by manufacturers. This is due to the certification fuel economy values that manufacturers report in compliance data, which are often not broken down to the specific level that is needed for compliance analysis, as determining the electric range of PHEVs is complicated if the vehicle can operate in blended modes.<sup>51</sup> For PHEVs like the Toyota Prius Prime SE, which cannot operate in blended mode, the electric range represents the estimated range operating in electric-only mode. However, for PHEVs that operate in a blended mode, the electric range represents the estimated range of the vehicle operating in either electric-only or blended mode, due to the design of the vehicle. For example, the Volvo XC60 Recharge uses electricity stored in its battery and a small amount of gasoline to achieve an alternative fuel range. Some PHEVs did not use any gasoline to achieve their electric range value on EPA test cycles; however, certain driving conditions (e.g., more aggressive accelerations, higher speeds) would likely cause these vehicles to operate in a blended mode instead of an all-electric mode.

### ***Fuel Cell and Battery Electric Vehicles***

FCEV and BEV technologies include BEV1, BEV2, BEV3, BEV4, and FCEV categories. NHTSA includes these vehicles in the Market Data Input Files that are used for the CAFE Model runs for the Draft SEIS analysis. NHTSA assigns vehicles with all-electric powertrains that use hydrogen fuel as FCEV, and BEV technologies based on range according to the thresholds listed previously in Table C.2.3-3. These range thresholds account for vehicles' existing range capabilities while allowing room for the Model to potentially apply more advanced electrification technologies.

### ***C.2.3.3 Electrification Adoption Features***

Broadly speaking, more advanced levels of electrification supersede all prior levels, while certain technologies within each level are mutually exclusive. NHTSA models (from least to most electrified) micro-hybrids, mild hybrids, SHEVs, PHEVs, and BEVs and FCEVs.<sup>52,53</sup>

Finally, for the Draft SEIS analysis, phase-in caps limit the adoption rates of BEVs and FCEVs across the rulemaking. These phase-in caps account for current market share, scalability, and reasonable consumer adoption rates of each technology. NHTSA does not include EVs (BEVs and FCEVs) in the standard-setting analysis.

### ***Plug-In Hybrids***

PHEV technologies include PHEV20PS/20H/20T and PHEV50PS/50H/50T. They supersede the micro, mild, and strong hybrids. For the CAFE Model runs for the SEIS, these technologies can only be replaced by fully electric technologies.

---

<sup>51</sup> EPA. 2024. The 2024 EPA Automotive Trends Report: Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975. November 2024. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101CUU6.pdf>. Page E-1.

<sup>52</sup> See CAFE Model Documentation for additional description of how path logic is applied.

<sup>53</sup> EVs (BEVs and FCEVs) are not considered in the standard-setting analysis but are considered in the Draft SEIS analysis.

### Fuel Cell and Battery Electric Vehicles

Adoption of BEVs and FCEVs is restricted in the standard-setting analysis and is limited by both path logic and phase-in caps for the Draft SEIS analysis where they are applied as end-of-path technologies that supersede previous levels of electrification.

The main adoption features applicable to BEVs and FCEVs are phase-in caps, defined in the CAFE Model Input file as percentages that represent the maximum rate of increase in penetration rate for a given technology. Phase-in caps are accompanied by a phase-in start year, which determines the first year the phase-in cap applies. Together, the phase-in cap and start year determine the maximum penetration rate for a given technology in a given year; the maximum penetration rate equals the phase-in cap times the number of years elapsed since the phase-in start year. Phase-in caps *do not* inherently dictate how much a technology is applied by the model. Rather, they represent how much of the fleet *could (maximally)* have a given technology by a given year. Because BEV1 costs less and has slightly higher effectiveness values<sup>54</sup> than other advanced electrification technologies, the Model has vehicles adopt it first until it is restricted by the phase-in cap.<sup>55</sup> Table C.2.3-5 shows the phase-in caps, phase-in year, and maximum penetration rate through 2050 for BEV and FCEV technologies for the LD fleet, based on market projections.<sup>56</sup> For comparison, NHTSA also lists the actual penetration rate of each technology in the 2024 analysis fleet in the fourth column from the left.

**Table C.2.3-5. Phase-In Caps for Fuel Cell and Battery Electric Vehicle Technologies**

Technology Name	Phase-In Cap	Phase-In Start Year	Actual OEM Avg. Penetration Rate in 2024	Actual non-EV OEM Avg. Penetration Rate in 2024 <sup>a</sup>	Maximum Penetration Rate in 2025	Maximum Penetration Rate in 2030	Maximum Penetration Rate in 2035	Maximum Penetration Rate in 2040	Maximum Penetration Rate in 2045	Maximum Penetration Rate in 2050
BEV1	0.0140%	1998	4.63%	0.47%	0.39%	0.46%	0.53%	0.60%	0.67%	0.74%
BEV2	0.114%	2009	5.56%	1.75%	1.94%	2.51%	3.08%	3.65%	4.22%	4.79%
BEV3	0.455%	2016	8.67%	2.42%	4.55%	6.83%	9.10%	11.38%	13.65%	15.93%
BEV4	1.000%	2021	9.67%	0.06%	5.00%	10.00%	15.00%	20.00%	25.00%	30.00%
FCEV	0.0002%	2016	0.0012%	0.0016%	0.0015%	0.0023%	0.0030%	0.0038%	0.0045%	0.0053%

Notes:

<sup>a</sup> Excludes EV-only OEMs: Fisker, Lucid, Mullen, Rivian, Tesla, and VinFast.

<sup>54</sup> BEV1 uses fewer batteries and weighs less than BEVs with greater ranges.

<sup>55</sup> Recall that this is only the case for the Draft SEIS analysis. EVs (BEVs and FCEVs) are restricted from the standard-setting analysis.

<sup>56</sup> Phase-in caps for BEVs and FCEVs were developed using the AEO 2025 Alternative Transportation case and Rho Motion’s Q1 EV & Battery Outlook (“downside projections”).

The LD BEV1 phase-in cap is also informed by manufacturers' tendency to move away from low-range passenger vehicles offerings in part because of potential consumer concern with range anxiety.<sup>57,58</sup> In some cases, the advertised range on EVs may not reflect the actual real-world range in cold and hot ambient temperatures and real-world driving conditions, affecting the utility of these lower-range vehicles.<sup>59,60</sup> Many manufacturers have told NHTSA that the portion of consumers willing to accept a vehicle with the lowest modeled range is small, with manufacturers targeting range values above BEV1 range for this reason.<sup>61</sup>

Furthermore, the average BEV range has steadily increased over the past decade<sup>62</sup> due to battery technological advances increasing energy density,<sup>63,64</sup> as well as batteries becoming more cost effective.<sup>65</sup> EPA observed in its 2024 Automotive Trends Report that the "average range of new BEVs has climbed substantially. In model year 2023, the average new BEV range is 292 miles, or almost four times the range of an average BEV in 2011."<sup>66</sup> Based on the cited examples and basis described in this section, the maximum growth rate for LD BEV1s in the model is set accordingly low to less than 0.1 percent per year. While this rate is significantly lower than that of the other BEV technologies, the BEV1 phase-in cap allows the penetration rate of low-range BEVs to grow by a multiple of what is currently observed in the market.

For higher BEV ranges, phase-in caps are intended to conservatively reflect potential challenges in the scalability of BEV manufacturing, and implementing BEV technology on many vehicle configurations, including larger vehicles. In the short term, the penetration of BEVs is largely limited by affordability, determined battery material acquisition, processing, and

---

<sup>57</sup> 2024 EPA Trends Report at 72.

<sup>58</sup> IEA. 2022. Trends in Electric light-duty vehicles. Available at: <https://www.iea.org/reports/global-ev-outlook-2022/trends-in-electric-light-duty-vehicles>. (Accessed: October 6, 2025).

<sup>59</sup> AAA. 2019. AAA Electric Vehicle Range Testing. Last Revised: Feb. 2019. Available at: <https://www.aaa.com/AAA/common/AAR/files/AAA-Electric-Vehicle-Range-Testing-Report.pdf>. (Accessed: October 6, 2025).

<sup>60</sup> Pratt, D. 2021. How Much Do Cold Temperatures Affect an Electric Vehicle's Driving Range? Consumer Reports. Last revised: Dec. 19, 2021. Available at: <https://www.consumerreports.org/hybrids-evs/how-much-do-cold-temperatures-affect-an-evs-driving-range-a5751769461>. (Accessed: October 6, 2025).

<sup>61</sup> Randall, T. 2023. Bloomberg News. California Shows an Electric-Car Uprising Headed for the US. Available at: <https://www.bnnbloomberg.ca/california-shows-an-electric-car-uprising-headed-for-the-us-1.1968891>. (Accessed: October 6, 2025).

<sup>62</sup> 2024 EPA Automotive Trends Report, at 64, Figure 4.19.

<sup>63</sup> Karkaria, U. Automotive News. BMW hatches an EV battery with 30% more range. Dec. 01, 2022. Available at: <https://www.autonews.com/mobility-report/bmws-next-generation-ev-battery-offers-30-more-range>. (Accessed: October 6, 2025).

<sup>64</sup> Karkaria, U. Automotive News. 202 Volvo EVs get rear-wheel drive, longer range. Available at: <https://www.autonews.com/cars-concepts/volvo-evs-have-e-motor-developed-house>. (Accessed: October 6, 2025).

<sup>65</sup> Bloomberg New Energy Finance. Lithium-Ion Battery Pack Prices Hit Record Low of \$139/kWh. Nov. 26, 2023. Available at: <https://about.bnef.com/blog/lithium-ion-battery-pack-prices-hit-record-low-of-139-kwh/>. (Accessed: October 6, 2025).

<sup>66</sup> 2024 EPA Automotive Trends Report, at 72.

manufacturing.<sup>67,68,69</sup> Incorporating battery packs with the capacity to provide greater electric range also poses its own engineering challenges. Heavy batteries and large packs may be difficult to integrate for many vehicle configurations and require vehicle structure modifications. Pickup trucks and large SUVs in particular require higher levels of energy as the number of passengers and/or payload increases, for towing and other high-torque applications. In the Draft SEIS analysis, NHTSA uses the LD BEV3 and BEV4 phase-in caps to reflect these transitional challenges.

NHTSA assigns the phase-in cap for FCEVs based on existing market share as well as historical trends in FCEV production for LD vehicles. FCEV production share in the past 5 years has been extremely low,<sup>70</sup> the lack of fueling infrastructure remains a limiting factor,<sup>71</sup> and the phase-in cap is set accordingly. As with BEV1, however, the phase-in cap still allows for the market share of FCEVs to grow several times over.

#### **C.2.3.4      *Electrification Effectiveness***

For this analysis, NHTSA considers a range of electrification technologies that, when modeled, result in varying levels of effectiveness at reducing fuel consumption. As discussed above, the modeled electrification technologies include micro hybrids, mild hybrids, two different strong hybrids, three different plug-in hybrid architectures with two separate AERs, BEVs, and FCEVs. Each electrification technology consists of many complex subsystems with unique component characteristics and operational modes. As discussed further below, the systems that contribute to the effectiveness of an electrified powertrain in the analysis include the vehicle's battery, electric motor/generator(s) ("M/G(s)"), power electronics, and accessory loads. NHTSA discusses the procedures for modeling each of these subsystems in Section C.2.2, *Transmission Paths*, TSD Chapter 3.2, and the CAFE Analysis Autonomie Documentation.

Argonne uses data from their Advanced Mobility Technology Laboratory (AMTL) to develop Autonomie's electrified powertrain models. The modeled powertrains are not intended to represent any specific manufacturer's architecture but act as surrogates by predicting representative levels of effectiveness for each electrification technology.

PHEV operates under both a charge sustaining and a charge depleting mode in CAFE Model runs, and the values are combined after applying the utility factor that was discussed in TSD Chapter 3.3.2.3 and *Plug-In Hybrids* in Section C.2.3.2, *Assigning Electrification Technologies in*

---

<sup>67</sup> Bloomberg New Energy Finance. Lithium-Ion Battery Pack Prices See Largest Drop Since 2017, Falling to \$115 per Kilowatt-Hour. Dec. 10, 2024. Available at: <https://about.bnef.com/insights/commodities/lithium-ion-battery-pack-prices-see-largest-drop-since-2017-falling-to-115-per-kilowatt-hour-bloombergnef/>. (Accessed: Jul. 3, 2025).

<sup>68</sup> Karkaria, U. 2025. Automotive News. Stalled AESC battery factory threatens BMW's U.S. EV production plans. Available at: <https://www.autonews.com/bmw/an-stalled-battery-factory-bmw-evs-0611/>. (Accessed: Jul. 3, 2025).

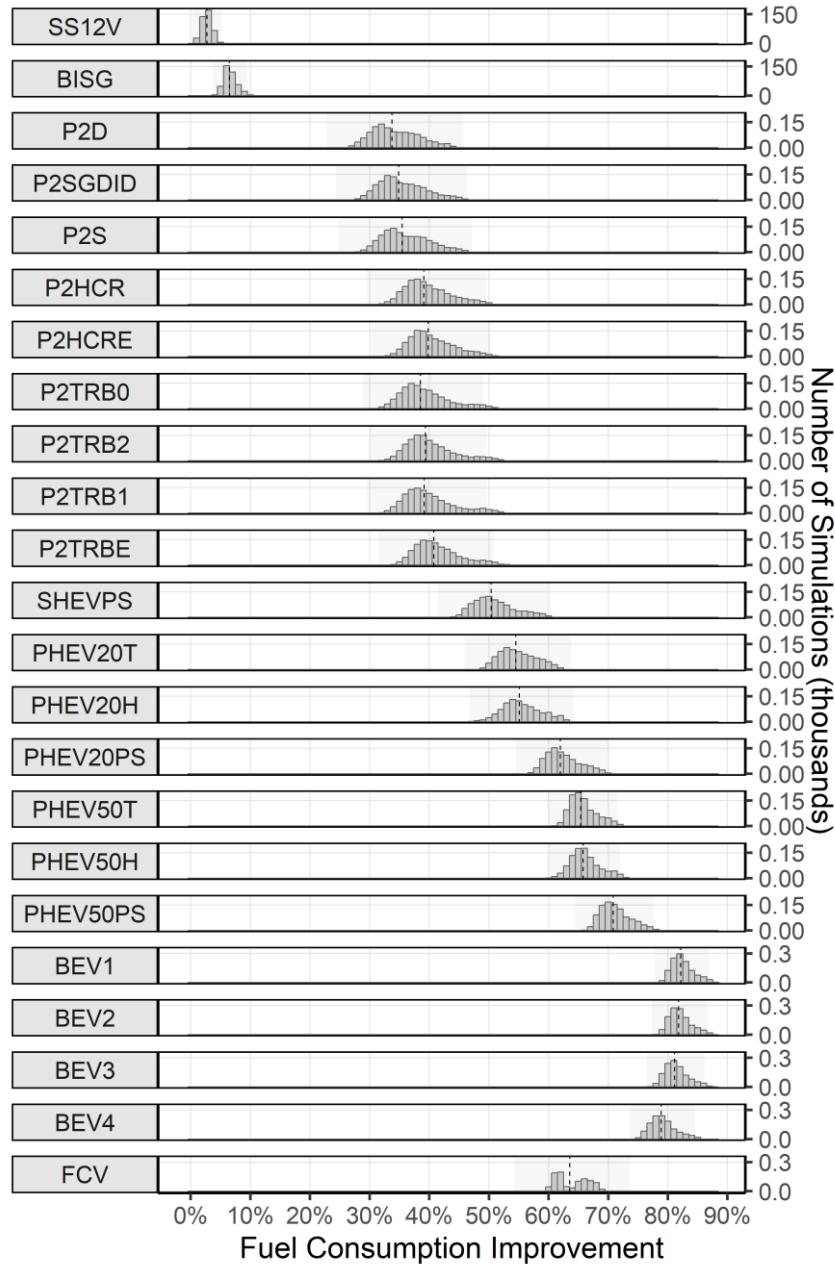
<sup>69</sup> Yang, H. 2025. Reuters. Exclusive: Hyundai Motor has a rare earths stockpile that can last about a year, source says. Available at: <https://www.reuters.com/business/autos-transportation/hyundai-motor-has-rare-earths-stockpile-that-can-last-about-year-source-says-2025-06-10/>. (Accessed: Jul. 3, 2025).

<sup>70</sup> 2024 EPA Automotive Trends Report, at 69, Figure 4.15.

<sup>71</sup> DOE. Alternative Fuels Data Center. Hydrogen Refueling Infrastructure Development. Available at: [https://afdc.energy.gov/fuels/hydrogen\\_infrastructure.html](https://afdc.energy.gov/fuels/hydrogen_infrastructure.html). (Accessed: May 28, 2025).

*the Analysis Fleet.* BEVs and FCEVs are only considered in the Draft SEIS analysis; for these technologies, Autonomie simulates vehicles performing the test cycles per guidance provided in SAE J1634.<sup>72</sup>

**Figure C.2.3-3. Light-Duty Electrification Technology Effectiveness Values for All Vehicle Technology Classes (SEIS)**



<sup>72</sup> SAE J1634. Battery Electric Vehicle Energy Consumption and Range Test Procedure. July 12, 2017.



**Batteries, Electric Motor/Generators, Power Electronics, and Accessories**

For this analysis, Autonomie employs a set of electric motor efficiency maps created by Oak Ridge National Laboratory (ORNL): one for a traction motor and an inverter, the other for a motor/generator and inverter.<sup>73</sup> Autonomie also uses test data validations from technical publications to determine the peak efficiency of BEVs and FCEVs.

**Table C.2.3-6. Electric Machine Efficiency Map Sources for Different Powertrain Configurations**

Powertrain Type	Source of Efficiency Map for Motor1 (Traction Motor) + Inverter	Source of Efficiency Map for Motor2 (Motor/Generator) + Inverter
SS12V	Camry HEV EM1 data from ORNL	N/A
BISG	Camry HEV EM1 data from ORNL	N/A
SHEVP2	N/A	Sonata HEV EM2 data from ORNL
SHEVPS, PHEV20	Camry HEV EM1 data from ORNL	Camry HEV EM2 Data from ORNL
PHEV50	Camry HEV EM1 data from ORNL	Sonata HEV EM2 Data from ORNL
BEV and FCEV	Chevrolet Bolt EM data from SAE paper <sup>74</sup>	N/A

For this analysis, NHTSA aggregates electrical accessory load modeling assumptions for the different powertrain types (electrified and conventional) from data from the Draft Technical Assessment Report, EPA Proposed Determination,<sup>75</sup> data from manufacturers,<sup>76</sup> research and development data from DOE’s Vehicle Technologies Office,<sup>77,78,79</sup> and DOT-sponsored vehicle

<sup>73</sup> Oak Ridge National Laboratory. 2008. Evaluation of the 2007 Toyota Camry Hybrid Synergy Drive System. Submitted to the U.S. Department of Energy; Oak Ridge National Laboratory. 2011. Annual Progress Report for the Power Electronics and Electric Machinery Program.

<sup>74</sup> Jehlik, F. et al. 2022. Vehicle Technology Assessment, Model Development, and Validation of a 2020 Chevrolet Bolt. Report No. DOT HS 813 351. National Highway Traffic Safety Administration.

<sup>75</sup> EPA Proposed Determination TSD. November 2016, at 2–270.

<sup>76</sup> Alliance of Automobile Manufacturers Comments on Draft TAR, at 30.

<sup>77</sup> DOE Electric Drive Systems Research and Development. Office of Energy Efficiency & Renewable Energy (EERE). Available at: <https://www.energy.gov/eere/vehicles/vehicle-technologies-office-electric-drive-systems>. (Accessed: October 6, 2025).

<sup>78</sup> Argonne National Laboratory. 2023. Advanced Mobility Technology Laboratory (AMTL). Available at: <https://www.anl.gov/taps/advanced-mobility-technology-laboratory>. (Accessed: October 6, 2025).

<sup>79</sup> DOE’s lab years are 10 years ahead of manufacturers’ potential production intent (e.g., 2020 Lab Year correlates with vehicle MY 2030).

benchmarking studies completed by Argonne’s AMTL, with vehicles, such as the Toyota RAV4 Prime,<sup>80</sup> Nissan Leaf,<sup>81</sup> and Chevy Bolt.<sup>82</sup>

**Table C.2.3-7. Accessory Load Assumptions in Watts by Vehicle Class and Powertrain Type**

Vehicle Class	Performance Category	Accessory Load (Watts) by Vehicle Powertrain Type			
		CONVs	HEVs	PHEVs	BEVs
Compact	LD Base	250	275	275	225
Compact	LD Premium	300	325	325	275
Midsized	LD Base	250	275	275	225
Midsized	LD Premium	300	325	325	275
Small SUV	LD Base	275	300	300	250
Small SUV	LD Premium	325	350	350	300
Midsized SUV	LD Base	275	300	300	250
Midsized SUV	LD Premium	325	350	350	300
Pickup	LD Base	275	300	300	250
Pickup	LD Premium	325	350	350	300

**Plug-in Hybrids**

As discussed earlier in Section C.2.3.1, *Electrification Technologies*, Autonomie follows EPA’s regulatory guidance and uses the SAE J1711 test procedure to model the incremental effectiveness of adding PHEV technology to a vehicle. The procedure from this guidance is divided into several phases that model charge sustaining, charge depleting, and cold operation<sup>83</sup> calculations for different test cycles. This is described in detail in the CAFE Analysis Autonomie Documentation.<sup>84</sup> Charge depleting mode is not used for standard-setting analysis.

**Battery Electric Vehicles**

The effectiveness of BEVs—considered only for the Draft SEIS analysis and not in the standard-setting analysis—is dependent on the efficiency of the components that transfer power from the battery to the driven wheels. These components include the battery, electric machine, power electronics, and mechanical gearing. For this analysis, NHTSA uses efficiency maps from production vehicles to calculate electric machine efficiency and area for which the maps

<sup>80</sup> Iliev, S. et al. 2022. Vehicle Technology Assessment, Model Development, and Validation of a 2021 Toyota RAV4 Prime. Report No. DOT HS 813 356. National Highway Traffic Safety Administration.

<sup>81</sup> Jehlik, F. et al. 2022. Vehicle Technology Assessment, Model Development, and Validation of a 2019 Nissan Leaf Plus. Report No. DOT HS 813 352. National Highway Traffic Safety Administration.

<sup>82</sup> Jehlik, F. et al. 2022. Vehicle Technology Assessment, Model Development, and Validation of a 2020 Chevrolet Bolt. Report No. DOT HS 813 351. National Highway Traffic Safety Administration.

<sup>83</sup> SAE J1711 cold test operation occurs in both Charge Sustaining and Charge Depleting modes.

<sup>84</sup> Chapter “Vehicle Sizing Process” of the CAFE Analysis Autonomie Documentation.

operate and scale the electric machine efficiency such that the peak efficiency value corresponds to the latest state-of-the-art technologies. The range of a BEV in the Draft SEIS analysis is dependent on the vehicle's class and the battery pack size.

An important note about Autonomie's BEV model is that it does not simulate any one manufacturer's technology, architecture, battery pack characteristics, or thermal management and SOC control strategies. Those BEV characteristics are unique for each manufacturer's vehicle models. And, like many other parts of this analysis, these technology models in Autonomie are discrete representative designs. Accordingly, the absolute MPGe from Autonomie could vary significantly compared to production vehicles in the market in the rulemaking timeframe.<sup>85</sup>

Another important note about BEVs in the Draft SEIS analysis is that the effectiveness of a BEV built in the CAFE Model is independent of the effectiveness of the CONV it replaces. As vehicles adopt BEV technology,<sup>86</sup> the CAFE Model uses the Autonomie databases to determine the added incremental efficiency that would bring a specific vehicle up to the appropriate fuel economy level that allows the manufacturer's fleet to achieve compliance. Since the CAFE Model considers a variety of vehicle types with differing powertrain types, vehicle technology classes, performance criteria, and physical properties (curb weight, etc.), each with a different overall effectiveness, the efficiency increment needed to achieve BEV effectiveness varies with each case. The effectiveness NHTSA uses in the CAFE Model represents the difference between the performance of the full-vehicle models' simulations—the full-vehicle model representing the initial-state vehicle versus the full-vehicle model representing the end-state—with all additional fuel-economy-improving technology applied, as NHTSA discusses in TSD Chapter 2.3.

As NHTSA discusses in Section C.1.3, *Technology Effectiveness Values*, Autonomie follows EPA regulatory guidance and uses the SAE J1634 test procedure to determine incremental effectiveness for BEVs in the CAFE Model analysis used for the SEIS; the procedure from this guidance uses the multi-cycle test method from this SAE standard. Autonomie's BEV model starts with the battery at full charge or maximum SOC and simulates the vehicle on the multi-cycle test until the battery is empty or has reached a minimum SOC.<sup>87</sup>

The resizing algorithm for BEVs is functionally the same as the PHEV algorithm; however, BEVs do not use a combustion engine, and thus, the BEV algorithm does not include this component. The Model calculates initial estimates of electric motor and battery powers based on acceleration performance, gradeability performance, and vehicle range. Then, the algorithm successively runs four simulation loops to finetune the powertrain size to ensure that all performance and operational criteria are maintained. First, the BEV electric motor and battery are sized to power the vehicle through the US06 cycle. Next, the battery capacity is adjusted to ensure the energy content is sufficient to complete a simulated Urban Dynamometer Driving

---

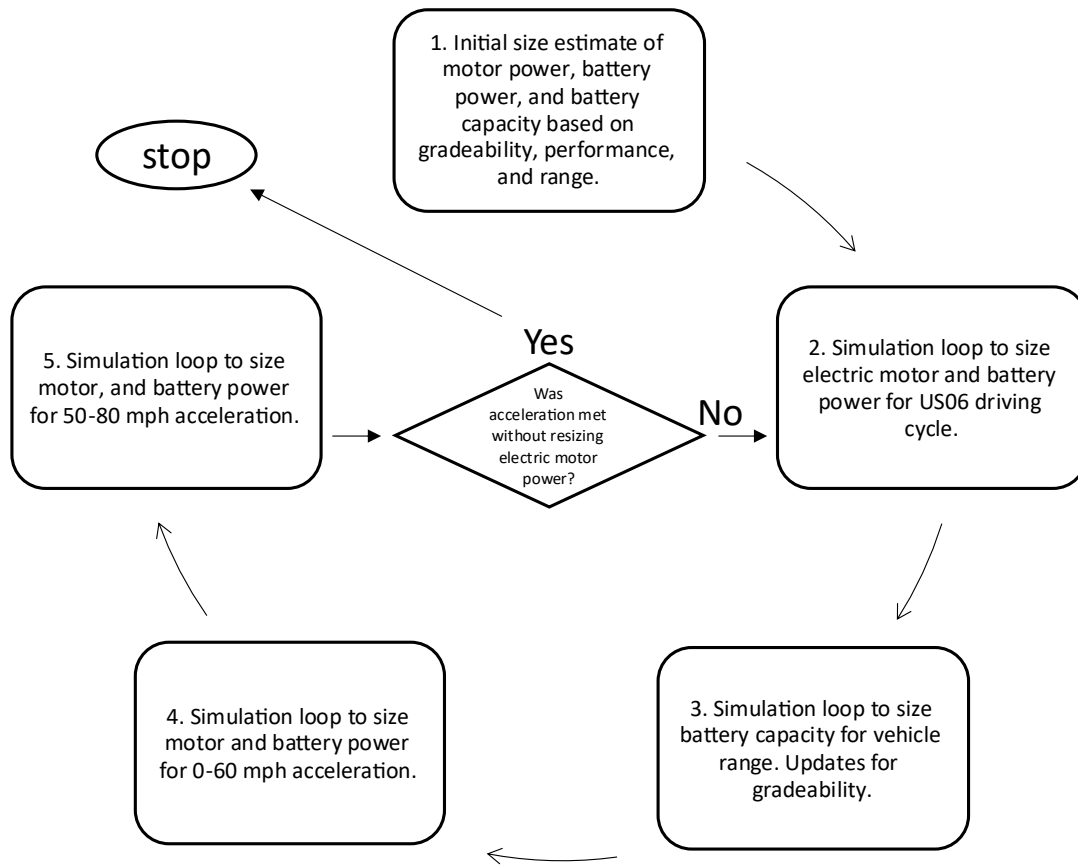
<sup>85</sup> Sredynski, P. 2013. Decoding Electric Car MPG: With Kilowatt-Hours, Small Is Beautiful. Edmunds. Last revised: Sept. 6th, 2013. Available at: <https://www.edmunds.com/fuel-economy/decoding-electric-car-mpg.html>. (Accessed: October 6, 2025).

<sup>86</sup> Within standard-setting years, BEV adoption is prohibited in response to increasing CAFE standards. However, for the purpose of NHTSA's "real-world" analysis for the SEIS, the agency does not apply the same restrictions.

<sup>87</sup> The minimum and maximum SOC for BEVs in this analysis is 5 to 95 percent.

Schedule (UDDS) + Highway Fuel Economy Test (HWFET) combined driving cycle, based on EPA adjustment factors to represent sticker values, and to meet the vehicle range requirement. Finally, the electric motor and battery powers are sized to meet 0–60 and 50–80 mile-per-hour acceleration targets. If either acceleration simulation loop results in a change to the electric motor size, the algorithm repeats all simulation loops. The algorithm finishes once the acceleration targets are met without resizing the electric motor. Figure C.2.3-4 shows a simplified sizing algorithm for BEVs.

**Figure C.2.3-4. Simplified BEV Sizing Algorithm in Autonomie**



For further detailed discussion of how Autonomie simulates BEVs, see the CAFE Analysis Autonomie Documentation.<sup>88</sup>

**Fuel Cell Electric Vehicles**

NHTSA models the fuel cell system in the Draft SEIS analysis to represent hydrogen consumption as a function of the produced power, assuming normal-temperature operating conditions with a peak system efficiency of 64 percent. The specific power used for the system is 860 watts per kilogram (kg) for LD vehicles. The hydrogen storage technology selected is a

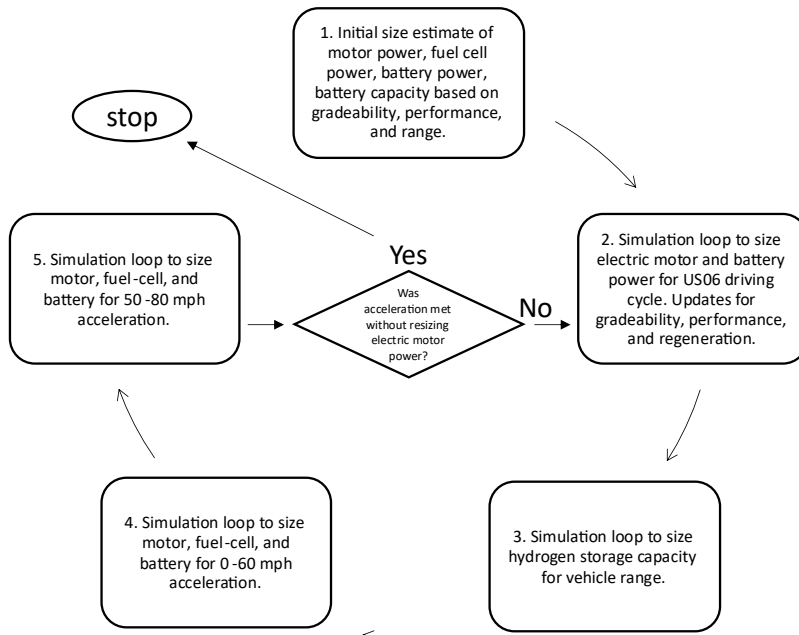
<sup>88</sup> Chapter “Vehicle Sizing Process” of the CAFE Analysis Autonomie Documentation.

high-pressure tank with a specific weight of 0.04 kg H<sub>2</sub>/kg, sized to provide a 320-mile range on the two-cycle test on the basis of adjusted energy values.

The sizing algorithm for FCEVs is similar to PHEVs and BEVs but is adapted for the specific components of a FCEV powertrain—the electric machine, fuel cell, hydrogen (H<sub>2</sub>) fuel tank, and battery pack. During very low operation of power (light loads), the battery pack alone powers the motor/wheels, depleting the battery charge. At moderate driving loads, the fuel cell provides electrical power (generated by consuming stored H<sub>2</sub>) to the electric motor and to charge the battery. Under heavy loads, both the fuel cell and battery deliver electric power to the electric motor.

To begin the FCEV sizing algorithm, the Model calculates initial power estimates for the electric motor, fuel cell, and battery based on criteria for acceleration, gradeability, and vehicle range. The algorithm successively runs four simulation loops to finetune powertrain size, ensuring that all performance and operational criteria are maintained. First, the FCEV electric motor and battery are sized to power the vehicle through the US06 cycle. Next, the model adjusts the on-board mass of H<sub>2</sub> fuel, as well as the fuel tank mass, to ensure the vehicle can complete a simulated 2-cycle test and meet the range requirement. Finally, the algorithm sizes the electric motor and fuel cell powers accordingly to meet 0–60 and 50–80 mile-per-hour acceleration targets. If either acceleration simulation loop results in a change to the electric motor size, the algorithm repeats all simulation loops. Once the acceleration targets are met without resizing the electric motor, the algorithm completes. Figure C.2.3-5 shows a simplified sizing algorithm for FCEVs.

**Figure C.2.3-5. Simplified FCEV Sizing Algorithm**



### C.2.3.5 Electrification Costs

#### Base Year Battery Pack Costs and Modeling

To reflect how battery costs across different electrified powertrains could decrease over the timeframe considered in the Draft SEIS analysis, NHTSA applies a learning rate to the BatPaC-generated direct manufacturing costs (DMC).

NHTSA used vehicle and battery outlook reports,<sup>89,90,91,92,93,94</sup> vehicle teardown reports,<sup>95,96</sup> and stakeholder discussions<sup>97</sup> to determine most common battery pack chemistries for each modeled electrification technology.

#### Battery Cell Chemistry

**Table C.2.3-8. Base Year Battery Chemistries Assumed by Applications**

Electrification Technology	Battery Chemistry
Mild HEV	LFP-G
Strong HEV	NMC622-G (Power Cell)
PHEV20	NMC622-G (Power Cell)
PHEV50	NMC622-G (Energy Cell)
BEV	NMC622-G (Energy Cell)

<sup>89</sup> Rho Motion. 2023. Seminar Series Live, Q1 2023 – Seminar Recordings, Emerging Battery Technology Forum. Available at: <https://rhomotion.com/membership-videos/seminar-series-live-q1-2023-session-1-into-the-next-phase-the-ev-market-towards-2030/> and <https://rhomotion.com/membership-videos/seminar-series-live-q1-2023-session-3-battery-technology-showcase-next-generation-technologies/>. (Accessed: Aug 18, 2025). This seminar video series is no longer publicly available to non-subscribers. Event information available here: <https://rhomotion.com/app/uploads/2024/01/RM-Q1-2023-Event-Agenda-JPMxRM.pdf>.

<sup>90</sup> Rho Motion. 2023. EV & Battery monthly & quarterly subscriptions. (Proprietary data).

<sup>91</sup> Benchmark Mineral Intelligence. 2023. Lithium-ion Batteries, Cathode, & Anode monthly & quarterly subscriptions. (Proprietary data).

<sup>92</sup> IEA. 2022. Global EV Outlook 2022 – Securing Supplies for an Electric Future. International Energy Agency. at 1-221. Available at: <https://iea.blob.core.windows.net/assets/ad8fb04c-4f75-42fc-973a-6e54c8a4449a/GlobalElectricVehicleOutlook2022.pdf>. (Accessed: October 6, 2025).

<sup>93</sup> IEA. 2023. Global EV Outlook 2023 – Catching up with climate ambitions. International Energy Agency. at 1-142. Available at: <https://iea.blob.core.windows.net/assets/dacf14d2-eabc-498a-8263-9f97fd5dc327/GEVO2023.pdf>. (Accessed: October 6, 2025).

<sup>94</sup> BloombergNEF. 2022. Electric Vehicle Outlook (EVO) 2022 and 2023. Originally available at: <https://about.bnef.com/electric-vehicle-outlook/>. (Accessed: October 6, 2025). Please note the latest Electric Vehicle Outlook report will be available at the link provided, and the PDF of the cited versions will be available in the rulemaking docket (Docket No. NHTSA-2025-0491).

<sup>95</sup> Hummel, P. et al. 2017. UBS Evidence Lab Electric Car Teardown – Disruption Ahead?. UBS. Available at: <https://neo.ubs.com/shared/d1ZTxnvF2k>. (Accessed: October 6, 2025).

<sup>96</sup> A2Mac1: Automotive Benchmarking. (Proprietary data). Retrieved from <https://portal.a2mac1.com/>. (Accessed: October 6, 2025).

<sup>97</sup> See Docket Submission of Ex Parte Meetings Prior to Publication of the Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks for Model Years 2027-2032 and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans for Model Years 2030-2035 Notice of Proposed Rulemaking memorandum, which can be found under References and Supporting Material in the rulemaking Docket No. NHTSA-2023-0022.

TSD Chapter 3.3.5.2.1 presents the non-battery component costs for micro and mild hybrids. For mild HEVs, NHTSA uses the LFP-G<sup>98</sup> chemistry because power and energy requirements for mild hybrids are very low, the charge and discharge cycles (or need for increased battery cycle life) are high, and the battery raw materials are much less expensive than a nickel manganese cobalt (NMC)-based cell chemistry. NHTSA uses NMC622-G<sup>99</sup> for all other electrified vehicle technology initial battery pack cost calculations. While NHTSA made this decision at the time of modeling based on the best available information, while also considering feedback on prior rules,<sup>100</sup> recent data affirm that EV batteries using NMC622 cathode chemistries were still a significant part of the market in MY 2022 and through MY 2023.<sup>101,102,103</sup> NHTSA recognizes there is ongoing research and development with battery cathode chemistries that may have the potential to reduce costs and increase battery capacity.<sup>104,105,106,107</sup> In particular, NHTSA is aware of a recent shift by manufacturers to transition to lithium iron phosphate (LFP) chemistry-based battery packs as prices for materials used in battery cells fluctuate (see additional discussion below); however, NHTSA believes that based on available data for the MY 2022 timeframe,<sup>108,109</sup> NMC622 is more representative for MY 2022 base year battery costs than LFP, and any additional cost reductions from manufacturers switching to LFP chemistry-based battery packs (or high-nickel cathode chemistries, for that matter) in years beyond 2022 are accounted for

---

<sup>98</sup> Lithium Iron Phosphate (LiFePO<sub>4</sub>) cathode and Graphite (G) anode.

<sup>99</sup> Lithium Nickel Manganese Cobalt Oxide (LiNiMnCoO<sub>2</sub>) cathode and Graphite (G) anode.

<sup>100</sup> Stakeholders had commented on both the 2020 and 2022 final rules that batteries using NMC811 chemistry had either recently come into or were imminently coming into the market and, therefore, NHTSA should have selected NMC811 as the appropriate chemistry for modeling battery pack costs.

<sup>101</sup> Rho Motion. Seminar Series Live, Q1 2023 – Seminar Recordings. Emerging Battery Technology Forum February 7, 2023. Available at: <https://rhomotion.com/rho-motion-seminar-series-live-q1-2023-seminar-recordings>. (Accessed: October 6, 2025). More specifically, the monthly weighted average global EV battery cathode chemistry across all vehicle classes shows a fairly even split. Even though NHTSA considered domestic battery production rather than global battery production for the analysis supporting this proposed rule, NMC622 was still prevalent even at a global level in MY 2022. Note that this seminar video is no longer publicly available to non-subscribers.

<sup>102</sup> Rho Motion. 2023, 2024. EV & Battery monthly & quarterly subscriptions. (Proprietary data).

<sup>103</sup> Benchmark Mineral Intelligence. 2023, 2024. Lithium-ion Batteries, Cathode, & Anode monthly & quarterly subscriptions. (Proprietary data).

<sup>104</sup> Slowik, P. et. al. 2022. Assessment of Light-Duty Electric Vehicle Costs and Consumer Benefits in the United States in the 2022-2035 Time Frame. International Council on Clean Transportation. Available at: <https://theicct.org/wp-content/uploads/2022/10/ev-cost-benefits-2035-oct22.pdf>. (Accessed: October 6, 2025).

<sup>105</sup> Batteries News. 2022. Solid-State NASA Battery Beats The Model Y 4680 Pack at Energy Density by Stacking all Cells in One Case. Last revised: October 20, 2022. Available at: <https://batteriesnews.com/solid-state-nasa-battery-beats-model-y-4680-pack-energy-density-stacking-cells-one-case/>. (Accessed: October 6, 2025).

<sup>106</sup> Sagoff, J. 2023. Scientists Develop More Humane, Environmentally Friendly Battery Material. Argonne National Laboratory. Last revised: Jan. 30, 2023. Available at: <https://www.anl.gov/article/scientists-develop-more-humane-environmentally-friendly-battery-material>. (Accessed: October 6, 2025).

<sup>107</sup> Visnic, B. 2023. SAE International. Battery Show opens as automakers, suppliers intensify EV battery investments. Available at: <https://www.sae.org/news/periodicals/2023-battery-show-opens-automakers-suppliers-intensify-ev-battery-investments-sae-ma-07237>. (Accessed: October 6, 2025).

<sup>108</sup> Rho Motion. 2023. EV & Battery monthly & quarterly subscriptions. (Proprietary data).

<sup>109</sup> International Energy Agency. Global EV Outlook 2023 (April 2023). Available at <https://www.iea.org/reports/global-ev-outlook-2023>. (Accessed: Jul. 3, 2025).

through learning. In this analysis, NHTSA accounts for the potential cost savings for future battery cell chemistries using a learning rate applied to the battery pack DMC. As discussed above, the battery chemistry NHTSA uses is intended to reasonably represent what is used in U.S. battery manufacturing in MY 2022, the DMC base year (in 2021\$) for NHTSA’s BatPaC calculations. Costs are updated to 2024\$ for analysis purposes.

Battery Plant Production Volume

**Table C.2.3-9. Battery Manufacturing Plant Production Volume Assumption for Different Electrification Technologies for MY 2022**

Technology	Production Volume
Mild HEV	200,000
Strong HEV	200,000
PHEVs	20,000
BEVs	60,000

Similar to previous rulemakings, NHTSA uses vehicle sales as a starting point to analyze potential base modeled battery manufacturing plant production volume assumptions. Since actual production data for specific battery manufacturing plants are extremely hard to obtain, and the battery cell manufacturer is not always the battery pack manufacturer,<sup>110</sup> NHTSA calculates an average production volume per manufacturer metric to approximate electrified vehicle production volumes for this analysis. This metric is calculated by taking an average of all mid-model year manufacturer’s battery energy across all electrified vehicle types reported in vehicle manufacturer’s pre-MY 2022 reports<sup>111</sup> and is divided by the averaged sales-weighted energy per vehicle; the resulting volume was then rounded to the nearest 5,000. NHTSA repeats this process for all electrified vehicle technologies, as reflected in Table C.2.3-10.

A manufacturer may have previously sold the same vehicle with different battery packs in two different markets, but as the outlook for battery materials and global economic events dynamically shift, manufacturers could take advantage of significant design overlap and other synergies such as vertical integration to introduce lower-cost battery packs in markets that were previously perceived to have different design requirements.<sup>112</sup>

<sup>110</sup> Zhou, Y. et al. 2021. Lithium-Ion Battery Supply Chain for E-Drive Vehicles in the United States: 2010-2020. ANL/ESD-21/3. Argonne National Laboratory: Argonne, Ill. Available at: <https://publications.anl.gov/anlpubs/2021/04/167369.pdf>. (Accessed: October 6, 2025).

<sup>111</sup> 49 CFR 537.7: Pre-model year and mid-model year reports.

<sup>112</sup> As an example, some U.S. Tesla Model 3 and Model Y battery packs use a nickel cobalt aluminum (Lithium Nickel Manganese Cobalt Aluminum Oxide cathode with Graphite anode, commonly abbreviated as NCA)-based cell, while the same vehicles for sale in China use LFP-based packs. However, Tesla has introduced LFP-based battery packs to some Model 3 vehicles sold in the United States, showing how manufacturers can take advantage of experience in other markets to introduce different battery technology in the United States. See the Tesla Model 3 Owner’s Manual for additional considerations regarding LFP-based batteries. Location-specific Model 3 Owner’s Manuals are available at: <https://www.tesla.com/ownersmanual/index-model-3.html>. (Accessed: October 6, 2025).



### Non-Battery Electrification Component Costs

Different electrified vehicles have variations of non-battery electrification components and configurations to accommodate different vehicle classes and applications with respective designs; for instance, some BEVs may be engineered with only one electric motor and some BEVs may be engineered with two or even four electric motors within their powertrain to provide all-wheel-drive (AWD) function.

NHTSA further groups the components into those comprising the electric traction drive system (ETDS) and all other components. Although each manufacturer’s ETDS and power electronics vary between the same electrified vehicle types and between different electrified vehicle types and architectures, NHTSA considers the ETDS for this analysis to be comprised of the electric motor and inverter, power electronics, and thermal management system. Table C.2.3-11 shows NHTSA’s assignments for each of the non-battery electrification components to HEVs,<sup>113</sup> PHEVs, BEVs, and FCEVs in the analysis.

**Table C.2.3-10. Non-Battery Electrification Component and Vehicle Assignment**

Major Non-Battery Electrification Components	HEV <sup>a</sup>	PHEV	BEV	FCEV
Electric Motor	X	X	X	X
Electric Generator <sup>b</sup>	X	X	N/A	N/A
Power Electronics	X	X	X	X
DC/DC Converter	X	X	X	X
Charging Port & High Voltage cable	N/A	X	X	N/A
On-board Charger	N/A	X	X	N/A
Thermal Management System	X	X	X	X
Fuel Cell Stack	N/A	N/A	N/A	X

Notes:

<sup>a</sup> Includes SS12Vs, BISGs, and SHEVs.

<sup>b</sup> Electric generators listed here typically only apply to HEVs and PHEVs with power-split architectures, in which the generator is connected to the ICE to recharge the high-voltage battery.

When researching costs for different non-battery electrification components, NHTSA finds that different reports vary in not only the cost breakdown, but also the components under consideration due to variations in vehicle classes, applications, and corresponding designs. This is not surprising because vehicle manufacturers use different non-battery electrification components in different vehicle systems, or even in the same vehicle type, depending on the application.<sup>114,115</sup>

<sup>113</sup> The HEV term here captures all levels of non-plug-in hybridization, including BISG and SHEV technologies.

<sup>114</sup> For example, the MY 2020 Nissan Leaf does not have an active battery cooling system, whereas Chevy Bolt uses an active battery cooling system.

<sup>115</sup> Argonne 2022. AMTL D3. Electric Vehicle Testing. Available at: <https://www.anl.gov/taps/electric-vehicle-testing>. (Accessed October 6, 2025).

### Strong Hybrid, Plug-in Hybrid, and Battery Electric Vehicle Costs

As discussed above, to estimate the cost of the ETDS, NHTSA uses U.S. DRIVE's Electrical and Electronics Technical Team (EETT) Roadmap report. The EETT Roadmap report reflects considerable work by the U.S. Department of Energy's (DOE's) Vehicle Technology Office collaboratively with U.S. DRIVE, a government-industry partnership. The EETT Roadmap report estimates the 2017 manufacturing cost of a commercial on-road 100-kW ETDS consisting of a single electric traction motor and inverter; the reported costs are approximately \$1,800, with the cost of the electric motor accounting for \$800, and approximately \$1,000 for the inverter, equaling \$18.00/kW for the ETDS. This is the equivalent to \$22.51/kW in 2024\$. NHTSA compares these costs with the UBS MY 2016 Chevy Bolt teardown;<sup>116</sup> the reported cost of the electrical components in the ETDS summed to \$2,619 for a 150-kW (2016 Chevy Bolt nominal power) ETDS. Normalizing this cost results in \$22.27/kW in 2024\$, which is consistent with the cost calculated from U.S. DRIVE's EETT Roadmap report.<sup>117</sup>

The EETT Roadmap report did not explicitly estimate the cost of other electrical equipment present in electrified powertrains, such as on-board chargers, DC/DC converters, high-voltage cables, and charging cables. NHTSA relies on the UBS MY 2016 Chevy Bolt teardown report to estimate those individual costs for some categories of strong hybrid components and all other PHEV and BEV components.

---

<sup>116</sup> Hummel, P. et al. 2017. UBS Evidence Lab Electric Car Teardown – Disruption Ahead?. UBS. Available at: <https://neo.ubs.com/shared/d1ZTxnvF2k>. (Accessed: October 6, 2025).

<sup>117</sup> NHTSA normalizes the cost of the ETDS for the 2016 Chevy Bolt by summing the ETDS components costs and dividing by e-motor power rating (150 kW).

**Table C.2.3-11. Cost Estimates from the EETT Roadmap Report, UBS MY 2016 Chevy Bolt Teardown, and FEV 2011 Ford Fusion HEV Teardown**

Non-Battery Electrical Components	EETT Roadmap Report (2017\$ in DMC Year 2017)	UBS MY 2016 Chevy Bolt Teardown (2017\$ in DMC Year 2017)	Assumptions	EPA-Sponsored FEV Report (Updated 2024\$ for Analysis)
ETDS	\$18/kW	\$17.76/kW	Based on e-motor peak power	\$22.51/kW
On-Board Charger	no information provided	\$85/kW	Based on vehicle requirement (7 kW for BEVs, 2 kW for PHEVs)	\$106.32/kW
DC/DC Converter	no information provided	\$90/kW	Based on converter rated power (2 kW)	\$114.74/kW
High Voltage Cables and Charging Cords for BEVs and PHEVs	no information provided	\$450	Fixed cost rated for 360V	\$562.89
High Voltage Cables for Strong Hybrids	no information provided	no information provided	Fixed cost	\$114.17

**Battery and Non-Battery Learning Curves**

Battery Learning Curves

To reflect the evolution of battery manufacturing, Argonne National Laboratory developed battery cost correlation equations from BatPaC for use in the NHTSA CAFE.<sup>118</sup> These cost equations—developed for use through MY 2035—were tailored for different vehicle segments,<sup>119</sup> different levels of electrification,<sup>120</sup> and anticipated plant production volumes.<sup>121</sup> These equations represent cost improvements achieved from advanced manufacturing, pack design, and cell design with current and anticipated future battery chemistries,<sup>122</sup> design parameters, forecasted market prices, and vehicle technology market penetration.

<sup>118</sup> ANL. 2024. Cost Analysis and Projections for U.S.-Manufactured Automotive Lithium-ion Batteries. ANL/CSE-24/1. Available at: <https://publications.anl.gov/anlpubs/2024/01/187177.pdf>. (Accessed: October 6, 2025).

<sup>119</sup> The vehicle classes considered in this project include compact cars, midsize cars, midsize SUVs, and pickup trucks.

<sup>120</sup> The levels of electrification considered in this project include LD HEVs, PHEVs, and BEVs (~250 and ~300 mile ranges) as well as medium/heavy-duty BEVs.

<sup>121</sup> Production volumes were determined for each vehicle class and type for each model year. See, DOE. Argonne National Laboratory. Cost Analysis and Projections for U.S.-Manufactured Automotive Lithium-ion Batteries. ANL/CSE-24/1. Equation 1 and Table 13. Available at: <https://www.osti.gov/biblio/2280913/>. (Accessed: October 6, 2025).

<sup>122</sup> Battery cathode chemistries considered in this project include nickel-based materials (NMC622, NMC811, NMC95, and LMNO) as well as lower-cost LFP cathodes; varying percentages of silicon content (5%, 15%, and 35%) within a graphite anode were considered, as well.

The battery cost correlation Equation C.2.3-2<sup>123,124</sup> uses different coefficients (see Table C.2.3-13) for HEVs<sup>125</sup> compared to the coefficients used for PHEVs and BEVs. For PHEVs and BEVs, the coefficients differ for lithium nickel manganese cobalt oxide (Ni/Mn or NMC) and LFP cathode chemistries.

**Equation C.2.3-2. Battery Pack Cost Correlation Equation**

$$C_{pack} = A + \frac{B}{x^C} - D(y-2023)e^{E(y-2023)}$$

**Table C.2.3-12. Correlation Equation Coefficients**

Coefficient	HEV (≤ 5kWh)	BEV/PHEV	
	Ni/Mn	Ni/Mn	LFP
A	122.9	128.9	120.6
B	509.6	1480	1535
C	0.7649	1.164	1.148
D	4.443	5.278	10.04
E	0.01018	-0.01290	-0.08346

The remaining correlation equation variables x and y correspond to pack energy (kWh) and model year, respectively, inputs ultimately used to develop learning curves for each vehicle class and level of electrification technology for this analysis.

<sup>123</sup>  $C_{pack}$  unit of measurement is in \$/kWh.

<sup>124</sup> The coefficients used assume a \$50/hour labor rate.

<sup>125</sup> ≤ 5 kWh battery, Ni/Mn cathode. This equation was also used for FCEV batteries whose battery packs typically have battery energy below 5 kWh.

**Table C.2.3-13. Average Battery Pack Energy Values from Autonomie Full Vehicle Model Simulations Across Vehicle Segments and Electrification Technologies**

Average Pack Energy (kWh)	SmallCar	SmallCar Perf	MedCar	MedCar Perf	SmallSUV	SmallSUV Perf	MedSUV	MedSUV Perf	Pickup	PickupHT
BISG	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
P2D	0.90	0.94	1.03	1.10	1.03	1.12	1.12	1.22	1.12	1.22
P2SGDID	0.90	0.94	1.03	1.10	1.03	1.12	1.12	1.22	1.12	1.22
P2S	0.90	0.94	1.03	1.10	1.03	1.12	1.12	1.22	1.12	1.22
P2SGDIS	0.92	0.95	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2TRB0	0.92	0.94	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2TRBE	0.92	0.94	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2TRB1	0.92	0.95	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2TRB2	0.92	0.95	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2HCR	0.92	0.95	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
P2HCRE	0.92	0.95	1.04	1.12	1.04	1.13	1.13	1.26	1.13	1.26
SHEVPS	1.21	2.16	1.71	3.35	1.51	2.21	1.53	2.43	1.53	2.43
PHEV20T	8.89	9.33	9.51	10.01	10.80	11.36	11.69	12.62	11.69	12.62
PHEV50T	22.41	23.55	24.08	25.39	27.21	28.58	29.44	31.70	29.44	31.70
PHEV20H	8.83	9.23	9.44	9.89	10.70	11.21	11.57	12.45	11.57	12.45
PHEV50H	22.27	23.33	23.92	25.09	26.93	28.18	29.14	31.25	29.14	31.25
PHEV20PS	8.37	8.76	9.05	9.59	10.30	10.76	11.28	12.08	11.28	12.08
PHEV50PS	19.23	20.34	20.74	22.11	23.71	25.04	25.92	28.10	25.92	28.10
BEV1	48.81	51.18	52.66	55.08	60.79	63.28	66.23	70.92	66.23	70.92
BEV2	62.25	65.28	67.16	70.28	77.50	80.70	84.41	90.39	84.41	90.39
BEV3	77.28	81.07	83.37	87.18	96.31	100.30	104.79	112.18	104.79	112.18
BEV4	116.62	122.40	125.95	131.78	145.61	151.69	158.04	169.30	158.04	169.30
FCEV	0.95	1.04	1.13	1.22	1.16	1.25	1.24	1.43	1.24	1.43

In addition, due to the increasing prevalence of LFP displacing NMC cathodes in the U.S. PEV market, NHTSA uses a dynamic NMC/LFP mix between the battery cost correlation equations, referred to as a composite correlation equation; LFP market projections<sup>126</sup> used for the mix are noted in Table C.2.3-15. For the model years that the composite cost equation covers (for model years through 2035), NHTSA assumes the NMC battery cathode chemistry for the remaining market share. The composite cost equation only corresponds with BEV and PHEV electrification technologies and not HEV or FCEV electrification technologies.<sup>127</sup>

**Table C.2.3-14. U.S. Market Share Cathode Projections for BEVs and PHEVs**

Model Year	Percent LFP Cathode Market Share (U.S.)	Remaining NMC Market Share (U.S.)
2021	1%	99%
2022	3%	97%
2023	8%	92%
2024	10%	90%
2025	16%	84%
2026	17%	83%
2027	18%	82%
2028	19%	81%
2029	19%	81%
2030	19%	81%
2031	19%	81%
2032	19%	81%
2033	19%	81%
2034	19%	81%
2035	19%	81%

<sup>126</sup> A composite learning curve (used for PHEV and BEV battery cost projections) was developed, in coordination with DOE/ANL and EPA, to include a North American market mix of NMC and LFP chemistries (dynamic, over time); the NMC/LFP market presence projections values were based on (averaged, rounded, and smoothed) Rho Motion and Benchmark Mineral Intelligence proprietary data.

<sup>127</sup> BEVs and FCEVs are only considered in the Draft SEIS analysis.

The subsequent battery cost correlations are unique for each vehicle type, across electrification technologies through MY 2035. For this analysis, NHTSA uses a learning plateau cost constant in place of the battery cost correlations between MYs 2022 and 2025 to reflect the combination of increasing mineral costs, changing demand, and uncertainty in manufacturers' ability to increase production in such a short timeframe.<sup>128,129,130</sup>

---

<sup>128</sup> After MY 2025, the learning rate continues to trend downward because the cost of lithium has increased since 2020 and is not expected to decline significantly until additional capacity (mining, materials processing, and cell production) comes on-line, although prices have fallen from 2022 highs at the time of writing. NHTSA believes that a continuation of high prices for a few years followed by a decrease to near previous levels is reasonable because world lithium resources are more than sufficient to supply a global EV market and higher prices should continue to induce investment in lithium mining and refining.

<sup>129</sup> U.S. Geological Survey. 2023. Lithium Statistics and Information. Available at: <https://www.usgs.gov/centers/national-minerals-information-center/lithium-statistics-and-information>. (Accessed: October 6, 2025).

<sup>130</sup> Barlock, T.A. et al. 2024. Securing Critical Materials for the U.S. Electric Vehicle Industry. ANL-24/06. Final Report. Available at: <https://publications.anl.gov/anlpubs/2024/03/187907.pdf>. (Accessed: October 6, 2025).

Non-Battery Electrification Learning Curves

**Table C.2.3-15. Learning Rate Factor Used for Non-Battery Electrification Components for Electrified Powertrains (MYs 2017–2031)**

Technology	Model Year											
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
SS12V	0.8914	0.8634	0.8374	0.8143	0.7921	0.7734	0.7565	0.7423	0.7299	0.7190	0.7093	0.7006
BISG	0.7849	0.7312	0.6882	0.6559	0.6344	0.6129	0.5914	0.5806	0.5591	0.5484	0.5376	0.5376
P2D, P2SGDID, P2S, P2SGDIS, P2TRB0, P2TRBE, P2TRB1, P2TRB2, P2HCR, P2HCRE, SHEVPS	0.8925	0.8710	0.8387	0.8172	0.7849	0.7634	0.7419	0.7312	0.7204	0.7097	0.6989	0.6882
PHEV20T, PHEV50T, PHEV20H, PHEV50H, PHEV20PS, PHEV50PS	0.8791	0.8462	0.8132	0.7802	0.7582	0.7253	0.7033	0.6923	0.6703	0.6593	0.6593	0.6484
BEV1, BEV2, BEV3, BEV4	0.8276	0.7701	0.7241	0.6897	0.6437	0.6092	0.5862	0.5632	0.5517	0.5287	0.5172	0.5172
FCEV	0.9212	0.8950	0.8807	0.8665	0.8522	0.8379	0.8280	0.8181	0.8081	0.7982	0.7882	0.7783



### Total Electrified Powertrain Costs

For this analysis, NHTSA calculates total electrified powertrain costs by summing individual component costs, which ensures that all technologies in an electrified powertrain appropriately contribute to the total system cost. NHTSA combines the costs associated with the ICE (if applicable) and transmission, non-battery electrification components like the electric machine, and battery pack to create a full-system cost. The following sections describe how NHTSA calculates the aggregated cost of each electrified powertrain based on the detailed component costs presented in the earlier sections.

The application of the electrification costs to an existing platform follows the same basic process for each technology on the electrification path. The costs for each technology depend on the model year the CAFE Model applies the technology. First, the Model removes costs associated with reference powertrain technologies. Next, the Model applies the costs associated with the electrification technology, discussed above.

The incremental costs for these electrification technologies can be found in three places: the Engines tab and Vehicles tab of the Technologies Input file and the CAFE Model Battery Costs file, which is the database of battery costs DMCs created using the BatPaC model. Table C.2.3-17 shows a summary of the general components considered for each electrification technology and where the costs of those components can be found in the CAFE Model Input file folders.

**Table C.2.3-16. Breakdown of the Component Costs Considered in the CAFE Analysis**

Electrification Technology Type	Technologies Input File; Vehicle Tabs	Technologies Input File; Engine Tabs	CAFE Model Battery Costs File <sup>a</sup>
Micro Hybrid (SS12V)	Motor/generator	N/A	Battery pack <sup>b</sup>
Mild Hybrid (BISG)	Motor/generator, DC/DC converter, power electronics, cables, and other components	N/A	Battery pack
Strong Hybrid with Parallel Architecture (P2)	DC/DC converter, high-voltage cables, motor/generator, AT8L2 transmission, and power electronics	ICE <sup>c</sup>	Battery pack
Strong Hybrid with Power-Split Device (SHEVPS)	DC/DC converter, high-voltage cables, motor/generator, eCVT transmission, and power electronics	ICE	Battery pack
Plug-in Hybrid with Parallel Architecture and Turbo Engine (PHEV 20T/50T)	DC/DC converter, on-board charger, high-voltage cables, motor/generator, AT8L2 transmission, and power electronics	ICE	Battery pack
Plug-in Hybrid with Parallel Architecture and HCR Engine (20H/50H)	DC/DC converter, on-board charger, high-voltage cables, motor/generator, AT8L2	ICE	Battery pack

Electrification Technology Type	Technologies Input File; Vehicle Tabs	Technologies Input File; Engine Tabs	CAFE Model Battery Costs File <sup>a</sup>
	transmission, and power electronics		
Plug-in Hybrid with Power-Split Device and Atkinson Cycle Engine (PHEV 20/50)	DC/DC converter, on-board charger, high-voltage cables, motor/generator, eCVT, transmission, and power electronics	ICE	Battery pack
Battery Electric (BEVs)	DC/DC converter, on-board charger, high-voltage cables, motor/generator, direct drive transmission, power electronics	ETDS, see TSD Table 3-60 for detail	Battery pack
Fuel Cell Electric (FCEV)	Fuel cell system, high-voltage cables, motor/generator, H <sub>2</sub> tank, transmission, and power electronics	N/A	Battery pack

Notes:

<sup>a</sup> The CAFE Model Battery Costs File is installed as part of the CAFE Model installation and is viewable in the CAFE Model Program Directory.

<sup>b</sup> As discussed further in this section, NHTSA no longer uses the BatPaC SS12V battery cost and uses a cheaper AGM battery instead, and NHTSA reflects the updated cost in the CAFE Model Battery Costs File.

<sup>c</sup> The engine cost for a P2 Hybrid is based on engine technology used in the CONV.

### Micro Hybrid Cost

Unlike the rest of the electrification technologies, the micro hybrid system uses a shallower learning curve, as shown in *Non-Battery Electrification Component Costs* in Section C.2.3.5, *Electrification Costs*. This shallow curve reflects the maturity of the technology; as NHTSA discusses in Section C.2.3.2, *Assigning Electrification Technologies in the Analysis Fleet*, approximately 60 percent of the MY 2024 fleet utilizes a SS12V micro hybrid system.<sup>131</sup>

### Battery Electric Vehicle Cost

For the Draft SEIS analysis, the total costs of BEVs include the optimized battery pack and electric machine costs. Like the other electrified powertrains, Autonomie optimizes both the size of the battery pack and electric machine to fulfill the performance requirements for each vehicle. Further discussion of electrification technology component sizing and optimization is provided in Section C.2.3.4, *Electrification Effectiveness*. Electrification component costing is discussed in *Base Year Battery Pack Costs and Modeling* and *Non-Battery Electrification Component Costs* in Section C.2.3.5, *Electrification Costs*.

The Model calculates the total cost of a BEV by first removing the cost of the ICE and transmission associated with the conventional or hybridized powertrain and replacing that cost

<sup>131</sup> SS12V technology penetration in the central analysis fleet is 62.97 percent, and 58.42 percent in the Draft SEIS analysis fleet.

with the cost of an ETDS (i.e., the motor and inverter). It is important to accurately estimate the electric motor size (rating) because the cost of the ETDS accounts for a significant portion of the total cost of electrifying a vehicle. NHTSA uses the MY 2020 Market Data Input File to compute the average engine power for each technology class. Table C.2.3-18 shows the steps taken to calculate the equivalent electric motor power required to replace each engine technology, derived from the MY 2020 Market Data Input File.<sup>132</sup> These power ratings are found under appropriate Engine tabs in the Technologies Input File. The cost of the rest of the non-battery electrification components are found under the Vehicle tabs of the Technologies Input File. Summing these two costs leads to the total BEV electrified powertrain cost shown in the final column of Table C.2.3-18. The values in these tables are for DMC year 2024 in 2024\$.

---

<sup>132</sup> NHTSA found that model year 2022 vehicles' power ratings were similar to model year 2020 vehicles and concluded the analysis based on the model year 2020 fleet was still appropriate.

Table C.2.3-17. Cost Estimation for Battery Electric Drivetrains for LD Engine Technology Classes in MY 2024 (in 2024\$)

Technology Class	HP Estimate	Power [kW]	ETDS (Motor and Inverter) DMC	ETDS (Motor and Inverter) Total Costs	DC/DC Converter [kW]	DC/DC Converter	Onboard Charger [kW]	Onboard Charger	Power Distribution Cables	Other Non-Battery Electrical Component DMC	Other Non-Battery Electrical Component Total Costs	BEV Electrification Total Costs
3C1B	122	91.0	\$2,051	\$1,980	2.0	\$230	7.0	\$745	\$564	\$1,539	\$1,486	\$3,466
4C1B	198	147.5	\$3,325	\$3,210	2.0	\$230	7.0	\$745	\$564	\$1,539	\$1,486	\$4,696
6C1B	255	190.1	\$4,285	\$4,137	2.0	\$230	7.0	\$745	\$564	\$1,539	\$1,486	\$5,623
6C2B	286	212.9	\$4,799	\$4,633	2.0	\$230	7.0	\$745	\$564	\$1,539	\$1,486	\$6,119
8C2B	286	212.9	\$4,799	\$4,633	2.0	\$230	7.0	\$745	\$564	\$1,539	\$1,486	\$6,119

## Fuel Cell Electric Vehicle Cost

For the Draft SEIS analysis, NHTSA considers technology advancements in fuel cell systems, hydrogen storage tanks and hydrogen delivery systems, sensors and control systems, and market penetration. The cost of hydrogen storage tanks and fuel cells come from a DOE, Office of Energy Efficiency and Renewable Energy, Fuel Cell Technologies Office cost analysis. In these studies, DOE estimates the cost for 10,000 units per year production of a compressed gas storage system at around \$26/kWh (2016\$, equivalent to \$33.17 in 2024\$), and the cost of the fuel cell system at about \$85/kW (2017\$, equivalent to \$106.40 in 2024\$).<sup>133,134</sup> The DMC for FCEVs' non-battery components in this analysis is \$14,248.46 in 2024\$. After Retail Price Equivalent, the cost is \$21,372.69 in 2024\$.

The total cost of an FCEV includes the fuel cell, control systems, electric motors, inverters, hydrogen storage tanks, wiring harness, hydrogen fuel delivery lines, sensors, and hardware. See the Vehicle tabs in the Technologies Input File for the total cost of the non-battery components for a FCEV in this analysis across model years.

## **C.2.4 Mass Reduction Paths**

### **C.2.4.1 Mass Reduction Analysis for Light-Duty Fleet Assignment**

NHTSA leverages many documented variables in the LD analysis fleet as independent variables in the regressions. Continuous independent variables used for the LD regression model include footprint (wheelbase x track width) and powertrain peak power. Binary independent variables include SHEV (yes or no), PHEV (yes or no), BEV or FCEV (yes or no), AWD (yes or no), rear-wheel drive (RWD) (yes or no), pickup bed length (for the pickup truck regression only) and convertible (yes or no).<sup>135</sup> In addition, for PHEV the capacity of the battery pack is included in the regression as a continuous independent variable. In some body design categories, the analysis fleet does not cover the full spectrum of independent variables. For instance, in the pickup body style regression, there are no front-wheel drive vehicles in the analysis fleet, so the regression defaults to AWD and is left an independent variable for RWD.<sup>136</sup> Also, the terms in the regression pertaining to BEVs and FCEVs are negated in the standard-setting analysis because there are no BEVs or FCEVs within the fleet used for the analysis. They therefore do not affect the mass reduction level rating for any platform analyzed herein.

---

<sup>133</sup> James, B. et al. 2016. Hydrogen Storage System Cost Analysis. Final Report. at 20 -Table 6. Available at: <https://www.osti.gov/servlets/purl/1343975>. (Accessed: October 6, 2025).

<sup>134</sup> Thompson, S. et al. 2018. Direct Hydrogen Fuel Cell Electric Vehicle Cost Analysis: System and High-Volume Manufacturing Description, Validation, and Outlook. at 8 – Fig. 6. Available at: <https://www.osti.gov/pages/biblio/1489250>. (Accessed: October 6, 2025).

<sup>135</sup> BEVs and FCEVs are only considered in the Draft SEIS analysis and are not in the standard-setting analysis.

<sup>136</sup> The Hyundai Santa Cruz and Ford Maverick are two such FWD pickup trucks but share platforms with the Hyundai Tucson and Ford Bronco Sport, respectively. Since mass reduction is applied at the platform level, they can be counted as AWD without affecting the mass reduction regression modeling.

**Table C.2.4-1. Regression Statistics for Curb Weight (lb.) for 3-Box Vehicles**

Observations	822					
Adjusted R Square	0.87					
Standard Error	228.70					
Regression Statistics	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-1581.63	98.50	-16.06	0.00	-1775.00	-1388.30
Footprint (sq. ft.)	100.5	2.2	44.79	0	69.1	104.9
Power (HP)	1.22	0.1	14.85	0	1.1	1.4
Bed length (inches)	-	-	-	-	-	-
Strong HEV (1,0)	200.36	46.3	4.33	0	109.5	291.2
PHEV (1,0)	259.28	96.8	2.68	0.0075	69.3	449.2
BEV or FCEV (1,0)	602.33	215	2.8	0.0052	180.3	1024.3
Battery pack size (kWh)	-2.48	4.1	-0.6	0.5461	-10.6	5.6
AWD (1,0)	294.51	24.5	12.03	0	246.4	342.6
RWD (1,0)	117.2	23.7	4.94	0	70.6	163.8
Convertible (1,0)	273.65	25.3	10.84	0	224.1	323.2

**Table C.2.4-2. Regression Statistics for Curb Weight (lb.) for Pickup Vehicles**

Observations	312					
Adjusted R Square	0.84					
Standard Error	206.80					
Regression Statistics	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	1062.21	130.23	8.16	0.00	805.95	1318.48
Footprint (sq. ft.)	58.31	2.37	24.96	0	53.72	62.91
Power (HP)	2.5	0.21	11.79	0	2.08	2.92
Bed length (inches)	-9.57	1.14	-8.4	0	-11.81	-7.32
Strong HEV (1,0)	-	-	-	-	-	-
PHEV (1,0)	-	-	-	-	-	-
BEV or FCEV (1,0)	-	-	-	-	-	-
Battery pack size (kWh)	-	-	-	-	-	-
AWD (1,0)	260.91	23.62	11.05	0	214.43	307.38
RWD (1,0)	-	-	-	-	-	-
Convertible (1,0)	-	-	-	-	-	-

**Table C.2.4-3. Regression Statistics for Curb Weight (lb.) for 2-Box Vehicles**

Observations	584					
Adjusted R Square	0.88					
Standard Error	332.80					
Regression Statistics	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-1930.09	142.50	-13.54	0.00	-2210.00	-1650.20
Footprint (sq. ft.)	104.72	3.6	28.69	0	97.5	111.9
Power (HP)	3.09	0.2	13.42	0	2.6	3.5
Bed length (inches)	-	-	-	-	-	-
Strong HEV (1,0)	358.97	80.3	4.47	0	201.3	516.6
PHEV (1,0)	462.9	169.7	2.73	0.01	129.5	796.3
BEV or FCEV (1,0)	374.24	152.1	2.46	0.01	75.5	673
Battery pack size (kWh)	-1.32	3.7	-0.36	0.72	-8.5	5.9
AWD (1,0)	353.91	33.4	10.59	0	288.3	419.5
RWD (1,0)	208.02	54.1	3.84	0	101.7	314.3
Convertible (1,0)	-	-	-	-	-	-

**Table C.2.4-4. Results of the Regression Analysis for a Few Select Light-Duty Vehicles from the MY 2022 Fleet**

Brand	Model	Sales Weighted Platform Mass Reduction Residual (%)	Mass Reduction Level for 71% Glider Weight
Ford	GT	-28.0	MR5
Tesla	Model S	-26.7	MR5
Lamborghini	Urus	-21.8	MR5
Bugatti	Chiron	-21.2	MR5
Hyundai	Elantra	-14.2	MR4
Lamborghini	Aventador	-13.8	MR4
Tesla	Model Y	-13.4	MR4
Mazda	MX5	-12.2	MR4
Kia	Forte	-11.8	MR4
Mercedes	AMG GT	-11.7	MR4
Hyundai	Veloster N	-11.3	MR4
Audi	R8 Coupe	-10.8	MR4
Ford	F-150	-10.5	MR3
Chevrolet	Corvette	-10.2	MR3
Jaguar	F-Pace	-10.0	MR3
Honda	Accord	-9.2	MR3
Kia	K5	-8.9	MR3
Ford	Mach-E	-8.6	MR3
Porsche	Macan	-8.3	MR3
Volkswagen	Atlas	-7.5	MR3
Toyota	Camry	-7.2	MR3
Volvo	XC90	-6.4	MR2
Nissan	Ultima	-6.2	MR2
GMC	Sierra	-6.1	MR2
Mercedes	GLB	-5.4	MR2
Land Rover	Defender	-5.4	MR2

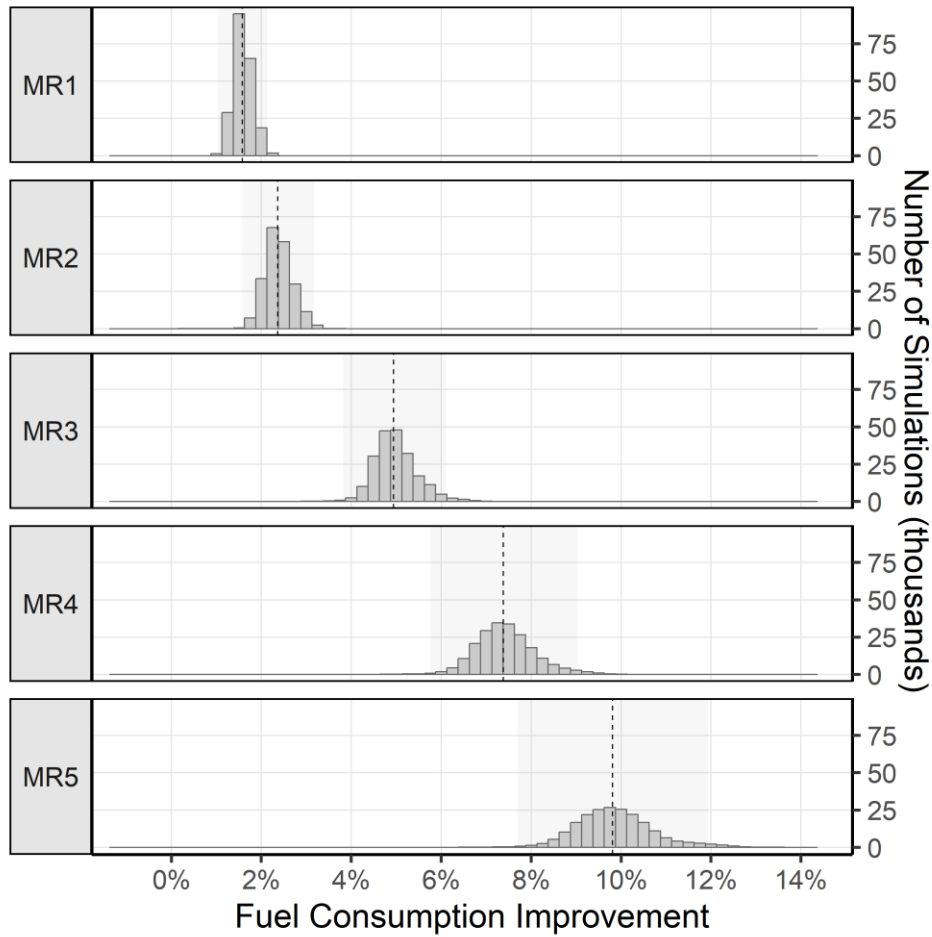
#### **C.2.4.2 Mass Reduction Effectiveness**

##### ***The Summary of Mass Reduction Technology Effectiveness***

The range of effectiveness values for the mass reduction technologies for the 10 LD vehicle technology classes are shown in Figure C.2.4-1 for the unconstrained application of technology scenario for the Draft SEIS analysis.



Figure C.2.4-1. LD Mass Reduction Technology Effectiveness Values for All Vehicle Technology Classes (Unconstrained)



## C.2.5 Aerodynamics

### C.2.5.1 Aerodynamic Technologies in the Baseline Fleet

For the analysis, NHTSA uses a relative performance approach to assign an initial level of aerodynamic drag reduction technology to each vehicle. Each AERO level represents a percent reduction in a vehicle’s aerodynamic drag coefficient ( $C_d$ ) from a baseline value for its body style. AERO technologies and their definitions, as well as their prevalence in the 2024 LD fleet for the Draft SEIS analysis are provided in Table C.2.5-1. For a vehicle to achieve AERO5, the  $C_d$  must be at least 5 percent below the baseline for the body style; for AERO10, 10 percent below the baseline, and so on.

Table C.2.5-1. Penetration Rates of Aerodynamic Drag Reduction Levels in the 2024 LD Fleet

Aero Technology	Technology Description	Standard-Setting Analysis <sup>a</sup>		Draft SEIS Analysis <sup>b</sup>	
		Sales Volume	Penetration Rate	Sales Volume	Penetration Rate
AERO0	Baseline aero	3,355,312	24.5%	3,356,003	22.7%
AERO5	Aero level 1 (5% drag reduction)	4,479,851	32.7%	4,519,321	30.6%
AERO10	Aero level 2 (10% drag reduction)	5,153,969	37.6%	5,229,390	35.4%
AERO15	Aero level 3 (15% drag reduction)	325,906	2.4%	646,310	4.4%
AERO20	Aero level 4 (20% drag reduction)	391,182	2.8%	1,022,158	6.9%

Notes:

<sup>a</sup> EVs (BEVs and FCEVs) removed from the Central Analysis fleet.<sup>b</sup> EVs (BEVs and FCEVs) remain in the fleet for the EIS Analysis.

Table C.2.5-2. Aerodynamic Application by Manufacturer as a Percent of MY 2024 LD Sales Used in the Unconstrained Analysis

Manufacturer	AERO0	AERO5	AERO10	AERO15	AERO20
BMW	27.7%	12.7%	29.1%	13.7%	16.8%
Mercedes-Benz	20.7%	0.8%	19.4%	9.7%	49.3%
Stellantis	70.0%	13.5%	4.5%	11.0%	1.1%
Ford	4.6%	0.0%	89.0%	6.4%	0.0%
GM	3.6%	24.6%	67.3%	4.5%	0.0%
Honda	3.1%	34.0%	55.3%	7.6%	0.0%
Hyundai	1.1%	60.9%	12.3%	0.0%	25.7%
Kia	25.3%	52.3%	12.6%	0.0%	9.8%
JLR	31.6%	19.8%	7.6%	17.0%	23.9%
Mazda	1.9%	72.9%	21.6%	0.0%	3.6%
Mitsubishi	13.2%	55.6%	31.1%	0.0%	0.0%
Nissan	27.5%	46.0%	25.4%	1.1%	0.0%
Subaru	28.4%	43.3%	26.5%	1.8%	0.0%
Tesla	0.0%	0.0%	0.0%	0.0%	100.0%
Toyota	54.7%	31.0%	10.9%	3.1%	0.3%
Volvo	4.5%	65.2%	29.6%	0.7%	0.0%
VWA	47.4%	22.1%	11.3%	1.9%	17.4%

<b>Manufacturer</b>	<b>AERO0</b>	<b>AERO5</b>	<b>AERO10</b>	<b>AERO15</b>	<b>AERO20</b>
Fisker	0.0%	0.0%	0.0%	0.0%	100.0%
Lucid	0.0%	0.0%	0.0%	0.0%	100.0%
Rivian	0.0%	0.0%	0.0%	76.9%	23.1%
INEOS	100.0%	0.0%	0.0%	0.0%	0.0%
VinFast	0.0%	0.0%	100.0%	0.0%	0.0%
Ferrari	0.0%	0.0%	100.0%	0.0%	0.0%
Mullen	0.0%	100.0%	0.0%	0.0%	0.0%

**C.2.5.2 Aerodynamic Technology Adoption Features**

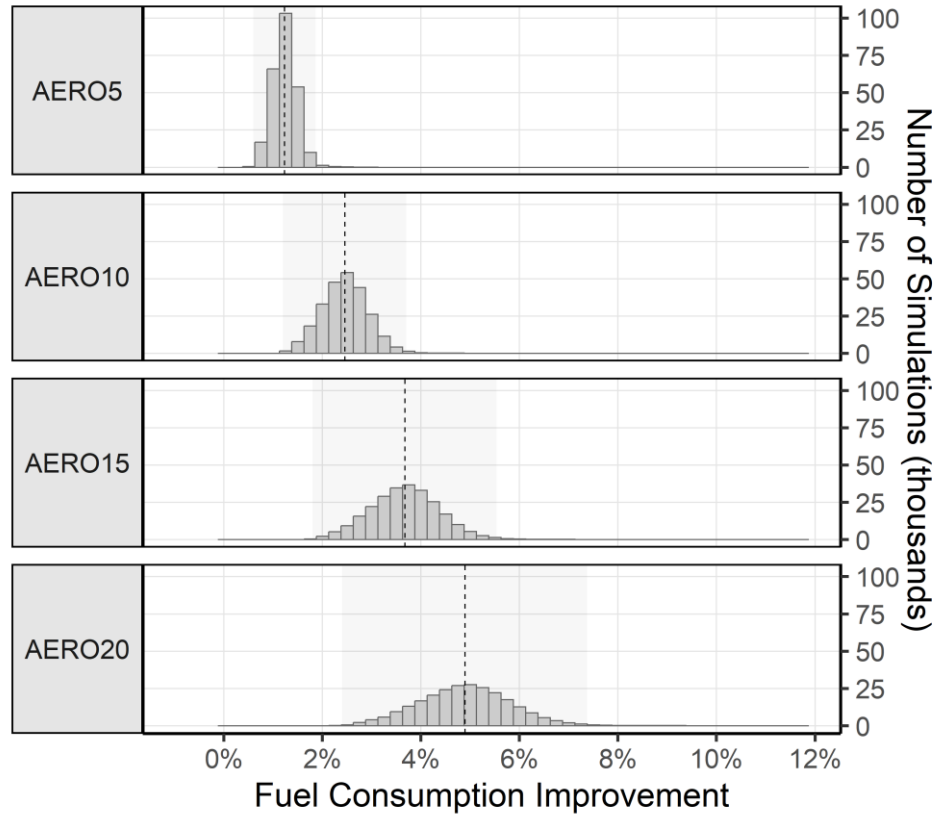
NHTSA also does not allow application of AERO15 and AERO20 technology to vehicles with more than 780 horsepower (HP). There are two main types of vehicles that inform this threshold: performance ICE vehicles and high-power BEVs. In the case of the former, NHTSA recognizes that manufacturers tune aerodynamic features on these vehicles to provide desirable downforce at high speeds and to provide sufficient cooling for the powertrain, rather than reducing drag, resulting in middling drag coefficients despite advanced aerodynamic features. Therefore, manufacturers may have limited ability to improve aerodynamic drag coefficients for high-performance ICE vehicles without reducing HP. Only 2,518 units of sales volume in the baseline fleet include limited application of aerodynamic technologies due to ICE vehicle performance.<sup>137</sup>

In the case of high-power BEVs in the Draft SEIS analysis, the 780-HP threshold is set above the highest peak system HP present on a BEV in the 2020 fleet. NHTSA originally set this threshold based on vehicles in the MY 2020 fleet in parallel with the 780-HP ICE limitation. For this analysis, the restriction only affects the Rimac Nevera but does not affect other BEVs that have above 780 HP in the MY 2024 analysis fleet for the Draft SEIS analysis—the Rivian R1T is a pickup truck and is excluded from AERO20 but assigned AERO15 as a baseline technology, the Tesla Model S and X Plaid, and variants of the Lucid Air—are already assigned AERO20 as a baseline technology state, and there are no additional levels of AERO technology left for those vehicles to adopt. The Rimac Nevera is a high-performance BEV that focuses its aerodynamic package towards high-speed downforce and powertrain cooling, much like the ICE vehicles discussed in the above paragraph. In the 2024 baseline fleet, the Nevera has eight units of sale and is assigned AERO5. Broadly speaking, BEVs have different aerodynamic behavior and considerations than ICE vehicles, allowing for features such as flat underbodies that significantly reduce drag. BEVs are therefore more likely to achieve higher AERO levels, so the HP threshold is set high enough that it does not unnecessarily restrict AERO15 and AERO20 application, with the Rimac Nevera being the only exception. The CAFE Model does not force high levels of AERO adoption; rather, higher AERO levels are usually adopted organically by BEVs because significant drag reduction allows for smaller batteries and, by extension, cost savings.

<sup>137</sup> See the Market Data Input File.

**C.2.5.3 Aerodynamic Technology Effectiveness**

**Figure C.2.5-1. LD AERO Technology Effectiveness Values for All Vehicle Technology Classes**



(Unconstrained)

**C.2.6 Tire Rolling Resistance**

**C.2.6.1 Tire Rolling Resistance Analysis Fleet Assignments**

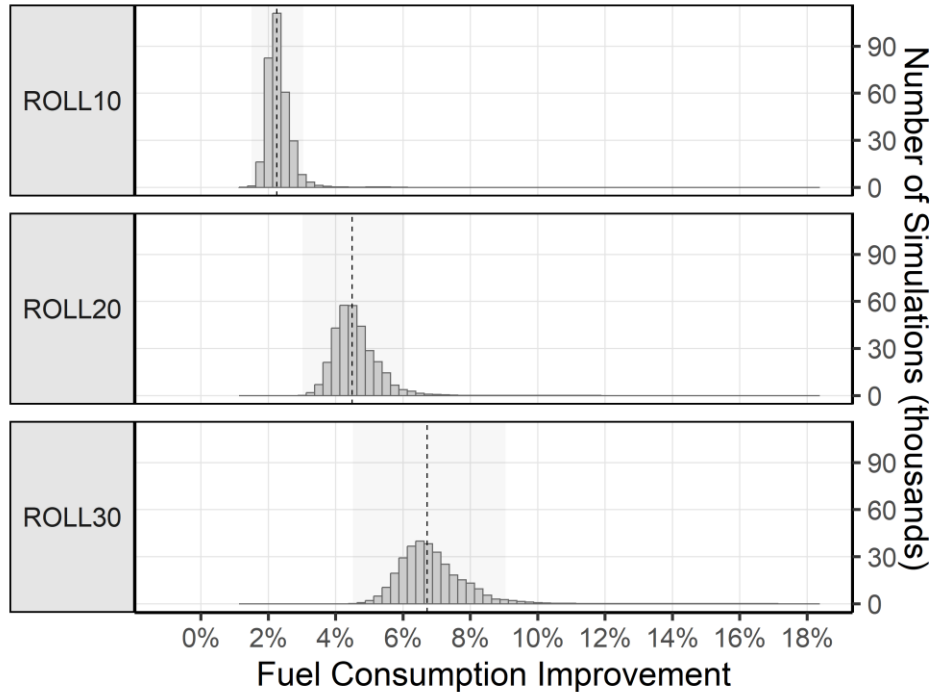
**Table C.2.6-1. Distribution of Tire Rolling Resistance Technology for the MY 2024 LDV for the Standard-Setting Analysis and the Draft SEIS Analysis**

Technology	Standard-Setting Analysis	SEIS Analysis
ROLL0	54.9%	52.3%
ROLL10	13.0%	12.5%
ROLL20	28.4%	26.4%
ROLL30	3.7%	8.8%

**C.2.6.2 Tire Rolling Resistance Effectiveness**

The data points with the highest effectiveness values are almost all exclusively BEV and FCEV technology combinations for medium-sized non-performance cars.<sup>138</sup> The effectiveness for these vehicles, when the low rolling resistance technology is applied, is amplified by a complementary effect where the lower rolling resistance reduces road load, and the vehicle can use a smaller battery pack (and still meet range requirements). The smaller battery pack reduces the overall weight of the vehicle, further reducing road load, and reducing fuel consumption. All vehicle technology classes experience this complementary effect, but the strongest effect is on the mid-sized vehicle non-performance classes. By using full-vehicle simulations, NHTSA captures effects that demonstrate the full interactions of vehicle technologies.

**Figure C.2.6-1. LD Roll Technology Effectiveness Values for All Vehicle Technology Classes (Unconstrained)**



<sup>138</sup> These effectiveness value combinations for BEVs and FCEVs are not used in the standard-setting CAFE analysis but are used in the Draft SEIS analysis.

## C.3 Consumer Response to Manufacturer Compliance Strategies

### C.3.1 Macroeconomic Assumptions that Affect and Describe Consumer Behavior

#### C.3.1.1 *Gross Domestic Product and Other Macroeconomic Assumptions*

For this analysis, NHTSA employs forecasts of future fuel and electricity prices from the U.S. Energy Information Administration 2025 Annual Energy Outlook.<sup>139</sup> The Energy Information Administration collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

For the SEIS, NHTSA requires projections related to the expected evolution of the power grid. NHTSA relies on the Annual Energy Outlook's Alternative Electricity case. NHTSA relies on these cases because they better reflect the mix of policies expected to be in place during the period projected for this analysis. For all other projections, NHTSA's sources match those used in the standard-setting analysis. The sources for these projections can be found in TSD Chapter 4.1.

### C.3.2 Estimating Total Vehicle Miles Traveled

#### C.3.2.1 *Overview of the Process*

"Forecasted Light-Duty VMT Constraint" for car and light truck vehicle miles traveled (VMT) is calculated for each future calendar year using the Federal Highway Administration's (FHWA's) LD VMT forecasting model in conjunction with the same macroeconomic forecasts used elsewhere in the CAFE Model in the case of the SEIS.

For the SEIS, the CAFE Model uses the FHWA model to develop a forecast of total LD VMT for each future calendar year spanned by the analysis (currently 2024 through 2050) that reflects forecasts of the U.S. population, future economic conditions, fuel prices and fleet average fuel economy, and consumer confidence levels. This is a reasonable approach to modeling fleetwide demand for VMT, as is the case in the SEIS, and is consistent with the approach NHTSA used in the 2024 Final Rule. However, it would not be a suitable approach for modeling VMT for the standard-setting fleet because it assumes a larger on-road fleet than what is modeled in that analysis.

#### C.3.2.2 *Using the Mileage Accumulation Schedules to Estimate Total VMT*

For the SEIS, NHTSA constrains VMT to match an independent forecast based on demographic trends and aggregate economic growth. As described in more detail below, it uses a travel forecasting model developed and used by FHWA to produce a forecast of growth in car and light truck use that is consistent with the same forecasts of population growth, increases in

---

<sup>139</sup> Data from the 2025 Annual Energy Outlook can be accessed at [https://www.eia.gov/outlooks/aeo/tables\\_ref.php](https://www.eia.gov/outlooks/aeo/tables_ref.php).

household formation, growth in aggregate economic output and personal income, and consumer confidence used elsewhere throughout its analysis.

### **C.3.2.3      *Constraining VMT in the CAFE Model (Formerly TSD 4.3.4, which was deleted)***

For the SEIS, NHTSA uses the FHWA’s VMT forecasting model, regardless of differences the model simulates among alternatives in the size or age distribution of the LD fleet. In future years where total VMT calculated internally by the CAFE Model differs from the FHWA forecast, each age or model year cohort’s average VMT is adjusted up or down so that the two estimates match. In calendar years where the CAFE Model’s estimate of total VMT constructed using average mileage by vehicle age and the numbers of vehicles of different ages is below the forecast from the FHWA model, the CAFE Model’s estimates of annual VMT for cars and trucks of each age are adjusted upward by the proportion necessary for its forecast to match that produced by the FHWA model. Conversely, if the initial estimate of total VMT for a calendar year the CAFE Model develops using its fleet size and age distribution in conjunction with mileage accumulation schedules for cars and light trucks exceeds the forecast by the FHWA model, average use of vehicles of each age is scaled down proportionally until the two estimates match. This process ensures that any differences in total VMT among regulatory alternatives reflect only the different levels of fuel economy they require and their consequences for car and light truck use via the fuel economy rebound effect.

FHWA’s VMT forecasting model is based on underlying theories of the determinants of travel demand, with their parameters estimated econometrically from annual time-series data on vehicle use, demographic variables, and measures of aggregate economic output and income. It employs an auto-regressive distributed lag specification including error correction terms in an effort to capture the long-run behavioral relationships between vehicle use and economic and demographic growth, as well as the year-to-year adjustments of vehicle use to short-term fluctuations in economic activity. Full documentation of its development, calibration, and use is available from FHWA, and the model is described only briefly here.<sup>140</sup> As FHWA has revised the model to improve its forecasting performance, updated versions have been fully integrated into NHTSA’s CAFE Model. Table C.3.2-1 reports the variables currently included in FHWA’s LD VMT forecasting equation and the most recently estimated values of their coefficients.<sup>141</sup>

---

<sup>140</sup> Pickrell, D. et al. 2020. FHWA Travel Analysis Framework: Development of VMT Forecasting Models for Use by the Federal Highway Administration. Department of Transportation, Volpe. pp. 1-19. Available at: [https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt\\_model\\_dev.pdf](https://www.fhwa.dot.gov/policyinformation/tables/vmt/vmt_model_dev.pdf). (Accessed: October 6, 2025).

<sup>141</sup> The 90 percent confidence interval for the estimated coefficient on fuel cost per mile easily includes 0.10, which corresponds to the 10 percent rebound effect the agency uses throughout its analysis.

Table C.3.2-1. FHWA VMT Forecasting Model

Adjustment Variable	
Previous Period VMT	-0.358 (0.048) ***
Long-Run Variables	
Personal Disposable Income PC	3.567 (0.468)**
Personal Disposable Income PC Sq.	-0.435 (0.072)**
Fuel Cost per Mile	-0.085 (0.018)***
Short-Run Variables (First Differenced, except Consumer Confidence)	
Personal Disposable Income PC	3.661 (0.812)*
Personal Disposable Income PC (-1)	-0.310 (0.075)***
Personal Disposable Income PC (-2)	-0.249 (0.069)*
Personal Disposable Income PC Sq.	-0.547 (0.124)*
Consumer Confidence	0.046 (0.014)***
Structural break Indicator (2006)	-0.036 (0.007)
Constant	0.435 (0.266)
Observations	50
Adj. R2	0.88
RMSE	0.007
Cumby-Huizinga Test for Autocorrelation (P-Value (One Lag))	0.69
Bounds F-Stat.	19.34***
Bounds T-Stat.	-7.43***
In-Sample MAPE (1970-2019)	0.49%
Out-of-Sample MAPE (2014-2019)	0.85%

## Notes:

Suffixes on the variable names indicate the values of a variable from the previous year (-1) period two years previous (-2). Critical values for the bounds test are taken from Pesaran et al. (2001) for case 3. Model lag lengths were based on best Bayesian Information Criterion statistic.

Standard errors in parentheses: † p<0.1 \* p<0.05 \*\* p<0.01 \*\*\* p<0.001.

The second reason the Model redistributes VMT across the on-road fleet is a discrepancy between unadjusted VMT (the product of average annual vehicle use and the on-road vehicle population) and forecasted non-rebound VMT. In most cases, this redistribution is small and fluctuates between adding and removing miles in any given year. However, in this analysis, the constrained annual VMT is strongly affected by the COVID-19 pandemic.



## C.4 Simulating Emissions Impacts of Regulatory Alternatives

### C.4.1 Estimating Health Effects from Changes in Criteria Pollutant Emissions

#### C.4.1.1 Health Effects per Ton from Upstream Emissions

Table C.4.1-1. CAFE/GREET Source Sectors to EPA Source Mapping

CAFE Model Upstream Component (per GREET)	Corresponding EPA Source Categories
Petroleum Extraction	Assigned to the “Oil and natural gas” sector from a 2018 EPA paper (Fann et al.). <sup>142</sup> Health incidents per ton were calculated using BenMAP Health Incidence Files received from EPA staff.
Petroleum Transportation	Assigned to several mobile source sectors from a 2019 EPA paper (Wolfe et al.) <sup>143</sup> and one source sector from the 2018 EPA source apportionment TSD. <sup>144</sup> The specific mode mappings are as follows: From Wolfe et al.: Rail sector (for GREET’s rail mode) C1&C2 marine vessels sector (for GREET’s barge mode) C3 marine vessels sector (for GREET’s ocean tanker mode) On-road heavy-duty diesel sector (for GREET’s truck mode) From the 2018 EPA source apportionment TSD: Electricity generating units (for GREET’s pipeline mode) A weighted average of these different sectors was used to determine the overall health impact values for the sector as a whole.
Refineries	Assigned to the refineries sector in the 2018 EPA source apportionment TSD.
Fuel TS&D	Assigned to several mobile source sectors from a 2019 EPA paper (Wolfe et al.) and one source sector from the 2018 EPA source apportionment TSD. <sup>145</sup> The specific mode mappings are as follows: From Wolfe et al.: Rail sector (for GREET’s rail mode) C1&C2 marine vessels sector (for GREET’s barge mode) C3 marine vessels sector (for GREET’s ocean tanker mode) On-road heavy-duty diesel sector (for GREET’s truck mode)

<sup>142</sup> Fann et al. 2018. Assessing Human Health PM<sub>2.5</sub> and Ozone Impacts from U.S. Oil and Natural Gas Sector Emissions in 2025. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6718951/>. (Accessed: July 7, 2025).

<sup>143</sup> Wolfe, P. et al. 2019. Monetized Health Benefits Attributable to Mobile Source Emission Reductions Across the United States in 2025. *The Science of the Total Environment*. Vol. 650(2): pp. 2490–98. Available at: <https://pubmed.ncbi.nlm.nih.gov/30296769/>. (Accessed: July 7, 2025)(*hereinafter* Wolfe et al). Health incidence per ton values corresponding to this paper were sent by EPA staff.

<sup>144</sup> EPA. 2018. Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors. Office of Air and Radiation and Office of Air Quality Planning and Standards. Research Triangle Park, NC. pp. 1-108. Available at: [https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd\\_2018.pdf](https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf). (Accessed: July 7, 2025).

<sup>145</sup> EPA. 2018. Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors. Office of Air and Radiation and Office of Air Quality Planning and Standards. Research Triangle Park, NC. pp. 1-108. Available at: [https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd\\_2018.pdf](https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf). (Accessed: October 6, 2025).

CAFE Model Upstream Component (per GREET)	Corresponding EPA Source Categories
	From the 2018 EPA source apportionment TSD: Electricity generating units (for GREET’s pipeline mode) A weighted average of these different sectors was used to determine the overall health impact values for the sector as a whole.
Electricity Generation	Assigned to the electricity-generating units sector from the 2018 EPA source apportionment TSD. <sup>146</sup>

**Health Incidence per Ton Values Associated with the Refineries Sector**

In the SEIS runs, health incidence per ton values associated with electricity generation are used to calculate total changes in health effects. They correspond to changing incidences in morbidity and mortality due to changes in the tons of pollutants emitted. TSD Table 5-9 shows the values used in the CAFE Model analysis, based on values from a 2018 EPA TSD detailing different incidence per ton estimates based on the sector of the pollution source.

**C.5 Simulating Economic Impacts of Regulatory Alternatives**

**C.5.1 Costs and Benefits to Consumers and Commercial Operators**

**C.5.1.1 Benefits of Less Frequent Refueling**

**Including Electric Vehicle Recharging (Formerly TSD 6.1.5.3, which has been deleted)**

In addition to including the refueling costs associated with the “legacy fleet,” the CAFE Model also adds the cost to recharge EVs to the total refueling costs, although this is used for SEIS purposes only, since electric technologies are not available as a compliance pathway to meet the proposed standards in the central analysis.<sup>147</sup> It is important to first understand how many EV charging events require the driver to wait and the duration of the waiting period—which is dependent on the range of the EV and the length of the trip.<sup>148</sup> For trips shorter than the vehicle’s range, the driver can recharge the vehicle at times that do not require them to be actively waiting, and there would be no time cost related to recharging. Only for trips where the vehicle is driven for more miles than the vehicle’s range will the driver have to stop mid-

<sup>146</sup> EPA. 2018. Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors. Office of Air and Radiation and Office of Air Quality Planning and Standards. Research Triangle Park, NC. pp. 1-108. Available at: [https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd\\_2018.pdf](https://www.epa.gov/sites/default/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf). (Accessed: October 6, 2025).

<sup>147</sup> Since EVs are not considered in the central analysis, the costs to recharge do not influence the cost-benefit analysis. These costs, however, are considered in the Draft SEIS analysis.

<sup>148</sup> While the range of EVs is dependent on a number of factors, such as driver habits, geography, and weather, NHTSA took a conservative approach and assumed a best-case scenario.

trip, a time that is assumed to be inconvenient, to recharge the vehicle at least enough to reach the intended destination.

NHTSA uses trip data from the National Household Transportation Survey to estimate the frequency and expected length of trips that exceed the range of the EV technologies in the simulation (200- and 350-mile ranges, which were extrapolated for longer battery ranges). The National Household Transportation Survey collects data on individual trips by mode of transportation from a representative random sample of U.S. households. A trip is defined by the starting and ending point for any personal travel, so that vehicle trips capture any time a car is driven. The survey includes identification numbers for households, individuals, and vehicles, as well as mode of transportation (including the body style of the vehicle for vehicle trips), and the date of the trip. Although some trips made in the same day may allow for convenient charging between trips, NHTSA assumes that travel in the same day exceeding the range involves the driver waiting for the vehicle to charge. Thus, the total number of miles driven by the same vehicle in a single day is summed, and NHTSA assumes that charging stations are not conveniently available to the driver in between.

From the final body style datasets (which exclude taxis and rental cars), NHTSA calculates two measures that allow for the construction of the value of recharging time. First, the expected distance between trips that exceed the range of 200-mile and 350-mile BEVs is calculated. This is calculated as the quotient of the sum of total miles driven by each individual body style and the total number of trips exceeding the range, as shown in Equation C.5.1-1.<sup>149</sup>

**Equation C.5.1-1. Calculation of En Route Charge Frequency**

$$Charge\ Frequency_{Style, Range} = \frac{\sum_{Trip \in Style} Trip\ Length}{\sum_{Trip \in Style} [Trip\ Length > Range]}$$

This equation calculates the expected frequency of en route recharging events, or the number of miles traveled per inconvenient recharging event. NHTSA uses this later to calculate the total expected time to recharge a vehicle.

The second measure needed to calculate the total expected recharging time is the expected share of miles driven that will be fueled by a charge in the middle of a trip (causing the driver to wait and lose the value of time). To calculate this measure, NHTSA sums the difference of the trip length and range, conditional on the trip length exceeding the range for each body style. NHTSA divides this figure by the sum of the length of all trips for that body style, as in Equation C.5.1-2.

**Equation C.5.1-2. Share of Battery Electric Range Charged**

$$Share\ Charged_{Style, Range} = \frac{\sum_{Trip \in Style} ([Trip\ Length > Range] * (Trip\ Length - Range))}{\sum_{Trip \in Style} Trip\ Length}$$

---

<sup>149</sup> The denominator counts the number of necessary recharging events by body style. It is not a measurement of VMT.

The calculated frequency of inconvenient charging events and share of miles driven that require the driver to wait for BEVs with varying range capabilities are presented in Table C.5.1-1. As the table shows, cars are expected to require less frequent inconvenient charges and a smaller share of miles driven will require the driver to charge the vehicle in the middle of a trip. Pickups and vans/SUVs have fairly similar measures, with vans and SUVs requiring slightly more inconvenient charging than pickups.

**Table C.5.1-1. Electric Vehicle Recharging Thresholds by Body Style and Range<sup>150,151</sup>**

Metric	Body Style	Cars	Vans/SUVs	Pickups
Miles until mid-trip charging event	BEV1	2,000	1,500	1,600
	BEV2	3,600	2,500	2,700
	BEV3	5,200	3,500	3,800
	BEV4	10,400	7,000	7,600
Share of miles charged mid-trip	BEV1	6.00%	9.00%	8.00%
	BEV2	4.50%	6.50%	6.00%
	BEV3	3.00%	4.00%	4.00%
	BEV4	1.50%	2.00%	2.00%
Charge rate (miles/hour)	BEV1	67	67	67
	BEV2	100	100	100
	BEV3	100	100	100
	BEV4	100	100	100

The measures presented in Table C.5.1-1 can be used to calculate the expected time drivers of EVs of a given body style and range will spend recharging at a time that requires them to wait. First, NHTSA calculates the expected number of refueling events for a vehicle of a given style and range in a given calendar year. This is shown in Equation C.5.1-3 as the expected miles driven by a vehicle in a given calendar year divided by the charge frequency of a vehicle of that style and range from Table C.5.1-1.<sup>152</sup>

**Equation C.5.1-3. Calculation of Recharge Events**

$$Recharge\ Events_{CY, Veh \in (Style \cup Range)} = \frac{Miles_{CY, Veh}}{Charge\ Frequency_{(Style, Range)}}$$

NHTSA next calculates the number of miles charged for a vehicle of a given style and range in a specific calendar year. This is the product of the number of miles driven by the vehicle and the

<sup>150</sup> Ranges for LD BEVs are as follows: BEV1<sub>LD</sub> ≤ 225 miles; 225 miles < BEV2<sub>LD</sub> ≤ 275 miles; 275 miles < BEV3<sub>LD</sub> ≤ 350 miles; 350 miles < BEV3<sub>LD</sub>.

<sup>151</sup> These charge rates are low relative to what is available in the market now, but it reflects the availability of infrastructure in the United States at this time.

<sup>152</sup> Note that  $\sum_{Trip \in Style} Trip\ Length$  and  $Miles_{CY, Veh}$  are different values.  $Miles_{CY, Veh}$  is the estimated amount of VMT predicted by VMT while  $\sum_{Trip \in Style} Trip\ Length$  is the sum of trips observed by the NHTSA study.

share of miles driven that require an inconvenient charge for a vehicle of that style and range (from Table C.5.1-1) as presented in Equation C.5.1-4.

**Equation C.5.1-4. Calculation of Miles Charged**

$$Miles\ Charged_{CY, Veh \in (Style \cup Range)} = Miles_{CY, Veh} * Share\ Charged_{Style, Range}$$

Finally, NHTSA calculates the expected time a driver of an EV (of a given style and range) will spend waiting for the vehicle to charge. This is the product of the fixed amount of time it takes to get to the charging station and the number of recharging events plus the quotient of the expected miles that will require inconvenient charging over an input assumption of the rate at which a vehicle of that style and range can be charged (expressed in units of miles charged per hour). The fixed amount of time it takes to get to a charging station is set equal to the average time it takes for an ICE vehicle to get to a gas station for a refueling event, as discussed above.<sup>153</sup> This is shown in Equation C.5.1-5.

**Equation C.5.1-5. Calculation of Charging Time**

$$Charge\ Time_{CY, Veh \in (Style \cup Range)} = (Fixed_{Veh} * Recharge\ Events_{CY, Veh}) + \frac{Miles\ Charged_{CY, Veh}}{Charge\ Rate_{Veh}}$$

The expected time that a driver will wait for their vehicle to charge can then be multiplied by the value of time estimate, as is done with gasoline, diesel, and E85 vehicles (see descriptions in TSD Chapter 6.1.5.1 and Chapter 6.1.5.2 of the current approach to accounting for refueling time costs).

PHEVs are treated somewhat differently in the modeling. Presumably, PHEVs that are taken on a trip that exceed their electric range will be driven on gasoline and the driver will recharge the battery at a time that is convenient. For this reason, NHTSA excludes the electric portion of travel from the refueling time calculation. The gasoline portion of travel is treated the same as other gasoline vehicles so that when the tank reaches some threshold, the vehicles are assumed to be refueled with the same fixed event time and the same rate of refueling flow.

---

<sup>153</sup> Given the current state charging infrastructure, this is likely a conservative estimate. Gas stations vastly outnumber publicly available recharging stations and are often in more convenient locations.

# APPENDIX D

## Energy

## **APPENDIX D ENERGY**

This appendix is intended to supplement the content in Chapter 3, *Energy*, providing important context for the energy-related assumptions that feed into the CAFE Model and explaining the updated analytical methods, data sources, and modeling parameters used to evaluate energy consumption and related environmental impacts, as required under NEPA for disclosure of assumptions and methodologies supporting the impact analysis.<sup>1</sup> This appendix also provides additional information about other associated potential impacts of the Proposed Action and action alternatives. Because some of the impacts described in this appendix cannot be estimated quantitatively, the discussion of such impacts is provided solely for informational purposes and cannot be used to determine reliably the difference between the No-Action Alternative and the action alternatives.

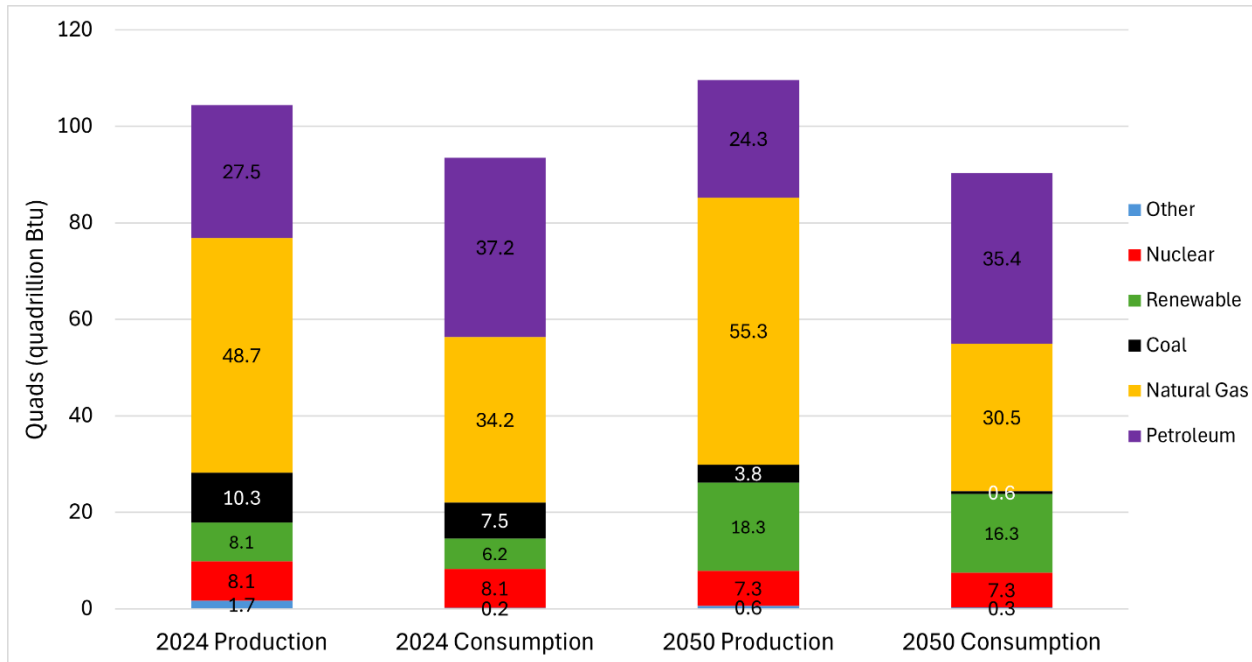
### **D.1 Introduction**

The Annual Energy Outlook (AEO) 2025 provides long-term projections of U.S. energy markets through 2050 under alternative scenarios, which are used as inputs in the CAFE Model to analyze the impacts of different levels of CAFE standards. These projections suggest a gradual shift away from fossil fuels toward renewable energy sources, with renewables expected to nearly triple their share of total consumption by 2050, as shown in Figure D.1-1 (U.S. Energy Information Administration [EIA] 2025f). Despite increased travel demand, transportation fuel use is projected to decline due to improved fuel economy, especially among light-duty (LD) vehicles. The projections reflect market-driven trends but are subject to considerable uncertainty due to evolving technologies, economic conditions, and unforeseen events.

---

<sup>1</sup> For information on NHTSA's prior qualitative discussion of the affected of light-duty (LD) fuel consumption and the upstream processes that produce the fuel used for LD vehicles, see the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond, Chapter 3, *Energy* (NHTSA 2024). The qualitative discussion includes scientific studies and assessments representing a summary of the state of the science at the time of Final EIS drafting, which NHTSA considered and is providing as contextual background for the analysis presented in this document.

Figure D.1-1. U.S. Energy Production and Consumption by Source in 2024 and 2050



Source: EIA 2025f, Alternative Transportation and Alternative Electricity case.  
 Btu = British thermal unit.

## D.2 Affected Environment

The following sections summarize the environmental impacts of producing and consuming LD vehicle fuels, providing context for the CAFE Model’s quantitative estimates. Although NHTSA cannot fully quantify all environmental impacts of LD vehicle production and consumption, this discussion supplements Chapter 3, *Energy*, to support the quantitative analysis. Consistent with DOT Order 5610.1D, this Draft SEIS addresses the environmental impacts of each transportation fuel in proportion to their significance.

### D.2.1 Gasoline

Motor gasoline represents the largest share of LD vehicle fuel consumption, both now (97.4 percent of total fuel consumption in 2024) and in the future (88.4 percent in 2050) based on the CAFE Model projections.<sup>2</sup> Gasoline is produced from the refining of crude oil, which is extracted, transported, and processed using energy and resulting in the emissions of both criteria and non-criteria pollutants.<sup>3</sup> Of the motor gasoline consumed in the United States,

<sup>2</sup> Where motor gasoline excludes E85, a blend of 85 percent ethanol (renewable) and 15 percent motor gasoline (nonrenewable).

<sup>3</sup> Non-criteria emissions (NCEs) throughout this Draft SEIS refer specifically to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are not classified as criteria pollutants under the Clean Air Act. NCEs from the extraction, refining, supply, and combustion of gasoline generally account for 80 percent of total vehicle life-cycle emissions, but this can vary based on vehicle type and supply chain characteristics (Hawkins et al. 2012; Ambrose and Kendall 2016; U.S. Department of Energy [DOE] 2024).



98 percent was consumed by the transportation sector, with LD vehicles responsible for 91.0 percent of transportation use, while the remaining gasoline was consumed across the industrial, residential, commercial, and electrical power sectors (EIA 2023a, 2025a). Gasoline remains the largest component of fuel consumption among the LD vehicle fleet and, therefore, warrants a more detailed discussion of its affected environment and potential environmental impacts. Non-criteria emissions (NCEs) from the extraction, refining, supply, and combustion of gasoline generally account for the majority of total vehicle life-cycle emissions.

According to AEO 2019, U.S. tight oil production became the most common form of crude oil production in 2015; it currently accounts for approximately 70 percent of total U.S. crude oil production and is expected to continue to drive future U.S. crude oil production into 2050 (EIA 2025g).<sup>4</sup>

In the sections that follow, NHTSA outlines the anticipated environmental impacts of the fuels and fuel production processes discussed in the CAFE Model's analysis of the impacts of different levels of CAFE standards based on currently available data. Gasoline represents 97.4 percent of total fuel consumption by LD vehicles, and this Draft SEIS discusses impacts in proportion to their significance in accordance with DOT Order 5610.1D.

#### **D.2.1.1      *Petroleum Extraction***

NHTSA cannot quantitatively analyze all of the impacts of its action related to petroleum extraction but provides the following discussion to give additional context to its quantitative estimates of changes in environmental impacts due to petroleum extraction. NHTSA does quantitatively analyze the changes in criteria pollutants and NCEs from petroleum extraction in the CAFE Model analysis.<sup>5</sup>

Petroleum extraction refers to the multistage process of obtaining crude oil and other liquid hydrocarbons from beneath the earth's surface or ocean floor, typically involving exploration, drilling, and production operations.<sup>6</sup> Onshore activities often require land clearing, road building, and site development (Baynard 2011; Mudumba et al. 2023; Strack et al. 2019). Offshore extraction relies on seismic surveys and underwater drilling (Bakke et al. 2013; Anderson et al. 2011; Gillett et al. 2020; Beyer et al. 2025). Studies have linked oil extraction in both environments to methane (CH<sub>4</sub>) emissions and contamination of surface water and

---

<sup>4</sup> See footnote 1. Information on the environmental impacts of the shift to unconventional oil and overall gasoline production and consumption is provided in Chapter 3, Section 3.2.1, *Gasoline*, of the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under the Energy Policy and Conservation Act of 1975 (EPCA).

<sup>5</sup> The assumptions informing that analysis are discussed in detail in Draft Technical Support Document Chapter 5 and the results of that analysis are discussed in Chapters 4 and 5 of this Draft SEIS.

<sup>6</sup> See footnote 1. The petroleum extraction process is explained in Chapter 3, Section 3.2.1.1, *Petroleum Extraction*, of the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

groundwater due to spills and improper wastewater management (Atoufi and Lampert 2020; Poberezhna et al. 2024; Kharaka et al. 2005).

The environmental impacts of U.S. gasoline production vary based on whether the crude oil was sourced conventionally or unconventionally. While emissions from conventional oil extraction and refining are well documented, there is less agreement regarding the broader environmental impacts of unconventional petroleum sources, such as tight oil.

#### **D.2.1.2      *Petroleum Transportation***

Once crude oil is extracted, it is transported through pipelines, railcars, tanker trucks, or marine oil tankers to refineries where it is processed into various petroleum products. Oil spills from transportation activities, whether by pipeline or rail, pose risks to sensitive aquatic ecosystems. Studies have suggested that transportation infrastructure can intersect with sensitive aquatic systems, increasing the risk to aquatic ecosystems (Cederwall et al. 2020; Kishore and Arun 2025).<sup>7</sup> Spills in sensitive aquatic ecosystems can disrupt food webs and lead to long-term ecological impacts, including bioaccumulation of toxic substances in fish and other organisms (Beyer et al. 2016; Murry et al. 2018; Zapelini de Melo et al. 2022; Silva et al. 2024). The severity of these impacts can vary based on a wide range of factors, including the type and viscosity of oil, specific location of the incident, and subsequent weathering.

Pipelines are the leading mode of long-distance domestic crude oil transport in the United States, with over 83,000 miles in operation as of 2024, due in part to design features that reduce safety risks and the likelihood of spills compared to other methods (Pipeline and Hazardous Materials Safety Administration [PHMSA] 2025a). However, leaks can still occur due to corrosion, equipment failures, or external damage to the pipeline. In 2024, an estimated 13,414 barrels of oil were released in 59 pipeline incidents (PHMSA 2025b).<sup>8</sup> Studies have indicated that such spills can harm the environment by contaminating waterways and soil, threatening wildlife and aquatic ecosystems (Fox and Lamm 2021).

Tanker trucks and railcars are used for transporting smaller volumes of oil in specialized tanks over shorter distances, such as within a country or region, while oil tankers are ships designed to transport large volumes of crude oil over long distances across oceans. Rail transport is heavily relied on to transport oil from source regions and pose a higher risk of spillage. Studies have noted that rail spills have the potential to cause serious fires due to crude oil's flammability and ability to re-ignite, posing risks to the environment (Lehr and Simecek-Beatty 2004; Walker et al. 2016; Stout 2020). The environmental impacts of a crude oil spill and fire on water can be especially severe because the oil can spread quickly and contaminate large areas of the water and shoreline, causing long-term environmental damage including harm to aquatic species.

---

<sup>7</sup> See footnote 1. The environmental impacts of crude oil transportation are further discussed for each mode of transportation in Chapter 3, Section 3.2.1.2, *Petroleum Transportation*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>8</sup> PHMSA defined an incident as a release of at least 5 gallons of hazardous liquids as defined under 49 CFR 195.50.

Similarly, spills from oil tankers and tanker trucks may harm aquatic species and pose long-term health risks to humans and wildlife through bioaccumulation. Oil tanker incidents may lead to contamination of sediment, water, and surrounding habitats, with serious consequences for marine life. In 2024, there were six large spills (exceeding 700 tons of oil) and four medium spills (ranging from 7 to 700 tons), releasing an estimated total of 10,000 tons of oil worldwide (ITOPF 2025). Tanker trucks transport smaller quantities of petroleum, but studies have indicated that they present a higher risk of spillage due to their increased likelihood of collisions and rollover incidents (Hasan et al. 2025). Environmental impacts from these spills are comparable to those associated with rail transport, including the contamination of waterways, soil, and aquatic ecosystems.

NHTSA cannot analyze all of the impacts of its action related to petroleum transportation quantitatively but provides the aforementioned discussion to give additional context to its quantitative estimates of changes in environmental impacts due to petroleum transportation. NHTSA does analyze quantitatively the changes in criteria pollutants and NCEs from petroleum transportation in the CAFE Model analysis.<sup>9</sup>

### **D.2.1.3      *Petroleum Refining***

Petroleum refining converts crude oil into finished products such as motor gasoline through separation, chemical treatment, and blending of hydrocarbon streams.<sup>10</sup> Studies have noted that refining operations, including catalytic cracking and hydrotreating, are energy intensive and generate air emissions, wastewater, solid waste, and noise (O'Rourke and Connolly 2003; Al-Rubaye et al. 2023). Studies have identified refining as a source of air pollutants such as volatile organic compounds (VOCs), sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and particulate matter (PM), which can degrade air quality, contribute to smog and acid rain, and harm human, plant, and animal health (O'Rourke and Connolly 2003; Al-Rubaye et al. 2023; Adebisi 2022; EPA 2025c). NCEs from refineries represent a notable portion of total emissions from the oil sector, accounting for approximately 5.8 percent of total U.S. oil industry NCEs in 2022 (EPA 2024a; International Energy Agency [IEA] 2021).

Refining operations also produce wastewater and solid waste that may affect soil and water quality if not properly managed. Studies suggest that residuals, such as spent catalysts, tank sludges, and other petroleum-derived pollutants, can be hazardous, and legacy contamination and impacts on development, health, and morbidity of fish from wastewater discharge and runoff remain a concern (Cherr et al. 2017; Wang 2023). Other studies have asserted that certain chemicals used in gasoline blending, such as benzene, pose risks to human and

---

<sup>9</sup> The assumptions informing that analysis are discussed in detail in Draft TSD Chapter 5 and the results of that analysis are discussed in Chapter 4, *Air Quality*, and Chapter 5, *Non-Criteria Emissions*, of this Draft SEIS.

<sup>10</sup> See footnote 1. The refining process and its environmental impacts are discussed in more detail in Chapter 3, Section 3.2.1.3, *Petroleum Refining*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

ecological health due to their toxicity and persistence in the environment (Epstein et al. 2002; Vasta and Bhatt 2025).<sup>11</sup>

#### **D.2.1.4      *Petroleum Imports***

In addition to domestic extraction, the United States imports crude oil used in the production of gasoline, with net imports projected to rise from 2.5 million barrels per day in 2024 to 4.6 million barrels per day by 2050 (EIA 2025h).<sup>12</sup> The environmental impact of these imports varies depending on the country of origin because the emissions intensity of crude oil production ranges widely due to factors such as extraction methods, flaring, venting, and CH<sub>4</sub> leakage (Masnadi et al. 2018).

For all fuels, the CAFE Model analyzes the extent to which: changes in fuel consumption lead to changes in net imports of finished fuel and domestic refining output; and changes in domestic refining output lead to changes in domestic crude oil production and net imports of crude oil.

#### **D.2.1.5      *Fuel Transportation, Storage, and Distribution***

Following the refining process, gasoline is moved through a distribution network that includes pipelines, storage tanks, terminals, railcars, and tanker trucks before reaching consumers.<sup>13</sup> Equipment failures during transportation, such as ruptured hoses or valve malfunctions, can result in the release of gasoline into the soil, air, or nearby waterways. Storage tanks, both underground and aboveground, are also vulnerable to leaks due to corrosion, natural disasters, or improper maintenance. These incidents can contaminate soil and groundwater, pose fire hazards, and expose humans and wildlife to harmful toxins.

At the point of retail distribution, such as gas stations, environmental risks include both liquid spills and vapor losses during fueling and tank refilling. Studies have shown that vapors from gasoline storage tanks and vehicles contribute to local air pollution, and leaked gasoline can seep through concrete, affecting soil and potentially groundwater (Hilpert et al. 2015; Hilpert and Breyse 2014; Jia et al. 2022). The same studies suggest that runoff from fueling stations can carry hydrocarbons into nearby water sources, affecting aquatic ecosystems.

---

<sup>11</sup> See footnote 1. The environmental impacts of wastewater are discussed in more detail in Section D.2.1.1, *Petroleum Extraction*, of this Draft SEIS and in Section 3.2.1.3, *Petroleum Refining*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>12</sup> See footnote 1. U.S. petroleum imports and the associated environmental impacts are discussed in Chapter 3, Section 3.2.1.4, *Petroleum Imports*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>13</sup> See footnote 1. This process of fuel transportation, storage, and distribution, and the consequential environmental impacts are discussed in detail in Chapter 3, Section 3.2.1.5, *Fuel Transportation, Storage, and Distribution*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

## D.2.2 Electricity

Electricity currently makes up 0.8 percent of LD vehicle fuel use, but the CAFE Model projects this proportion to increase to 11.2 percent by 2050, representing the largest share of fuel consumption outside of gasoline (EIA 2025i). The CAFE Model accounts for life-cycle emissions from all energy sources, showing that electricity used by electric vehicles (EVs) results in lower emissions than gasoline or diesel used by internal combustion engine vehicles.

To understand the impact that the increasing share of EVs will have on emissions and the environment, understanding the projections for U.S. electricity production is critical. In the AEO Alternative Electricity case, while the average annual increase in U.S. electricity use is expected to be below 2 percent between 2024 and 2050 (which will be slightly offset by efficiency improvements), the transportation sector, driven by the increasing share of EVs, is projected to increase as a share of total U.S. electricity consumption from 0.6 percent in 2024 to 13.8 percent in 2050 (EIA 2025a).

It is projected that the share of renewables (i.e., solar, wind, and hydropower) in the electricity generation mix will more than double from approximately 24 to 69 percent in 2050, complemented by increased battery storage capacity (EIA 2025k). However, the demand for stationary energy storage is anticipated to represent around 5 percent of total battery demand (Gohlke et al. 2024). Studies have shown that battery production, especially for grid-scale lithium-ion storage that could be associated with increased electricity use, depending how vehicle manufacturers choose to respond to CAFE standards, contributes to other environmental impacts such as hazardous waste, NCEs, and other pollutants (Dehghani-Sanij et al. 2019). Mining for battery materials and manufacturing processes may result in localized impacts, though growing investments in battery recycling aim to mitigate these impacts (EPA 2023a; U.S. Department of Energy [DOE] no date; National Renewable Energy Laboratory [NREL] 2025). Today, the United States has nearly 100 facilities involved in battery recycling to expand the circular use of critical minerals used across transportation, consumer, and industrial applications (NREL 2025).<sup>14</sup>

### D.2.2.1 Electricity Generation: Oil, Coal, Natural Gas, and Renewables

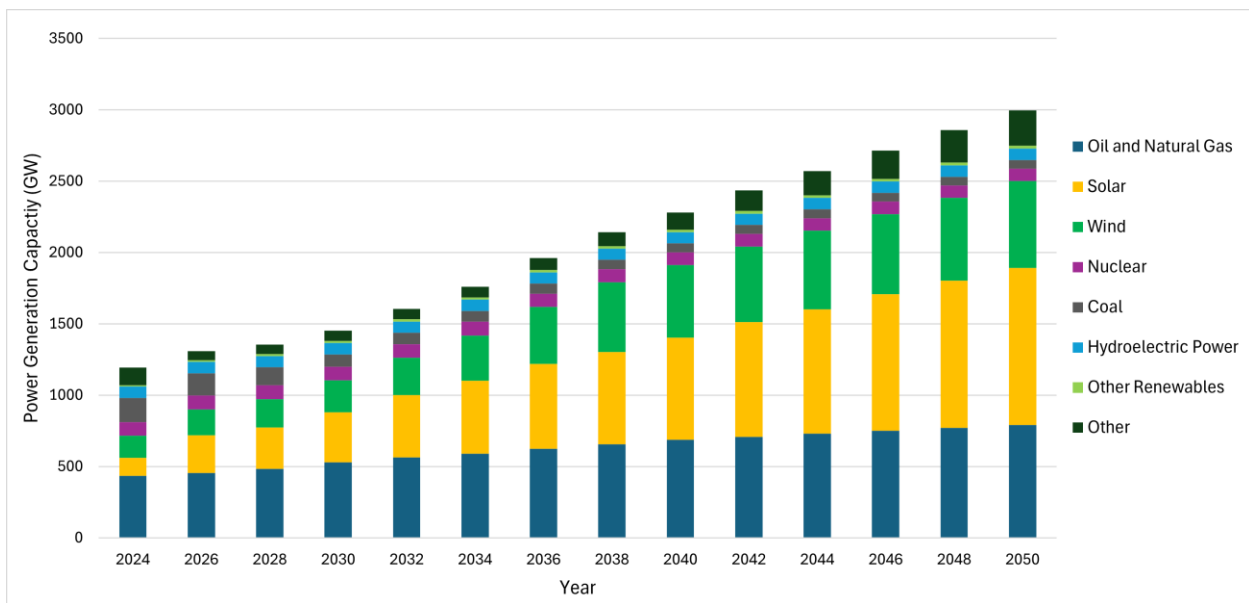
Electric power generation accounts for more energy consumption in the United States than any other energy-use sector, accounting for around 34.7 percent of total energy use (EIA 2025a). As it is a secondary source of energy, electricity is generated using energy from a primary source, such as fossil fuels or renewable energy (EIA 2024a). In 2024, oil and natural gas accounted for the majority of net electricity generation (43.2 percent), followed by renewables (e.g., wind, solar, conventional hydropower) (24.0 percent), nuclear (17.6 percent), and coal (14.9 percent), respectively (EIA 2025k).

---

<sup>14</sup> See footnote 1. To understand the environmental impacts of electricity production and consumption by the transportation sector, especially LD vehicles, see Chapter 3, Section 3.2.2, *Electricity*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

In 2024, coal was used to generate approximately 8 percent of total U.S. energy consumption, with 90 percent of that consumption attributed to the electric power sector (EIA 2025a). Despite the electricity-generating sector being the largest consumer of coal, Figure D.2.2-1 shows that coal electricity generating capacity is gradually declining as other energy sources like natural gas and renewable energy increase capacity (EIA 2025l, 2025m). Figure D.2.2-2 also illustrates this decline, showing that U.S. electricity generation from coal is projected to fall from approximately 655 billion kilowatt-hours (kWh) in 2024 to 187 billion kWh in 2050, partially reflected by additional natural gas and renewable energy generating capacity (EIA 2025k). EIA’s AEO 2025 Alternative Electricity case projects that electricity generation from coal will continue to gradually decline through 2050 (EIA 2025m).

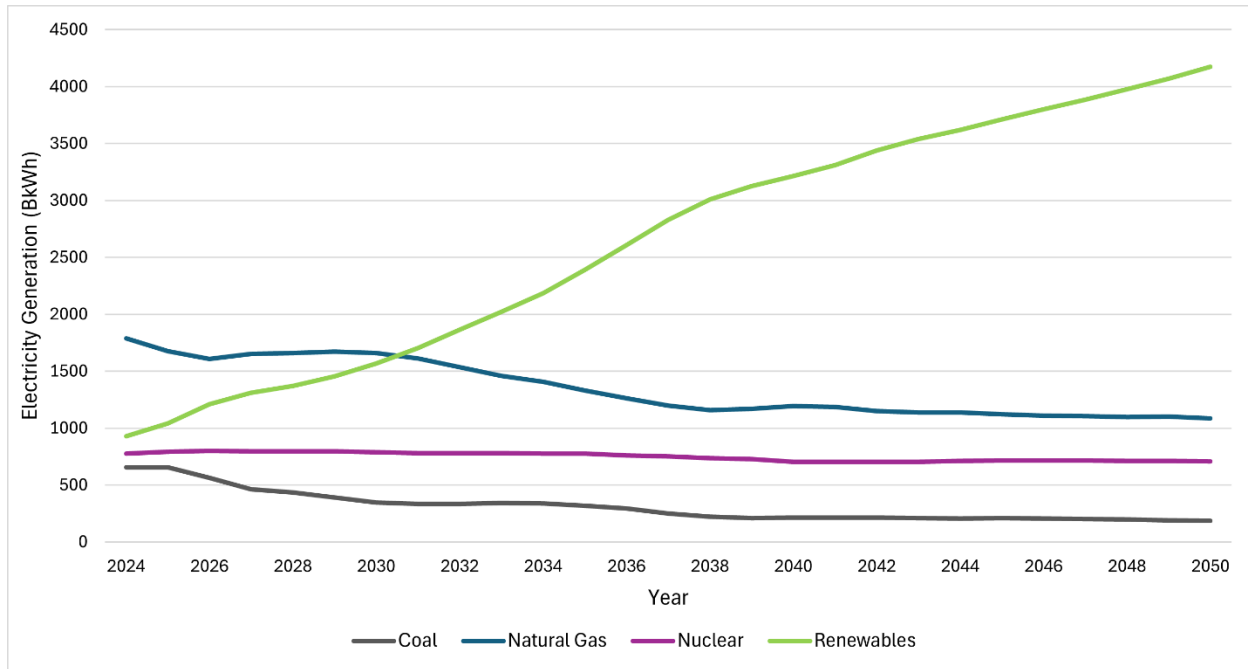
**Figure D.2.2-1. U.S. Electricity Generating Capacity by Year, Projections to 2050**



Sources: EIA 2025l, 2025m.

Note: The data in this figure are for the power sector only and do not include end-use capacity. The category “Other” refers to additional electric power sources that represent 10.8 percent of the electric generating capacity in 2024 and includes fossil steam, pumped storage, diurnal storage, hydrogen, and fuel cells.

Figure D.2.2-2. Electricity Generation by Source (2024 to 2050)



Source: EIA 2025k.

The majority of U.S. electricity generation retirements are projected to be from coal generation, whereas the majority of additions will be from renewable sources as well as oil (EIA 2025n).

The production of coal can have environmental impacts.<sup>15</sup> In particular, non-NCE byproducts from coal production (i.e., SO<sub>x</sub>, NO<sub>x</sub>, PM, and heavy metals such as lead, mercury, and arsenic) have been shown to have impacts on the environment and human health. Studies have shown that these substances can increase the risk of respiratory issues and cardiovascular diseases and can be carcinogenic (Munawer 2018; EIA 2024b; EPA 2025d).

Natural gas is another fossil-based energy source. Like coal, natural gas generates electricity through combustion, which powers a generator. However, when natural gas is substituted for coal to produce heat or electricity, emissions of carbon dioxide (CO<sub>2</sub>), sulfur dioxide, and nitrogen dioxide are lower (EPA 2024a). Natural gas has recently become a significantly larger portion of U.S. electricity generation, reaching 43 percent in 2024 and is projected to decrease to 18.2 percent of generation by 2050 (EIA 2025k). The decline in the natural gas share of electricity generation is due to the anticipated growth in electricity generation from renewable sources. The process of exploring and drilling for natural gas involves hydraulic fracturing. Following extraction, natural gas is transported and distributed through pipelines. Studies have

<sup>15</sup> See footnote 1. The environmental impacts of coal production are discussed in detail in Chapter 3, Section 3.2.2.1, *Electricity Generation: Oil, Coal, Natural Gas, and Renewables*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

suggested that the process of exploring, drilling, producing, and transporting natural gas can have many environmental impacts.<sup>16</sup>

As of 2024, renewables account for 22.3 percent of total U.S. utility-scale electricity generation (EIA 2025k). Wind power generates 10.8 percent of electricity using blowing wind to spin large-scale wind turbine blades that power a generator (EIA 2025k, 2025I). Hydropower harnesses kinetic energy from the natural flow of water to power a generator and accounts for 5.8 percent of electricity generation (EIA 2025k, 2025I). Solar power only makes up 4.8 percent of current U.S. utility-scale electricity generation, but it is one of the fastest-growing energy technologies (EIA 2025k, 2025I). For example, the United States added 5.6 gigawatts of small-scale solar or rooftop solar capacity in 2024 (EIA 2025o). As residential solar continues to expand as a provider of electricity, it may lead to a decrease in upstream emissions from charging EVs. While there are less-common sources of renewable energy-powered electrical generation, including biomass and geothermal, most power plants use wind, hydropower, or solar energy technologies, and renewable energy is projected to drive electricity generation growth starting in 2031 and continuing through 2050, per Figure D.2.2-2.

While renewables are critical to reducing overall emissions from electricity generation, there are important environmental impacts that must be considered. The production of photovoltaic cells for solar energy involves potentially hazardous materials and chemicals that studies have shown to have negative environmental impacts if mishandled or not lawfully disposed of at the solar panel's end of life (EIA 2024c). Some of these materials include silicon, cadmium, and copper, which involve mining and purification processes if not sourced from recycled products. Some of the materials and chemicals used in the manufacturing process have been shown to be carcinogenic and have other negative health impacts (Tawalbeh et al. 2021; EIA 2024c). Similar studies have found that construction of solar plants may also require land clearing, which may disturb surrounding habitats and displace land that could be used for other purposes like agriculture (Tawalbeh et al. 2021; EIA 2024c). For wind energy, the materials and metals used to create wind turbines, such as steel, fiberglass, carbon fiber, and concrete, have been shown to have additional environmental impacts (McKenna et al. 2025; Wang and Wang 2015).<sup>17</sup>

### **D.2.2.2 Region-Specific Electricity Grid Impacts**

In the United States, the grid mix consists of coal, natural gas, nuclear, hydroelectric, oil, and renewable energy sources. The relative proportions of these components can be analyzed by

---

<sup>16</sup> See footnote 1. The environmental impacts of exploring, drilling, producing, and transporting natural gas are discussed in detail in Section D.2.1.1, *Petroleum Extraction*, and Section D.3, *Environmental Consequences: Other Associated Potential Impacts* of this Draft SEIS as well as Chapter 3, Section 3.2.2.1, *Electricity Generation: Oil, Coal, Natural Gas, and Renewables*, of the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>17</sup> See footnote 1. Further discussion of the environmental impacts of EV charging stations, hydropower, and other renewables is discussed in Chapter 3, Section 3.2.2.1, *Electricity Generation: Oil, Coal, Natural Gas, and Renewables*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.



regions, including North American Electric Reliability Corporation regions and EPA Emissions & Generation Resource Integrated Database (eGRID) subregions. For example, in the eGRID subregion that includes Missouri and much of Illinois, the majority (51.1 percent) of electricity was generated by coal in 2023, while in most of Alaska, the majority (67.2 percent) of energy came from hydropower in the same year, indicating that the magnitude of emissions associated with EVs charged in the two subregions would likely differ significantly (EPA 2025e).

Additionally, because of the variation in grid mixes, electricity emissions rates vary significantly by subregion, with the most carbon-intensive subregion of the United States emitting 6.4 times as many pounds of carbon dioxide equivalent (CO<sub>2</sub>e)/megawatt-hours relative to the least carbon-intensive subregion (EPA 2025e).<sup>18</sup>

### **D.2.2.3 Downstream Electricity Impacts**

Understanding the life-cycle impacts of EVs requires evaluating the environmental impacts of vehicle manufacturing, infrastructure development, and electricity generation. Due to the absence of tailpipe emissions, downstream emissions associated with generating electricity for use as EV fuel are attributed to the process of retiring a power plant or system (NREL 2021).<sup>19</sup>

### **D.2.3 Diesel and Biofuels**

The CAFE Model projects diesel fuel to continue to decline as a share of LD fuel consumption through 2050.<sup>20</sup> AEO 2025 projects that domestic production and consumption of biodiesel will steadily decrease between 2024 and 2050, with domestic production decreasing from 1.66 billion gallons per year to 0.98 billion gallons per year in the same period (EIA 2025h). EIA projects that the market share for biodiesel will decrease over this period as demand for renewable diesel and gasoline increases and the cost of petroleum-based gasoline and diesel decreases.

During the same period, renewable diesel consumption is projected to increase from 0.4 to 0.5 quadrillion British thermal units (Btu), as shown in Figure D.2.3-1 (EIA 2025b). The increase is partially due to Federal legislation, such as the 2005 Energy Policy Act that established the Renewable Fuel Standard, mandating that transportation fuel contain a minimum volume of renewable fuels or biofuels. By 2025, the program mandates the production of 22.3 billion gallons of total renewable fuel (EPA 2025c). As illustrated in Figure D.2.3-1, ethanol is projected

---

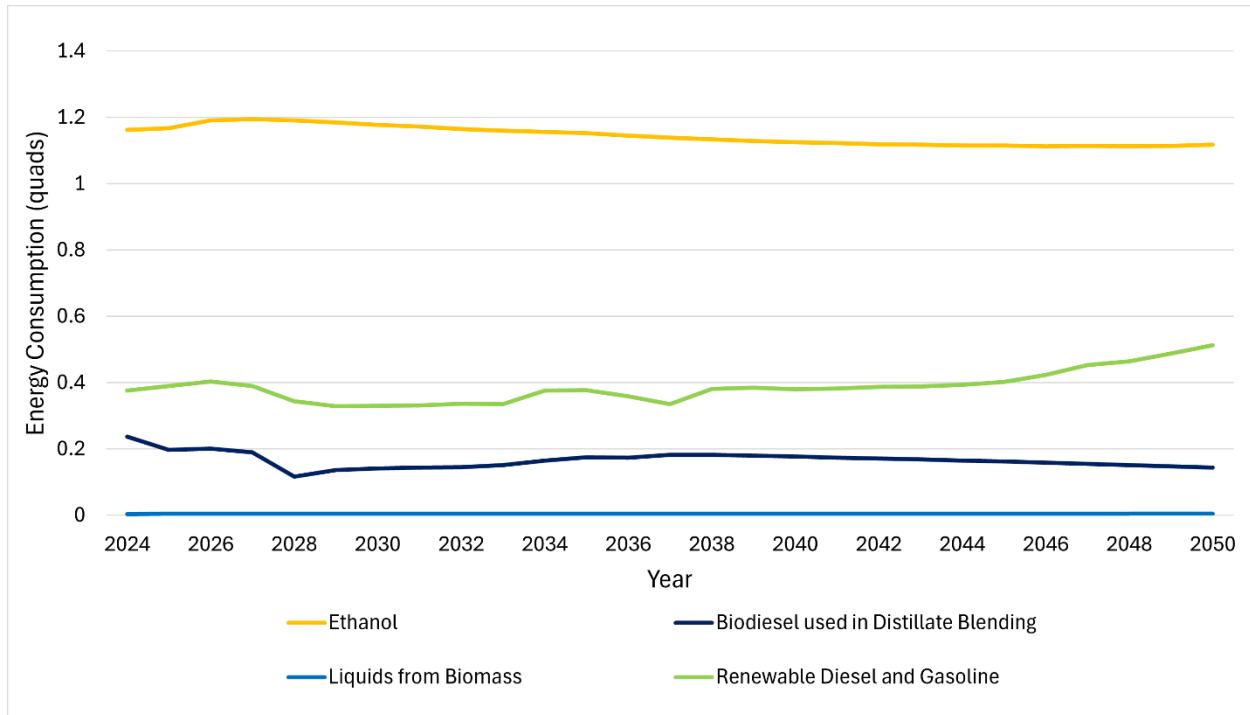
<sup>18</sup> See footnote 1. Chapter 3, Section 3.2.2, *Region-Specific Electricity Grid Impacts*, of the Final EIS (NHTSA 2024) discusses the variation in regional electricity grid mixes in further detail. Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>19</sup> See footnote 1. Downstream electricity impacts are discussed in detail in Chapter 3, Section 3.2.2.3, *Downstream Electricity Impacts*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>20</sup> See footnote 1. The impact of crude oil is further discussed in Chapter 3, *Energy*, in the Final EIS (NHTSA 2024), specifically Sections 3.2.1.1, *Petroleum Extraction*, 3.2.1.2, *Petroleum Transportation*, and 3.2.1.3, *Petroleum Refining*. Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

to make up the majority of transportation sector renewable fuel consumption, followed by renewable diesel and gasoline, biodiesel, and liquids from biomass.

**Figure D.2.3-1. Transportation Renewable Energy Consumption Projections by Source**



Source: EIA 2025b.

### D.2.3.1 Diesel

Diesel is a petroleum-derived distillate fuel used in compression ignition engines. Diesel currently makes up 0.6 percent of LD vehicle fuel consumption in the United States, and the CAFE Model projects this proportion to decrease to 0.3 percent by 2050. Most of the diesel produced in the United States is refined from crude oil at petroleum refineries, as described in Section D.2.1.3, *Petroleum Refining*.<sup>21</sup> Produced through the fractional distillation of crude oil and further processed to reduce the sulfur content, petroleum-based diesel generates life-cycle emissions of 97 kilograms (kg) CO<sub>2</sub>e/million British thermal units (MMBtu), similar to that of gasoline (EIA 2023b; EPA 2023b). Despite this, diesel engines may emit higher levels of other pollutants, such as PM.<sup>22</sup>

In 2024, the total energy consumption from refining distillate fuel oil in the United States was 1.6 trillion Btu (EIA 2025p). In the same year, diesel fuel consumption was responsible for approximately 438 million metric tons of CO<sub>2</sub> emissions, along with pollutants like PM, NO<sub>x</sub>,

<sup>21</sup> See footnote 1. The process of producing diesel can have environmental impacts, as further discussed in Chapter 3, Section 3.2.3, *Diesel and Biofuels*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA’s statutory authority under EPCA.

<sup>22</sup> This is further discussed in Chapter 4, Section 4.1.1.1, *Health Effects of Criteria Pollutants and Mobile Source Air Toxics*.

hydrocarbons, and CO, which studies have linked to a range of adverse health outcomes such as respiratory illnesses and heart and lung disease, and environmental effects such as increased ground-level ozone and acid rain (EIA 2024d; EPA 2025f). “[E]xposure to diesel exhaust can lead to serious health conditions like asthma and respiratory illnesses and can worsen existing heart and lung disease,” and can contribute to the production of ground-level ozone and acid rain, which damages crops, trees, other vegetation, and water resources (EPA 2025f).

### **D.2.3.2 Ethanol**

Ethanol is another major biofuel used in LD vehicles and currently accounts for 1.2 percent of energy consumption by the transportations sector (EIA 2025a, 2025b). Corn ethanol production grew by 21.7 percent from 2010 to 2024, reaching over 16 billion gallons annually (EIA 2025q). Most ethanol is produced from corn, though it can also be derived from cellulosic sources like crop residue and woody biomass (EIA 2020). Ethanol emissions benefits vary by blend and feedstock but generally improve with higher ethanol blend levels. Federal policy has played a major role in biofuel development, particularly through the Renewable Fuel Standard, which mandates production of 22.3 billion gallons of renewable fuel by 2025 and requires life-cycle NCE reductions relative to a 2005 petroleum baseline (EPA 2025g).

E85 is an alternative blend that contains between 51 and 85 percent ethanol, depending on the geography and season, and is only used by flex-fuel vehicles (EPA 2025h). In 2024, E85 represented less than 1.0 percent of ethanol consumed by the transportation sector (EIA 2025b). The vast majority of ethanol consumed by the transportation sector was consumed as lower blends, such as 10.0 percent ethanol blends (E10), which is approved by EPA for use in all gasoline-powered vehicles. Over time, the carbon intensity of corn ethanol has declined, increasing its emissions savings relative to gasoline. However, ethanol fuel still results in life-cycle emissions pollutants such as NO<sub>x</sub>, SO<sub>x</sub>, CO, VOCs, ammonia, and PM (EPA 2025i). In 2025, EPA released the final *Biofuels and the Environment: Third Triennial Report to Congress*, which details environmental impacts from the production and use of biofuels like ethanol and biodiesel.<sup>23</sup>

Ethanol production also contributes to agriculture and production-related impacts. Studies have suggested that fertilizer and pesticide use during corn cultivation can degrade air and water quality, while irrigation and land conversion reduce water availability and harm biodiversity (EPA 2025i). Soil erosion and loss of habitat are additional concerns as cropland acreage expands (EPA 2025i).

### **D.2.3.3 Biodiesel**

Biodiesel is a renewable diesel alternative made from plant oils, used cooking oils, and animal fats, produced through transesterification, that currently accounts for 0.3 percent of fuel consumption by the transportation sector (McCormick and Moriarty 2023; EIA 2025a, 2025b).

---

<sup>23</sup> See footnote 1. These environmental impacts from the production and use of biofuels are also discussed in Chapter 3, Section 3.2.3.2, *Ethanol (E85)*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA’s statutory authority under EPCA.

It can significantly reduce NCEs compared to conventional diesel, with life-cycle NCEs ranging from 13.8 to 80.7 kg CO<sub>2</sub>e/MMBtu depending on the feedstock (EPA 2023b). Low-level biodiesel blends (B6–B20: 6 to 20 percent biodiesel) are compatible with LD diesel engines and widely used in the United States (McCormick and Moriarty 2023). While biodiesel consumption and production steadily grew through 2016, production has declined since 2020 and is projected to continue to decrease through 2050 as renewable diesel and gasoline gain market share (EIA 2025c, 2025r).

Biodiesel use in LD vehicles can significantly reduce NCEs when compared to petroleum diesel. The Argonne National Laboratory (ANL) Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool shows that replacing one diesel passenger car with a comparable model running on B20 or B100 biodiesel can reduce annual NCEs from 3.6 metric tons CO<sub>2</sub>e to 3.2 or 1.3 metric tons CO<sub>2</sub>e, respectively. Similarly, the GREET model estimates well-to-wheels emissions of 336 grams (g) CO<sub>2</sub>e per mile for conventional diesel and 303 g CO<sub>2</sub>e per mile for B20 biodiesel (ANL 2022). Other life-cycle assessments confirm these estimates, showing that biodiesel can reduce NCEs by 42 to 78 percent, depending on feedstock and production method (ANL 2022; Alternative Fuels Data Center 2017).

While biodiesel offers emissions benefits relative to petroleum-based diesel, studies have shown that increased production of biodiesel can contribute to other environmental concerns, such as land-use change, water use, and nutrient runoff, meaning greater usage of water, fertilizers, and pesticides, which can affect the surrounding environment and nearby waterways, similar to the impacts of corn ethanol.<sup>24</sup>

#### **D.2.3.4 Renewable Diesel**

Renewable diesel, produced from a variety of biomass sources such as oilseed crops and animal fats, provides another alternative to petroleum diesel (Section D.2.3.1, *Diesel*) that can be used in existing diesel-powered LD vehicles without modification. Most renewable diesel (hydrogenation-derived renewable diesel and hydro-processed esters and fatty acids) is produced through hydrogenation of triglycerides, commonly practiced in commercial plants given the modest retrofitting necessary to convert petroleum refineries for renewable diesel production (EIA 2024e).

While data on renewable diesel consumption for LD vehicles are limited, renewable diesel meets the same fuel quality standards as petroleum diesel. As of 2024, renewable diesel accounted for 0.4 percent of total energy consumption by the transportation sector (EIA 2025a, 2025b). In addition, U.S. production capacity of renewable diesel and other biofuels was 4.3 billion gallons per year in 2024, with potential to grow to 5.9 billion gallons by the end of 2025 (EIA 2023c, 2025s). Life-cycle NCEs of renewable diesel are 63 to 86 percent lower than petroleum diesel.

---

<sup>24</sup> See footnote 1. These impacts are described in Section D.2.3.2, *Ethanol*, of this Draft SEIS and Chapter 3, Section 3.2.3.3, *Biodiesel*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

The environmental impacts resulting from renewable diesel fuel production are similar to those associated with ethanol and biodiesel production.<sup>25</sup> Studies have found that despite its lower emissions relative to petroleum-based diesel, renewable diesel production generates more NCEs than biodiesel production (Xu et al. 2022). For example, agricultural intensification and extensification to meet feedstock demand can lead to soil erosion, nutrient depletion, water pollution, deforestation, and biodiversity loss (Lark 2023; Moriarty et al. 2024). Hydrogenation, the dominant production method, requires significant hydrogen input and biomass, which studies have shown may further elevate emissions depending on the energy source (EIA 2024e; Xu et al. 2022).

## D.2.4 Natural Gas

While natural gas can be used to generate electricity to power EVs, it can also be used to directly fuel vehicles in compressed or liquefied forms. In 2024, natural gas accounted for 4.7 percent of total energy usage by the transportation sector, compared to 94.5 percent for petroleum and 6.1 percent for biofuels (EIA 2025a, 2025b).<sup>26</sup> The majority of natural gas consumed by the transportation sector is used by freight trucks (62.5 percent) and bus transportation (26.4 percent) (EIA 2025i). LD vehicles are projected to continue to account for less than 1 percent of natural gas consumed by the transportation sector and less than 0.01 percent of LD vehicle fuel consumption from 2024 to 2050 (EIA 2025i).<sup>27</sup> While natural gas combustion produces less CO<sub>2</sub> emissions per unit of energy than other fossil fuels, studies have shown it still results in CH<sub>4</sub> emissions, primarily through releases during fracking and fuel transportation, groundwater contamination, increased seismic activity, and habitat disruption (EIA 2022, 2024f, 2024g; EPA 2024a).

## D.2.5 Hydrogen

Fuel cell vehicles (FCVs) use hydrogen to generate electricity on board, emitting only water and heat during operation. According to the CAFE Model, hydrogen accounted for less than 0.01 percent of total LD vehicle fuel consumption in 2024 and is projected to increase to represent 0.09 percent of LD fuel consumption by 2050 (EIA 2025i). Fuel cell technology continues to improve, and FCV registrations grew by 15.1 percent between 2022 and 2023 (IEA

---

<sup>25</sup> See footnote 1. These impacts are discussed in Section D.2.3.2, *Ethanol*, and Section D.2.3.3, *Biodiesel*, of this Draft SEIS, as well as Chapter 3, Section 3.2.3.4, *Renewable Diesel*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

<sup>26</sup> The petroleum and biofuels categories are not mutually exclusive. Ethanol and biodiesel, which are biofuels blended into gasoline and diesel, are counted in both categories, reflecting the integrated nature of fuel blending practices. This overlap causes the percentage totals to exceed 100 percent but does not indicate a calculation error.

<sup>27</sup> See footnote 1. The extraction and production of natural gas involves hydraulic fracturing and transportation via pipelines and tank ships, which have environmental impacts, discussed in Chapter 3, Section 3.2.4, *Natural Gas*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under EPCA.

2025; EIA 2025r). Hydrogen fuel cells represent a potential alternative to carbon-intensive fuels, depending on the hydrogen production pathway.<sup>28</sup>

While FCVs produce no tailpipe emissions, emissions reductions from FCVs vary by upstream fuel pathway, with up to 40.0 percent lower emissions than gasoline vehicles if upstream fuel production is from natural gas, and up to 80.0 percent lower emissions with fuel produced via renewable electrolysis or with carbon capture. In addition, fuel cells rely on the use of platinum group metal catalysts, and mining these materials can cause land degradation and water quality impacts (DOE 2022).<sup>29</sup>

### D.3 Environmental Consequences: Other Associated Potential Impacts

This section explores the impact of the Proposed Action and alternatives in combination with other associated potential impacts, using a range of modeled future scenarios. Per the Supreme Court’s recent decision in *Seven County Infrastructure Coalition v. Eagle County, Colorado* and its progeny,<sup>30</sup> NHTSA is not obligated to analyze the impacts from other projects separate in time, separate in place, or that fall outside of NHTSA’s regulatory authority. Agencies are granted substantial deference to determine the scope of the environmental impacts that they address and may decide to evaluate environmental impacts from separate projects upstream or downstream from this action.<sup>31</sup> This Proposed Action amends standards for model years for which CAFE standards have previously been established. Accordingly, the agency has decided to retain in this Draft SEIS certain aspects of the analytical frame of prior CAFE EISs. Specifically, this Draft SEIS includes a discussion of potential environmental impacts of sectors other than those the agency regulates, where changes in those impacts are linked to the action and alternatives under consideration here. In *Seven County*, the Court clarified that NEPA analysis beyond the direct regulatory impact at issue is not required in an EIS.<sup>32</sup> While

---

<sup>28</sup> See footnote 1. The environmental impacts of hydrogen fuel cells are further discussed in Chapter 3, Section 3.2.5, *Hydrogen*, in the Final EIS (NHTSA 2024). Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA’s statutory authority under EPCA.

<sup>29</sup> Additional environmental impacts associated with natural gas and electricity are discussed further in Section D.2.4, *Natural Gas*, and Section D.2.2, *Electricity*.

<sup>30</sup> *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497 (2025); see also *Sierra Club v. FERC*, 145 F.4th 74, 88-9 (D.C. Cir. 2025).

<sup>31</sup> See *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497, 1504 (2025) (“Courts should defer to agencies’ discretionary decisions about where to draw the line when considering indirect environmental effects and whether to analyze effects from other projects separate in time or place. See *Department of Transportation v. Public Citizen*, 541 U.S. 752, 767, 124 S. Ct. 2204, 159 L.Ed.2d 60. In sum, when assessing significant environmental effects and feasible alternatives for purposes of NEPA, an agency will invariably make a series of fact-dependent, context-specific, and policy-laden choices about the depth and breadth of its inquiry—and also about the length, content, and level of detail of the resulting EIS. Courts should afford substantial deference and should not micromanage those agency choices so long as they fall within a broad zone of reasonableness.”).

<sup>32</sup> At issue in *Seven County* was the scope of analysis required under NEPA when an agency issues a permit authorizing construction of a segment of linear infrastructure; our discussion here applies that case’s holding to the current context, where NHTSA is undertaking NEPA analysis in connection with a regulatory standards rulemaking.

NHTSA is not required to assess impacts that are not a direct result of changes in CAFE standards and has determined that analyses of such impacts are not necessary for NHTSA to undertake reasoned decision-making pursuant to its authority under the Energy Policy and Conservation Act of 1975, as amended by the Energy Independence and Security Act of 2007, the agency nonetheless provides discussion of those impacts solely for informational purposes.

Environmental impacts from other projects separate in time or separate in place are impacts on the environment that result from the incremental impacts of the action when added to the impacts of other actions regardless of what agency (Federal or non-Federal) or person undertakes these actions. The underlying inputs, models, and assumptions of the CAFE Model already take into account other actions that affect U.S. transportation sector fuel use and U.S. mobile source air pollutant emissions. Therefore, the analysis of reasonably foreseeable environmental impacts of the Proposed Action and alternatives inherently incorporates projections about other associated potential impacts to develop a realistic reference baseline.

For example, the CAFE Model analysis includes AEO projections from two alternative policy cases (the Alternative Transportation and Alternative Electricity cases), current regulatory policy, and other foreseeable trends as analytical inputs. AEO 2025 includes two alternative policy cases to examine the effects of recent regulations on power plants and vehicle fuel economy, and emissions standards, which together form the baseline for the CAFE modeling used in this Draft SEIS.

The CAFE Model relies on the AEO 2025 Alternative Transportation case data for all CAFE Model inputs unrelated to electricity generation and capacity. The Alternative Transportation case assumes the adoption of all laws and regulations in place as of December 2024, excluding NHTSA's CAFE standards and EPA's vehicle tailpipe emission standards for MYs 2027–2032, and the California Air Resources Board's zero-emission vehicle sale mandates for trucks. Additionally, growth rates for reshoring of EV and battery supply chains and eligibility for Inflation Reduction Act credits are projected to be slower than in the Reference case. The Alternative Transportation case most closely reflects policies in place at the time this Draft SEIS is published.

Similarly, the Alternative Electricity case, which is used to forecast the electricity grid mix, incorporates electricity grid-related policy assumptions. This case assumes the Clean Air Act section 111 rule is not in place and that affected generators are able to operate under regulations that existed prior to April 2024. Under this scenario, existing coal-fired power plants are not required to implement modifications to reduce emissions, and electricity generation from new natural gas-fired combined cycle units is not constrained by requirements to install carbon capture equipment.

While the CAFE Model accounts for foreseeable trends, there are uncertainties and unexpected developments that may affect central estimates. These uncertainties include changes in energy markets since the publication of AEO 2025, as well as uncertainties that may not be fully

captured in AEO 2025 side cases for the electricity sector.<sup>33</sup> As a result, AEO 2025 projections in both the central and side cases may overestimate the scale and pace of renewable energy and electricity grid storage expansion in future years. Also, analyzing the AEO 2025 alternative policy cases and core side cases captures some of the foreseeable uncertainty in projecting trends in future energy use,<sup>34</sup> which is relevant to this action because LD vehicles comprise a significant share of U.S. energy consumption, as discussed above.

The AEO 2025 Alternative Transportation and Alternative Electricity cases also account for several market, regulatory, and policy changes that have occurred, which may result in additional impacts not reflected in AEO 2025. These potential other actions could result in reduced U.S. petroleum consumption and slightly increased U.S. electricity consumption, trends that may not be fully captured in AEO 2025. Even though U.S. electricity consumption could increase slightly, that electricity usage would be more efficient and could result in a more efficient vehicle fleet, to the extent that manufacturers choose to respond to changes in CAFE standards by producing vehicles powered solely or in part by electricity. However, the No-Action Alternative includes NHTSA's 2022 and 2024 fuel economy standards that consider EVs and credit trading between manufacturers, which is impermissible under the Energy Policy and Conservation Act of 1975. In addition, those standards are unachievable for the gasoline-and diesel-powered vehicles in manufacturers' fleets, so it is unclear whether these trends are projected accurately.

AEO 2025 publishes additional side cases that represent a range of future outcomes where oil consumption is lower based on a range of macroeconomic factors. Because the results of the CAFE Model analysis indicate a decline in oil consumption resulting from the Proposed Action, albeit at a slower pace than the No-Action Alternative, examining side cases that also result in lower oil consumption while varying macroeconomic factors provides insight into the reasonably foreseeable impacts of CAFE standards in combination with other potential actions.

Figure D.3-1 adds the AEO 2025 side cases for low economic growth and high oil prices to the Alternative Transportation case projections from Figure D.1-1. Both side cases project less petroleum consumption than the Alternative Transportation case. The Alternative Transportation case projects 2050 consumption of petroleum to account for 39.2 percent of overall energy consumption while the low economic growth and high oil price cases project 33.6 percent and 32.9 percent, respectively. The high oil price side case substitutes natural gas for petroleum. The Alternative Transportation case projects natural gas to make up

---

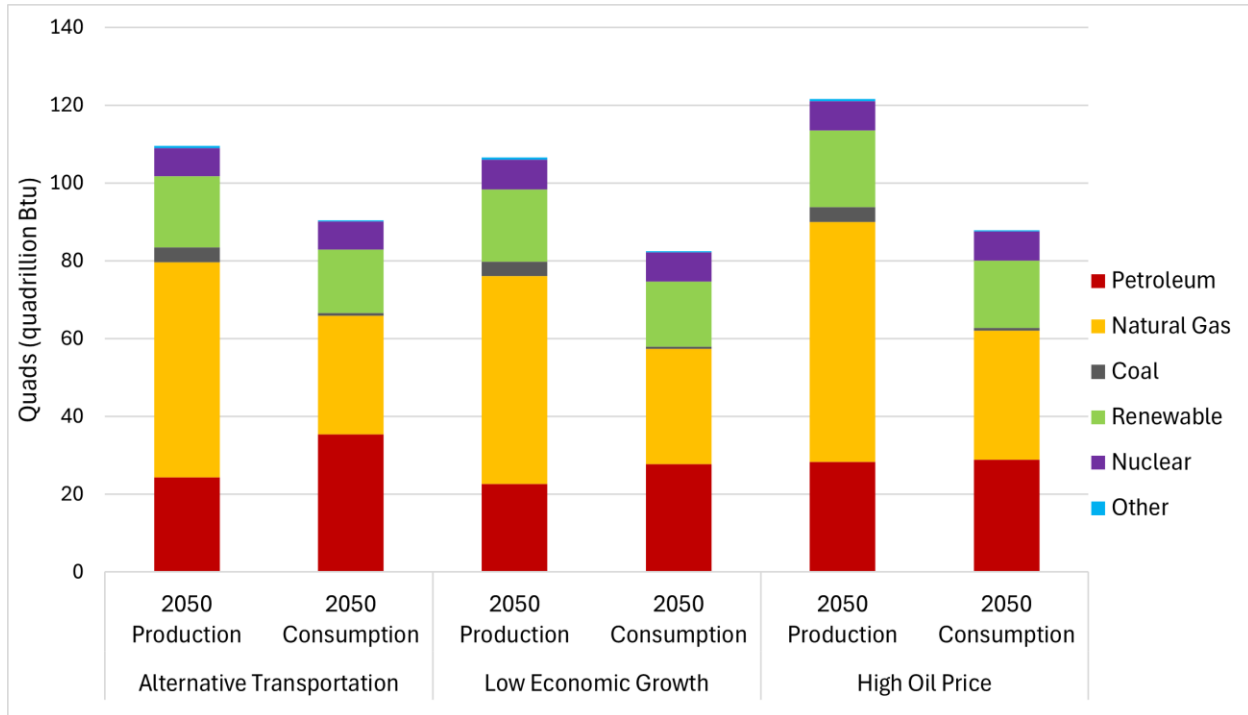
<sup>33</sup> For example, both the Alternative Transportation and Alternative Electricity cases assume full implementation of the Inflation Reduction Act, including associated funding and policy support for renewable energy, grid storage, EVs, and advanced manufacturing. However, future implementation of these provisions remains uncertain due to evolving legal and policy developments.

<sup>34</sup> For example, the side cases show that renewable energy could comprise between 50.4 and 58.9 percent of the grid mix, largely depending on oil and natural gas prices and supply, technology costs, and policy changes (EIA 2025m). AEO 2025 models the future grid mix under scenarios in which current policies remain in place through 2050, with variations in transportation and electricity policy as well as high and low oil prices, oil and gas supply, zero-carbon technology costs, and economic growth. While the side cases attempt to capture variability in energy projections through 2050, other factors not considered in the modeling will also influence the future electricity grid mix. These include advancements in technology, electricity demand growth, natural gas prices, renewable energy prices, and battery prices. How these different variables play out in the future will have significant implications on future grid mix.



33.8 percent of overall consumption, whereas the low economic growth and high oil price cases project natural gas consumption to increase to 35.9 percent and 37.7 percent of overall consumption, respectively (EIA 2025h).

**Figure D.3-1. U.S. Energy Production and Consumption by Source in 2050**

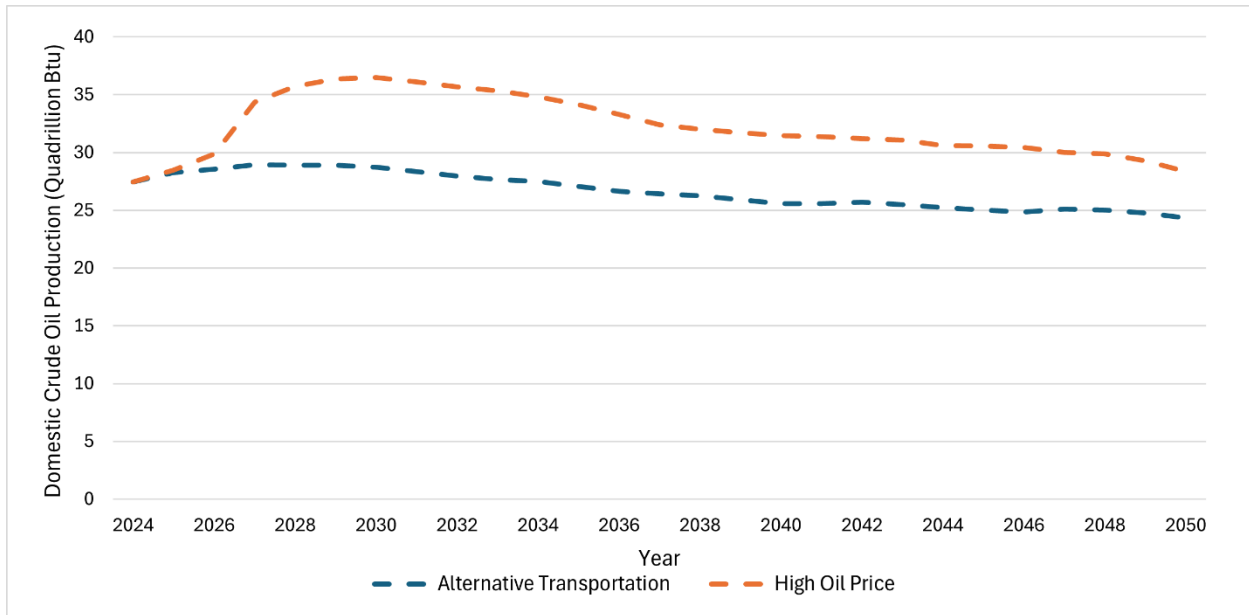


Source: EIA 2025m.

Btu = British thermal unit; NGL = natural gas liquid; LPG = liquefied petroleum gas.

On the production side, the AEO Alternative Transportation case forecast of U.S. domestic crude oil production shown in Figure D.3-2 appears to show minimal impact of previously adopted CAFE standards for MYs through 2026 on domestic production. In fact, the figure illustrates that U.S. production is projected to continue rising gradually through about 2030; however, it is not possible to determine with certainty whether production would have increased more substantially in the absence of those standards. This suggests that reductions in U.S. petroleum consumption on the scale projected to result from the proposed CAFE standards is unlikely to reduce U.S. petroleum production, mainly because the financial incentive for U.S. petroleum exploration and production is determined by the global market price of crude oil.

Figure D.3-2. AEO 2025 Forecast of Domestic Crude Oil Production



Source: EIA 2025m.

CAFE standards in the action alternatives are expected to increase gasoline and diesel fuel use in the transportation sector relative to the No-Action Alternative but are not expected to have any discernable impact on energy consumption by other sectors of the U.S. economy because petroleum products account for a very small share of energy use in other sectors.

## **APPENDIX E**

# **Air Quality and NCE Methodology and Other Information**

## APPENDIX E AIR QUALITY AND NCE METHODOLOGY AND OTHER INFORMATION

### E.1 Introduction

This appendix is intended to supplement the content in Chapter 4, *Air Quality*, and Chapter 5, *Non-Criteria Emissions*, by providing additional information about the analysis methods used in those chapters, as well as other associated potential impacts of the Proposed Action and alternatives.

Section E.2, *Air Quality*, discusses the methods used for modeling and assessing air quality impacts from the Proposed Action and alternatives, the results of which are shown in Chapter 4, *Air Quality*, as well as other associated potential impacts of the Proposed Action and Alternatives. The air quality impacts include those from the five analyzed criteria pollutants (carbon monoxide [CO], nitrogen dioxide [NO<sub>2</sub>], ozone,<sup>1</sup> particulate matter 2.5 microns or less in diameter [PM<sub>2.5</sub>], and sulfur dioxide [SO<sub>2</sub>]), and the six priority mobile source air toxics (MSATs) (acetaldehyde, acrolein,<sup>2</sup> benzene, 1,3-butadiene, diesel particulate matter, and formaldehyde). NHTSA assesses impacts related to these pollutants and MSATs because these pollutants and MSATs are either generated from upstream fuel production for fuels used to power vehicles or generated as a byproduct of combustion as a vehicle is driven and emitted directly from a vehicle's tailpipe. Additional information about EPA's emissions standards for motor vehicles and National Ambient Air Quality Standards (NAAQS) for criteria pollutants can be found on EPA's websites.<sup>3,4</sup>

Section E.3, *Non-Criteria Emissions*, discusses the methods for analysis used in Chapter 5, *Non-Criteria Emissions*, as well as other associated potential impacts of the Proposed Action and alternatives. NHTSA relies on panel-reviewed synthesis and assessment reports to discuss non-

---

<sup>1</sup> Ozone is evaluated based on emissions of the ozone precursor pollutants nitrogen oxides and volatile organic compounds.

<sup>2</sup> EPA no longer considers acrolein to be a key driver of health risk from mobile sources (EPA 2018a). However, this analysis retains acrolein for consistency with the Federal Highway Administration's MSAT guidance (FHWA 2023).

<sup>3</sup> On-road vehicle emission standards: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-onroad-vehicles-and-engines>. NAAQS: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>.

<sup>4</sup> For information on NHTSA's prior qualitative discussion of the health impacts resulting from changes in criteria pollutants and MSATs emitted from light-duty vehicles or from the upstream processes that produce the fuel used for light-duty vehicles, see the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond, Chapter 4, *Air Quality*, and Appendix C, *Air Quality* (NHTSA 2024). The qualitative discussion includes scientific studies and assessments representing a summary of the state of the science at the time of Final EIS drafting, which NHTSA considered and is providing as contextual background for the analysis presented in this document. The discussion draws largely from EPA Integrated Science Assessments unless otherwise noted by citations to meta-analyses or other individual studies. Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under the Energy Policy and Conservation Act of 1975.

criteria emissions (NCEs)<sup>5</sup> and climate trends because these reports assess numerous individual studies to draw general conclusions about the state of climate science and potential impacts of climate trends. Even where assessment reports include consensus conclusions of expert authors, uncertainty still exists, as with all assessments of environmental impacts.<sup>6</sup>

## **E.2 Air Quality**

### **E.2.1 Methods**

NHTSA uses the CAFE Compliance and Effects Modeling System (the CAFE Model) to estimate manufacturers' potential responses to new CAFE and carbon dioxide (CO<sub>2</sub>) standards, and to estimate various impacts of those responses. NHTSA also uses EPA's Motor Vehicle Emissions Simulator (MOVES) model to estimate downstream (tailpipe exhaust) emissions factors, and uses Argonne National Laboratory's Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) model to estimate emissions rates from fuel production and distribution processes (upstream emissions). See Appendix C, *CAFE Model Analysis Methods*, Figure C.1-1, for a highly summarized form of the basic categories of CAFE Model procedures, and the sequential flow between different stages of the modeling.

To analyze air quality and human health impacts, NHTSA uses the CAFE Model to calculate the emissions of criteria pollutants and MSATs from passenger cars and light trucks that would occur under each alternative. NHTSA then estimates the resulting changes in emissions by comparing emissions under each action alternative to those under the No-Action Alternative. The resulting changes in air quality and impacts on human health are assumed proportional to the changes in emissions projected to occur under each action alternative.

When the compliance simulation is complete, the CAFE Model transitions to impact calculations. At the conclusion of the compliance simulation for a given regulatory scenario, the model produces a representation of the registered light-duty (LD) vehicle population in the United States for each model year and calendar year. Then the CAFE Model generates criteria pollutant and MSAT emissions estimates for the representative fleet for each model year and calendar year included in the analysis. The model then uses these estimates, along with

---

<sup>5</sup> In this Draft SEIS, the term *non-criteria emissions* (NCEs) refers specifically to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are not classified as criteria pollutants under the Clean Air Act.

<sup>6</sup> Information on NCEs; short-lived climate forcers (SLCFs); climate trends and drivers; how uncertainty is communicated; and the health, societal, and environmental impacts of climate trends, is discussed in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond, Appendix F, Section F.2, *Greenhouse Gas Emissions and Aerosols—Historical and Current Trends*, Section F.3, *Climate Change Trends*, and Section F.5, *Health, Societal, and Environmental Impacts of Climate Change* (NHTSA 2024). The qualitative discussion includes scientific studies and assessments representing a summary of the state of the science at the time of Final EIS drafting, which NHTSA considered and is providing as contextual background for the analysis presented in this document. Please note that NHTSA is not incorporating any prior quantitative analysis from the 2024 Final EIS, as the standards set in the rulemaking associated with that EIS were based on an impermissible construction of NHTSA's statutory authority under the Energy Policy and Conservation Act of 1975.

numerous other benefit and cost categories, to calculate the benefits and costs associated with each action alternative relative to a No-Action Alternative.

The air quality analysis accounted for manufacturers' projected responses to CAFE standards, and NHTSA's assumptions regarding future fuel prices, market demand for fuel economy, and the cost and efficacy of fuel-saving technologies. The analysis also accounted for market responses, including demand for new LD vehicles, scrappage of used LD vehicles, and demand for travel (i.e., vehicle miles traveled [VMT]), accounting for the rebound effect. NHTSA estimates that the VMT rebound effect is 0.15 (i.e., an increase/decrease of 1 percent in fuel economy results in an increase/decrease of 0.15 percent in VMT). This is consistent with the agency's analysis of the literature used to support rebound effect modeling in previous CAFE rulemakings. In earlier rulemakings, NHTSA used a range of estimates, from 0.1 to 0.2. The resultant change in emissions under each action alternative would be the sum of the following components.

- Any increases in upstream emissions that result from increases in gasoline consumption (from decreased fuel economy) and, therefore, higher volumes of fuel production and distribution.
- Any decreases in upstream emissions that result from decreases in electricity generation to power plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs).
- Any decreases in per-vehicle tailpipe emissions resulting from slight shifts in light truck sales towards passenger cars (because decreasing fuel economy produces larger fuel cost increases for light trucks than for passenger cars) and slightly less reliance on older vehicles (which have higher per-mile emissions rates than newer vehicles).
- Any decreases in emissions resulting from decreased VMT due to the rebound effect. While aggregate VMT is predicted to increase over time under any given alternative, the rebound effect will produce decreased VMT relative to the No-Action Alternative. The magnitude of this decrease will vary based on the stringency of the action alternative.
- Any increases in tailpipe emissions resulting from decreases in sales and use of PHEVs and BEVs.

As discussed in Appendix C, *CAFE Model Analysis Methods*, and Chapter 5 of the Draft Technical Support Document (TSD), the air quality results presented in Chapter 4, *Air Quality*, including impacts on human health, are based on assumptions about the type and rate of emissions from the combustion of fossil fuels. In addition to tailpipe estimates from MOVES5 (EPA 2024b),<sup>7</sup> this analysis accounts for upstream emissions from the extraction, production, and distribution of fuels, including contributions from the power plants that generate the electricity used to recharge electric vehicles (EVs) and from the production of the fuel burned in those power plants. Emissions and other environmental impacts from electricity production depend on the efficiency of the power plant and the mix of fuel sources used, sometimes referred to as the *grid mix*. In the United States, the current (2024) grid mix is composed of natural gas, coal, nuclear, hydroelectric, wind, other renewable energy sources, and oil. The largest sources of

---

<sup>7</sup> EPA's MOVES model, described in Chapter 5.3 of the Draft TSD, estimates emissions based on a variety of inputs, including vehicle type and age, fuel type and quality, operating conditions, and vehicle characteristics.

electricity (by billion kilowatt-hours generated) are from natural gas (43 percent), followed by renewables (23 percent), nuclear (18 percent), and coal (15 percent) (EIA 2025n).

To estimate upstream emissions changes resulting from changes in downstream fuel consumption, the analysis uses emissions factors from the GREET model (version 2024 developed by the U.S. Department of Energy (DOE), Argonne National Laboratory) (ANL 2025). The GREET model contains information on emissions intensities (amount of pollutant emitted per unit of fuel or electrical energy generated) extending to 2050. Upstream emissions factors for gasoline, diesel, flex fuel (E85), and electricity in grams per million British thermal units were taken from the GREET model outputs for 2022 and then 2025–2050 in 5-year increments. NHTSA developed upstream emissions factors for MSATs that are consistent with EPA’s National Emission Inventory and tailpipe emissions factors from the MOVES5 model. A spreadsheet model was developed to adjust upstream emissions factors to account for the imported share of petroleum.

The analysis presented throughout this Draft SEIS assumes that the future EV fleet would charge from a grid whose mix is uniform across the country. To project the U.S. average electricity-generating fuel mix, this rulemaking uses a grid mix from the Annual Energy Outlook Alternative Electricity case, developed by the U.S. Energy Information Administration using the National Energy Modelling System (EIA 2025k, 2025l). The Alternative Electricity case assumes that EPA’s April 2024 revisions for Section 111 of the Clean Air Act are not in place, which is consistent with the proposed EPA policy at the time of this Draft SEIS.

### **E.2.1.1 Regional Analysis**

In addition to the national-level analysis described in Section E.2.1, *Methods*, NHTSA analyzed the regional air quality impacts of the Proposed Action and alternatives. Performing this analysis does not affect the agency’s conclusion that a general conformity determination is not required, as discussed in Chapter 4, Section 4.1.1.2, *Conformity Regulations*. While a truly local analysis (i.e., at the individual roadway level) is impractical for a nationwide EIS, NHTSA believes a regional emissions analysis still provides valuable information and is feasible for the scope of this analysis.

To assess regional differences in the Proposed Action impacts, NHTSA estimated net emissions changes for individual nonattainment and maintenance areas.<sup>8</sup> The distribution of emissions is not uniform nationwide, and either increases or decreases in emissions can occur within individual nonattainment and maintenance areas. NHTSA’s assessment emphasized areas that are in nonattainment or maintenance for ozone or PM<sub>2.5</sub> because these are the criteria pollutants that are of greatest concern to human health. There are many areas designated as nonattainment for ozone or PM<sub>2.5</sub>, and also many areas designated as maintenance for ozone or PM<sub>2.5</sub>. At present, there are no CO or NO<sub>2</sub> nonattainment areas. There are many areas designated as being in nonattainment for SO<sub>2</sub> or particulate matter 10 microns or less in diameter (PM<sub>10</sub>). There are also maintenance areas for CO, NO<sub>2</sub>, PM<sub>10</sub>, and SO<sub>2</sub>. NHTSA did not quantify PM<sub>10</sub> emissions separately from PM<sub>2.5</sub> because almost all the particulate matter

---

<sup>8</sup> NHTSA focused on nonattainment and maintenance areas because air quality problems have been the greatest in these areas.

in the exhaust from LD vehicles is PM<sub>2.5</sub>. Appendix F, *Air Quality Nonattainment Area Results*, provides emissions estimates for all nonattainment and maintenance areas for all criteria pollutants (except lead, as explained in Chapter 4, Section 4.1.1, *Relevant Pollutants and Standards*). On-road motor vehicles are a minor contributor to SO<sub>2</sub> emissions (less than 1 percent of national emissions, as noted above) (EPA 2024d) and are unlikely to affect the attainment status of SO<sub>2</sub> nonattainment and maintenance areas.

NHTSA's emissions analysis is national and regional but does not attempt to address the specific geographic locations of changes in emissions within nonattainment and maintenance areas. For example, there is limited evidence that EV use is disproportionately greater in areas with the worst traffic congestion (Section 8.3.3.3 of NHTSA 2020). Because hybrid EVs and PHEVs have lower tailpipe emissions compared to conventionally fueled vehicles, and BEVs have no tailpipe emissions, greater EV use in these areas could suggest that tailpipe emissions in urban nonattainment areas would be less than the analysis estimates. However, because of the complication and uncertainties associated with these local variations, NHTSA's emissions analysis does not assume any variation by vehicle type or fuel in the geographic distribution of VMT. In addition, EV charging location and time affects emissions from power plants by changing the demand for electricity in the region where charging occurs, for the duration of charging (Chapter 3, Section 3.2.2.2 of NHTSA 2024). NHTSA's emissions analysis does not assume any variation in EV charging by location or time.

Emissions changes due to the rebound effect would occur from LD vehicles operating on entire regional roadway networks; any emissions changes due to the rebound effect would be distributed throughout a region's entire road network and at any specific location would be uniformly proportional to VMT changes at that location. At any one location within a regional network, the resulting change in emissions would be small compared to total emissions from all sources surrounding that location (including existing emissions from traffic already using the road), so the localized impacts of the Proposed Action and alternatives on ambient concentrations and health impacts should also be small. The nationwide aggregated consequences of such small near-source impacts on ambient pollutant concentrations and health might be larger but are not feasible to quantify.

### **E.2.1.2 Analysis Periods**

The longest averaging period for measuring whether ambient concentrations of a pollutant comply with the NAAQS is 1 year.<sup>9</sup> This air quality analysis considers emissions that would occur over annual periods, consistent with the NAAQS. To evaluate Proposed Action impacts on air quality, specific years must be selected for which emissions are estimated and impacts on air quality are calculated.

---

<sup>9</sup> Compliance with the ozone NAAQS is based on the average of the fourth highest daily maximum 8-hour concentration over a 3-year period; compliance with the 24-hour PM<sub>2.5</sub> NAAQS is based on the average of the daily 98th-percentile concentrations averaged over a 3-year period; compliance with the annual PM<sub>2.5</sub> NAAQS is based on the 3-year average of the weighted annual mean concentrations.



NHTSA selected calendar years that are meaningful for the timing of likely Proposed Action impacts, as follows.

- **2035:** A near-term forecast year; by 2035, vehicle manufacturers could be 4 years beyond a full response (MY 2031) to new CAFE standards, with vehicles produced in MYs 2031 and beyond accounting for about one-third of passenger car and light truck VMT.
- **2050:** A long-term forecast year; by 2050, vehicles produced in MYs 2031 and beyond will account for about 90 percent of passenger car and light truck VMT, such that changes in year-over-year impacts would be determined primarily by VMT growth.

### **E.2.1.3 *Incomplete or Unavailable Information***

As noted throughout this methods section, the estimates of emissions rely on models and forecasts that contain numerous assumptions and data that are uncertain. Examples of areas in which information is uncertain (and therefore may be incomplete or unavailable) include future emissions rates, vehicle manufacturers' decisions about vehicle technology and design, the mix of vehicle types and model years in the LD fleets, VMT projections, emissions from fuel refining and distribution, the future composition of the grid mix, and economic factors. The degree of uncertainty increases as projections extend farther into the future.

To support the information in this Draft SEIS, NHTSA used the best available models and supporting data. The models used for the Draft SEIS were subjected to scientific review and were approved by the agencies that sponsored their development. Nonetheless, there are limitations to current modeling capabilities. For example, uncertainties can derive from model formulation (including numerical approximations and the definition of physical and chemical processes) and inaccuracies in the input data (e.g., emissions inventory estimates).

Additional limitations are associated with the estimates of health impacts. To approximate the health impacts associated with each alternative, NHTSA used screening-level estimates of health impacts in the form of cases per ton<sup>10</sup> of criteria pollutant emissions change. Changes in emissions of MSATs should also result in health impacts, but scientific data that would support quantification of these impacts are not available.

### **E.2.1.4 *Allocation of Exhaust Emissions to Nonattainment Areas***<sup>11</sup>

For each alternative, the CAFE Model provided national emissions estimates for each criteria air pollutant (or its chemical precursors) and MSAT. National emissions were allocated to the county level using VMT data for each county. EPA provided estimated passenger car and light truck VMT data for all counties in the United States, consistent with EPA's National Emissions Inventory (NEI).<sup>12</sup> VMT data used in the NEI were estimated from traffic counts taken by

---

<sup>10</sup> The term *ton(s)* as used in this appendix refers to U.S. tons (2,000 pounds).

<sup>11</sup> In Section E.2.1.4, *Allocation of Exhaust Emissions to Nonattainment Areas*, and Section E.2.1.5, *Allocation of Upstream Emissions to Nonattainment Areas*, the term *nonattainment* refers to both nonattainment areas and maintenance areas. Also, the emissions allocations discussed in both sections pertain only to areas in nonattainment or maintenance of the primary NAAQS standards.

<sup>12</sup> The VMT data provided by EPA are based on data generated by the Federal Highway Administration.

counties and states on major roadways, and therefore are subject to some uncertainty. These EPA data were projected for 2038, the most representative year available in the EPA dataset. NHTSA used the estimates of county-level VMT from the NEI only to allocate nationwide total emissions to counties and not to calculate the county-level emissions directly. The estimates of nationwide total emissions are based on the national VMT data used in the CAFE Model.

NHTSA used the county-level VMT allocations, expressed as the fractions of national VMT that take place within each county, to derive the county-level emissions from the estimates of nationwide total emissions. Emissions for each nonattainment area were then derived by summing the emissions for the counties included in each nonattainment area. Many nonattainment areas comprise one or more counties, and because county-level emissions are aggregated for each nonattainment area, uncertainties in the county-level emissions estimates carry over to estimates of emissions within each nonattainment area. Over time, some counties will grow faster than others, and VMT growth rates will vary. EPA's estimate of county-level VMT allocation is constant over time, which introduces some uncertainty into the nonattainment-area-level VMT estimates for future years. Additional uncertainties that affect county-level exhaust emissions estimates arise from differences among counties or nonattainment areas in factors other than VMT, such as ambient temperatures, vehicle age distributions, vehicle speed distributions, vehicle inspection and maintenance programs, and fuel composition requirements. Because of these uncertainties, emissions in a particular nonattainment area may be overestimated or underestimated. The overall uncertainty increases as the projection period lengthens, such as for analysis year 2050 compared with analysis year 2035.

The geographic definitions of nonattainment and maintenance areas that NHTSA uses in this document came from the current *Green Book Nonattainment Areas for Criteria Pollutants* (EPA 2025j). For nonattainment areas that include portions of counties, NHTSA calculated the proportion of county population that falls within the nonattainment area boundary as a proxy for the proportion of county VMT within the nonattainment area boundary. Partial county boundaries were taken from geographic information system (GIS) files based on 2025 nonattainment area definitions. The population estimates used projections to the 2035 and 2050 analysis years at 1-kilometer resolution across the country (Gao 2020). This method assumes that per-capita VMT is constant in each county so that the proportion of countywide VMT in the partial county area reflects the proportion of total county population residing in that same area. This technique for allocating VMT to partial counties involves some additional uncertainty because actual VMT per capita can vary according to the characteristics of land use and urban development. For example, VMT per capita can be lower than average in urban centers with mass transit, and higher than average in suburban and rural areas where people tend to drive more (Cook et al. 2006; Eno Center for Transportation 2019).

The method for allocation of emissions to nonattainment areas is the same for all geographic areas and pollutants. Table E.2.1-1 lists the current nonattainment and maintenance areas for ozone and PM<sub>2.5</sub> and their status and general conformity threshold. Areas for ozone and PM<sub>2.5</sub> are listed because these are the pollutants for which nonattainment areas encompass the largest human populations. For the complete list of nonattainment and maintenance areas for all pollutants and standards, see Appendix F, *Air Quality Nonattainment Area Results*.

**Table E.2.1-1. Nonattainment and Maintenance Areas for Ozone and PM2.5**

<b>Nonattainment/Maintenance Area</b>	<b>Pollutant</b>	<b>Status <sup>a</sup></b>	<b>General Conformity Threshold <sup>b</sup></b>
Allegan County, MI	Ozone	Serious	50
Allegheny County, PA	PM2.5	Moderate	100
Allentown, PA	PM2.5	Maintenance	100
Allentown-Bethlehem-Easton, PA	Ozone	Marginal	50
Amador County, CA	Ozone	Marginal	100
Atlanta, GA	Ozone	Maintenance	100
Baltimore, MD	Ozone	Serious	50
Baton Rouge, LA	Ozone	Maintenance	100
Berrien County, MI	Ozone	Serious	50
Birmingham, AL	PM2.5	Maintenance	100
Butte County, CA	Ozone	Marginal	100
Calaveras County, CA	Ozone	Marginal	100
Canton-Massillon, OH	PM2.5	Maintenance	100
Charleston, WV	PM2.5	Maintenance	100
Charlotte-Rock Hill, NC-SC	Ozone	Maintenance	100
Chicago, IL-IN-WI	Ozone	Serious	50
Chico (Butte County), CA	Ozone	Marginal	100
Chico, CA	PM2.5	Maintenance	100
Cincinnati, OH-KY-IN	Ozone	Maintenance	100
Cleveland, OH	Ozone	Serious	50
Cleveland, OH	PM2.5	Maintenance	100
Columbus, OH	Ozone	Maintenance	100
Dallas-Fort Worth, TX	Ozone	Severe 15	25
Delaware County, PA	PM2.5	Maintenance	100
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone	Severe 15	25
Detroit, MI	Ozone	Maintenance	100
Detroit-Ann Arbor, MI	PM2.5	Maintenance	100
Door County, WI	Ozone	Maintenance	100
Dukes County, MA	Ozone	Marginal	50
El Paso-Las Cruces, TX-NM	Ozone	Marginal	100
Fairbanks, AK	PM2.5	Serious	100
Greater Connecticut, CT	Ozone	Serious	50
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5	Maintenance	100
Houston-Galveston-Brazoria, TX	Ozone	Severe 15	25
Imperial County, CA	Ozone	Moderate	100
Imperial County, CA	PM2.5	Moderate	100
Jamestown, NY	Ozone	Marginal	50

**Appendix E Air Quality and NCE Methodology and Other Information**

<b>Nonattainment/Maintenance Area</b>	<b>Pollutant</b>	<b>Status <sup>a</sup></b>	<b>General Conformity Threshold <sup>b</sup></b>
Johnstown, PA	PM2.5	Maintenance	100
Kern County (Eastern Kern), CA	Ozone	Severe 15	25
Klamath Falls, OR	PM2.5	Moderate	100
Knoxville, TN	Ozone	Maintenance	100
Knoxville-Sevierville-La Follette, TN	PM2.5	Maintenance	100
Lancaster, PA	Ozone	Marginal	50
Lancaster, PA	PM2.5	Maintenance	100
Las Vegas, NV	Ozone	Serious	50
Lebanon County, PA	PM2.5	Maintenance	100
Liberty-Clairton, PA	PM2.5	Moderate	100
Logan, UT-ID	PM2.5	Maintenance	100
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone	Severe 15	25
Los Angeles-South Coast Air Basin, CA	Ozone	Extreme	10
Los Angeles-South Coast Air Basin, CA	PM2.5	Serious	100
Louisville, KY-IN (IN portion)	Ozone	Maintenance	100
Louisville, KY-IN (KY portion)	Ozone	Moderate	100
Manitowoc County, WI	Ozone	Maintenance	100
Mariposa County, CA	Ozone	Moderate	100
Memphis, TN-MS-AR	Ozone	Maintenance	100
Milwaukee, WI	Ozone	Serious	50
Milwaukee-Racine, WI	PM2.5	Maintenance	100
Morongo Band of Mission Indians, CA	Ozone	Severe 15	25
Muskegon County, MI	Ozone	Serious	50
Nevada County (Western part), CA	Ozone	Serious	50
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone	Severe 15	25
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5	Maintenance	100
Nogales, AZ	PM2.5	Maintenance	100
Northern Wasatch Front, UT	Ozone	Serious	50
Oakridge, OR	PM2.5	Maintenance	100
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone	Moderate	100
Philadelphia-Wilmington, PA-NJ-DE	PM2.5	Maintenance	100
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone	Serious	50
Phoenix-Mesa, AZ	Ozone	Moderate	100
Pittsburgh-Beaver Valley, PA	Ozone	Marginal	50
Pittsburgh-Beaver Valley, PA	PM2.5	Maintenance	100
Plumas County, CA	PM2.5	Serious	100
Provo, UT	PM2.5	Serious	100

**Appendix E Air Quality and NCE Methodology and Other Information**

<b>Nonattainment/Maintenance Area</b>	<b>Pollutant</b>	<b>Status<sup>a</sup></b>	<b>General Conformity Threshold<sup>b</sup></b>
Reading, PA	Ozone	Marginal	50
Riverside County (Coachella Valley), CA	Ozone	Extreme	10
Sacramento Metro, CA	Ozone	Severe 15	25
Sacramento, CA	PM2.5	Moderate	100
Salt Lake City, UT	PM2.5	Serious	100
San Antonio, TX	Ozone	Serious	50
San Diego County, CA	Ozone	Severe 15	25
San Francisco Bay Area, CA	Ozone	Marginal	100
San Francisco Bay Area, CA	PM2.5	Moderate	100
San Joaquin Valley, CA	Ozone	Extreme	10
San Joaquin Valley, CA	PM2.5	Serious	100
San Luis Obispo (Eastern part), CA	Ozone	Marginal	100
Seaford, DE	Ozone	Marginal	50
Sheboygan County, WI	Ozone	Serious	50
Southern Wasatch Front, UT	Ozone	Marginal	100
St. Louis, MO-IL	Ozone	Serious	50
Steubenville-Weirton, OH-WV	PM2.5	Maintenance	100
Sutter Buttes, CA	Ozone	Marginal	100
Tacoma, WA	PM2.5	Maintenance	100
Tuolumne County, CA	Ozone	Marginal	100
Tuscan Buttes, CA	Ozone	Marginal (Rural Transport)	100
Uinta Basin, UT	Ozone	Moderate	100
Upper Green River Basin Area, WY	Ozone	Marginal	100
Ventura County, CA	Ozone	Serious	50
Washington, DC-MD-VA	Ozone	Moderate	50
West Central Pinal, AZ	PM2.5	Moderate	100
West Silver Valley, ID	PM2.5	Maintenance	100
Yuba City-Marysville, CA	PM2.5	Maintenance	100
Yuma, AZ	Ozone	Marginal	100

Source: EPA 2025j.

Notes:

<sup>a</sup> Pollutants for which the area is designated in nonattainment or maintenance as of May 2025. For nonattainment areas, the status given is the severity classification as defined in 40 CFR 51.1303. Classifications in order of increasing ozone concentration are Marginal, Moderate, Serious, Severe 15, Severe 17, and Extreme. Where an area is nonattainment for more than one standard for the same pollutant, the more restrictive severity classification is shown.

<sup>b</sup> Emissions thresholds in tons per year. In ozone nonattainment areas, the thresholds given are for the precursor pollutants VOC or NO<sub>x</sub>; in PM2.5 nonattainment areas the thresholds represent primary PM2.5. Where an area is nonattainment for more than one standard for the same pollutant, the lowest applicable threshold is shown. Source: 40 CFR 93.153. These thresholds are provided for information only; a general conformity determination is not required for NHTSA's Proposed Action. NO<sub>x</sub> = nitrogen oxides; PM2.5 = particulate matter 2.5 microns or less in diameter; VOC = volatile organic compounds.

### **E.2.1.5 Allocation of Upstream Emissions to Nonattainment Areas**

For liquid and gaseous fuels, upstream emissions are generated when fuels used by motor vehicles are produced, processed, and transported. NHTSA estimates in its CAFE Model analysis how changes in fuel economy standards are directly linked to changes in the environmental impacts of these upstream fuel production processes, which in the CAFE program's analysis consist of four categories that measurably change in response to changes in fuel economy standards: feedstock recovery; feedstock transportation; fuel refining; and fuel transportation, storage, and distribution (TS&D). The methodology used to calculate these impacts is also discussed in Draft TSD Chapter 5. Feedstock recovery refers to the extraction or production of fuel feedstocks—the materials (e.g., crude oil) that are the main inputs to the refining process. In the case of petroleum, this is the stage of crude-oil extraction. During the next stage, feedstock transportation, crude oil or other feedstocks are shipped to fuel refineries. Fuel refining refers to the processing of crude oil into gasoline and diesel fuel. Fuel refining is the largest source of upstream emissions of criteria pollutants. Depending on the specific fuel and pollutant, fuel refining accounts for between 32 and 72 percent of all upstream emissions per unit of fuel produced and distributed (based on GREET version 2024). Commonly, TS&D refers to the movement of gasoline and diesel from refineries to bulk terminals, storage at bulk terminals, and transportation of fuel from bulk terminals to retail outlets.<sup>13</sup> Emissions of pollutants at each stage are associated with expenditure of energy and with leakage or spillage and evaporation of fuel products. NHTSA has allocated upstream emissions to individual nonattainment areas to provide additional information in its regional air quality analysis to the decision-maker and the public, consistent with previous CAFE EISs (NHTSA 2010, 2012, 2020, 2022, 2024) and the HD fuel efficiency (FE) standards EISs (NHTSA 2011, 2016). NHTSA made a number of assumptions for this analysis because of uncertainty over the accuracy of the allocation of upstream emissions. A similar analysis was performed for upstream emissions from electricity for transportation use, accounting for feedstock production and then electricity generation and transmission using a nationally representative grid mix (see Appendix D, Section D.2.2, *Electricity*, for a discussion of the environmental impacts).

To analyze the Proposed Action impacts on individual nonattainment areas, NHTSA allocated projected emissions data from the EPA 2022-based air quality modeling platform (EPA 2025b). These EPA data were projected for 2038 for criteria pollutants and 2026 for MSATs, the most representative years available in the EPA dataset for these groups of pollutants. NHTSA allocated changes in nationwide total emissions for each of the four source categories separately to individual nonattainment areas. The EPA modeling platform includes estimates of emissions of criteria pollutants and MSATs by county and by source category. Because each of the four upstream emissions source categories represents a separate source category in the EPA modeling platform, it is possible to estimate the share of nationwide emissions from each category that occurs within each nonattainment area. This analysis assumes that the share of emissions from feedstock extraction and fuel refining allocated to each nonattainment area does not change over time, which means that emissions for these two source categories are

---

<sup>13</sup> Emissions that occur while vehicles are being refueled at retail stations are included in estimates of emissions from vehicle operation.

assumed to change uniformly (in percentage terms) across that category nationwide as a result of each alternative.<sup>14</sup> This analysis also assumes that the share of emissions from feedstock and fuel TS&D allocated to each nonattainment area can change over time based on the population forecast for each area.

#### **E.2.1.6 Health Impacts**

This section describes quantitative estimates of reasonably foreseeable adverse health impacts of conventional air pollutants associated with the Proposed Action and alternatives. See a full discussion of the quantified and unquantified impacts in EPA 2018b.

This analysis quantified the impacts on human health anticipated to result from the changes in pollutant emissions and related changes in human exposure to air pollutants under each alternative based on values from publicly available literature. This method estimates the health impacts of each alternative for each analysis year, expressed as the number of additional or avoided adverse health outcomes per year. Health outcomes are calculated for each primary pollutant (nitrogen oxides [NO<sub>x</sub>], directly emitted PM<sub>2.5</sub>, and SO<sub>2</sub>) and expressed as adverse health outcomes increased per ton of increased emissions or as adverse health outcomes avoided per ton of reduced emissions. Each primary pollutant has a specific factor related to its quantifiable health impacts expressed as incidence of impacts per ton of emissions. The general approach to calculating the health outcomes associated with each alternative is to multiply these factors by the estimated annual change in emissions of that pollutant and to sum the results of these calculations for all pollutants. This calculation provides the total health impacts that would result under each alternative.

In calculating the health impacts of emissions increases, only the PM<sub>2.5</sub>-related human health impacts expected to result from population exposure to atmospheric concentrations of PM<sub>2.5</sub> were estimated. Directly emitted PM<sub>2.5</sub> is included in the analysis, as are NO<sub>x</sub> and SO<sub>2</sub> as precursor emissions that contribute to secondary formation of PM<sub>2.5</sub>. NO<sub>x</sub> and volatile organic compound (VOC) emissions would also increase ozone formation and the health impacts associated with ozone exposure, but there are no incidence-per-ton estimates for NO<sub>x</sub> and VOCs because of the complexity of the atmospheric air chemistry and nonlinearities associated with ozone formation. This analysis does not quantify any health impacts resulting from greater population exposure to other criteria air pollutants and MSATs because there are not enough data available in publicly available literature to quantify these impacts.

#### **Quantified Health Impacts**

The incidence-per-ton factors represent the total human health benefits due to a suite of PM-related health impacts for each ton of emissions reduced. The factors are specific to an individual pollutant and source. The PM<sub>2.5</sub> incidence-per-ton estimates apply to directly emitted PM<sub>2.5</sub> or its precursors (NO<sub>x</sub> and SO<sub>2</sub>). NHTSA followed the incidence-per-ton

---

<sup>14</sup> NHTSA incorporated the feedstock recovery and feedstock transportation stages in this Draft SEIS. Emissions from the feedstock recovery and feedstock transportation stages are small relative to total upstream and tailpipe emissions and do not have a substantial effect on the Draft SEIS results.

technique used in EPA's PM<sub>2.5</sub> NAAQS Regulatory Impact Analysis (RIA) (EPA 2013b), Ozone NAAQS RIA (EPA 2010b), Portland Cement National Emission Standards for Hazardous Air Pollutants RIA (EPA 2010c), NO<sub>2</sub> NAAQS RIA (EPA 2010d), and *Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors* (EPA 2018b).<sup>15,16</sup> NHTSA included additional updates given in Wolfe et al. (2019). The benefits estimates use the concentration-response functions<sup>17</sup> as reported in the epidemiology literature.<sup>18</sup>

EPA developed national per-ton estimates for selected pollutants emitted through stationary and mobile activity (EPA 2018b;<sup>19</sup> Wolfe et al. 2019). Because the per-ton values vary between emissions source and pollutant, the total health impacts were derived by multiplying the stationary per-ton estimates by total upstream emissions and the mobile per-ton estimates by total mobile emissions. The estimate of PM<sub>2.5</sub> benefits is, therefore, based on the total direct PM<sub>2.5</sub> and PM<sub>2.5</sub>-related precursor emissions controlled by sector and multiplied by this per-ton value.

PM-related mortality reductions provide most of the benefit in each benefit-per-ton estimate. EPA's methodology has been updated, see recent *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles* final rule<sup>20</sup> (LMDV rule), but, due to time constraints, this analysis for the Draft SEIS could not be updated to be consistent with EPA's LMDV rule. The following description of the approach is based on EPA's earlier methodology from the *Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards* (EPA 2021). EPA bases its benefits analyses on peer-reviewed studies of air quality and health effects. EPA calculated the premature mortality-related effect coefficients that underlie the benefit-per-ton estimates from an epidemiology study that examined a large population cohort—the American Cancer Society cohort (Krewski et al. 2009). EPA estimated the benefits of changes in PM<sub>2.5</sub> and ozone based on information drawn from EPA's 2019 PM<sub>2.5</sub> and 2020 Ozone ISAs, which were reviewed by the Clean Air Science Advisory Committee and the public (EPA 2019, 2020a). These benefit-per-ton estimates are based on the review of the EPA 2009 PM ISA and 2012 PM ISA Provisional Assessment and include a mortality risk estimate derived from the Krewski et al. (2009) analysis of the American Cancer

---

<sup>15</sup> EPA refers to this technique as the “benefit per ton” method for estimating the health benefits of reduced emissions, and NHTSA follows this terminology in this appendix. However, this technique applies equally to estimating the additional health outcomes from increased emissions.

<sup>16</sup> EPA updated this document in 2023 for 21 stationary source sectors: [https://www.epa.gov/system/files/documents/2021-10/source-apportionment-tsd-oct-2021\\_0.pdf](https://www.epa.gov/system/files/documents/2021-10/source-apportionment-tsd-oct-2021_0.pdf).

<sup>17</sup> Concentration-response functions measure the relationship between exposure to pollution as a cause and specific outcomes as an impact (e.g., the incremental number of hospitalizations that would result from exposure of a population to a specified concentration of an air pollutant over a specified period).

<sup>18</sup> The complete method for creating the benefit-per-ton estimates used in this analysis is provided in *Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors* (EPA 2018b) and Fann et al. (2009). Since the publication of Fann et al. (2009), EPA no longer assumes that there is a threshold in PM-related models of health impacts.

<sup>19</sup> EPA updated this document in 2023. However, the 2023 document does not include mobile source sectors, which are an important part of NHTSA's analysis. EPA recommended that NHTSA continue to use the older document for consistency until EPA publishes updated information for mobile sources.

<sup>20</sup> Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles; Final Rule, 89 FR 27842 (Apr. 18, 2024).



Society cohort and nonfatal illnesses consistent with benefits analyses performed for the analysis of the final EPA Tier 3 Vehicle Rule, the final EPA 2012 PM NAAQS Revision, and the final EPA 2017–2025 LD Vehicle Greenhouse Gas Rule.

The benefits of mortality reductions do not occur in the year of analysis. Instead, EPA’s method assumes that there is a cessation lag—that is, the benefits are distributed across 20 years following the year of exposure (the emissions analysis year). The benefit-per-ton estimates used in this analysis are based on the mortality health outcome factors. The benefit-per-ton estimates are subject to several assumptions and uncertainties based on publicly available data:

- The benefit-per-ton estimates incorporate projections of key variables, including atmospheric conditions, source level emissions, population, health baselines, and incomes. These projections introduce some uncertainties to the benefit-per-ton estimates.
- The benefit-per-ton estimates do not reflect local variability in population density, meteorology, exposure, baseline health incidence rates, or other local factors that might lead to an overestimate or underestimate of the actual benefits of controlling fine particulates (PM<sub>2.5</sub>). Emissions changes and benefit-per-ton estimates alone are not a precise indication of local or regional air quality and health impacts because there could be localized impacts associated with the Proposed Action and alternatives. Because the atmospheric chemistry related to ambient concentrations of PM<sub>2.5</sub>, ozone, and MSATs is very complex, full-scale photochemical air quality modeling is necessary to control for local variability. Full-scale photochemical modeling provides the needed spatial and temporal detail to estimate changes in ambient levels of these pollutants and their associated impacts on human health and welfare. This modeling provides insight into the uncertainties associated with the use of benefit-per-ton estimates. NHTSA intends to conduct a photochemical modeling analysis for the Final SEIS using the same methods as in the CAFE Final EISs (NHTSA 2010, 2012, 2020, 2022, 2024) and the HD FE Standards Phases 1 and 2 Final EISs (NHTSA 2011, 2016). Using the same approach the agency used for the *Final Environmental Impact Statement for Corporate Average Fuel Economy Standards, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond* (NHTSA 2024) photochemical analysis, NHTSA intends to conduct a photochemical modeling analysis for the Final SEIS using a 12-kilometer (7.5-mile) by 12-kilometer grid cell size in accordance with EPA guidance (EPA 2018c), making use of the most recent EPA emissions information that is based on a 12-kilometer by 12-kilometer grid cell size.
- The analysis assumed that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality. This is an important assumption, because PM<sub>2.5</sub> produced via transported precursors emitted from stationary sources might differ significantly from direct PM<sub>2.5</sub> released from diesel engines and other industrial sources, as well as from mobile sources.<sup>21</sup> However, there are no clear scientific grounds to support estimating differential effects by particle type.

---

<sup>21</sup> A mobile source is any piece of equipment, engine, or vehicle that generates air pollution and has the ability to move or be moved from one location to another, such as a car or truck.

- The analysis assumed that the health impact (concentration-response) function for fine particles is linear within the range of ambient concentrations under consideration. Therefore, the estimates include health benefits from reducing fine particles in areas with varied concentrations of PM<sub>2.5</sub>, including regions that are in attainment for the fine-particle standard and those that do not meet the standard, down to the lowest modeled concentrations.
- The following uncertainties, among others, are associated with the health impact functions. These uncertainties could underestimate or overestimate benefits.
  - Within-study variability (the precision with which a given study estimates the relationship between air quality changes and health impacts)
  - Across-study variation (different published studies of the same pollutant/health effect relationship typically do not report identical findings, and in some cases the differences are substantial)
  - Application of concentration-response functions nationwide (does not account for any relationship between region and health impact to the extent that there is such a relationship)
  - Extrapolation of impact functions across population (NHTSA assumed that certain health impact functions applied to age ranges broader than those considered in the original epidemiological study)
- The analysis was unable to quantify several health-benefits categories because of limitations associated with using benefit-per-ton estimates, several of which could be substantial. Because NO<sub>x</sub> and VOCs are also precursors to ozone, reductions in NO<sub>x</sub> and VOC emissions would also reduce ozone formation and the health impacts associated with ozone exposure. Unfortunately, there are no benefit-per-ton estimates for ozone because of the complexity of the atmospheric air chemistry and nonlinearities associated with ozone formation. The PM-related benefit-per-ton estimates also do not include any human welfare or ecological benefits because of limitations on the availability of data to quantify these impacts of pollutant emissions.

Because of these uncertainties, it is not possible to draw conclusions about whether the benefit-per-ton values are underestimated or overestimated. The fact that impacts in several health-benefits categories cannot be quantified suggests overall health benefits may be more likely to be underestimated. The RIA for the 2012 PM<sub>2.5</sub> NAAQS (EPA 2013b) provides more information about the overall uncertainty in the estimates of the benefits of reducing PM<sub>2.5</sub> emissions.

The incidence-per-short-ton estimates for PM-related health impacts (derived by the process described in this section) are available in the Emission Health Impacts worksheet in the CAFE Model parameters file, which is located in the NHTSA EIS docket (Docket No. NHTSA-2025-0490).

The EPA incidence-per-ton estimates are national averages and account for impacts of upstream and downstream emissions separately. However, they do not reflect localized variations in emissions, population characteristics, or exposure to pollutants. Most upstream

emissions are released from elevated points (e.g., tall stacks at refineries and power plants) and disperse widely before reaching ground level. The population in a large geographic region could be affected, but pollutant concentrations generally would be relatively low at any one location. On the other hand, concentrations very close to an upstream source that releases emissions at a relatively low elevation could be greater. The actual health impacts from human exposure at any particular location would vary with emissions, local meteorology and topography, and population characteristics.

Unlike most upstream emissions, downstream emissions occur across the roadway system and are released at or near ground level. Populations located near roadways could experience relatively greater pollutant levels because the short distance from the roadway allows less pollutant dispersion to occur. Near-road pollutant levels could be less in areas with greater EV adoption because EVs do not contribute tailpipe emissions. As with upstream emissions, the actual health impacts from human exposure at any particular location would vary with emissions, local meteorology and topography, and population characteristics. Because of these variations, the actual change in health impacts per ton of emissions change could be larger or smaller at any particular location than the values used in this analysis.

## **E.2.2 Conformity Regulations**

This section supports the demonstration in Chapter 4, *Air Quality*, and Section VIII.B.2 of the proposed rule preamble that the EPA General Conformity Rule does not apply to NHTSA's Proposed Action. The General Conformity Rule defines direct emissions as "those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable."<sup>22</sup> Because NHTSA's Proposed Action and alternatives would set fuel economy standards for passenger cars and light trucks, they would cause no direct emissions consistent with the meaning of the General Conformity Rule.<sup>23</sup>

Indirect emissions under the General Conformity Rule are "those emissions of a criteria pollutant or its precursors (1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) That are reasonably foreseeable; (3) That the agency can practically control; and (4) For which the agency has continuing program responsibility."<sup>24</sup> Each element of the definition must be met to qualify as indirect emissions. NHTSA has determined that, for purposes of general conformity, emissions that may result from the fuel economy standards would not be caused by NHTSA's action, but rather would occur because of subsequent activities the agency cannot practically control. "[E]ven if a Federal licensing, rulemaking, or other approving action

---

<sup>22</sup> 40 CFR 93.152.

<sup>23</sup> *Department of Transportation v. Public Citizen*, 541 U.S. 752, 772 (2004) ("[T]he emissions from the Mexican trucks are not 'direct' because they will not occur at the same time or at the same place as the promulgation of the regulations."). NHTSA's Proposed Action is to set fuel economy standards for MY 2022–2031 passenger cars and light trucks; any emissions increases would occur well after the promulgation of a final rule.

<sup>24</sup> 40 CFR 93.152.

is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions.”<sup>25</sup>

As noted in provision (3) of the definition above, emissions are subject to conformity only if the agency can “practically control” them. As the CAFE standards are performance-based, NHTSA cannot control the technologies vehicle manufacturers use to meet the fuel economy standards for passenger cars and light trucks. Furthermore, NHTSA cannot control vehicle purchasing decisions (which affect average achieved fleetwide fuel economy) and driving behavior (i.e., operation of motor vehicles, as measured by VMT). It is the combination of fuel economy technologies, vehicle purchasing decisions, and driving behavior that results in criteria pollutant or precursor emissions. For purposes of analyzing the reasonably foreseeable environmental impacts of the Proposed Action and alternatives under NEPA, NHTSA has made assumptions regarding each of these factors. This NEPA analysis predicts that increases in criteria pollutants and MSATs would occur in most nonattainment areas under all alternatives. However, the Proposed Action and alternatives do not mandate specific manufacturer decisions, vehicle purchasing decisions, or driver behavior, and NHTSA cannot practically control any of them.<sup>26</sup> Consequently, these increases in criteria pollutant and MSAT emissions are not subject to conformity.

In addition, NHTSA does not have the statutory authority to control the actual VMT by drivers. As the extent of emissions is directly dependent on the operation of motor vehicles, changes in any emissions that result from NHTSA’s standards are not changes that the agency can practically control or for which the agency has continuing program responsibility. Therefore, the Proposed Action and alternatives would not cause indirect emissions under the General Conformity Rule, and a general conformity determination is not required.

### **E.2.3 Environmental Consequences: Other Associated Potential Impacts**

This section explores the impact of the Proposed Action and alternatives in combination with other associated impacts, using a range of modeled future scenarios. Per the Supreme Court’s recent decision in *Seven County Infrastructure Coalition v. Eagle County, Colorado* and its progeny,<sup>27</sup> agencies are granted substantial deference to determine the scope of the environmental impacts that they address and may decide to evaluate environmental impacts from separate projects upstream or downstream from this action.<sup>28</sup> This Proposed Action

---

<sup>25</sup> 40 CFR 93.152.

<sup>26</sup> See, e.g., *Department of Transportation v. Public Citizen*, 541 U.S. 752, 772-73 (2004); *South Coast Air Quality Management District v. Federal Energy Regulatory Commission*, 621 F.3d 1085, 1101 (9th Cir. 2010).

<sup>27</sup> *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497 (2025); see also *Sierra Club v. FERC*, 145 F.4th 74, 88-9 (D.C. Cir. 2025).

<sup>28</sup> See *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497, 1504 (2025) (“Courts should defer to agencies’ discretionary decisions about where to draw the line when considering indirect environmental effects and whether to analyze effects from other projects separate in time or place. See *Department of Transportation v. Public Citizen*, 541 U.S. 752, 767, 124 S. Ct. 2204, 159 L.Ed.2d 60. In sum, when assessing significant environmental effects and feasible alternatives for purposes of NEPA, an agency will invariably make a series of fact-dependent, context-specific, and policy-laden choices about the depth and breadth of its inquiry—and also about the length, content, and level of detail of the resulting EIS. Courts should afford

amends standards for model years for which CAFE standards have previously been established. Accordingly, the agency has decided to retain in this Draft SEIS certain aspects of the analytical frame of prior CAFE EISs. Specifically, this Draft SEIS includes a discussion of potential environmental impacts of sectors other than those the agency regulates, where changes in those impacts are linked to the action and alternatives under consideration here. In *Seven County*, the Court clarified that NEPA analysis beyond the direct regulatory impact at issue is not required in an EIS.<sup>29</sup> While NHTSA is not required to assess impacts that are not a direct result of changes in CAFE standards and has determined that analyses of such impacts are not necessary for NHTSA to undertake reasoned decision-making pursuant to its authority under the Energy Policy and Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 (EISA), the agency nonetheless provides discussion of those impacts solely for informational purposes.

The underlying inputs, models, and assumptions of the CAFE Model already take into account other actions that affect U.S. transportation sector fuel use and U.S. mobile source air pollutant emissions. Therefore, the analysis of reasonably foreseeable environmental impacts of the Proposed Action and alternatives inherently incorporates projections about the impacts of other actions to develop a realistic reference baseline.

Many other Federal regulations affect air quality, in addition to the CAFE rulemaking. The primary regulatory actions that have resulted in tailpipe emissions decreases from vehicles are the EPA Tier 1, Tier 2, and Tier 3 Motor Vehicle Emission and Fuel Standards. EPA also has issued emissions standards for transportation sources other than motor vehicles, such as locomotives, marine vessels, and recreational vehicles, as well as standards for engines used in construction equipment, emergency generators, and other nonvehicle sources. In addition, NHTSA issued Phase 1 and Phase 2 medium- and heavy-duty (MDHD) vehicle FE standards.<sup>30</sup>

In January 2023, EPA issued amended standards for tailpipe emissions of criteria pollutants and MSATs from HD engines and vehicles.<sup>31</sup> EPA has announced its intent to reevaluate the 2023 heavy-duty (HD) emissions rules (EPA 2025k). In addition, in April 2024, EPA issued amended standards for multi-pollutant emissions from HD vehicles.<sup>32</sup> However, EPA has proposed to

---

substantial deference and should not micromanage those agency choices so long as they fall within a broad zone of reasonableness.”).

<sup>29</sup> At issue in *Seven County* was the scope of analysis required under NEPA when an agency issues a permit authorizing construction of a segment of linear infrastructure; our discussion here applies that case’s holding to the current context, where NHTSA is undertaking NEPA analysis in connection with a regulatory standards rulemaking.

<sup>30</sup> *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles; Final Rules*, 76 FR 57106 (Sept. 15, 2011); *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Vehicles – Phase 2; Final Rule*, 81 FR 73478 (Oct. 25, 2016).

<sup>31</sup> *Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards; Final Rule*, 88 FR 4296 (Jan. 24, 2023).

<sup>32</sup> *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3; Final Rule*, 89 FR 29440 (Apr. 22, 2024).

repeal all NCE standards for LD and HD vehicles and engines, including EPA's 2024 HD Phase 3 rule.<sup>33</sup> In addition, NHTSA has announced that it is reviewing its existing MDHD standards.<sup>34</sup>

Consistent with the Annual Energy Outlook (AEO) Alternative Transportation case, as discussed in Appendix D, Section D.3, *Environmental Consequences: Other Associated Potential Impacts*, NHTSA's emissions analysis assumes that EPA's vehicle tailpipe emission standards for MYs 2027–2032 are not in place, and that the California Air Resources Board's zero-emission vehicle sale mandates for trucks are not in place.

Additional EPA and state actions could affect the impacts of the proposed standards by changing the emissions from upstream sources. Actions that affect upstream emissions associated with vehicles include EPA and state regulation of stationary emissions sources associated with power generation and with fuel feedstock extraction and refining. EPA regulations relevant to stationary source emissions include New Source Performance Standards, National Emissions Standards for Hazardous Air Pollutants, the Acid Rain Program under Title IV of the Clean Air Act, the Cross-States Air Pollution Rule, and the Mercury and Air Toxics Standards Rule. EPA has announced its intent to reconsider or revoke several provisions of these programs (EPA 2025I). EPA has not taken final action on these rules as of October 2025. State air quality agencies have issued additional emissions control requirements applicable to stationary sources as part of their State Implementation Plans.

In addition, long-term climate trends are expected to affect air quality and associated health effects. For example, Fann et al. (2021) modeled projected changes in climate and emissions, the resulting concentrations of ozone and PM<sub>2.5</sub>, and associated mortality through 2095. The amount of mortality attributable to air pollution was predicted to increase substantially due to long-term climate trends. The increases in mortality attributable to air pollution associated with long-term climate trends were projected to decline if air pollutant emissions were reduced.

As discussed in Chapter 3, *Energy*, market-driven changes in the energy sector are expected to affect U.S. emissions and could result in future increases or decreases in emissions. Market forces could affect the availability and price of power plant fossil energy sources (primarily coal and natural gas) and of non-fossil power plant energy sources (nuclear, hydro, solar, wind, geothermal, battery storage, demand side/behind-the-meter). These changes could affect the upstream emissions associated with EV charging. Potential changes in Federal regulation of energy production and emissions from industrial processes and power generation also could result in future increases or decreases in aggregate emissions from these sources.

Depending on what future changes in tailpipe and upstream emissions ultimately occur, the overall emissions of any specific criteria pollutant or MSAT could decrease in some years and increase in others. As fuel use in the LD transportation sector decreases, upstream energy use associated with feedstock extraction and refining, distribution, and storage could decrease

---

<sup>33</sup> Throughout this Draft SEIS, the term *non-criteria emissions* refers specifically to carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride, which are not classified as criteria pollutants under the Clean Air Act.

<sup>34</sup> *Resetting the Corporate Average Fuel Economy Program; Interpretive Rule*, 90 FR 24518, 24525 (June 11, 2025).

proportionally, decreasing emissions associated with that upstream energy use (although such decreases could be dampened by suppliers' participation in the global markets for petroleum and petroleum products). Upstream emissions associated with sources other than energy use also could decrease. For example, decreases in oil and gas development would decrease emissions from associated processes such as hydraulic fracturing. Changes in other Federal rules that affect the oil and gas industry would affect the size of these emissions changes.

The forecasts of power generation used in the CAFE Model are based on the AEO Alternative Electricity case.<sup>35</sup> To the extent that power plant emissions requirements may be amended in future years when the EV percentage of LD vehicle sales has changed, power sector emissions for EV charging would change accordingly. Based on current trends, electrification of the LD market is expected to increase over the next decade from current levels. However, the rate of growth in electrification of the LD vehicle sector could be affected by changes in Federal policies, including tax credits and other incentives for purchasing EVs, such as the changes made by the One Big Beautiful Bill Act (Pub. L. No. 119-21).

Similarly, the forecasts of upstream and downstream emissions that underlie the impact analysis assume the continuation of current emissions standards (including previously promulgated future changes in standards) for vehicles, oil and gas development operations, and industrial processes such as fuel refining. To the extent that these emissions standards change in the future, total nationwide emissions from vehicles and industrial processes could also change accordingly.

Future changes to tailpipe and upstream emissions from any of the actions and trends described above could affect health effects based on population exposure to air pollution. Higher emissions in a geographic area would be expected to lead to an increase in overall health effects in that area, while lower emissions would be expected to lead to a decrease in health effects in that area, compared to conditions in the absence of such effects. Population distribution varies geographically, and as a result, a given amount of emissions would have greater health effects in an area with greater population than in an area with less population. The level of population exposure in an area also is affected by the meteorological and topographical conditions in that area because these factors affect the dispersion and transport of emissions in the atmosphere. In addition, populations living or working near roadways could experience relatively greater exposure to tailpipe emissions, while populations living or working near upstream facilities (e.g., refineries) could experience relatively greater exposure to upstream emissions. Trends in meteorology and climate, locations of upstream emissions sources, population growth, and population levels near roadways or refineries could affect regional distributions of population exposure. An individual geographic area could experience either an increase or decrease in overall impacts under the standards, depending on the relative magnitudes of impacts from tailpipe versus upstream emissions that would affect that area.

---

<sup>35</sup> For further discussion on AEO Alternative Electricity case, see Appendix D, Section D.3, *Environmental Consequences: Other Associated Potential Impacts*.

## E.3 Non-Criteria Emissions

The methods NHTSA used to characterize the impacts of the alternatives on climate have three key elements:

- **Analyzing the impacts of each alternative on NCEs.** Many analyses of environmental and energy policies and regulations express their environmental impacts, at least in part, in terms of NCE increases or decreases.
- **Estimating the monetized damages associated with NCE increases attributable to each alternative.** NHTSA conducted a sensitivity analysis using a monetized CO<sub>2</sub> valuation considering domestic impacts in accordance with recently developed guidance.<sup>36</sup> Results of this sensitivity analysis are included in the Preliminary Regulatory Impact Analysis, Chapter 9, which is incorporated by reference.
- **Analyzing how NCE increases under each alternative would affect the climate system (climate impacts).** Climate models characterize the relationship between NCEs and various climatic parameters in the atmosphere and ocean system, including temperature, precipitation, sea level, and ocean pH.<sup>37</sup> NHTSA translated the changes in NCEs associated with each action alternative to changes in CO<sub>2</sub> concentrations, temperature, precipitation, sea level, and ocean pH, both alone and relative to the same parameters under the No-Action Alternative.

Comparisons between the No-Action Alternative and each action alternative are presented to illustrate the different environmental impacts of each action alternative. The impact of each action alternative is measured by the difference in the climate parameter (CO<sub>2</sub> concentration, temperature, sea level, precipitation, and ocean pH) under the No-Action Alternative and the climate parameter under that action alternative. For example, the increase in CO<sub>2</sub> emissions attributable to an action alternative is measured by the difference between emissions under the No-Action Alternative and emissions under that alternative.

NHTSA's methods for modeling emissions and estimating climate impacts are discussed below.

### E.3.1 Uncertainty in Climate Modeling

The methods used to characterize emissions and climate impacts consider multiple sources of uncertainty. Sources of uncertainty include the following, in addition to many other factors.

- The pace and impacts of technology changes in the transportation sector and other sectors that emit NCEs.
- Changes in the future fuel supply and fuel characteristics that could affect emissions.

---

<sup>36</sup> See Office of Management and Budget. 2025. Guidance Implementing Section 6 of Executive Order 14154, Entitled "Unleashing American Energy." May 5, 2025. Available at: <https://www.whitehouse.gov/wp-content/uploads/2025/02/M-25-27-Guidance-Implementing-Section-6-of-Executive-Order-14154-Entitled-Unleashing-American-Energy.pdf>.

<sup>37</sup> In discussing impacts on ocean pH, this Draft SEIS uses both *changes to* and *reductions of* ocean pH to describe ocean acidification. The metric pH is a parameter that measures how acidic or basic a solution is. The increase in atmospheric concentration of CO<sub>2</sub> is causing acidification of the oceans, which can be measured by a decrease in ocean pH.

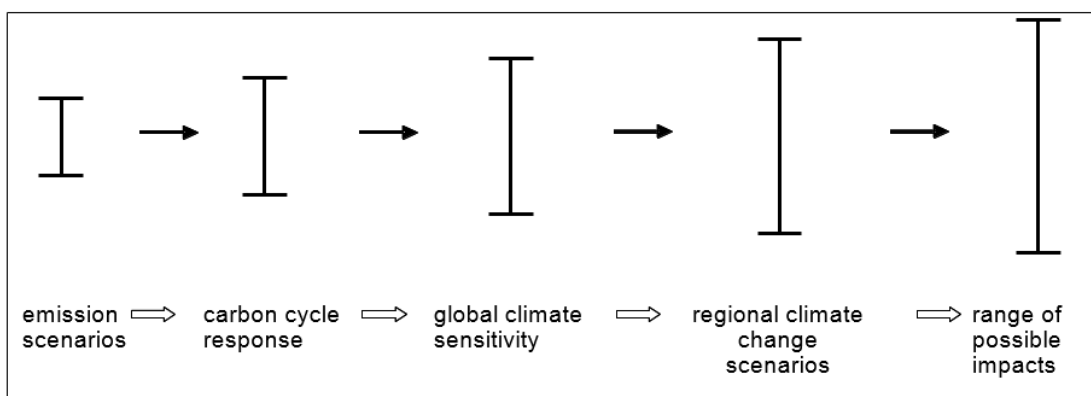


- Sensitivity of climate to increased NCE concentrations.
- The rate of change in the climate system in response to changing NCE concentrations.
- Potential existence of thresholds in the climate system (which cannot be predicted or simulated).
- Regional differences in the magnitude and rate of climate change.
- Sensitivity to natural variability, such as El Niño conditions.

The Intergovernmental Panel on Climate Change (IPCC) notes two primary uncertainties with climate modeling: (1) *model uncertainties*, which occur when a climate model might not accurately represent complex phenomena in the climate system, and (2) *scenario uncertainties*, which arise because of uncertainty in projecting future NCEs, concentrations, and forcings. These types of uncertainties are described by using two metrics for communicating the degree of certainty—the confidence in the validity of findings (expressed qualitatively) and quantified measures of uncertainties (expressed probabilistically). This approach provides a consistent method to define confidence levels and percent probability of a projected outcome or impact and was applied to key IPCC and U.S. Global Change Research Program (GCRP) findings where IPCC or GCRP has defined the associated uncertainty with the finding.<sup>38</sup>

Moss and Schneider (2000) characterize the “cascade of uncertainty” in climate simulations (Figure E.3.1-1). As indicated in Figure E.3.1-1, since emissions scenarios have narrower bands of uncertainty than global climate sensitivity, the emissions estimates used in this Draft SEIS are less uncertain than regional climate impacts. The impacts on climate are, in turn, less uncertain than the impacts of climate on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources). Although the uncertainty bands broaden with each successive step in the analytic chain, not all values within the bands are equally likely; the mid-range values have the highest likelihood.

**Figure E.3.1-1. Cascade of Uncertainty in Climate Simulations**



Source: Moss and Schneider 2000.

<sup>38</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

Scientific understanding of the climate system is incomplete; like any analysis of complex, long-term changes to support decision-making, evaluating reasonably foreseeable impacts on the human environment involves many assumptions and uncertainties. This Draft SEIS uses methods and data to analyze climate impacts that represent the best and most current information available on this topic and that have been subjected to extensive peer review and scrutiny. The information cited throughout this section, extracted from the most recent EPA, IPCC, and GCRP reports on climate trends, has endured a more thorough and systematic review process than information on virtually any other topic in environmental science and policy. The tools used to perform the climate trend impacts analysis such as the Model for the Assessment of Greenhouse Gas-Induced Climate Change (MAGICC) are widely available and are commonly used in the scientific community.

The Climate Change Science Program (CCSP) Synthesis and Assessment Product 3.1 report on the strengths and limitations of climate models (CCSP 2008) provides a thorough discussion of the methodological limitations regarding modeling. Additionally, Chapter 1 of the IPCC Working Group 1 Sixth Assessment Report Summary for Policymakers (IPCC WGI AR6) provides an evaluation of the performance of global climate models. Readers interested in a detailed treatment of this topic will find the Technical Summary and Chapter 1 of IPCC WGI AR6 useful in understanding the issues that underpin the modeling of environmental impacts of the Proposed Action and alternatives on climate trends (IPCC 2021b).<sup>39</sup>

### **E.3.2 Methods for Modeling Emissions**

This Draft SEIS compares NCEs under each action alternative to those under the No-Action Alternative. NCEs under each alternative were estimated using the methods described in Chapter 2, Section 2.3, *Draft SEIS Methods and Assumptions*. NCEs were estimated by the DOT Volpe National Transportation Systems Center (Volpe) using the CAFE Compliance and Effects Model (referred to as the CAFE Model), described in Appendix C, *CAFE Model Analysis Methods*. For years 2022 through 2050, the emissions estimates in this Draft SEIS include tailpipe emissions from fuel combustion and upstream emissions from the production and distribution of fuel and electricity for passenger cars and light trucks.<sup>40</sup> To calculate tailpipe CO<sub>2</sub> emissions, the CAFE Model applies estimates of the density and carbon content of gasoline and other fuels. To calculate tailpipe methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions, the CAFE Model applies gram-per-mile emissions factors from EPA's MOVES.<sup>41</sup> To calculate NCEs from upstream processes such as refining and electricity generation, the CAFE Model applies process-specific

---

<sup>39</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>40</sup> Volpe estimates emissions to 2050, because by this point nearly the entire U.S. vehicle fleet will be composed of MY 2027–2031 or later LD vehicles.

<sup>41</sup> All downstream emissions estimates in the CAFE Model use emissions factors from EPA's MOVES5 model version (EPA 2025b).

emissions factors specified on a gram-per-British thermal unit basis that were developed using the GREET model, developed by the DOE Argonne National Laboratory.<sup>42</sup>

For the climate analysis, NCE trajectories are projected through the year 2100.<sup>43</sup> To estimate NCEs for the LD fleet for 2051 to 2100, NHTSA extrapolated from the CAFE Model results by applying the projected rate of change in U.S. transportation fuel consumption over this period from the global climate scenarios (SSP2-4.5 and SSP3-7.0) used in the analysis.<sup>44,45</sup> For 2051 through 2100, the SSP2-4.5 and SSP3-7.0 scenarios project that U.S. road transportation fuel consumption will decline slightly because of assumed improvements in efficiency of internal combustion engine (ICE)-powered vehicles and increased deployment of non-ICE vehicles with higher drivetrain efficiencies. However, the projection of road transport fuel consumption beyond 2050 does not change substantially. Therefore, emissions remain relatively constant from 2050 through 2100.<sup>46</sup> The assumptions and methods used to extrapolate NCE estimates beyond 2050 for this Draft SEIS are broadly consistent with those used in previous LD and HD EISs dating back to 2008.<sup>47</sup>

The emissions estimates include global CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions resulting from direct fuel combustion and the production and distribution of fuel and electricity (upstream emissions).<sup>48</sup> The MOVES model also estimated non-NCEs—both criteria pollutants and MSATs—which are

---

<sup>42</sup> Upstream emissions estimates in the CAFE Model use emissions factors from Argonne National Laboratory's GREET model (DOE 2025b).

<sup>43</sup> The year 2100 is used as a standard reference point in climate analyses because it aligns with climate model time horizons, international policy goals, and the need to capture the long-term impacts of today's emissions.

<sup>44</sup> More information regarding global emissions scenarios can be found in Section E.3.3.5, *Global Emissions Scenarios*. SSP2-4.5 is an intermediate global emissions scenario that reflects reasonably foreseeable actions in global climate policy, yielding a moderate level of global NCE reductions from the baseline global emissions scenario used in the Proposed Action impact analysis (SSP3-7.0).

<sup>45</sup> 2050 is the last year for which the CAFE Model provides estimates of fleet NCE emissions for this analysis.

<sup>46</sup> NHTSA anticipates a larger post-2050 decline in passenger car and light truck energy consumption than what is projected in the SSP2-4.5 and SSP3-7.0 scenarios due to updated projections around technology availability and adoption, as well as other factors that affect fuel consumption. However, the Draft SEIS approach for projecting emissions from 2051 to 2100 is consistent with methods used in recent NHTSA EISs, conservative in terms of estimating environmental impacts, and reasonable given the uncertainty associated with post-2050 projections.

<sup>47</sup> Previous EISs include the MY 2011–2015 CAFE Final EIS (NHTSA 2008), MY 2012–2016 CAFE Final EIS (NHTSA 2010), Phase 1 Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles Final EIS (NHTSA 2011), MY 2017–2025 CAFE Final EIS (NHTSA 2012), Phase 2 Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles Final EIS (NHTSA 2016), MY 2021–2026 Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Final EIS (NHTSA 2020), MY 2024–2026 CAFE Final EIS and SEIS (NHTSA 2021, 2022), and CAFE MY 2027 and Beyond and the HDPUV MY 2030 and beyond Final EIS (NHTSA 2024).

<sup>48</sup> Upstream emissions considered in this Draft SEIS include those that occur during the recovery, extraction, and transportation of crude petroleum, as well as during the refining, storage, and distribution of transportation fuels. Upstream emissions from electric vehicles (EVs) also include emissions associated with electricity production, including power generation and transmission to vehicles. The CAFE Model considers crude petroleum from domestic and international sources. A portion of finished motor fuels is refined within the United States using imported crude petroleum as a feedstock and GREET's emissions factors are used to estimate emissions associated with transporting imported petroleum from coastal port facilities to U.S. refineries, refining it to produce transportation fuels, and storing and distributing those fuels. In addition, GREET's emissions factors are used to estimate the NCEs produced in foreign countries during the extraction, refining, transportation, storage, and distribution of refined fuels imported to the United States from abroad.

used as inputs in MAGICC7.<sup>49</sup> Criteria pollutants included are SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>2.5</sub>, and VOCs. MSATs included are acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and diesel particulate matter.

Higher fuel consumption from less stringent CAFE standards would result in higher overall emissions of CO<sub>2</sub> (the main NCE emitted) because of increased refining, distribution, and use of transportation fuels.<sup>50</sup> Fuel efficiency, fuel consumption, and CO<sub>2</sub> emissions are closely connected. Fuel efficiency describes how much fuel a vehicle requires to perform a certain amount of work (for example, how many miles it can travel or how many tons it can carry per mile traveled). A vehicle is more fuel efficient than another if it can perform more work with the same amount of fuel, or can perform the same amount of work while consuming less fuel. Higher fuel consumption increases CO<sub>2</sub> emissions directly because the primary source of vehicle-related CO<sub>2</sub> emissions is generated from the combustion of carbon-based fuel in ICEs. Combustion of a hydrocarbon in an ICE essentially converts chemical energy into mechanical energy (used to power the vehicle) and primarily generates CO<sub>2</sub>, water, and heat.<sup>51</sup> Therefore, increasing fuel consumption or lowering fuel efficiency results in more CO<sub>2</sub> emissions.

NHTSA estimated increases in tailpipe CO<sub>2</sub> emissions resulting from fuel savings by assuming that the carbon content of gasoline, diesel, and other fuels is converted entirely to CO<sub>2</sub> during the combustion process.<sup>52</sup> Specifically, NHTSA estimated CO<sub>2</sub> emissions from fuel combustion as the product of the volume of each type of fuel consumed (in gallons), its mass density (in grams per gallon), the fraction of its total mass represented by carbon (measured as a proportion), and CO<sub>2</sub> emissions per gram of fuel carbon (the ratio of the molecular weights of CO<sub>2</sub> and elemental carbon). NHTSA estimated changes in tailpipe CH<sub>4</sub> and N<sub>2</sub>O emissions by applying MOVES-based emissions factors for these NCEs to estimated annual mileage accumulation (i.e., vehicle miles traveled) of vehicles of different types and vintages.

Greater fuel consumption also increases CO<sub>2</sub> emissions that result from the use of carbon-based energy sources during fuel production and distribution. At the same time, new standards may also lead to reductions in CO<sub>2</sub> emissions from processes involved in producing and delivering any alternative energy sources (i.e., other than petroleum) for which consumption decreases. In particular, the CAFE Model shows electricity consumption by passenger cars and light trucks decreasing more rapidly under the action alternatives than under the No-Action

---

<sup>49</sup> MAGICC7 is the version of MAGICC used in this analysis, which incorporates the latest science.

<sup>50</sup> For this rulemaking, NHTSA estimated emissions of vehicular CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions, but did not estimate vehicular emissions of hydrofluorocarbons (HFCs). HFCs are released to the atmosphere only through air-conditioning system leakage and are not directly related to fuel efficiency. NHTSA's authority under the Energy Policy and Conservation Act, as amended by the Energy Independence and Security Act, extends only to the regulation of vehicle fuel efficiency. For reference, CH<sub>4</sub> and N<sub>2</sub>O account for 0.6 percent of the tailpipe NCEs from passenger cars and light trucks. CO<sub>2</sub> emissions account for the remaining 99.4 percent. Of the total (including non-tailpipe) NCEs from LD vehicles, tailpipe CO<sub>2</sub> represents approximately 97.6 percent, tailpipe CH<sub>4</sub> and N<sub>2</sub>O represent approximately 0.6 percent, and HFCs represent approximately 1.7 percent (values are calculated from EPA 2024a).

<sup>51</sup> However, because combustion in internal combustion engines is not 100 percent complete, it also produces other byproducts, such as CO, NO<sub>x</sub>, and PM, as described in more detail in Chapter 4, *Air Quality*.

<sup>52</sup> This assumption results in a slight overestimate of CO<sub>2</sub> emissions because a small fraction of the carbon content of gasoline is emitted as CO and unburned hydrocarbons. However, the magnitude of this overestimation is likely to be extremely small. This approach is consistent with the recommendation of IPCC for Tier 1 national NCE inventories (IPCC 2006).

Alternative. NHTSA estimated the CO<sub>2</sub> emissions during each phase of fuel and electricity production and distribution (upstream emissions) using CO<sub>2</sub> emissions rates obtained from the GREET model and using previous assumptions about how fuel use increases are reflected in increases in activity during each phase of fuel production and distribution. For this Draft SEIS, the Argonne National Laboratory GREET model was updated from the 2021 version to the 2022 version. The total increase in CO<sub>2</sub> emissions from lowering fuel economy under each alternative is the sum of the increases in motor vehicle emissions from increased fuel combustion compared to the No-Action Alternative plus the increase in upstream emissions from a higher volume of fuel production and distribution than is projected under the No-Action Alternative (plus the decrease in upstream emissions resulting from reduced electricity generation used to power EVs).

### **E.3.3 Methods for Estimating Non-Criteria Emissions Impacts**

This Draft SEIS estimates and reports the projected increases in NCEs that would result from the action alternatives. The increase in NCEs is a reasonably foreseeable impact of the decreased stringency in fuel economy associated with the action alternatives. The increases in NCE emissions, in turn, cause indirect impacts on five attributes of climate trends: CO<sub>2</sub> concentrations, temperature, sea level, precipitation, and ocean pH.

The subsections that follow describe methods and models used to characterize the increases in NCEs and the indirect impacts on the five attributes of climate trends. Because NCEs from U.S. fuel use contribute to global atmospheric changes, NHTSA has been assessing climate on a global scale using a publicly available, reduced-complexity climate model. Importantly, this Draft SEIS uses the Shared Socioeconomic Pathways (SSPs) that were developed for the IPCC AR6 report to represent a range of future climate trend scenarios and development pathways.<sup>53</sup> Similar to Representative Concentration Pathways (RCPs), which were developed for the previous IPCC AR5 report, the SSPs use global socioeconomic projections to derive time-dependent global NCE concentrations and drive general circulation model simulations of climate trends. The SSPs were designed to provide an expanded set of NCE concentration scenarios for the Coupled Model Intercomparison Project Phase 6 (CMIP6) based on a range of socioeconomic scenarios, with SSP1 through 5 accounting for various global mitigation and adaptation measures, described in further detail in the following subsections.

#### **E.3.3.1 CO<sub>2</sub> Concentrations and Global Mean Surface Temperature**

NHTSA used a reduced-complexity climate model (MAGICC) to estimate the changes in CO<sub>2</sub> concentrations and global mean surface temperature.<sup>54</sup> NHTSA used the publicly available

---

<sup>53</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>54</sup> The selection of MAGICC for this analysis is described in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024), Appendix F, Section F.4.2, *Methods for Modeling Greenhouse Gas Emissions*.

modeling software<sup>55</sup> MAGICC7 (Meinshausen et al. 2020) to estimate changes in key Proposed Action impacts. NHTSA used MAGICC7 to incorporate the estimated increases in emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, CO, NO<sub>x</sub>, SO<sub>2</sub>, and VOCs and the associated estimated changes in upstream emissions using factors obtained from the GREET model and CAFE Model analysis. NHTSA also performed a sensitivity analysis to examine variations in the climate impacts of the Proposed Action and alternatives under different assumptions about the sensitivity of climate to CO<sub>2</sub> concentrations in Earth's atmosphere, described in Section E.3.3.7, *Sensitivity Analysis*. The results of the sensitivity analysis can be used to infer how the variation in NCEs associated with the action alternatives affects the anticipated magnitudes of Proposed Action climate impacts.

MAGICC7 incorporates the latest science from IPCC AR6 and AR5; MAGICC7 was used in the IPCC WGI AR6 (IPCC 2021b). NHTSA also performed a sensitivity analysis to examine variations in the reasonably foreseeable climate impacts under different assumptions about the sensitivity of climate to CO<sub>2</sub> concentrations in the atmosphere.

MAGICC7 is a reduced-complexity climate model well calibrated to the mean of the multimodel ensemble results for five of the most commonly used SSP scenarios—SSP1-1.9 [very low], SSP1-2.6 [low], SSP2-4.5 [intermediate], SSP3-7.0 [high], and SSP5-8.5 [very high].<sup>56,57</sup> The results of the model runs developed for this analysis agree relatively well with published estimates for both CO<sub>2</sub> concentrations and surface temperature. For a comparison of MAGICC modeling results and reported literature results, see NHTSA's prior CAFE EISs.

### **E.3.3.2      Sea Level**

NHTSA estimated the projected changes in global mean sea level using data from the IPCC WGI AR6 (IPCC 2021b).<sup>58,59</sup> Because the MAGICC climate model does not simulate sea-level rise directly, scenario-specific regression models were developed to relate global mean surface temperature change to sea-level rise. These regressions were derived from historical data (1950–2019) and future projections (2020–2100) under various SSP<sup>60</sup> scenarios, using global mean surface temperature and global mean sea-level rise data. The models apply linear relationships with coefficients specific to each scenario. The temperature changes simulated by

---

<sup>55</sup> MAGICC7, the version of MAGICC used in this analysis, is accessible for general use and is distributed under the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) license, which forbids commercial application. NHTSA has entered into a direct agreement with Climate Resource, the creators of MAGICC, to incorporate MAGICC7 modeling in this analysis.

<sup>56</sup> NHTSA used the MAGICC default climate sensitivity of 3.0 degrees Celsius (°C) (5.4 degrees Fahrenheit [°F]).

<sup>57</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>58</sup> Sea-level rise outputs from MAGICC7 were not used because this component of the model is still under development.

<sup>59</sup> In this Draft SEIS, the relationship between sea-level rise and global mean surface temperature developed using IPCC AR6 is used to estimate sea-level rise using global mean surface temperatures from AR6 for the SSP scenarios. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>60</sup> SSP1-1.9, SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5.

MAGICC were then used as inputs to these regression models to estimate projected sea-level rise for each SSP scenario.

### ***E.3.3.3 Precipitation***

NHTSA estimated the projected changes in global-average precipitation by converting the global-mean change in temperature from MAGICC into a percent change using IPCC AR6 hydrological-sensitivity scaling. Because MAGICC does not simulate precipitation directly, NHTSA applied IPCC scenario-specific rates (percent precipitation change per degree Celsius [°C] of warming) derived from CMIP6 models relative to a 1995–2014 baseline (IPCC 2021a, 2021b). To align with forcing values, NHTSA used the SSP3-7.0 scaling factor of 1.71 percent per °C. For each alternative and analysis year, NHTSA computed the percent change in global-mean precipitation as the scaling factor multiplied by the change in temperature, reporting results as percentage changes.<sup>61</sup>

### ***E.3.3.4 Ocean pH***

NHTSA projected changes in ocean pH using the CO<sub>2</sub> System Calculations (CO2SYS) model, which calculates parameters of the CO<sub>2</sub> system in seawater and freshwater. This model translates levels of atmospheric CO<sub>2</sub> into changes in ocean pH. A lower ocean pH indicates higher ocean acidity, while a higher pH indicates lower acidity.<sup>62</sup> The model was developed by Brookhaven National Laboratory and Oak Ridge National Laboratory and is used by both the DOE and EPA. Orr et al. (2015) compared multiple ocean carbon system models and found that the CO2SYS model was more efficient at analyzing observed ocean chemistry data than other models.

This model uses two of four measurable parameters of the CO<sub>2</sub> system (total alkalinity, total inorganic CO<sub>2</sub>, pH, and either fugacity or partial pressure of CO<sub>2</sub>) to calculate the remaining two input parameters. NHTSA used the CO2SYS model to estimate the pH of ocean water in the years 2040, 2060, and 2100 under the No-Action Alternative and each of the action alternatives. For each action alternative, total alkalinity and partial pressure of CO<sub>2</sub> were selected as inputs. The total alkalinity input was held constant at 2,345 micromoles per kilogram of seawater, based on a range of values derived from certified reference materials of sterilized natural seawater (Dickson and Millero 1987). The projected atmospheric CO<sub>2</sub> concentration (parts per million [ppm]) data were obtained from MAGICC model runs using each action alternative. NHTSA then compared the pH values calculated from each action alternative to the No-Action Alternative to determine the impact of the Proposed Action and alternatives on ocean pH.

---

<sup>61</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>62</sup> Preindustrial average ocean pH was 8.2. The average pH of the world's oceans has decreased by 0.1 unit compared to the preindustrial period, bringing ocean pH to 8.1 (IPCC 2021b).

### **E.3.3.5 Global Emissions Scenarios**

For this analysis, NHTSA applies the widely used SSPs, which are a series of projections representing a range of future climate scenarios and development pathways that encompass various trajectories of global NCEs. Developed using complex Integrated Assessment Models, these pathways make assumptions about how population, education, energy use, technology, and other factors could change over the next century and are coupled with further assumptions about the level of ambition for and success with mitigating climate change. These socioeconomic factors and mitigation ambitions are translated into projections of future NCEs and resulting changes to climate indicators (Harrison 2021).<sup>63</sup>

MAGICC uses the SSP long-term emissions scenarios that represent different assumptions about key drivers of NCEs. As explained in more detail below, the Proposed Action impacts analysis uses the SSP3-7.0 scenario, and the other associated potential impacts analysis uses the SSP2-4.5 scenario to represent reference case global emissions scenarios. NHTSA chose the SSP3-7.0 scenario as a reference case for the Proposed Action impacts analysis for its incorporation of a comprehensive suite of NCEs and pollutant gas emissions, including carbonaceous aerosols and a global context of emissions with a full suite of NCEs and ozone precursors. The SSP3-7.0 scenario yields an ERF of approximately 7.0 watts per square meter ( $W/m^2$ ) in the year 2100 and it is noted in the IPCC WGI AR6 as being a high emissions scenario, “in between RCP6.0 and RCP8.5.”<sup>64</sup> That assumes no successful, comprehensive global actions to mitigate NCEs (IPCC 2021b). SSP2-4.5 was chosen as a reference case for the other associated potential impacts analysis because the scenario assumes an intermediate level of emissions with significant global cooperation to address climate trends. The following subsections, *Global Emissions Scenario Used for the Proposed Action Impacts Analysis* and *Global Emissions Scenario Used for the Other Associated Potential Impacts Analysis*, describe the differences among these scenarios and provide the rationale for use in each analysis. NHTSA requests comments on the soundness of its selection of global emissions scenarios and the agency’s approach to presenting NCE impacts.

#### ***Global Emissions Scenario Used for the Proposed Action Impacts Analysis***

The results of the Proposed Action impacts analysis rely on the SSP3-7.0 scenario to represent a high reference case emissions scenario resulting from limited global cooperation on emissions mitigation efforts under the SSP3 socioeconomic development narrative. This scenario assumes there are no successful, comprehensive global actions to mitigate NCEs and yields atmospheric CO<sub>2</sub> levels of 800 ppm and an ERF of 7.0  $W/m^2$  in 2100. SSP3-7.0 has particularly high non-CO<sub>2</sub> emissions, including high aerosols emissions, which continue to increase over the

---

<sup>63</sup> For informational purposes, see the description of the SSPs and NHTSA’s application of various SSPs in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond, Appendix F, Section F.4.3.4, *Global Emissions Scenarios* (NHTSA 2024).

<sup>64</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.



21st century. The IPCC refers to SSP3-7.0 as a high emissions scenario, where CO<sub>2</sub> emissions roughly double current levels by 2100, but increase less rapidly than the very high SSP5-8.5 scenario.<sup>65,66</sup>

The impact of each action alternative was simulated by calculating the difference between annual NCEs under the No-Action Alternative and emissions under the action alternative and subtracting this change from the selected scenarios to generate modified global-scale emissions scenarios, which show the effects of the various regulatory alternatives on the global emissions path.

For example, CO<sub>2</sub> emissions from LD vehicles in the United States in 2040 under the No-Action Alternative are estimated to be 1,094 million metric tons carbon dioxide (MMTCO<sub>2</sub>); the emissions in 2040 are expected to be 52 MMTCO<sub>2</sub> higher for LD vehicles as a result of adopting Alternative 2 (Preferred Alternative) (Chapter 2, Section 2.2, *Proposed Action and Alternatives*).

Global emissions in 2040 are estimated to be 58,498 MMTCO<sub>2</sub> under the SSP3-7.0 scenario. These global emissions are assumed to incorporate emissions from LD vehicles in the United States under the No-Action Alternative. Therefore, global emissions under Alternative 2 (Preferred Alternative) are estimated to be 52 MMTCO<sub>2</sub> higher than the reference levels for SSP3-7.0 in 2040.

There are some inconsistencies between the overall assumptions used to develop SSP3-7.0 used by AR6 and the assumptions used in the CAFE Model in terms of economic growth, energy prices, energy supply, and energy demand. However, these inconsistencies affect the characterization of each action alternative in equal proportion, so the relative estimates provide a reasonable approximation of the differences in environmental impacts among the action alternatives.

### ***Global Emissions Scenario Used for the Other Associated Potential Impacts Analysis***

The other associated potential impacts analysis relies primarily on the SSP2-4.5 scenario to represent a reference case global emissions scenario that assumes a moderate level of global actions to address climate trends and predicts CO<sub>2</sub> emissions would remain around current

---

<sup>65</sup> SSP3, the regional rivalry scenario, centers around high challenges to mitigation and adaptation. Policies are focused on security with significant barriers to international trade, high inequality, slow economic growth, low population growth in rich countries, and high population growth in the developing world. The pathway represents concerns about competitiveness and security, and policies become increasingly oriented toward national and regional security issues with countries focusing on energy and food security within their own regions, at the expense of broader development. Educational and technological investments decline, and economic development is slow. Consumption is material-intensive and there is a low international priority for addressing environmental concerns, leading to inequalities and strong environmental degradation in some regions (Riahi et al. 2017). SSP3 has higher climate mitigation costs and shows high challenges to adaptation in terms of income and trade features. Unlike SSP5, which faces high challenges to mitigation and low challenges to adaptation, fossil fuel use does not intensify in SSP3 and therefore there is less intense warming. Furthermore, SSP3 does not see inequality deepen as much as the SSP4 pathway, which faces low challenges to mitigation and high challenges to adaptation. SSP4 and SSP5 include distinctly bleaker views of a world with limited technology improvements and continued business-as-usual emissions projections (Fujimori et al. 2017).

<sup>66</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

levels before starting to fall mid-century. The IPCC refers to SSP2-4.5 as an intermediate emissions scenario.<sup>67,68</sup> NHTSA chose this scenario as a plausible global emissions baseline for the other associated potential impacts analysis because of the potential impacts of these other actions, yielding a moderate level of global NCE increases from the SSP3-7.0 baseline scenario used in the Proposed Action impacts analysis. The SSP2-4.5 scenario serves as a reference scenario against which the climate impacts of the Proposed Action and alternatives can be measured. This scenario yields atmospheric CO<sub>2</sub> levels of 568 ppm and an ERF of approximately 4.5 W/m<sup>2</sup> in the year 2100.

The timeframe for this analysis extends from 2040 through 2100 and the geographic area of interest is domestic and global because other associated potential impacts of changes in NCEs occur on a domestic and global scale. This temporal and geographic focus is consistent with the analysis of Proposed Action NCEs and climate trends impacts as discussed in Chapter 5, *Non-Criteria Emissions*.<sup>69</sup> The methods NHTSA used to characterize the impacts of the Proposed Action and alternatives on climate are described in the preceding subsections. The methods and assumptions for the other associated potential impacts analysis are largely the same as those used in the Proposed Action impacts analysis, except (1) the global emissions scenario used for the main other associated potential impacts analysis is SSP2-4.5, and (2) multiple global emissions scenarios are modeled in the sensitivity analysis.

For the other associated potential impacts analysis, NHTSA calculated the difference in annual NCEs under the Proposed Action and alternatives compared to the No-Action Alternative. NHTSA applied this change to the SSP2-4.5 scenario to generate modified global-scale emissions scenarios, which show the impact of the Proposed Action and alternatives on the global emissions paths.

For example, CO<sub>2</sub> emissions from LD vehicles in the United States in 2040 under the No-Action Alternative are estimated to be 1,094 MMTCO<sub>2</sub>; the emissions in 2040 are expected to be 52

---

<sup>67</sup> SSP2, the middle of the road scenario, considers medium challenges to mitigation and adaptation that continue with current development patterns (Fricko et al. 2017). The pathway represents a world in which social, economic, and technological trends do not shift markedly from historical patterns. Development and income growth proceed unevenly; institutions make slow progress in achieving sustainable development goals; environmental systems experience degradation, although there are some improvements; and overall, resource and energy use declines. Global population growth levels off in the second half of the century and income inequality persists or slowly improves, with challenges to reducing vulnerability to societal and environmental changes remaining (Riahi et al. 2017). While no specific policy scenarios are included in the SSP scenario framework, there are regional, Federal, and international actions that indicate that a moderate reduction in the growth rate of global NCEs is reasonably foreseeable in the future. Thus, NHTSA believes that SSP2-4.5 represents reasonable proxies for the past, present, and reasonably foreseeable NCEs through 2100, and is used for that purpose in this other associated potential impacts analysis on NCEs and climate trends.

<sup>68</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>69</sup> For information on specific actions that support the use of the scenarios used in this analysis, see examples in Appendix F, Section F.4.3.4.3, *Other Past, Present, and Reasonably Foreseeable Future Actions*, in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024).

MMTCO<sub>2</sub> higher for LD vehicles as a result of adopting Alternative 2 (Preferred Alternative) (Chapter 2, Section 2.2, *Proposed Action and Alternatives*).

Global emissions in 2040 are estimated to be 44,253 MMTCO<sub>2</sub> under the SSP2-4.5 scenario. These global emissions are assumed to incorporate emissions from LD vehicles in the United States under the No-Action Alternative. Therefore, global emissions under Alternative 2 (Preferred Alternative) for LD vehicles are estimated to be 52 MMTCO<sub>2</sub> higher than the reference levels for SSP2-4.5 in 2040.

To evaluate the sensitivity of the results to a reasonable range of alternative emissions scenarios, NHTSA also used the SSP1-2.6 and SSP3-7.0 scenarios. The SSP1-2.6 scenario is considered a more aggressive stabilization scenario that illustrates a “green growth strategy” that stabilizes the anthropogenic components of ERF at 2.6 W/m<sup>2</sup> and has atmospheric CO<sub>2</sub> levels at 437.66 ppm in 2100. In this scenario, there are low challenges to adaptation and mitigation.<sup>70</sup> The scenario is used in place of the optimistic RCP2.6 scenario and was designed with the aim of simulating a development that is compatible with a 2°C (3.6°F) target.

This green growth paradigm shows how NCEs and air pollutant emissions and global land use could develop in very different directions based on societal trends in the energy and agriculture sectors. SSP1 shows how a combination of resource efficiency, preferences for sustainable production methods, and investment in human development could lead to lower anthropogenic NCEs and land use in 2100 than in 2010. This scenario could be a basis for further discussion on how climate policy can be combined with achieving other societal goals (van Vuuren et al. 2017).

### **E.3.3.6 Reference Case Modeling Runs**

The modeling runs and sensitivity analysis simulate relative changes in atmospheric CO<sub>2</sub> concentrations, global mean surface temperature, precipitation, sea-level rise, and ocean pH that could result under each alternative. The modeling runs are based on the increases in emissions estimated to result from each of the action alternatives compared to projected emissions under the No-Action Alternative. They assume a climate sensitivity of 3.0°C (5.4°F) for a doubling of CO<sub>2</sub> concentrations in the atmosphere.<sup>71</sup> The approach uses the following five steps to estimate these changes.

---

<sup>70</sup> SSP1, the sustainability scenario, is based on minimal challenges to mitigation and adaptation, policy focused on sustainable development, effective international cooperation, reduced inequality, low consumption, and low population growth. The pathway represents a world that shifts gradually toward a more sustainable path, emphasizing development that respects environmental boundaries. Resource management slowly improves, investments in education and health accelerate the demographic transition, and the emphasis on economic growth shifts toward human well-being. Driven by an increasing commitment to achieving development goals, inequality is reduced both across and within countries, and consumption is oriented toward lower material growth and resource and energy intensity (Riahi et al. 2017).

<sup>71</sup> NHTSA used a climate sensitivity of 3°C (5.4°F) because this is IPCC’s best estimate, with a *likely* range of 1.5 to 4.0°C (2.7 to 7.2°F) (IPCC 2021b). IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

1. NHTSA assumed that global emissions under the No-Action Alternative would follow the trajectory provided by the global emissions scenario.
2. NHTSA assumed that global emissions for each action alternative would be equal to the global emissions under the No-Action Alternative plus the increases in emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOCs estimated to result from each action alternative. For example, the global emissions scenario under Alternative 2 (Preferred Alternative)<sup>72</sup> equals the global emissions scenario plus the emissions increases from this alternative.
3. NHTSA used MAGICC7 to estimate the changes in global CO<sub>2</sub> concentrations and global mean surface temperature through 2100 using the global emissions scenario under each alternative developed in Steps 1 and 2.
4. NHTSA used the CO2SYS model to estimate changes in ocean pH. Changes in global CO<sub>2</sub> concentrations calculated with the MAGICC7 model are parsed to the CO2SYS ocean pH model to calculate change. This model uses two of four measurable parameters of the ocean CO<sub>2</sub> system—total alkalinity, total inorganic CO<sub>2</sub>, pH, and either fugacity or partial pressure of CO<sub>2</sub>—to calculate the remaining two input parameters. NHTSA used the CO2SYS model to estimate the pH of ocean water in the years 2040, 2060, and 2100 under the No-Action Alternative and each of the action alternatives.
5. NHTSA used the increase in global mean surface temperature to estimate the increase in both global average precipitation and sea-level rise for each alternative using the global emissions scenario.

### **E.3.3.7 Sensitivity Analysis**

NHTSA performed a sensitivity analysis to examine the impact of various equilibrium climate sensitivities on the results, using MAGICC7 to run the same probabilistic distribution as in IPCC WGI AR6 for the categorization and climate assessment of the SSP scenarios. Equilibrium climate sensitivity is the projected responsiveness of Earth's global climate system to increased ERF from higher NCE concentrations and is expressed in terms of changes to global surface temperature resulting from a doubling of CO<sub>2</sub> compared to preindustrial atmospheric concentrations (278 ppm CO<sub>2</sub>) (IPCC 2021b). Sensitivity analyses examine the relationship among the alternatives, likely climate sensitivities, and scenarios of global emissions paths and the associated Proposed Action impacts for each combination.<sup>73</sup>

The best estimate from IPCC WGI AR6 probabilistic output expresses stronger confidence in some fundamental processes in models that determine climate sensitivity than the AR5 (IPCC 2021b). According to IPCC, the very likely range of equilibrium climate sensitivity is between 2°C (3.6 degrees Fahrenheit [°F]) (*high confidence*) and 5°C (9°F) (*medium confidence*). The

---

<sup>72</sup> Alternative 2 is NHTSA's Preferred Alternative. Under Alternative 2, CAFE stringency increases by 0.5 percent per year for MYs 2022–2026 (passenger cars and light trucks); by 0.35 percent (passenger cars) and 0.7 percent (light trucks) from MY 2026 to MY 2027; and by 0.25 percent per year for MYs 2028–2031 (both classes). See Chapter 2, Section 2.2.2.2, *Alternative 2 (Preferred Alternative)*, and Section 2.3, *Draft SEIS Methods and Assumptions*, for methods and assumptions.

<sup>73</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

assessed best estimate is 3°C (5.4°F) with a *likely* range of 2.5°C (4.5°F) to 4°C (7.2°F) (*high confidence*), compared to 1.5°C (2.7°F) to 4.5°C (8.1°F) in AR5.<sup>74</sup>

NHTSA assessed a range of climate sensitivities for a doubling of CO<sub>2</sub> concentrations in the atmosphere. NHTSA performed various sensitivity analyses around each alternative—the No-Action Alternative, Alternative 1, Alternative 2 (Preferred Alternative), and Alternative 3—because this was deemed sufficient to assess the impact of various climate sensitivities on the results under the range of alternatives considered in this Draft SEIS. The best estimate derived from the median output from MAGICC is in line with this climate sensitivity.

The approach uses the following four steps to estimate the sensitivity of the results to alternative estimates of the climate sensitivity.

1. NHTSA used the SSP3-7.0 scenario to represent emissions from the No-Action Alternative.
2. Starting with the respective scenarios, NHTSA assumed increases in global emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOCs for the alternatives. NHTSA assessed that emissions resulting from the least stringent alternatives (Alternatives 1 and 2 [Preferred Alternative]) would be equal to the global emissions of each pollutant under the No-Action Alternative plus emissions of each pollutant under Alternatives 1 and 2 (Preferred Alternative). Separately, NHTSA used the same approach for Alternative 3 (the lowest NCE alternative) compared to the No-Action Alternative.<sup>75</sup> All SO<sub>2</sub> increases were applied to Aerosol Region 1 of MAGICC, which includes North America.
3. NHTSA assumed a range of climate sensitivity values consistent with the 5th, 50th, to 95th percentile of the probability distribution from the IPCC WGI AR6 (IPCC 2021b).
4. For each climate sensitivity value in Step 3, NHTSA used MAGICC7 to estimate the resulting changes in CO<sub>2</sub> concentrations and global mean surface temperature, as well as the regression-based analysis to estimate sea-level rise through 2100 for the global emissions scenarios in Steps 1 and 2.

Chapter 5, Section 5.3, *Environmental Consequences: Reasonably Foreseeable Impacts from the Proposed Action*, presents the results of the model runs for the alternatives. For the Proposed Action impacts analysis, the sensitivity analysis was performed against the SSP3-7.0 scenario (800 ppm in 2100).

For the other associated potential impacts analysis, the sensitivity analysis also assesses the sensitivity around different global emissions scenarios. NHTSA assumed multiple global

---

<sup>74</sup> IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>75</sup> Some SO<sub>2</sub> emissions are associated with charging EVs. However, total power plant emissions are limited by caps under the EPA Acid Rain Program and the Cross-State Air Pollution Rule and will be reduced through emissions standards such as the Mercury and Air Toxics Standards rule. Because of these rules and advances in technology, emissions from the power-generation sector are expected to decline over time (i.e., the grid is expected to become cleaner). Any economic activity or trend that leads to an increase in electrical demand—including increases in EV sales and use—would be accommodated by the power industry in planning for compliance with applicable emissions limitations.

emissions scenarios, including SSP2-4.5 (568 ppm in 2100), SSP1-2.6 (438 ppm in 2100), and SSP3-7.0 (800 ppm in 2100).

### **E.3.4 Environmental Consequences: Other Associated Potential Impacts**

This section explores the impact of the Proposed Action and alternatives in combination with other associated potential impacts, using a range of modeled future scenarios. Per the Supreme Court’s recent decision in *Seven County Infrastructure Coalition v. Eagle County, Colorado* and its progeny,<sup>76</sup> agencies are granted substantial deference to determine the scope of the environmental impacts that they address and may decide to evaluate environmental impacts from separate projects upstream or downstream from this action.<sup>77</sup> This Proposed Action amends standards for model years for which CAFE standards have previously been established. Accordingly, the agency has decided to retain in this Draft SEIS certain aspects of the analytical frame of prior CAFE EISs. Specifically, this Draft SEIS includes a discussion of potential environmental impacts of sectors other than those the agency regulates, where changes in those impacts are linked to the action and alternatives under consideration here. In *Seven County*, the Court clarified that NEPA analysis beyond the direct regulatory impact at issue is not required in an EIS.<sup>78</sup> While NHTSA is not required to assess impacts that are not a direct result of changes in CAFE standards and has determined that analyses of such impacts are not necessary for NHTSA to undertake reasoned decision-making pursuant to its authority under EPCA, as amended by EISA, the agency nonetheless provides discussion of those impacts solely for informational purposes.

#### **E.3.4.1 Non-Criteria Emissions**

NHTSA used the same estimates of changes in total U.S. LD vehicle CO<sub>2</sub> emissions that would result from the alternatives from 2027 to 2100, shown in Table E.3.4-1 to assess the impacts of this action added to other actions. NHTSA did this by examining emissions against a range of alternate SSP scenarios and climate sensitivities for a doubling of CO<sub>2</sub> concentrations in the atmosphere.<sup>79</sup> All alternatives would result in higher CO<sub>2</sub> emissions than the No-Action Alternative because all alternatives involve less-stringent fuel economy standards than the No-Action Alternative. Compared to the SSP2-4.5 total global emissions projection of 2,484,191

---

<sup>76</sup> *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497 (2025); see also *Sierra Club v. FERC*, 145 F.4th 74, 88-9 (D.C. Cir. 2025).

<sup>77</sup> See *Seven Cnty. Infrastructure Coal. v. Eagle Cnty., Colorado*, 145 S. Ct. 1497, 1504 (2025) (“Courts should defer to agencies’ discretionary decisions about where to draw the line when considering indirect environmental effects and whether to analyze effects from other projects separate in time or place. See *Department of Transportation v. Public Citizen*, 541 U.S. 752, 767, 124 S. Ct. 2204, 159 L.Ed.2d 60. In sum, when assessing significant environmental effects and feasible alternatives for purposes of NEPA, an agency will invariably make a series of fact-dependent, context-specific, and policy-laden choices about the depth and breadth of its inquiry—and also about the length, content, and level of detail of the resulting EIS. Courts should afford substantial deference and should not micromanage those agency choices so long as they fall within a broad zone of reasonableness.”).

<sup>78</sup> At issue in *Seven County* was the scope of analysis required under NEPA when an agency issues a permit authorizing construction of a segment of linear infrastructure; our discussion here applies that case’s holding to the current context, where NHTSA is undertaking NEPA analysis in connection with a regulatory standards rulemaking.

<sup>79</sup> For discussion of the methods described see Section E.3.3.7, *Sensitivity Analysis*.

MMTCO<sub>2</sub> over this period, slight increases from the action alternatives would range from approximately 0.12 to 0.14 percent above projected levels. Figure E.3.4-1 shows the projected annual emissions from LD vehicles under the alternatives.

**Table E.3.4-1. Carbon Dioxide Emissions and Emissions Increases (MMTCO<sub>2</sub>) from All Light-Duty Vehicles, 2027 to 2100, by Alternative <sup>a</sup>**

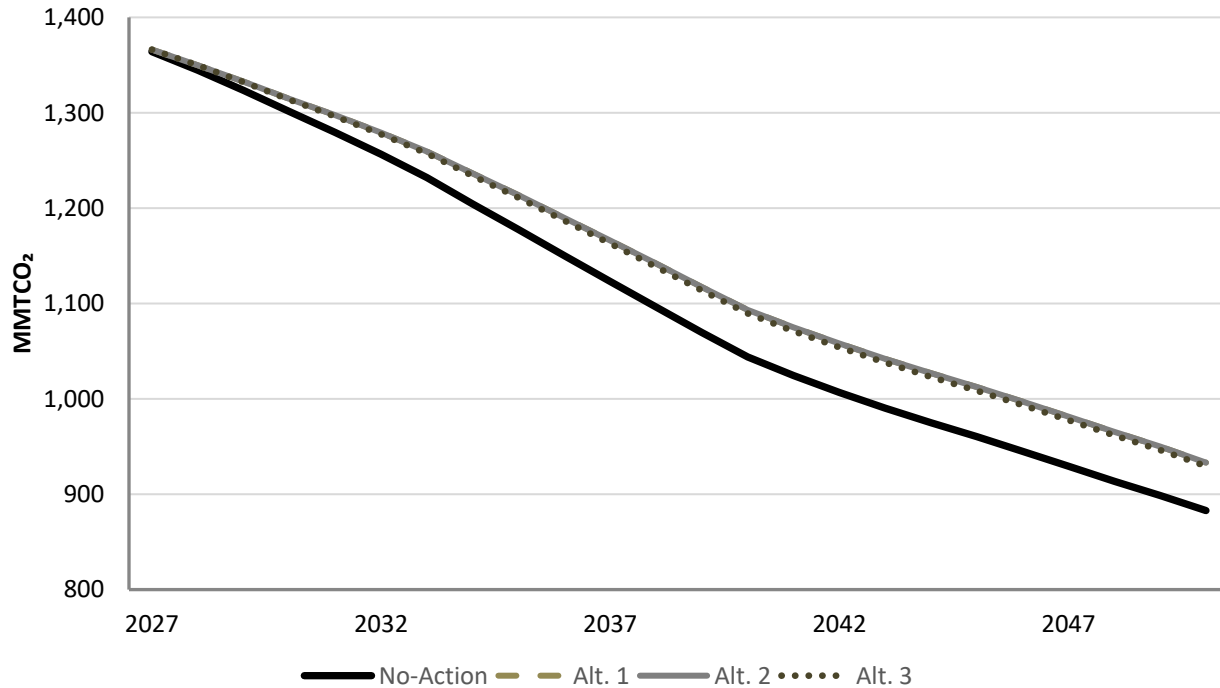
Alternative	Total Emissions	Emissions Increases Compared to No-Action	Percent Emissions Increases Compared to No-Action Alternative Emissions	Percent Emissions Increases Compared to Other Action Global Emissions
No-Action	69,400	-	-	-
Alt. 1	-	3,400	4.90%	0.14%
Alt. 2	-	3,400	4.90%	0.14%
Alt. 3	-	3,100	4.47%	0.12%

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

MMTCO<sub>2</sub> = million metric tons of carbon dioxide.

**Figure E.3.4-1. Projected Annual Carbon Dioxide Emissions (MMTCO<sub>2</sub>) from All Light-Duty Vehicles by Alternative**



MMTCO<sub>2</sub> = million metric tons of carbon dioxide.

Table E.3.4-2 shows that the alternatives would increase emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from their projected levels under the No-Action Alternative. The CH<sub>4</sub> and N<sub>2</sub>O increases are presented in CO<sub>2</sub> equivalents (MMTCO<sub>2e</sub>) in Table E.3.4-2. All alternatives would result in emissions increases compared to the No-Action Alternative. Alternatives 1 and 2 (Preferred Alternative) would result in the greatest emissions increases.

**Table E.3.4-2. Emissions of Non-Criteria Emissions (MMTCO<sub>2e</sub> per year) from All Passenger Cars and Light Trucks for the No-Action Alternative, and Change in Emissions by Alternative <sup>a,b</sup>**

NCEs and Year	No-Action (Total)	Alt. 1 (Change)	Alt. 2 (Change)	Alt. 3 (Change)
<b>Carbon dioxide (CO<sub>2</sub>)</b>				
2020	1,488	-	-	-
2040	1,044	49	49	46
2060	878	50	50	46
2080	872	50	50	46
2100	811	46	46	43
<b>Methane (CH<sub>4</sub>)</b>				
2020	55	-	-	-
2040	39	2	2	2
2060	33	2	2	2
2080	32	2	2	2
2100	30	2	2	1
<b>Nitrous oxide (N<sub>2</sub>O)</b>				
2020	17	-	-	-
2040	11	0	0	0
2060	10	0	0	0
2080	9	0	0	0
2100	9	0	0	0
<b>Total (all NCEs)</b>				
2020	1,560	-	-	-
2040	1,094	52	52	48
2060	921	52	52	48
2080	914	52	52	48
2100	850	48	48	45

Notes:

<sup>a</sup> Emissions from 2051 to 2100 were scaled using the rate of change for the U.S. transportation fuel consumption from the global emissions reference scenario. These assumptions project a slight decline over this period.

<sup>b</sup> Values reported as '-' indicate zero. Values reported as 0 represent amounts greater than 0 but less than 0.5. The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact differences between the values.

MMTCO<sub>2e</sub> = million metric tons of carbon dioxide equivalent; NCEs = non-criteria emissions.



**E.3.4.2 Associated Potential Impacts from Other Actions on Climate Indicators**

Using the methods described in Section E.3.3, *Methods for Estimating Non-Criteria Emissions Impacts*, this section describes the extent of this CAFE rulemaking’s impacts on selected climate indicators in the context of the expected changes associated with the emissions trajectories in the SSP scenarios and other models. The impacts of this rulemaking on such indicators are relatively small, primarily due to the global and multi-sectoral nature of climate trends. As discussed further in Section E.3.1, *Uncertainty in Climate Modeling*, the potential climate impacts of the Proposed Action and alternatives involve uncertainty inherent in all projections of future climate conditions and cannot reliably be determined with complete accuracy.

The SSP2-4.5 scenario was used to represent the No-Action Alternative for the other associated potential impacts analysis. Table E.3.4-3 shows the results for all alternatives. The action alternatives would increase slightly the projected increase in CO<sub>2</sub> concentrations and temperature, but the increases would be a small fraction of the total increase in CO<sub>2</sub> concentrations and global mean surface temperature. The values increase by up to 0.29 ppm under Alternatives 1 and 2 (Preferred Alternative) compared to the No-Action Alternative. The increase for Alternative 3 falls within this range. For 2040 and 2060, the corresponding range is similar. Because CO<sub>2</sub> concentrations are the key driver of all other climate impacts, the small changes in CO<sub>2</sub> lead to small differences in climate impacts.

**Table E.3.4-3. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise, and Ocean pH by Alternative <sup>a</sup>**

	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature (°C) <sup>b,c</sup>			Sea-Level Rise (cm) <sup>b</sup>			Ocean pH <sup>c</sup>		
	2040	2060	2100	2040	2060	2100	2040	2060	2100	2040	2060	2100
<b>Changes Under Alternatives</b>												
No-Action <sup>d</sup>	-0.01	-0.03	-0.07	-0.000	-0.000	-0.000	-0.00	-0.00	-0.01	0.000	0.000	0.000
Alt. 1	0.03	0.13	0.29	0.000	0.001	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002
Alt. 2	0.03	0.13	0.29	0.000	0.001	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002
Alt. 3	0.03	0.12	0.27	0.000	0.000	0.001	0.00	0.00	0.02	0.0000	-0.0001	-0.0002

Notes:

<sup>a</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values might not reflect the exact difference of the values in all cases.

<sup>b</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>c</sup> Values reported as 0.000 are more than zero but less than 0.001. Values reported as 0.0000 are less than zero but more than -0.0001.

<sup>d</sup> Values for the No-Action Alternative represent the difference between the Preferred Alternative (PC2LT002 + HDPUV108) and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>e</sup> °C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million.

### ***Atmospheric Carbon Dioxide Concentrations***

The slight increase in projected CO<sub>2</sub> concentrations under the Proposed Action and alternatives compared to the No-Action Alternative amounts to a small fraction of the projected total increases in CO<sub>2</sub> concentrations. However, the relative impact of the action alternatives is demonstrated by the slight increases of CO<sub>2</sub> concentrations under the range of action alternatives compared to the No-Action Alternative. As shown in Table E.3.4-3, the slight increase in CO<sub>2</sub> concentrations by 2100 under Alternatives 1 and 2 (Preferred Alternative) compared to the No-Action Alternative is only slightly larger than that of Alternative 3 compared to the No-Action Alternative.

### ***Changes in Climate Attributes<sup>80</sup>***

#### Temperature

MAGICC simulations of mean global surface air temperature increases show that the difference among alternatives are small (Table E.3.4-3). In 2100, the increase in temperature under all action alternatives is 0.001°C (0.002°F).<sup>81</sup> Quantifying the changes to regional climate from this rulemaking is not possible because of the limitations of existing climate models.<sup>82</sup>

#### Sea-Level Rise

The components of sea-level rise, treatment of these components, and recent scientific assessments are discussed in Chapter 5, Section 5.3.2, *Impacts from the Proposed Action on Climate Indicators*, under *Sea-Level Rise*. Table E.3.4-3 presents the impact on sea-level rise from each action alternative under the SSP2-4.5 scenario and shows sea-level rise in 2100 increasing by up to 0.02 centimeter (0.01 inch) under each action alternative by 2100 compared to the No-Action Alternative.

---

<sup>80</sup> For more information, see the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond, Appendix F, Section F.3.1, *Climate Change Attributes* (NHTSA 2024).

<sup>81</sup> Because the actual increase in global mean surface temperature lags behind the commitment to warming (i.e., the extra warming already locked in by past emissions, which will show up gradually because the climate system reacts slowly), the impact on global mean surface temperature increase is less than the impact on the long-term commitment to warming. The actual increase in surface temperature lags behind the commitment due primarily to the time required to heat the oceans.

<sup>82</sup> Quantifying the changes to regional climate from this rulemaking is not possible because of the limitations of existing climate models. However, the action alternatives would be expected to increase the changes in regional temperatures roughly in proportion to the slight increase in global mean surface temperature.

Precipitation

The impacts of the proposed action and alternatives would increase temperatures slightly compared to the No-Action Alternative and would increase predicted increases in precipitation slightly; however, the increase would be less than 0.01 percent in all instances.<sup>83,84</sup>

Ocean pH

Table E.3.4-3 shows the projected decrease of ocean pH under each action alternative compared to the No-Action Alternative under the SSP2-4.5 scenario. Ocean pH values decrease by less than 0.0002 under each action alternative by 2100 compared to the No-Action Alternative.

**Climate Sensitivity Variations**

NHTSA examined the sensitivity of climate impacts on key assumptions used in the analysis. This examination reviewed the impact of various climate sensitivities and global emissions scenarios on the climate impacts of all action alternatives.<sup>85</sup> Table E.3.4-4 through Table E.3.4-6 present the results of the sensitivity analyses for other associated potential impacts.

**Table E.3.4-4. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise,<sup>a</sup> and Ocean pH for SSP1-2.6 for Selected Other Associated Potential Impacts<sup>b</sup>**

Alternative	Climate Sensitivity	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature (°C) <sup>c,d</sup>			Sea-Level Rise (cm) <sup>c,d</sup>	Ocean pH <sup>d</sup>
		2040	2060	2100	2040	2060	2100	2100	2100
<b>Changes Under the No-Action Alternative<sup>e</sup></b>									
No-Action	Low	-0.01	-0.02	-0.03	-0.000	-0.000	-0.000	-0.00	0.0000
	Medium	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.01	0.0000
	High	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.01	0.0000

<sup>83</sup> The impacts of higher temperatures on the amount of precipitation and the intensity of precipitation events, as well as the IPCC scaling factors to estimate global mean precipitation change, are discussed in Chapter 5, Section 5.3.2, *Impacts from the Proposed Action on Climate Indicators*, under *Precipitation*. Applying these scaling factors to the increase in global mean surface warming provides estimates of changes in global mean precipitation.

<sup>84</sup> Regional variations and changes in the intensity of precipitation events cannot be quantified further for the same reasons described in Chapter 5, Section 5.3.2, *Impacts from the Proposed Action on Climate Indicators*.

<sup>85</sup> The use of alternative global emissions scenarios can influence the results in several ways. Emissions increases under higher emissions scenarios can lead to larger increases in CO<sub>2</sub> concentrations in later years. Under higher emissions scenarios, anthropogenic emissions levels exceed emissions sinks (e.g., plants, oceans, soils) by a greater extent. As a result, emissions increases under higher emissions scenarios contribute more anthropogenic emissions that stay in the atmosphere (i.e., are not removed by sinks) and contribute to higher CO<sub>2</sub> concentrations. The use of different climate sensitivities could affect not only projected warming but also indirectly affect other examined metrics.

Alternative	Climate Sensitivity	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature (°C) <sup>c,d</sup>			Sea-Level Rise (cm) <sup>c,d</sup>	Ocean pH <sup>d</sup>
		2040	2060	2100	2040	2060	2100	2100	2100
<b>Changes Under Alt. 1 Compared to the No-Action Alternative</b>									
Alt. 1	Low	0.03	0.12	0.22	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.12	0.25	0.000	0.001	0.002	0.02	-0.0002
	High	0.03	0.12	0.27	0.000	0.001	0.002	0.05	-0.0002
<b>Changes Under Alt. 2 Compared to the No-Action Alternative</b>									
Alt. 2	Low	0.03	0.12	0.22	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.12	0.25	0.000	0.001	0.002	0.02	-0.0002
	High	0.03	0.12	0.27	0.000	0.001	0.002	0.05	-0.0002
<b>Changes Under Alt. 3 Compared to the No-Action Alternative</b>									
Alt. 3	Low	0.03	0.11	0.20	0.000	0.000	0.001	0.02	-0.0002
	Medium	0.03	0.12	0.23	0.000	0.001	0.002	0.02	-0.0002
	High	0.03	0.11	0.25	0.000	0.001	0.002	0.04	-0.0002

Notes:

<sup>a</sup> Sea-level rise results are based on the regression analysis described in Section E.3.3.2, *Sea Level*.

<sup>b</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact difference of the values. Low (2.4°C), medium (3.0°C), and high (3.9°C) climate sensitivities were assessed, corresponding to the 5th, 50th, and 95th percentiles of the probability distribution of climate sensitivity values from IPCC AR6. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero.

<sup>e</sup> Values for the No-Action Alternative represent the difference between the Alternative PC2LT002 + HDPUV4 and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>°C</sup> = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million; SSP = Shared Socioeconomic Pathway.

As shown in Table E.3.4-4 through Table E.3.4-6, the sensitivity of simulated CO<sub>2</sub> emissions in 2040, 2060, and 2100 to assumptions of global emissions and climate sensitivity is low; the incremental changes in CO<sub>2</sub> concentration (i.e., the difference between Alternative 1 and Alternative 3) are insensitive to different assumptions on emissions and climate sensitivity. For 2040 and 2060, the choice of emissions scenario has little impact on the results. By 2100, the action alternatives would have the greatest impact on CO<sub>2</sub> concentration in the emissions scenarios with the highest CO<sub>2</sub> emissions (SSP3-7.0 scenario), and the smallest impact in the scenarios with the lowest CO<sub>2</sub> emissions (SSP1-2.6). The total range of the impacts of Alternatives 1 and 2 (Preferred Alternative) on CO<sub>2</sub> concentrations in 2100 is roughly 0.20 to 0.35 ppm across all three emissions scenarios. Alternative 3, using the SSP2-4.5 scenario and a

3.0°C (5.4°F) climate sensitivity, would have a 0.27 ppm increase compared to the No-Action Alternative.

**Table E.3.4-5. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise,<sup>a</sup> and Ocean pH for SSP2-4.5 for Other Associated Potential Impacts<sup>b</sup>**

Alternatives	Climate Sensitivity	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature (°C) <sup>c,d</sup>			Sea-Level Rise (cm) <sup>c,d</sup>	Ocean pH <sup>d</sup>
		2040	2060	2100	2040	2060	2100	2100	2100
<b>Changes Under the No-Action Alternative<sup>e</sup></b>									
No-Action	Low	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	0.0000
	Medium	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	0.0000
	High	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.01	0.0000
<b>Changes Under Alt. 1 Compared to the No-Action Alternative</b>									
Alt. 1	Low	0.03	0.12	0.26	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.13	0.29	0.000	0.001	0.001	0.02	-0.0002
	High	0.03	0.13	0.29	0.000	0.001	0.002	0.03	-0.0002
<b>Changes Under Alt. 2 Compared to the No-Action Alternative</b>									
Alt. 2	Low	0.03	0.12	0.26	0.000	0.001	0.001	0.02	-0.0002
	Medium	0.03	0.13	0.29	0.000	0.001	0.001	0.02	-0.0002
	High	0.03	0.13	0.29	0.000	0.001	0.002	0.03	-0.0002
<b>Changes Under Alt. 3 Compared to the No-Action Alternative</b>									
Alt. 3	Low	0.03	0.11	0.24	0.000	0.000	0.001	0.02	-0.0002
	Medium	0.03	0.12	0.27	0.000	0.000	0.001	0.02	-0.0002
	High	0.03	0.12	0.27	0.000	0.001	0.002	0.03	-0.0002

Notes:

<sup>a</sup> Sea-level rise results are based on the regression analysis described in Section E.3.3.2, *Sea Level*.

<sup>b</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact difference of the values. Low (2.4 °C), medium (3.0 °C), and high (3.9 °C) climate sensitivities were assessed, corresponding to the 5th, 50th, and 95th percentiles of the probability distribution of climate sensitivity values from IPCC AR6. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero.

<sup>e</sup> Values for the No-Action Alternative represent the difference between Alternative PC2LT002 + HDPUV4 and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>°C</sup> = degrees Celsius; <sup>cm</sup> = centimeters; <sup>CO<sub>2</sub></sup> = carbon dioxide; <sup>ppm</sup> = parts per million; <sup>SSP</sup> = Shared Socioeconomic Pathway.

**Table E.3.4-6. Changes in Carbon Dioxide Concentrations, Global Mean Surface Temperature, Sea-Level Rise,<sup>a</sup> and Ocean pH for SSP3-7.0 for Other Associated Potential Impacts<sup>b</sup>**

Alternatives	Climate Sensitivity	CO <sub>2</sub> Concentration (ppm)			Global Mean Surface Temperature (°C) <sup>c,d</sup>			Sea-Level Rise (cm) <sup>c,d</sup>	Ocean pH <sup>d</sup>
		2040	2060	2100	2040	2060	2100	2100	2100
<b>Changes Under the No-Action Alternative<sup>e</sup></b>									
No-Action	Low	-0.01	-0.02	-0.04	-0.000	-0.000	-0.000	-0.00	0.0000
	Medium	-0.01	-0.02	-0.05	-0.000	-0.000	-0.000	-0.00	0.0000
	High	-0.01	-0.02	-0.05	-0.000	-0.000	-0.000	-0.01	0.0000
<b>Changes Under Alt. 1 Compared to the No-Action Alternative</b>									
Alt. 1	Low	0.03	0.13	0.30	0.000	0.001	0.001	0.02	-0.0001
	Medium	0.04	0.13	0.32	0.000	0.001	0.001	0.03	-0.0002
	High	0.04	0.13	0.35	0.000	0.001	0.001	0.03	-0.0002
<b>Changes Under Alt. 2 Compared to the No-Action Alternative</b>									
Alt. 2	Low	0.03	0.13	0.30	0.000	0.001	0.001	0.02	-0.0001
	Medium	0.04	0.13	0.32	0.000	0.001	0.001	0.03	-0.0002
	High	0.04	0.13	0.35	0.000	0.001	0.001	0.03	-0.0002
<b>Changes Under Alt. 3 Compared to the No-Action Alternative</b>									
Alt. 3	Low	0.03	0.11	0.27	0.000	0.000	0.001	0.02	-0.0001
	Medium	0.03	0.12	0.30	0.000	0.001	0.001	0.02	-0.0001
	High	0.03	0.12	0.31	0.000	0.001	0.001	0.03	-0.0001

Notes:

<sup>a</sup> Sea-level rise results are based on the regression analysis described in Section E.3.3.2, *Sea Level*.

<sup>b</sup> The numbers in this table have been rounded for presentation purposes. As a result, the values do not reflect the exact difference of the values. Low (2.4°C), medium (3.0°C), and high (3.9°C) climate sensitivities were assessed, corresponding to the 5th, 50th, and 95th percentiles of the probability distribution of climate sensitivity values from IPCC AR6. IPCC data and projections inevitably carry substantial uncertainties due to the complexities of climate modeling and limitations in observational records. All climate models inherently make numerous assumptions, all of which introduce additional uncertainty and variability in projected outcomes.

<sup>c</sup> The values for global mean surface temperature and sea-level rise are relative to the average of the years 1986–2005.

<sup>d</sup> Values reported as 0.00, 0.000, or 0.0000 are greater than zero. Values reported as -0.00, -0.000, or -0.0000 are less than zero.

<sup>e</sup> Values for the No-Action Alternative represent the difference between Alternative PC2LT002 + HDPUV4 and the No-Action Alternative in the Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond (NHTSA 2024). NHTSA’s Proposed Action also includes proposed changes to its vehicle classification regulations starting in MY 2028, which reconsiders how light trucks are classified; therefore, the two data sets used here will differ in the types of vehicles included. See Section VI of the proposed rule preamble and Chapter 3 of the PRIA for additional detail regarding the effect of NHTSA’s proposed fleet reclassification.

<sup>°</sup>C = degrees Celsius; cm = centimeters; CO<sub>2</sub> = carbon dioxide; ppm = parts per million; SSP = Shared Socioeconomic Pathway.

The sensitivity of the simulated global mean surface temperatures for 2040, 2060, and 2100 varies over the simulation period, as shown in Table E.3.4-4 through Table E.3.4-6. In 2040, the impact would be low due primarily to the rate at which global mean surface temperature increases in response to increases in radiative forcing. In 2100, the impact would be larger due

to climate sensitivity and change in emissions. When modeling using the SSP3-7.0 scenario, the action alternatives result in a greater increase in global mean surface temperature than when modeled under SSP1-2.6. This difference is due to the nonlinear and near-logarithmic relationship between radiative forcing and CO<sub>2</sub> concentrations. At high emissions levels, CO<sub>2</sub> concentrations are high; therefore, a fixed increase in emissions yields a greater increase in radiative forcing and global mean surface temperature.

The sensitivity of simulated sea-level rise to change in climate sensitivity and global NCEs mirrors that of global temperature, as shown in Table E.3.4-4 through Table E.3.4-6. Scenarios with lower climate sensitivities have lower increases in sea-level rise; the increase in sea-level rise is lower under each alternative than it would be under scenarios with higher climate sensitivities. Higher global NCE scenarios have higher sea-level rise, but the impact of the action alternatives would be less than in scenarios with lower global emissions.

The sensitivity of the simulated ocean pH to change in climate sensitivity and global NCEs is low and less than that of global CO<sub>2</sub> concentrations.

## **APPENDIX F**

### **Air Quality Nonattainment Area Results**



## APPENDIX F AIR QUALITY NONATTAINMENT AREA RESULTS

This appendix provides emissions estimates for all nonattainment and maintenance areas for all criteria pollutants (except lead, as explained in Chapter 4, Section 4.1.1, *Relevant Pollutants and Standards*). To assess regional differences in the impacts of the action alternatives, NHTSA estimated net emissions changes for individual nonattainment and maintenance areas. The distribution of emissions is not uniform nationwide, and either increases or decreases in emissions can occur within individual nonattainment and maintenance areas. Generally, emissions differences of the magnitudes shown in the following tables would be considered within the uncertainty level of the CAFE Model predictions and might not result in differences in actual emissions. NHTSA focused on nonattainment and maintenance areas because air quality problems have been the greatest in these areas.

**Table F-1. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Carbon Monoxide (CO), 2035**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	69.31	69.31	66.44
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	276.49	276.49	265.08
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.50	0.50	0.48
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	115.55	115.55	111.01
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	11.94	11.94	11.45
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	10.08	10.08	9.69
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	133.15	133.15	128.00
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.28	2.28	2.19
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	14.83	14.83	14.26
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	90.41	90.41	86.95
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	102.26	102.26	98.31
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-0.13	-0.13	-0.09
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	6.24	6.24	5.98
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	18.33	18.33	17.57
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.01	1.01	0.97
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	167.22	167.22	160.30
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.02	3.02	2.90
Armstrong County: Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.69	0.69	0.66
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.23	1.23	1.18
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	984.70	984.70	944.03
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	763.74	763.74	732.22
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	6.45	6.45	6.19
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	77.10	77.10	73.99
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.49	1.49	1.43
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	421.53	421.53	404.24

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	423.71	423.71	406.33
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	140.22	140.22	135.02
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.89	1.89	1.81
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	3.94	3.94	3.77
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	32.48	32.48	31.13
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	13.02	13.02	12.51
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.17	0.17	0.19
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	198.36	198.36	190.96
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	69.28	69.28	66.41
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.15	1.15	1.10
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	136.25	136.25	130.61
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.37	0.37	0.37
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.17
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.66	1.66	1.59
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.39	1.39	1.34
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	24.69	24.69	23.68
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	6.39	6.39	6.13
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	6.39	6.39	6.13
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.84	0.84	0.81
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	4.30	4.30	4.12
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	45.77	45.77	43.90
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	29.57	29.57	28.34
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.16	1.16	1.12
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	34.26	34.26	32.84
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	277.16	277.16	265.69
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	480.70	480.70	460.80
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1120.0 4	1120.0 4	1075.5 4
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	1135.8 0	1135.8 0	1090.7 6
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	24.69	24.69	23.68
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.82	9.82	9.41
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	23.55	23.55	22.58
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	61.06	61.06	58.53
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	243.27	243.27	233.20
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	316.09	316.09	303.00
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	315.98	315.98	302.90
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	168.72	168.72	161.74
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	402.25	402.25	385.69
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	212.56	212.56	203.76
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	417.25	417.25	400.07

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	388.71	388.71	372.71
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.33	2.33	2.24
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	101.22	101.22	97.03
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	307.02	307.02	294.38
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	288.55	288.55	276.67
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	12.33	12.33	11.83
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	14.47	14.47	14.10
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.19	0.19	0.18
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.13	-0.13	-0.05
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	169.11	169.11	162.11
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	137.67	137.67	131.97
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1290.6 2	1290.6 2	1237.5 8
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1266.5 3	1266.5 3	1214.4 9
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	94.49	94.49	90.58
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	54.75	54.75	52.63
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	623.44	623.44	598.00
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	484.28	484.28	464.26
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	622.66	622.66	597.25
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	258.51	258.51	248.16
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	700.96	700.96	672.43
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	29.93	29.93	28.82
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	702.76	702.76	674.15
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.74	0.74	0.73
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.09	0.09	0.08
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	7.30	7.30	6.99
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.94	1.94	1.86
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	3.06	3.06	2.94
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	13.28	13.28	12.75
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.35	1.35	1.55
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.11	0.11	0.10
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.82	2.82	2.78
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	92.03	92.03	88.29
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	7.09	7.09	6.82
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	122.43	122.43	117.44
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	37.65	37.65	36.09
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	6.26	6.26	6.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	11.28	11.28	10.81

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.03	1.03	0.99
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.25	6.25	5.99
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.98	0.98	0.94
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	26.83	26.83	25.72
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.54	1.54	1.48
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.95	1.95	1.87
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.98	6.98	6.69
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	89.45	89.45	85.76
Gila County (part): Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.25	2.25	2.16
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.06	0.06	0.05
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.24	5.24	5.07
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.29	5.29	5.08
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.19
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	255.77	255.77	245.18
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	256.04	256.04	245.44
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	61.19	61.19	59.03
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.38	1.38	1.32
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.34	1.34	1.29
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	157.02	157.02	150.52
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	179.55	179.55	172.11
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	1.84	1.84	1.76
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.10	3.10	2.97
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.84	1.84	1.76
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.07	1.07	1.03
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.89	1.89	1.88
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-0.20	-0.20	-0.12
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1058.64	1058.64	1016.96
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1025.14	1025.14	984.85
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-0.16	-0.16	-0.13
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	5.52	5.52	5.29
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	5.66	5.66	5.43
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.29	1.29	1.25
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	38.08	38.08	36.65
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	38.03	38.03	36.60
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	30.38	30.38	29.23
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	30.38	30.38	29.23
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	36.24	36.24	34.87
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.16	6.16	5.99

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	11.85	11.85	11.36
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.47	0.47	0.45
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	94.30	94.30	90.40
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	10.21	10.21	9.79
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.87	0.87	0.84
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	11.10	11.10	10.64
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	25.59	25.59	24.54
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	20.67	20.67	19.84
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.48	0.48	0.46
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	11.61	11.61	11.13
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.55	0.55	0.53
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.71	5.71	5.48
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	18.11	18.11	17.36
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.20	5.20	4.99
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.43	1.43	1.37
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	11.94	11.94	11.69
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	11.94	11.94	11.69
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.24	3.24	3.11
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.08	2.08	2.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	6.28	6.28	6.02
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.29	6.29	6.03
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	7.20	7.20	6.91
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	130.19	130.19	124.80
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	158.59	158.59	152.03
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	9.69	9.69	9.29
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.26	4.26	4.08
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	62.44	62.44	60.86
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	36.17	36.17	34.67
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	6.29	6.29	6.03
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	40.28	40.28	39.34
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.31	0.31	0.30
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.16	0.16	0.15
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.09	2.09	2.01
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.21	5.21	5.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	4.28	4.28	4.10
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	73.86	73.86	70.80
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	73.84	73.84	70.78
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	37.67	37.67	36.11
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	316.48	316.48	303.38
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	315.98	315.98	302.90

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.55	0.55	0.55
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	18.39	18.39	17.63
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	24.32	24.32	23.38
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	2.28	2.28	2.19
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.60	0.60	0.57
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	21.02	21.02	20.15
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.35	12.35	11.84
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	8.19	8.19	7.85
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	114.23	114.23	109.86
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	114.20	114.20	109.83
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	2350.80	2350.80	2255.08
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	2350.85	2350.85	2255.13
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	2350.38	2350.38	2254.68
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	2349.24	2349.24	2253.59
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	2350.71	2350.71	2255.00
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	2350.71	2350.71	2255.00
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	35.93	35.93	34.45
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	152.54	152.54	146.22
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	18.57	18.57	17.80
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	46.40	46.40	44.64
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.15	7.15	6.92
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	15.60	15.60	14.96
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	10.23	10.23	9.80
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	27.83	27.83	26.68
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	897.71	897.71	860.55
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	77.92	77.92	74.70
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	2.57	2.57	2.47
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	2.58	2.58	2.48
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.50	1.50	1.44
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	15.52	15.52	14.88
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	157.22	157.22	150.75
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	206.24	206.24	197.74
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.75	2.75	2.63
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.45	2.45	2.35
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.61	2.61	2.50
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	27.50	27.50	26.36
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	258.08	258.08	247.50

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	119.27	119.27	114.44
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	228.55	228.55	219.19
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	486.42	486.42	466.53
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	473.37	473.37	454.03
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.50	12.50	11.98
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	12.85	12.85	12.32
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	43.06	43.06	41.28
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	10.72	10.72	10.27
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.70	0.70	0.68
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.89	2.89	2.77
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.32	0.32	0.31
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	4.86	4.86	4.66
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.95	0.95	0.91
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.93	0.93	0.89
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.14	3.14	3.01
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.49	2.49	2.39
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.24	4.24	4.07
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	21.32	21.32	20.43
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.40	0.40	0.38
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	13.31	13.31	12.76
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.37	1.37	1.31
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.74	0.74	0.72
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	14.11	14.11	13.53
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	14.15	14.15	13.57
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.13	4.13	3.96
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	150.95	150.95	144.70
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.54	0.54	0.52
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	46.58	46.58	44.65
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1103.07	1103.07	1057.44
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2055.46	2055.46	1970.46
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2096.92	2096.92	2010.19
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2055.99	2055.99	1970.97
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	3.57	3.57	3.43
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	281.68	281.68	270.05
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.14
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.32	12.32	11.81
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	12.32	12.32	11.81
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.06	4.06	3.93

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	14.81	14.81	14.33
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	8.35	8.35	8.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.14
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	6.09	6.09	5.84
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.24	0.24	0.23
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	13.50	13.50	12.98
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	8.27	8.27	7.93
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	164.46	164.46	157.69
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	184.60	184.60	177.28
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	507.96	507.96	487.24
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	943.46	943.46	905.05
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	943.22	943.22	904.82
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	878.80	878.80	842.42
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	900.18	900.18	862.92
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	909.22	909.22	871.58
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.16
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.46	0.46	0.44
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	6.68	6.68	6.40
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	37.08	37.08	35.55
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.07	4.07	3.90
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	35.05	35.05	33.69
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	295.46	295.46	283.60
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	269.41	269.41	258.62
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.25	0.25	0.24
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	3.45	3.45	3.31
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	260.36	260.36	249.66
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.62	0.62	0.59
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	11.77	11.77	11.28
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	27.43	27.43	26.30
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	98.27	98.27	94.23
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.59	1.59	1.52
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	329.30	329.30	315.67
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.12	-0.12	-0.08
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	54.21	54.21	52.13



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	53.83	53.83	51.60
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	4.11	4.11	3.94
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	79.45	79.45	76.16
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	79.45	79.45	76.16
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	91.35	91.35	87.57
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	2339.55	2339.55	2244.30
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.23	0.23	0.22
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.97	4.97	4.78
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.19	0.19	0.19
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	197.81	197.81	189.69
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	338.79	338.79	324.97
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	338.75	338.75	324.93
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	226.80	226.80	217.49
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	330.14	330.14	316.68
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	41.70	41.70	39.98
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	36.55	36.55	35.07
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	300.27	300.27	287.87
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	177.47	177.47	170.16
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	177.56	177.56	170.24
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	300.31	300.31	287.95
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	78.52	78.52	75.61
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	495.35	495.35	474.85
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	494.63	494.63	474.16
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	494.40	494.40	473.94
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1032.98	1032.98	990.94
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1031.85	1031.85	989.85
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1034.54	1034.54	992.43
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	975.77	975.77	936.06
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	614.55	614.55	589.51
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	614.55	614.55	589.51
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	614.56	614.56	589.52
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	614.52	614.52	589.48
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	614.52	614.52	589.48
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.06	1.06	1.17
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.06	1.06	1.17
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.41	3.41	3.26
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.70	1.70	1.63

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.62	3.62	3.47
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	42.89	42.89	41.11
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	500.35	500.35	479.69
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	12.08	12.08	11.58
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.43	2.43	2.33
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	10.99	10.99	10.53
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.25	3.25	3.11
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.42	5.42	5.19
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.97	1.97	1.89
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	98.26	98.26	94.22
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.09	1.09	1.04
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	54.43	54.43	52.18
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	53.98	53.98	51.75
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	24.39	24.39	23.38
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.46	4.46	4.31
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.88	7.88	7.56
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.34	1.34	1.28
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	118.60	118.60	113.73
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	408.42	408.42	391.78
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	426.57	426.57	409.19
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	6.24	6.24	5.99
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	12.57	12.57	12.05
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	55.74	55.74	53.44
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.15	4.15	3.98
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	69.67	69.67	66.79
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	81.57	81.57	78.24
Tazewell County; Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.76	2.76	2.65
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	10.03	10.03	9.62
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	15.84	15.84	15.18
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.64	0.64	0.61
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.08	0.08	0.11
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	12.12	12.12	11.61
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	-0.47	-0.47	-0.38
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	135.82	135.82	130.20

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	7.99	7.99	7.66
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-0.03	-0.03	-0.03
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	-0.03	-0.03	-0.03
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	9.10	9.10	8.73
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.05	1.05	1.01
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	2.31	2.31	2.24
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	99.25	99.25	95.17
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	47.24	47.24	45.35
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	110.60	110.60	106.30
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	110.41	110.41	106.12
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.51	2.51	2.40
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	20.18	20.18	19.35
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.59	0.59	0.57
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	10.62	10.62	10.18
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	4.89	4.89	4.69
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.22	0.22	0.23
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.34	1.34	1.31
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.77	1.77	1.72
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	111.55	111.55	106.94
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	849.32	849.32	814.16
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	849.68	849.68	814.50
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	54.38	54.38	52.13
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.47	7.47	7.25
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	9.69	9.69	9.29
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	3.02	3.02	2.90
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	1.53	1.53	1.46
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-2.32	-2.32	-1.96
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	81.83	81.83	78.44
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	36.95	36.95	35.42
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	15.28	15.28	14.65
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.24	5.24	5.02
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	24.86	24.86	23.83
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	16.72	16.72	16.03
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	26.13	26.13	25.04

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-2. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Carbon Monoxide (CO), 2050

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	120.26	120.26	121.03
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	480.10	480.10	483.05
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.77	0.77	0.78
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	214.03	214.03	214.18
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	20.56	20.56	20.69
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	18.99	18.99	18.98
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	251.14	251.14	250.94
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.31	4.31	4.31
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	28.16	28.16	28.13
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	172.46	172.46	172.16
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	192.98	192.98	192.82
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.81	1.81	1.64
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	10.99	10.99	11.05
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	32.09	32.09	32.30
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.76	1.76	1.77
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	290.16	290.16	292.02
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.58	5.58	5.58
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	1.14	1.14	1.15
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.22	2.22	2.24
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	1709.68	1709.68	1720.21
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1327.24	1327.24	1335.31
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	11.10	11.10	11.17
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	140.16	140.16	140.66
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.59	2.59	2.61
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	738.17	738.17	742.17
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	741.94	741.94	745.96
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	276.99	276.99	275.75
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.23	3.23	3.25
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	6.81	6.81	6.86
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	56.21	56.21	56.57
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	24.40	24.40	24.42
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.83	1.83	1.71
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	389.42	389.42	387.86
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	120.20	120.20	120.98
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.14	2.14	2.15

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	236.15	236.15	237.67
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.02	1.02	1.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.30
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.88	2.88	2.90
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.76	2.76	2.74
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	43.36	43.36	43.59
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	11.25	11.25	11.31
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	11.25	11.25	11.31
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.39	1.39	1.40
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	7.52	7.52	7.56
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	80.61	80.61	81.00
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	51.78	51.78	52.12
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.12	2.12	2.13
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	59.29	59.29	59.67
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	479.69	479.69	482.78
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	834.44	834.44	839.81
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2044.9 2	2044.9 2	2048.8 1
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	2078.1 0	2078.1 0	2081.6 1
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	43.36	43.36	43.58
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	17.46	17.46	17.57
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	41.57	41.57	41.79
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	106.00	106.00	106.69
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	421.05	421.05	423.76
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	547.47	547.47	550.99
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	548.86	548.86	552.39
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	292.02	292.02	293.90
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	701.37	701.37	705.43
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	367.89	367.89	370.25
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	727.34	727.34	731.57
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	677.92	677.92	681.83
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	4.20	4.20	4.22
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	176.31	176.31	177.43
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	535.40	535.40	538.49
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	503.44	503.44	506.32
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	22.03	22.03	22.12
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	37.91	37.91	37.01
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.33	0.33	0.33
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.14	4.14	3.78
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	292.70	292.70	294.58
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	238.21	238.21	239.74

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2255.77	2255.77	2268.35
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2214.06	2214.06	2226.38
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	163.54	163.54	164.59
Delaware County, PA	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	103.46	103.46	103.36
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1100.60	1100.60	1105.82
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	840.84	840.84	846.12
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1099.09	1099.09	1104.32
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	468.29	468.29	469.57
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	1240.73	1240.73	1246.29
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	58.65	58.65	58.41
Detroit-Ann Arbor, MI	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1243.90	1243.90	1249.48
Dona Ana County; Anthony, NM	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	2.10	2.10	2.04
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.13	0.13	0.13
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	12.66	12.66	12.74
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.51	3.51	3.54
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	5.30	5.30	5.33
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	24.21	24.21	24.29
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	16.72	16.72	15.55
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.19	0.19	0.19
East Kern County, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	8.80	8.80	8.47
El Paso County, TX	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	163.88	163.88	164.61
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	13.37	13.37	13.37
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	216.69	216.69	217.67
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	66.36	66.36	66.79
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	11.08	11.08	11.15
Fairbanks, AK	PM <sub>2.5</sub> (2006 24-hour)	Nonattainment, Serious	100	0	19.88	19.88	20.01
Flathead County; Columbia Falls and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	1.78	1.78	1.79
Flathead County; Kalispell and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	11.23	11.23	11.31
Flathead County; Whitefish and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	1.73	1.73	1.75
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	47.16	47.16	47.46
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.69	2.69	2.71
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.71	3.71	3.70
Fremont County; Canon City Area, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	12.07	12.07	12.15

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	157.47	157.47	158.42
Gila County (part): Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.95	3.95	3.97
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.09	0.09	0.10
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	11.54	11.54	11.39
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.57	9.57	9.63
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.89	1.89	1.76
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	442.65	442.65	445.50
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	443.12	443.12	445.98
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	127.15	127.15	126.10
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	2.61	2.61	2.61
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.56	2.56	2.56
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	271.78	271.78	273.53
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	311.23	311.23	313.24
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	2.98	2.98	3.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	5.01	5.01	5.04
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.98	2.98	3.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.77	1.77	1.78
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	7.48	7.48	7.16
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.85	3.85	3.50
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1954.10	1954.10	1955.96
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1895.85	1895.85	1897.36
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.36	1.36	1.22
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	9.55	9.55	9.61
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	9.94	9.94	10.01
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.19	3.19	3.13
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	73.89	73.89	73.67
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	73.79	73.79	73.56
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	59.79	59.79	59.60
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	59.79	59.79	59.60
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	70.42	70.42	70.20
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	15.09	15.09	14.80
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	20.47	20.47	20.61
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.82	0.82	0.83
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	163.22	163.22	164.27
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	17.50	17.50	17.61
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	1.65	1.65	1.63
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	19.25	19.25	19.37
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	45.07	45.07	45.36
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	37.19	37.19	37.30
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.82	0.82	0.82

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	20.15	20.15	20.28
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.97	0.97	0.98
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	10.29	10.29	10.33
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	31.37	31.37	31.57
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	9.40	9.40	9.46
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.60	2.60	2.62
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	33.35	33.35	32.33
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	33.35	33.35	32.33
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.64	5.64	5.68
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.60	3.60	3.63
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	11.25	11.25	11.32
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	11.26	11.26	11.34
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	12.85	12.85	12.93
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	225.41	225.41	226.86
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	274.51	274.51	276.28
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	17.00	17.00	17.11
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.58	7.58	7.63
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	165.09	165.09	161.14
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	62.60	62.60	63.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	10.69	10.69	10.75
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	111.15	111.15	108.21
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.58	0.58	0.58
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.29	0.29	0.29
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.54	3.54	3.56
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.03	9.03	9.09
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	7.19	7.19	7.24
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	127.83	127.83	128.65
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	127.80	127.80	128.62
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	66.39	66.39	66.82
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	549.72	549.72	553.26
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	548.86	548.86	552.39
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	2.50	2.50	2.38
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	31.83	31.83	32.03
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	46.29	46.29	46.23
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	4.31	4.31	4.31
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.15	1.15	1.16
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	36.41	36.41	36.65
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	21.83	21.83	21.93
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	14.22	14.22	14.31
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	213.73	213.73	213.33



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	213.69	213.69	213.28
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	4165.03	4165.03	4183.86
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	4165.11	4165.11	4183.93
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	4164.57	4164.57	4183.38
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	4162.58	4162.58	4181.37
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	4165.18	4165.18	4183.99
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	4165.18	4165.18	4183.99
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	62.20	62.20	62.60
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	264.00	264.00	265.70
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	32.20	32.20	32.41
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	89.71	89.71	89.47
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	16.26	16.26	16.03
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	27.53	27.53	27.71
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	17.92	17.92	18.04
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	48.17	48.17	48.48
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	1556.54	1556.54	1566.56
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	134.88	134.88	135.75
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	4.70	4.70	4.71
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	4.72	4.72	4.73
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.62	2.62	2.64
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	27.37	27.37	27.54
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	274.27	274.27	275.85
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	359.68	359.68	361.80
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.05	5.05	5.08
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	4.50	4.50	4.52
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.78	4.78	4.81
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	47.60	47.60	47.90
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	453.30	453.30	455.70
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	212.34	212.34	213.18
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	401.47	401.47	403.53
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	856.66	856.66	860.95
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	833.63	833.63	837.74
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	22.09	22.09	22.24
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	22.72	22.72	22.87
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	75.06	75.06	75.54

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	19.09	19.09	19.21
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.40	1.40	1.39
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.48	5.48	5.50
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.58	0.58	0.59
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	8.57	8.57	8.62
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.60	1.60	1.61
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.58	1.58	1.59
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.48	5.48	5.51
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.45	4.45	4.47
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.50	7.50	7.55
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	37.13	37.13	37.37
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.65	0.65	0.65
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	23.33	23.33	23.48
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.43	2.43	2.45
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.70	1.70	1.67
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	24.23	24.23	24.39
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	24.30	24.30	24.45
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.19	7.19	7.23
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	261.49	261.49	263.17
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.11	1.11	1.10
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	80.62	80.62	81.14
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1911.36	1911.36	1923.50
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3562.34	3562.34	3584.86
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	3634.07	3634.07	3657.05
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3563.22	3563.22	3585.76
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	6.51	6.51	6.55
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	490.10	490.10	493.07
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.23
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	21.40	21.40	21.53
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	21.40	21.40	21.53
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	9.19	9.19	9.07
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	33.53	33.53	33.08
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	14.45	14.45	14.54
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.23	0.23	0.23
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.24	0.24	0.24
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	10.69	10.69	10.76
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.45	0.45	0.45
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	25.56	25.56	25.55
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	14.49	14.49	14.57
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	286.92	286.92	288.57
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	338.21	338.21	338.74
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	896.94	896.94	901.15
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1669.4 1	1669.4 1	1676.9 4
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1669.0 2	1669.0 2	1676.5 5
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	1523.1 6	1523.1 6	1532.9 7
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	1560.0 9	1560.0 9	1570.1 4
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	1576.0 0	1576.0 0	1586.1 5
Pierce County; Tacoma, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	3.00	3.00	2.78
Pima County; Ajo planning area, AZ	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.71	0.71	0.72
Pima County; Rillito planning area, AZ	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	11.28	11.28	11.35
Pinal County (part); West Pinal, AZ	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	65.09	65.09	65.51
Pitkin County; Aspen, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	7.04	7.04	7.09
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	66.07	66.07	66.02
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	532.27	532.27	533.85
Pittsburgh-Beaver Valley, PA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	486.82	486.82	488.15
Plumas County, CA	PM <sub>2.5</sub> (2012 Annual)	Nonattainment, Serious	100	0	0.43	0.43	0.43
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	5.98	5.98	6.02
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	456.01	456.01	458.60
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	1.13	1.13	1.14
Power-Bannock Counties; Portneuf Valley Area, ID	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	20.59	20.59	20.73
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	47.88	47.88	48.19
Provo, UT	PM <sub>2.5</sub> (2006 24-hour)	Nonattainment, Serious	100	0	171.87	171.87	172.84
Prowers County; Lamar, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	2.81	2.81	2.83
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	569.97	569.97	573.64
Ramsey County, MN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	1.92	1.92	1.75
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	103.10	103.10	102.95
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	94.20	94.20	94.81
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	7.30	7.30	7.35
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	137.20	137.20	138.08
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	137.20	137.20	138.08
Riverside County; Coachella Valley planning area, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	157.80	157.80	158.81

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	4145.78	4145.78	4164.46
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.41	0.41	0.41
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	9.89	9.89	9.84
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.66	0.66	0.63
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	346.23	346.23	348.12
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	597.83	597.83	600.66
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	597.77	597.77	600.59
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	398.93	398.93	401.08
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	583.69	583.69	586.44
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	73.11	73.11	73.58
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	65.39	65.39	65.63
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	522.40	522.40	525.58
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	309.22	309.22	311.03
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	309.37	309.37	311.18
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	523.93	523.93	526.94
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	150.86	150.86	150.15
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	857.59	857.59	863.09
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	856.34	856.34	861.83
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	856.17	856.17	861.66
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1829.21	1829.21	1837.41
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1827.20	1827.20	1835.39
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1831.91	1831.91	1840.12
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1730.26	1730.26	1737.99
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1087.87	1087.87	1092.86
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1087.87	1087.87	1092.87
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1087.89	1087.89	1092.88
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1087.82	1087.82	1092.81
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1087.82	1087.82	1092.81
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	10.06	10.06	9.37
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	10.06	10.06	9.37
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.38	5.38	5.42
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.05	3.05	3.06
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	6.59	6.59	6.63

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	74.19	74.19	74.67
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	871.52	871.52	876.89
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	21.14	21.14	21.27
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.41	4.41	4.44
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	19.20	19.20	19.32
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.62	5.62	5.66
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	9.43	9.43	9.49
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.43	3.43	3.45
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	171.85	171.85	172.82
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.86	1.86	1.87
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	94.85	94.85	95.46
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	94.07	94.07	94.68
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	42.52	42.52	42.79
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	9.61	9.61	9.50
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	13.76	13.76	13.84
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.40	2.40	2.42
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	207.47	207.47	208.63
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	722.31	722.31	725.61
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	753.66	753.66	757.16
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	11.39	11.39	11.43
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	21.95	21.95	22.08
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	97.40	97.40	98.00
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.23	7.23	7.27
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	120.59	120.59	121.37
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	144.97	144.97	145.65
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.83	4.83	4.86
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	17.55	17.55	17.67
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	28.01	28.01	28.19
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.08	0.08	0.08
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.12	1.12	1.13
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	1.69	1.69	1.56
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	21.02	21.02	21.16
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.58	3.58	3.21
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	237.47	237.47	239.00
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	14.08	14.08	14.15
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.16	0.16	0.14
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.16	0.16	0.14

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 CO Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	16.35	16.35	16.43
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.97	1.97	1.98
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	5.13	5.13	5.06
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	173.59	173.59	174.55
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	86.16	86.16	86.37
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	207.53	207.53	207.46
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	207.20	207.20	207.13
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.46	4.46	4.49
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	34.93	34.93	35.15
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.98	0.98	0.99
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	18.43	18.43	18.55
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	8.30	8.30	8.36
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.81	1.81	1.70
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	3.85	3.85	3.75
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.62	4.62	4.53
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	193.07	193.07	194.32
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	1470.01	1470.01	1479.47
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	1470.63	1470.63	1480.09
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	95.16	95.16	95.77
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	17.94	17.94	17.62
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	17.11	17.11	17.22
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	4.76	4.76	4.79
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	2.69	2.69	2.70
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	10.81	10.81	9.58
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	141.62	141.62	142.54
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	65.39	65.39	65.81
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	26.88	26.88	27.05
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	9.22	9.22	9.28
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	43.32	43.32	43.58
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	29.28	29.28	29.46
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	45.55	45.55	45.84

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-3. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Nitrogen Oxides (NO<sub>x</sub>), 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.31	1.31	1.26
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.17	6.17	5.94
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.36	5.36	5.18
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.23	0.23	0.22
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.91	0.91	0.88
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	12.12	12.12	11.75
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.20
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.43	1.43	1.39
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	6.42	6.42	6.22
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	6.64	6.64	6.43
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.71	0.71	0.69
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.17	0.17	0.17
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.35	0.35	0.33
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.16	3.16	3.04
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.20
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.01	0.01	0.01
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	21.48	21.48	20.65
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	17.30	17.30	16.64
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.12
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.83	3.83	3.70
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	11.22	11.22	10.82
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	11.26	11.26	10.85
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	23.78	23.78	23.09
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.03
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.07	0.07	0.07
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.61	0.61	0.59
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.76	0.76	0.73
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.51	0.51	0.50
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	23.44	23.44	22.74
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.31	1.31	1.26
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.58	2.58	2.47

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.26	0.26	0.26
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.05
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.56	0.56	0.54
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.18	0.18	0.17
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.18	0.18	0.17
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.08
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.24	1.24	1.20
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.56	0.56	0.54
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.65	0.65	0.62
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.24	5.24	5.03
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	9.09	9.09	8.73
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	62.66	62.66	60.66
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	64.01	64.01	61.96
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.56	0.56	0.54
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.19	0.19	0.18
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.53	0.53	0.51
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	1.15	1.15	1.11
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	4.60	4.60	4.42
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	5.98	5.98	5.74
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	5.97	5.97	5.74
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.19	3.19	3.06
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.99	8.99	8.65
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	4.02	4.02	3.86
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	9.28	9.28	8.92
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	8.74	8.74	8.40
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.96	1.96	1.88
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	6.79	6.79	6.53
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	6.44	6.44	6.20
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.80	0.80	0.78
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.90	2.90	2.82
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.26	2.26	2.20
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.20	3.20	3.07
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.60	2.60	2.50
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	34.96	34.96	33.70
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	34.51	34.51	33.26
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.79	1.79	1.72
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	7.59	7.59	7.36



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	26.91	26.91	26.02
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	10.12	10.12	9.73
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	26.66	26.66	25.78
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	13.70	13.70	13.26
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	25.32	25.32	24.46
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.74	3.74	3.63
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	25.41	25.41	24.54
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.59	0.59	0.58
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.14	0.14	0.13
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.06	0.06	0.06
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.51	0.51	0.49
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.24	2.24	2.18
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.32	2.32	2.25
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	4.54	4.54	4.39
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.89	0.89	0.86
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	5.80	5.80	5.61
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.71	0.71	0.68
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.12	0.12	0.11
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.21	0.21	0.20
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.11
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.51	0.51	0.49
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.09	0.09	0.09
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.86	1.86	1.79
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.14
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.20	0.20	0.19

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	4.84	4.84	4.64
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.84	4.84	4.65
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	16.28	16.28	15.81
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.09	0.09	0.08
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.97	2.97	2.86
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.39	3.39	3.26
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.03	0.03	0.03
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.06
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.03	1.03	1.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.99	0.99	0.96
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	75.15	75.15	72.81
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	74.49	74.49	72.18
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.01	1.01	0.98
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.10	0.10	0.10
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.11	0.11	0.10
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.40	0.40	0.39
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	2.99	2.99	2.90
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.99	2.99	2.90
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	2.39	2.39	2.32
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	2.39	2.39	2.32
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	2.85	2.85	2.76
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.39	2.39	2.32
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.22	0.22	0.22
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.78	1.78	1.71
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.19
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.10	0.10	0.10
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.21	0.21	0.20
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.48	0.48	0.46
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.09	1.09	1.05
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.22	0.22	0.21
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.17	0.17	0.16
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.34	0.34	0.33
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	8.11	8.11	7.88
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.11	8.11	7.88
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.11
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.11
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	2.46	2.46	2.36
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	3.00	3.00	2.88
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.18	0.18	0.18
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	9.90	9.90	9.61
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.68	0.68	0.66
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.12	0.12	0.11
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.12	7.12	6.92
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.09
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.40	1.40	1.34
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.40	1.40	1.34
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.71	0.71	0.68
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	5.98	5.98	5.74
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.97	5.97	5.74
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.52	0.52	0.51
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.35	0.35	0.33
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.73	2.73	2.65
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.21	0.21	0.20
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.40	0.40	0.38
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.53	0.53	0.52
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.15
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	14.00	14.00	13.58
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	14.00	14.00	13.58
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	95.35	95.35	92.16
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	95.35	95.35	92.16
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	95.41	95.41	92.22
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	95.37	95.37	92.18
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	95.40	95.40	92.21
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	95.40	95.40	92.21
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.68	0.68	0.65
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	2.88	2.88	2.77

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.35	0.35	0.34
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.97	3.97	3.84
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.45	1.45	1.41
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.29	0.29	0.28
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.19	0.19	0.19
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.53	0.53	0.51
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	16.97	16.97	16.29
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.47	1.47	1.41
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.08
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.08
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.28
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.20	4.20	4.05
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	5.13	5.13	4.94
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.04
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.52	0.52	0.50
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.27	8.27	7.98
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.65	5.65	5.46
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	7.71	7.71	7.45
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	14.77	14.77	14.25
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	14.70	14.70	14.18
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.24	0.24	0.23
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.24	0.24	0.23
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.83	0.83	0.80
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.19
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.05
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.09	0.09	0.09
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.08	0.08	0.08
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.40	0.40	0.39
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.25	0.25	0.24
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.02
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.20	0.20	0.20
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.27	0.27	0.26
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.27	0.27	0.26
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.85	2.85	2.74
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.07
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.88	0.88	0.85
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	24.21	24.21	23.28
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	44.56	44.56	42.86
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	45.35	45.35	43.61
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	44.57	44.57	42.86
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	6.44	6.44	6.20
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.23	0.23	0.22
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.22
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.28	0.28	0.27
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.02	1.02	0.98
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.16	0.16	0.15
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.14	0.14	0.13
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.03
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.52	1.52	1.47
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.30	0.30	0.29
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.03	5.03	4.86
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	6.36	6.36	6.14
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	17.79	17.79	17.18
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	28.89	28.89	27.87
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	28.89	28.89	27.87
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	16.61	16.61	15.95

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	17.02	17.02	16.34
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	17.19	17.19	16.50
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.61	0.61	0.59
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.13	0.13	0.12
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.70	0.70	0.67
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.17	3.17	3.07
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	15.25	15.25	14.76
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	14.59	14.59	14.12
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.07	0.07	0.06
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.97	5.97	5.74
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.21
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.52	0.52	0.50
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	2.71	2.71	2.61
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	6.23	6.23	5.98
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.82	0.82	0.79
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	4.21	4.21	4.08
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.02	1.02	0.98
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.07
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.50	1.50	1.44
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	1.50	1.50	1.44
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	1.73	1.73	1.66
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	95.20	95.20	92.02
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.69	0.69	0.67
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.18	0.18	0.18
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.17	5.17	4.98
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	9.34	9.34	9.00
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	9.34	9.34	9.00
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.41	5.41	5.21
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	9.13	9.13	8.81
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.79	0.79	0.76
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.81	1.81	1.75
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	6.80	6.80	6.54

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.47	4.47	4.31
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	4.48	4.48	4.31
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	7.11	7.11	6.84
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	12.71	12.71	12.34
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	9.46	9.46	9.08
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	9.45	9.45	9.07
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.44	9.44	9.07
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	34.17	34.17	32.99
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	34.12	34.12	32.93
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	34.22	34.22	33.03
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	32.49	32.49	31.36
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	22.14	22.14	21.39
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	22.14	22.14	21.39
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	22.14	22.14	21.39
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	22.14	22.14	21.39
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	22.14	22.14	21.39
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	3.33	3.33	3.23
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.33	3.33	3.23
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.81	0.81	0.78
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	10.06	10.06	9.67
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.23	0.23	0.22
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.20
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.71	2.71	2.61
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.03	1.03	0.99
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	1.02	1.02	0.98
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.46	0.46	0.44
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.51	2.51	2.44
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.16	0.16	0.15
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.02
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.94	2.94	2.83
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	13.66	13.66	13.19

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	14.00	14.00	13.52
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.27	0.27	0.26
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.30	0.30	0.29
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.14	1.14	1.09
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.08	0.08	0.08
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.32	1.32	1.27
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.15	2.15	2.07
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.19	0.19	0.18
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.29
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.85	0.85	0.83
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.23	0.23	0.22
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.26	2.26	2.20
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.57	2.57	2.47
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.19	0.19	0.18
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.03	0.03	0.03
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.30	0.30	0.29
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.38	0.38	0.37
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.86	2.86	2.75
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.93	1.93	1.87
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	10.58	10.58	10.26
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	10.57	10.57	10.25
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.38	0.38	0.37
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.20	0.20	0.19
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.09	0.09	0.09
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.70	0.70	0.68
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.72	0.72	0.70
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.73	0.73	0.71
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.11	2.11	2.02
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	16.07	16.07	15.43
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	16.07	16.07	15.43



Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.03	1.03	0.99
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.39	2.39	2.32
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.18	0.18	0.18
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.05
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.68	0.68	0.66
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.55	1.55	1.49
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.70	0.70	0.67
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.29	0.29	0.28
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.10
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.51	0.51	0.49
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.32	0.32	0.31
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.50	0.50	0.48

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-4. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Nitrogen Oxides (NO<sub>x</sub>), 2050

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.91	1.91	1.93
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.11	13.11	12.66
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	21.45	21.45	19.73
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.33	0.33	0.33
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.44	4.44	4.05
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	59.21	59.21	53.91
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.01	1.01	0.92
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.07	7.07	6.44
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	29.64	29.64	27.06
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	29.98	29.98	27.40
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	4.09	4.09	3.69
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.49	0.49	0.46
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.52	0.52	0.52
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.62	4.62	4.67
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.92	0.92	0.84
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.02	0.02	0.02
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	43.69	43.69	42.37
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	37.58	37.58	36.21
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.18	0.18	0.18
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	15.87	15.87	14.58
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	30.42	30.42	28.73
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	30.47	30.47	28.78
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	126.24	126.24	114.52
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.11	0.11	0.11
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.90	0.90	0.90
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.31	3.31	3.03
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.95	2.95	2.67
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	119.29	119.29	108.42
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.91	1.91	1.93
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.76	3.76	3.80

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.49	1.49	1.35
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.20	0.20	0.19
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.19	1.19	1.15
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.49	0.49	0.47
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.49	0.49	0.47
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.12	0.12	0.12
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	3.44	3.44	3.24
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.82	0.82	0.83
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.94	0.94	0.95
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	7.64	7.64	7.71
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	13.29	13.29	13.42
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	270.71	270.71	247.99
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	277.06	277.06	253.79
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.19	1.19	1.15
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.28	0.28	0.28
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.17	1.17	1.12
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	1.69	1.69	1.70
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	6.70	6.70	6.77
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	8.72	8.72	8.80
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	8.74	8.74	8.83
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.65	4.65	4.70
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	19.09	19.09	18.43
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	5.86	5.86	5.92
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	19.50	19.50	18.85
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	18.71	18.71	18.05
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.08	3.08	3.08
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	14.15	14.15	13.69
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	13.64	13.64	13.18
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.65	3.65	3.34
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	15.47	15.47	14.03
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.08	13.08	11.82
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.66	4.66	4.71
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.79	3.79	3.83
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	96.69	96.69	91.17
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	96.02	96.02	90.50
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.62	2.62	2.64
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	39.47	39.47	35.84

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	104.83	104.83	96.58
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	18.94	18.94	18.54
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	103.53	103.53	95.41
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	58.12	58.12	53.30
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	89.11	89.11	82.60
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	19.16	19.16	17.41
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	89.47	89.47	82.94
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.39	3.39	3.06
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.20	0.20	0.20
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.08	0.08	0.09
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.87	1.87	1.73
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	12.72	12.72	11.50
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	13.18	13.18	11.92
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	18.84	18.84	17.30
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.57	4.57	4.16
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	23.59	23.59	21.68
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.06	1.06	1.07
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.18	0.18	0.18
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.32	0.32	0.32
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.18
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.75	0.75	0.76
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.38	0.38	0.35
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.19
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	3.49	3.49	3.42
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.40	0.40	0.37
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.15	0.15	0.15
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.12	1.12	1.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	7.05	7.05	7.12
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	7.06	7.06	7.13
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	89.29	89.29	80.89
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.38	0.38	0.35
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.38	0.38	0.35
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	4.36	4.36	4.40
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.96	4.96	5.01
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.05	0.05	0.05
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	5.79	5.79	5.24
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	5.73	5.73	5.18
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	348.05	348.05	317.72
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	346.95	346.95	316.63
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	5.86	5.86	5.30
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.15	0.15	0.15
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.16	0.16	0.16
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.23	2.23	2.02
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	14.16	14.16	12.92
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	14.14	14.14	12.90
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	11.46	11.46	10.45
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	11.46	11.46	10.45
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	13.50	13.50	12.31
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.31	13.31	12.05
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.33	0.33	0.33
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.60	2.60	2.62
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.28	0.28	0.28
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.49	0.49	0.45
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.31	0.31	0.31
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.72	0.72	0.72
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	4.61	4.61	4.23
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.32	0.32	0.32
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.50	0.50	0.47
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.50	0.50	0.50
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.15
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	45.95	45.95	41.57
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	45.95	45.95	41.57
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.18
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.18
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.21
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	3.59	3.59	3.63
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	4.37	4.37	4.41
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.27	0.27	0.27
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	51.70	51.70	46.93
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.00	1.00	1.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.17	0.17	0.17
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	37.53	37.53	34.05
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.15
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.12
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	2.04	2.04	2.06
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.04	2.04	2.06
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.06	1.06	1.07
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	8.75	8.75	8.84
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.74	8.74	8.83
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	2.96	2.96	2.68
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.51	0.51	0.51
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	13.85	13.85	12.59
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.01	1.01	0.92
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.58	0.58	0.59
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.08	2.08	1.91
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.23	0.23	0.23
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	71.08	71.08	64.58
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	71.08	71.08	64.58
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	360.21	360.21	332.49
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	360.22	360.22	332.50
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	360.58	360.58	332.83
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	360.44	360.44	332.70
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	360.51	360.51	332.77
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	360.51	360.51	332.77
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.99	0.99	1.00
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	4.20	4.20	4.25

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.51	0.51	0.52
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	19.14	19.14	17.44
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.81	7.81	7.08
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.44	0.44	0.44
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.29	0.29	0.29
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.77	0.77	0.77
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	24.78	24.78	25.03
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.15	2.15	2.17
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.28	0.28	0.26
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.28	0.28	0.26
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.44	0.44	0.44
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	11.44	11.44	10.80
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	12.80	12.80	12.18
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.08
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.08	0.08	0.08
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.76	0.76	0.77
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	26.77	26.77	24.96
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	22.93	22.93	21.08
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	25.95	25.95	24.12
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	45.65	45.65	42.69
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	46.26	46.26	43.20
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.36
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.36	0.36	0.37
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.31	1.31	1.31
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.31
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.23	0.23	0.21
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.29	0.29	0.27
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.14	0.14	0.14
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.09	0.09	0.09
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.07
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.12	0.12	0.12
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.59	0.59	0.60
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.37	0.37	0.38
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.07	1.07	0.97
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.39	0.39	0.39
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.39	0.39	0.39
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.12
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	4.16	4.16	4.21
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.36	0.36	0.33
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.28	1.28	1.30
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	49.88	49.88	48.31
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	89.75	89.75	87.14
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	90.91	90.91	88.31
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	89.75	89.75	87.14
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	14.25	14.25	13.71
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.34	0.34	0.34
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.34	0.34	0.34
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.27	1.27	1.16
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.64	4.64	4.24
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.23	0.23	0.23
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.30	0.30	0.29
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.14	0.14	0.12
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	7.74	7.74	7.04
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.08	1.08	1.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	15.69	15.69	14.66
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	21.51	21.51	19.99
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	61.36	61.36	56.96
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	89.79	89.79	83.93
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	89.79	89.79	83.93
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	24.25	24.25	24.50



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	24.84	24.84	25.09
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	25.09	25.09	25.35
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.49	3.49	3.15
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.18	0.18	0.18
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	1.04	1.04	1.05
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.12
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	15.46	15.46	14.08
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	64.03	64.03	58.74
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	62.36	62.36	57.16
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.01	0.01	0.01
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.10	0.10	0.10
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	13.21	13.21	12.71
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.33	0.33	0.33
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.76	0.76	0.77
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	7.65	7.65	7.20
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.05
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.07	9.07	9.17
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.73	4.73	4.28
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	19.89	19.89	18.14
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.50	1.50	1.51
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.12	0.12	0.12
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	2.18	2.18	2.21
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	2.18	2.18	2.21
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.51	2.51	2.54
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	360.28	360.28	332.52
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.56	3.56	3.23
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.05	1.05	0.95
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.73	13.73	12.99
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	26.22	26.22	24.69
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	26.22	26.22	24.69
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.77	12.77	12.21
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	25.80	25.80	24.29
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.16	1.16	1.18
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	7.49	7.49	6.88
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	14.77	14.77	14.23

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	11.37	11.37	10.80
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	11.37	11.37	10.80
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	16.53	16.53	15.82
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	66.51	66.51	60.35
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	14.20	14.20	14.29
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	14.18	14.18	14.26
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	14.18	14.18	14.26
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	113.07	113.07	105.24
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	112.83	112.83	105.02
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	113.21	113.21	105.37
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	108.10	108.10	100.58
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	77.84	77.84	72.17
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	77.84	77.84	72.17
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	77.84	77.84	72.17
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	77.84	77.84	72.16
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	77.84	77.84	72.16
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	19.12	19.12	17.29
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	19.12	19.12	17.29
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.09	0.09	0.09
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.15
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.11
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.18	1.18	1.19
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	17.32	17.32	17.12
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.34	0.34	0.34
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.31	0.31	0.31
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.15
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.06
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	7.65	7.65	7.20
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.51	1.51	1.53
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	1.50	1.50	1.51
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.68	0.68	0.68
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	14.18	14.18	12.83
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.28	0.28	0.28
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	7.27	7.27	6.92
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	45.57	45.57	42.39

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	46.07	46.07	42.90
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.04	1.04	0.96
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.69	0.69	0.66
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.02	2.02	1.99
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.12	0.12	0.12
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.93	1.93	1.95
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	5.75	5.75	5.44
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.08
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.28	0.28	0.28
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.45	0.45	0.45
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	4.94	4.94	4.46
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.33	0.33	0.34
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	13.12	13.12	11.86
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.78	3.78	3.82
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.43	0.43	0.41
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.17	0.17	0.15
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.17	0.17	0.15
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.99	0.99	0.93
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.98	1.98	1.80
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	8.41	8.41	7.89
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	7.31	7.31	6.75
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	52.16	52.16	47.47
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	52.15	52.15	47.47
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.56	0.56	0.56
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.29	0.29	0.30
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.13	0.13	0.13
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.05	4.05	3.66
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	4.08	4.08	3.69
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	4.09	4.09	3.70
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.07	3.07	3.11
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	23.46	23.46	23.69
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	23.48	23.48	23.71

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 NO <sub>x</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.52	1.52	1.53
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.19	13.19	11.95
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.27	0.27	0.28
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.94	3.94	3.56
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.26	2.26	2.28
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.04	1.04	1.05
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.43	0.43	0.43
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.15	0.15	0.15
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.89	0.89	0.88
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.48	0.48	0.49
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.74	0.74	0.75

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-5. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Particulate Matter (PM<sub>2.5</sub>), 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM <sub>2.5</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.25	0.25	0.25
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.43	0.43	0.45
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Allegheny County, PA	PM <sub>2.5</sub> (2012 Annual)	Nonattainment, Moderate	100	0	0.44	0.44	0.45
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Allentown, PA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.31
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.31	0.31	0.32
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.03
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.13	0.13	0.13
Archuleta County; Pagosa Springs, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.99	0.99	0.98
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.82	0.82	0.81
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.12
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.44	0.44	0.44
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.44	0.44	0.44
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.82	0.82	0.85
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Birmingham, AL	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.05	1.05	1.08
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Bonner County; The Sandpoint Area, ID	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.10

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM <sub>2.5</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Brooke; Follansbee area, WV	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.06
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.03
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.21	0.21	0.21
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.37	0.37	0.36
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.88	1.88	1.90
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	1.93	1.93	1.94
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Chico, CA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.19	0.19	0.18
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.24	0.24	0.24
Clark County; Las Vegas planning area, NV	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.24	0.24	0.24
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.13
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.40	0.40	0.39
Cleveland, OH	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	0.16	0.16	0.16
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.41	0.41	0.41
Cleveland-Akron-Lorain, OH	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.39	0.39	0.38
Cochise County; Paul Spur/Douglas planning area, AZ	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.32	0.32	0.32
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.31	0.31	0.31
Cook County; Lyons Township, IL	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cook County; Southeast Chicago, IL	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.09
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.06
Cuyahoga County, OH	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.11	0.11	0.10
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.30	1.30	1.29
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.28	1.28	1.27
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.07
Delaware County, PA	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	0.23	0.23	0.24

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.86	0.86	0.86
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.41	0.41	0.40
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.85	0.85	0.85
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.45	0.45	0.46
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.89	0.89	0.89
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.11	0.11	0.12
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.90	0.90	0.89
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.06	0.06	0.06
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.21	0.21	0.21
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.26	0.26	0.27
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.01	0.01	0.01
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.08	0.08	0.08
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.04

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.20	0.20	0.19
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.20	0.20	0.19
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.42	0.42	0.44
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.13
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.08
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.08
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2.68	2.68	2.73
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.65	2.65	2.71
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.32	0.32	0.34
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.32	0.32	0.34
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.26	0.26	0.27
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.26	0.26	0.27
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.31	0.31	0.32
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.07	0.07	0.07
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.23	0.23	0.24
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.23	0.23	0.24
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.10
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.31	0.31	0.32
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.23
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.06	0.06	0.06
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.24	0.24	0.24
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.24	0.24	0.24
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.04	0.04	0.05
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.10	0.10	0.10
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.42	0.42	0.43
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.42	0.42	0.43
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	3.38	3.38	3.40
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	3.38	3.38	3.40
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	3.39	3.39	3.40
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	3.39	3.39	3.40
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	3.39	3.39	3.40
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	3.39	3.39	3.40
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.12	0.12	0.11

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.16
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.69	0.69	0.67
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.15
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.19	0.19	0.19
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.34	0.34	0.34
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.23	0.23	0.24
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.32	0.32	0.32
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.71	0.71	0.71
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.71	0.71	0.71
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.11
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.03
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.92	0.92	0.90
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.73	1.73	1.69
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.76	1.76	1.72
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.73	1.73	1.69
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.27	0.27	0.27
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.13	0.13	0.13
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.19	0.19	0.19
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.37	0.37	0.38
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.74	0.74	0.74
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.30	1.30	1.31
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.30	1.30	1.31
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.68	0.68	0.66

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.69	0.69	0.67
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.70	0.70	0.68
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.04
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.12
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.56	0.56	0.57
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.54	0.54	0.55
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.28	0.28	0.28
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.12	0.12	0.12
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.25
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.22	0.22	0.22
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.06	0.06	0.06
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.06	0.06	0.06
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.07	0.07	0.07
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	3.38	3.38	3.39
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.21
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.44	0.44	0.44
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.44	0.44	0.44
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.25
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.43	0.43	0.43
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.28	0.28	0.28

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.19
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.19	0.19	0.19
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.30	0.30	0.29
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.37	0.37	0.39
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.39	0.39	0.38
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.39	0.39	0.38
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.39	0.39	0.38
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.35	1.35	1.35
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.35	1.35	1.35
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.35	1.35	1.35
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.28	1.28	1.28
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.81	0.81	0.81
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.81	0.81	0.81
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.81	0.81	0.81
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.81	0.81	0.81
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.81	0.81	0.81
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.10	0.10	0.10
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.10	0.10	0.10
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.42	0.42	0.41
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.12	0.12	0.12
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.11
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.55	0.55	0.55

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.56	0.56	0.56
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.04	0.04	0.05
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.06
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.10
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.12
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.33	0.33	0.34
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.33	0.33	0.34
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.08
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.66	0.66	0.64
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.66	0.66	0.64

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.14	0.14	0.15
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-6. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Particulate Matter (PM2.5), 2050

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.47	0.47	0.44
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.16	3.16	2.88
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.23	0.23	0.21
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	3.05	3.05	2.78
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.36	0.36	0.33
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.12	2.12	1.93
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	2.13	2.13	1.94
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.22	0.22	0.20
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.07	0.07	0.07
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	2.49	2.49	2.29
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	2.39	2.39	2.20
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.54	0.54	0.49
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	1.23	1.23	1.13
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.23	1.23	1.13
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	6.51	6.51	5.92
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.39	0.39	0.36
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.39	0.39	0.35
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	8.12	8.12	7.39
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.05



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM <sub>2.5</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.06
Brooke; Follansbee area, WV	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.05
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.23	0.23	0.21
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.11
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.20	0.20	0.19
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	9.57	9.57	8.73
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	9.85	9.85	8.99
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.05
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.10
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.13	0.13	0.13
Clark County; Las Vegas planning area, NV	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.13	0.13	0.13
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.97	0.97	0.89
Cleveland, OH	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.98	0.98	0.90
Cleveland-Akron-Lorain, OH	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.97	0.97	0.89
Cochise County; Paul Spur/Douglas planning area, AZ	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.91	0.91	0.84
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.90	0.90	0.83
Cook County; Lyons Township, IL	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.10
Cook County; Southeast Chicago, IL	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.64	0.64	0.58
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.48	0.48	0.44
Cuyahoga County, OH	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.28	3.28	3.02
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.27	3.27	3.01
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Delaware County, PA	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	1.74	1.74	1.59

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.65	3.65	3.34
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.56	0.56	0.52
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.57	3.57	3.27
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.37	2.37	2.16
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	3.44	3.44	3.15
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.82	0.82	0.75
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	3.46	3.46	3.16
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.26	0.26	0.23
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.11
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.59	0.59	0.54
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.48	0.48	0.44
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.27	1.27	1.16
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.33	0.33	0.30
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.58	1.58	1.44
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.14	0.14	0.13
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.22	0.22	0.20
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.31	0.31	0.28

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.10
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.10
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.42	3.42	3.11
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.68	0.68	0.62
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.68	0.68	0.62
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	17.16	17.16	15.63
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	17.12	17.12	15.60
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.11	0.11	0.10
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.09	0.09	0.08
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	2.68	2.68	2.44
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.68	2.68	2.43
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	2.17	2.17	1.97
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	2.17	2.17	1.97
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	2.55	2.55	2.32
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.49	0.49	0.44
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.05	0.05	0.04
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.08	0.08	0.07
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.99	1.99	1.81
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.99	1.99	1.81
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.05	0.05	0.05
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.36	2.36	2.14
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.71	1.71	1.56
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.13	0.13	0.13
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.13	0.13	0.13
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.39	0.39	0.35
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.71	0.71	0.65
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.05
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.00	3.00	2.73
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	3.00	3.00	2.73
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	15.12	15.12	13.81
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	15.12	15.12	13.81
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	15.15	15.15	13.84
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	15.14	15.14	13.83
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	15.14	15.14	13.83
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	15.14	15.14	13.83
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.06

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.07	1.07	0.97
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.41	0.41	0.37
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.37	0.37	0.36
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.02
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.02
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.38	0.38	0.35
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.40	0.40	0.37
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.39	1.39	1.27
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.33	1.33	1.21
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.38	1.38	1.26
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.20	3.20	2.92
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.30	3.30	3.01
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.02
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.08	0.08	0.08
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.06	1.06	0.99
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2.17	2.17	2.03
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.19	2.19	2.05
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.17	2.17	2.03
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.59	0.59	0.55
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.27
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.08	1.08	0.99
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.45	0.45	0.41
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.04
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.61	0.61	0.56
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.14	2.14	1.95
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	3.30	3.30	3.01
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	5.55	5.55	5.07
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.55	5.55	5.07
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.36	0.36	0.35

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.37	0.37	0.36
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.38	0.38	0.37
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.31	0.31	0.28
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.02	0.02	0.02
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.80	0.80	0.73
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	3.14	3.14	2.86
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	3.08	3.08	2.81
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.83	0.83	0.76
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.01	0.01	0.01
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.43	0.43	0.39
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.13
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.47	0.47	0.43
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.59	1.59	1.44
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.03	0.03	0.03
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.04	0.04	0.04
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	15.14	15.14	13.83
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.25	0.25	0.23
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.02
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.61	0.61	0.56
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.78	1.78	1.63
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.78	1.78	1.63
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.78	0.78	0.72
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.75	1.75	1.60
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.49	0.49	0.45
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.60	0.60	0.55

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.55	0.55	0.50
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.55	0.55	0.50
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.70	0.70	0.64
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.82	2.82	2.57
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.25	0.25	0.24
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.25	0.25	0.24
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.24
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	5.38	5.38	4.92
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	5.37	5.37	4.91
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	5.38	5.38	4.92
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.12	5.12	4.68
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	3.25	3.25	2.97
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	3.25	3.25	2.97
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	3.25	3.25	2.97
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	3.25	3.25	2.97
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	3.25	3.25	2.97
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.87	0.87	0.79
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.87	0.87	0.79
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.52	0.52	0.49
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.43	0.43	0.39
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.22	0.22	0.20
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.26	0.26	0.24
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.26	2.26	2.07



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	2.27	2.27	2.08
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.02
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.35	0.35	0.32
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.39	0.39	0.35
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.00
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.48	0.48	0.44
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.19	0.19	0.17
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.44	0.44	0.41
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.74	0.74	0.67
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	2.23	2.23	2.03
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.23	2.23	2.03
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.06
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.07	0.07	0.06
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.07	0.07	0.07
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.04
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.35	0.35	0.34
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.35	0.35	0.34

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 PM2.5 Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.58	0.58	0.53
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.27	1.27	1.16
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-7. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Sulfur Oxides (SO<sub>2</sub>), 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.20
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.36	0.36	0.33
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-1.29	-1.29	-1.17
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.03
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-1.13	-1.13	-1.03
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	-14.93	-14.93	-13.59
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.26	-0.26	-0.23
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-1.71	-1.71	-1.56
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	-24.33	-24.33	-22.16
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	-24.31	-24.31	-22.14
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-1.93	-1.93	-1.76
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-0.02	-0.02	-0.02
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.06	0.06	0.05
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.52	0.52	0.48
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.00	-0.00	-0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	1.96	1.96	1.83
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1.28	1.28	1.19
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-7.14	-7.14	-6.50
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	-1.15	-1.15	-1.03
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-1.15	-1.15	-1.03
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	-	-	-
					110.76	110.76	100.88
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.09
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-2.16	-2.16	-1.97
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-2.20	-2.20	-2.01
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	-75.48	-75.48	-68.74
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.22	0.22	0.20
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.42	0.42	0.39
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.32	-0.32	-0.29
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-0.02	-0.02	-0.02
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-0.02	-0.02	-0.01
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-0.02	-0.02	-0.01
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	-0.49	-0.49	-0.45
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.09	0.09	0.08
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.11	0.11	0.10
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.86	0.86	0.80
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.49	1.49	1.38
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-84.93	-84.93	-77.31
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	-92.08	-92.08	-83.82
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.18
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.76	0.76	0.70
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.98	0.98	0.91
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.98	0.98	0.91
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.52	0.52	0.48
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.17	0.17	0.17
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.66	0.66	0.61
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.22	0.22	0.22
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.13	0.13	0.13
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.30	0.30	0.28
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.35	0.35	0.33
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.29	0.29	0.28
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.21	-0.21	-0.19
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-13.46	-13.46	-12.26
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-7.04	-7.04	-6.42
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.53	0.53	0.49
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.43	0.43	0.40
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-2.49	-2.49	-2.21
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-2.56	-2.56	-2.28

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.29	0.29	0.27
Delaware County, PA	PM <sub>2.5</sub> (2012 Annual)	Maintenance, Moderate	100	0	-3.04	-3.04	-2.77
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-0.88	-0.88	-0.78
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	1.00	1.00	0.93
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-0.85	-0.85	-0.75
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-20.52	-20.52	-18.68
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	-26.19	-26.19	-23.82
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-7.59	-7.59	-6.92
Detroit-Ann Arbor, MI	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	-26.31	-26.31	-23.94
Dona Ana County; Anthony, NM	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	-0.26	-0.26	-0.24
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.02	0.02	0.02
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.21	-0.21	-0.19
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-15.64	-15.64	-14.24
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	-7.05	-7.05	-6.42
El Paso County, TX	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	-0.98	-0.98	-0.89
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.32	-0.32	-0.29
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-1.20	-1.20	-1.09
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.11
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Fairbanks, AK	PM <sub>2.5</sub> (2006 24-hour)	Nonattainment, Serious	100	0	0.04	0.04	0.03
Flathead County; Columbia Falls and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Flathead County; Whitefish and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-0.03	-0.03	-0.03
Fremont County; Canon City Area, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.14	0.14	0.13
Gila County (part): Payson, AZ	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.17	-0.17	-0.16
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-0.12	-0.12	-0.11
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.80	0.80	0.73
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.80	0.80	0.73
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-2.63	-2.63	-2.39
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	-0.02	-0.02	-0.02
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.02	-0.02	-0.02
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.49	0.49	0.45
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.56	0.56	0.52
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.01	0.01	0.01
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-2.56	-2.56	-2.33
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-2.56	-2.56	-2.34
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-71.30	-71.30	-64.90
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-71.38	-71.38	-64.97
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-20.81	-20.81	-18.95
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-4.23	-4.23	-3.85
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	-0.18	-0.18	-0.16
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-0.18	-0.18	-0.16
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	-0.14	-0.14	-0.13
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	-0.14	-0.14	-0.13
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	-0.17	-0.17	-0.15
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-7.05	-7.05	-6.42
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.03
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.29	0.29	0.27
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	-0.06	-0.06	-0.06
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	-0.29	-0.29	-0.26
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.03
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.01	-0.01	-0.01
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-12.31	-12.31	-11.21

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-12.31	-12.31	-11.21
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.40	0.40	0.37
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.49	0.49	0.46
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-61.29	-61.29	-55.82
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.11	0.11	0.10
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-44.73	-44.73	-40.74
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.01
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.23	0.23	0.21
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.21
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.11
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.98	0.98	0.91
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.98	0.98	0.91
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	-2.20	-2.20	-2.01
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-1.52	-1.52	-1.38
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	-0.26	-0.26	-0.23
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.01	-0.01	-0.01
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-13.43	-13.43	-12.23
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	-13.43	-13.43	-12.23
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	-34.41	-34.41	-31.25
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	-34.41	-34.41	-31.25
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	-34.48	-34.48	-31.31
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	-34.46	-34.46	-31.30
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	-34.46	-34.46	-31.30
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	-34.46	-34.46	-31.30
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.11	0.11	0.10

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.47	0.47	0.44
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.05
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-3.75	-3.75	-3.41
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-3.55	-3.55	-3.23
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.04
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.09	0.09	0.08
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.79	2.79	2.58
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.24	0.24	0.22
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	-0.02	-0.02	-0.02
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	-0.02	-0.02	-0.02
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.04
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.43	-0.43	-0.38
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	-0.27	-0.27	-0.24
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.09	0.09	0.08
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-0.24	-0.24	-0.21
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.67	-0.67	-0.60
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	-0.33	-0.33	-0.29
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-7.85	-7.85	-7.13
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-8.42	-8.42	-7.65
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.12
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	-0.03	-0.03	-0.02
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.02	-0.02	-0.02
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.01
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.06
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00



Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-0.42	-0.42	-0.38
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.47	0.47	0.43
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.02	-0.02	-0.02
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	2.58	2.58	2.40
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	5.15	5.15	4.77
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	5.28	5.28	4.89
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.14	5.14	4.76
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-0.41	-0.41	-0.37
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.07	-0.07	-0.07
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.27	-0.27	-0.24
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.02
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.01
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	-0.00	-0.00	-0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.18	-0.18	-0.16
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.15	-0.15	-0.13
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	-0.82	-0.82	-0.74
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	-2.65	-2.65	-2.40
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	-2.69	-2.69	-2.41
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-2.69	-2.69	-2.41
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	2.73	2.73	2.52

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	2.80	2.80	2.58
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	2.83	2.83	2.61
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.59	-0.59	-0.54
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.12	0.12	0.11
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-3.92	-3.92	-3.57
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	-14.45	-14.45	-13.15
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	-14.27	-14.27	-12.99
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.15	0.15	0.15
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.03
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.09	0.09	0.08
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	-0.85	-0.85	-0.77
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.02	1.02	0.95
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-1.76	-1.76	-1.60
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	-2.11	-2.11	-1.92
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.17	0.17	0.15
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.25	0.25	0.23
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.25	0.25	0.23
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.28	0.28	0.26
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	-34.51	-34.51	-31.34
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.16	-0.16	-0.14
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-0.05	-0.05	-0.05
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-3.34	-3.34	-3.03
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	-3.69	-3.69	-3.35
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-3.69	-3.69	-3.35
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.09	-0.09	-0.07
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	-3.70	-3.70	-3.36
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.13	0.13	0.12
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-1.17	-1.17	-1.07
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	-0.36	-0.36	-0.31

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.74	-0.74	-0.66
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	-0.74	-0.74	-0.66
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-1.12	-1.12	-1.01
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	-12.85	-12.85	-11.70
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.49	1.49	1.37
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	1.48	1.48	1.37
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.48	1.48	1.37
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-22.83	-22.83	-20.76
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-22.80	-22.80	-20.72
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	-22.85	-22.85	-20.77
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-21.85	-21.85	-19.86
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	-15.46	-15.46	-14.06
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	-15.46	-15.46	-14.06
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	-15.46	-15.46	-14.06
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	-15.46	-15.46	-14.06
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	-15.46	-15.46	-14.06
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-7.73	-7.73	-7.04
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-7.73	-7.73	-7.04
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-0.00	-0.00	-0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.13	0.13	0.12
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.96	0.96	0.90
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.03
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-0.85	-0.85	-0.77
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.17	0.17	0.15
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.07
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-2.45	-2.45	-2.23
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	-1.52	-1.52	-1.38
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-11.09	-11.09	-10.09

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	-11.04	-11.04	-10.04
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-0.05	-0.05	-0.05
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.02	0.02	0.01
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.11
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.21	0.21	0.20
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	-0.34	-0.34	-0.31
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	-1.15	-1.15	-1.05
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	-7.05	-7.05	-6.42
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.42	0.42	0.39
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	-0.00	-0.00	-0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-0.01	-0.01	-0.01
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	-0.01	-0.01	-0.01
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	-0.03	-0.03	-0.03
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	-1.42	-1.42	-1.29
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	-0.90	-0.90	-0.82
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	-0.50	-0.50	-0.45
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	-12.46	-12.46	-11.34
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	-12.46	-12.46	-11.34
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	-0.35	-0.35	-0.32
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	-0.35	-0.35	-0.32
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	-0.35	-0.35	-0.32
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.32
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	2.64	2.64	2.44
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	2.64	2.64	2.44

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.17	0.17	0.16
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	-5.41	-5.41	-4.93
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	-1.59	-1.59	-1.45
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.23
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.11
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.04
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.05	0.05	0.05
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.07

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-8. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Sulfur Oxides (SO<sub>2</sub>), 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.29	0.29	0.27
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.17	1.17	1.07
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.58	0.58	0.48
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.11	0.11	0.06
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	1.43	1.43	0.75
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.16	0.16	0.08
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.78	1.78	0.72
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.83	1.83	0.77
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.11	0.11	0.03
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.02
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.08	0.08	0.07
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.69	0.69	0.64
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	4.14	4.14	3.80
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	3.23	3.23	2.95
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.02
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.75	0.75	0.41
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	1.89	1.89	1.66
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.90	1.90	1.67
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	6.90	6.90	2.21
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.13	0.13	0.12
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.18	0.18	0.08
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.13	0.13	0.03
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	5.16	5.16	1.92
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.29	0.29	0.27
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.56	0.56	0.52

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.01
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.11	0.11	0.10
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.23	0.23	0.19
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.12	0.12	0.11
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.14	0.14	0.13
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.15	1.15	1.06
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	2.00	2.00	1.85
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	9.72	9.72	5.69
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	10.20	10.20	5.86
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.11	0.11	0.10
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.25	0.25	0.24
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1.01	1.01	0.93
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.31	1.31	1.22
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.31	1.31	1.22
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.70	0.70	0.65
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.73	1.73	1.56
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.88	0.88	0.82
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.79	1.79	1.62
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.67	1.67	1.51
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.42	0.42	0.39
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.31	1.31	1.19
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1.23	1.23	1.12
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.05
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.83	0.83	0.26
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.40	0.40	0.11
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.70	0.70	0.65
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.57	0.57	0.53
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	5.73	5.73	5.07
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.63	5.63	4.98
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.39	0.39	0.36
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.41	0.41	0.26

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.76	2.76	2.45
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	2.04	2.04	1.87
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2.75	2.75	2.45
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.29	2.29	1.33
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	4.53	4.53	3.13
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.56	0.56	0.23
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.54	4.54	3.14
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.01
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.03	0.03	0.03
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.90	0.90	0.25
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.41	0.41	0.12
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.46	0.46	0.38
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.03
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.60	0.60	0.50
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.16	0.16	0.15
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.02
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.05	0.05	0.04
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.10
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.38	0.38	0.35
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.00



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	1.06	1.06	0.98
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.06	1.06	0.98
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.43	0.43	0.29
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.65	0.65	0.60
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.74	0.74	0.69
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.01	0.01	0.01
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.16	0.16	0.05
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.15	0.15	0.04
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	8.69	8.69	5.25
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.55	8.55	5.12
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.18	1.18	0.31
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.25	0.25	0.07
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.18	0.18	0.16
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.18	0.18	0.16
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.15	0.15	0.13
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.15	0.15	0.13
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.17	0.17	0.15
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.43	0.43	0.13
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.39	0.39	0.36
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.05	0.05	0.04
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.10
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.11	0.11	0.09
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.05	0.05	0.04
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.76	0.76	0.24
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.76	0.76	0.24
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.02
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.54	0.54	0.50
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.66	0.66	0.61
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.78	3.78	1.19
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.15	0.15	0.14
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.73	2.73	0.85
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.31	0.31	0.28
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.31	0.31	0.28
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.16	0.16	0.15
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	1.31	1.31	1.22
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.31	1.31	1.22
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.13	0.13	0.04
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.19	0.19	0.12
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.01
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.08
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.26	1.26	0.65
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	1.26	1.26	0.65
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	12.17	12.17	9.72
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	12.17	12.17	9.72
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	12.17	12.17	9.72
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	12.17	12.17	9.72
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	12.17	12.17	9.72
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	12.17	12.17	9.72
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.15	0.15	0.14
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.63	0.63	0.59

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.07
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.42	0.42	0.24
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.24	0.24	0.08
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.06
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.04	0.04	0.04
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.12	0.12	0.11
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	3.72	3.72	3.46
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.32	0.32	0.30
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.70	0.70	0.62
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.91	0.91	0.81
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.11	0.11	0.11
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.13	1.13	1.01
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.56	0.56	0.48
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.01	1.01	0.90
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.56	2.56	2.02
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.53	2.53	1.97
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.17
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.04
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.08
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.05
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.01
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.05
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.05
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.63	0.63	0.58
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.19	0.19	0.18
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	4.62	4.62	4.25
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	8.58	8.58	7.92
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	8.75	8.75	8.08
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	8.58	8.58	7.92
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.24	1.24	1.10
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.09	0.09	0.07
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.03
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.02
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.06
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.72	0.72	0.64
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.86	0.86	0.74
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.35	2.35	2.03
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	4.25	4.25	3.73
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.25	4.25	3.73
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	3.64	3.64	3.38

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	3.73	3.73	3.46
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	3.77	3.77	3.50
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.01
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.16	0.16	0.14
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.38	0.38	0.20
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	2.11	2.11	1.38
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.98	1.98	1.27
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.12	1.12	1.02
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.11	0.11	0.11
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.47	0.47	0.40
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.36	1.36	1.27
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.03
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.36	0.36	0.25
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.23	0.23	0.21
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.33	0.33	0.30
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.33	0.33	0.30
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.38	0.38	0.35
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	12.13	12.13	9.68
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.05	1.05	0.82
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.68	1.68	1.38
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.68	1.68	1.38
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.99	0.99	0.89
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.64	1.64	1.35
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.16
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.23	0.23	0.16
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.32	1.32	1.18

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.81	0.81	0.70
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.81	0.81	0.70
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.36	1.36	1.19
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.07	1.07	0.50
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2.05	2.05	1.90
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	2.05	2.05	1.90
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.05	2.05	1.90
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	5.78	5.78	4.38
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	5.77	5.77	4.38
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	5.79	5.79	4.39
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.48	5.48	4.15
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	3.55	3.55	2.64
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	3.55	3.55	2.64
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	3.55	3.55	2.64
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	3.55	3.55	2.64
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	3.55	3.55	2.64
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.45	0.45	0.12
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.45	0.45	0.12
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.01
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.18	0.18	0.16
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	2.11	2.11	1.94
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.04
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.47	0.47	0.40
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.21
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.22	0.22	0.21
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.09
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.16	0.16	0.05
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.60	0.60	0.49
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.40	2.40	1.76

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	2.48	2.48	1.83
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.05
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.24	0.24	0.22
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.27
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.38	0.38	0.33
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.07	0.07	0.02
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.40	0.40	0.11
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.57	0.57	0.53
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.09	0.09	0.03
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.48	0.48	0.40
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.24	0.24	0.19
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	1.19	1.19	0.63
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.19	1.19	0.62
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.08
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.01
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.01
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.01
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.46	0.46	0.43
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	3.52	3.52	3.26
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	3.52	3.52	3.26

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 SO <sub>2</sub> Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.23	0.23	0.21
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.34	0.34	0.11
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.09	0.09	0.02
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.34	0.34	0.31
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.16	0.16	0.15
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.07	0.07	0.06
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.11	0.11	0.10

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.



Table F-9. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Volatile Organic Compounds (VOCs), 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.69	6.69	6.32
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	27.83	27.83	26.24
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	55.01	55.01	51.02
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.66	0.66	0.63
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	6.20	6.20	5.75
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	83.53	83.53	77.38
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.41	1.41	1.30
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	10.73	10.73	9.94
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	76.77	76.77	71.06
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	77.44	77.44	71.70
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	11.10	11.10	10.25
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.08	2.08	1.94
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	1.94	1.94	1.83
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.10
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	9.19	9.19	8.82
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.79	2.79	2.58
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.04	0.04	0.04
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	117.24	117.24	110.20
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	105.03	105.03	98.49
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.35	0.35	0.34
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	66.38	66.38	61.43
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.27
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	112.50	112.50	104.70
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	112.58	112.58	104.78
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	221.35	221.35	204.63
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.17	0.17	0.16
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.22	0.22	0.21
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.94	2.94	2.78
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	13.69	13.69	12.67
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	8.28	8.28	7.65
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	343.70	343.70	317.70
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	6.69	6.69	6.32
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.02	12.02	11.37

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.58	4.58	4.22
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.13	0.13	0.12
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.49	1.49	1.38
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	11.50	11.50	10.66
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	2.02	2.02	1.88
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.02	2.02	1.88
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.06	0.06	0.06
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.24	0.24	0.23
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	14.48	14.48	13.46
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.62	1.62	1.56
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.67	2.67	2.53
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	17.83	17.83	17.01
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	31.06	31.06	29.64
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	405.87	405.87	376.95
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	412.49	412.49	383.10
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	11.50	11.50	10.66
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.69	0.69	0.65
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	11.42	11.42	10.59
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	4.42	4.42	4.20
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	22.45	22.45	21.21
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	27.51	27.51	26.03
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	37.01	37.01	34.80
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	23.61	23.61	22.13
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	84.79	84.79	79.08
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	28.43	28.43	26.67
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	86.09	86.09	80.31
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	84.05	84.05	78.37
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.13	0.13	0.12
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	6.73	6.73	6.41
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	75.86	75.86	70.65
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	74.84	74.84	69.67
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.36	5.36	4.98
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	16.30	16.30	15.08
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	58.11	58.11	53.65
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	23.66	23.66	22.19
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	19.26	19.26	18.06
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	267.46	267.46	249.50
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	265.85	265.85	247.97
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	7.90	7.90	7.49
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	70.02	70.02	64.75

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	225.99	225.99	209.87
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	40.81	40.81	38.65
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	223.07	223.07	207.18
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	102.17	102.17	94.85
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	167.87	167.87	156.38
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	31.84	31.84	29.45
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	168.55	168.55	157.01
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	8.00	8.00	7.39
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.47	0.47	0.45
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.11	0.11	0.10
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.23	0.23	0.22
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	8.13	8.13	7.53
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	11.21	11.21	10.35
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	58.37	58.37	53.89
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	46.44	46.44	43.06
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	10.97	10.97	10.14
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	58.48	58.48	54.23
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.07	2.07	1.99
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.34	0.34	0.33
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.62	0.62	0.59
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.34	0.34	0.33
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.52	1.52	1.46
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	5.62	5.62	5.19
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.40	0.40	0.38
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	19.26	19.26	17.96
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.87	4.87	4.51
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.28
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	6.82	6.82	6.29

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	14.05	14.05	13.49
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	14.07	14.07	13.50
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	193.02	193.02	178.31
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.86	1.86	1.72
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.89	1.89	1.74
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	10.50	10.50	10.01
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	9.86	9.86	9.47
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.10	0.10	0.10
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.17	0.17	0.16
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.10	0.10	0.10
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.13	0.13	0.12
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	32.93	32.93	30.41
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	32.73	32.73	30.21
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	904.03	904.03	836.70
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	898.45	898.45	831.49
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	16.81	16.81	15.51
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.56	0.56	0.53
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.72	0.72	0.67
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.94	3.94	3.64
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	61.01	61.01	56.40
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	60.94	60.94	56.33
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	48.33	48.33	44.68
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	48.33	48.33	44.68
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	58.08	58.08	53.69
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	58.81	58.81	54.30
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.65	0.65	0.62
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	7.09	7.09	6.74
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.73	0.73	0.70
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	5.81	5.81	5.36
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.98	0.98	0.93
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.41	1.41	1.35
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	20.62	20.62	19.08
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.64	0.64	0.61
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.10	2.10	1.95
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.00	1.00	0.96
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.29	0.29	0.27
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	126.34	126.34	116.65
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	126.34	126.34	116.65
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.17

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.11
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.51	0.51	0.49
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.52	0.52	0.49
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.59	0.59	0.56
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	7.15	7.15	6.86
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	9.06	9.06	8.68
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.78	0.78	0.74
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.40	0.40	0.38
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	49.37	49.37	45.71
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.82	2.82	2.68
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.49	0.49	0.47
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	35.52	35.52	32.89
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.19	0.19	0.18
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.38	0.38	0.36
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.31	0.31	0.30
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	5.44	5.44	5.17
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	5.44	5.44	5.17
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.07	2.07	1.99
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	37.07	37.07	34.86
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	37.01	37.01	34.80
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	8.44	8.44	7.79
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	1.01	1.01	0.97
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	29.19	29.19	26.99
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.41	1.41	1.30
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.16	1.16	1.11
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.56	4.56	4.23
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.90	0.90	0.85
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	179.62	179.62	166.05
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	179.61	179.61	166.04
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	817.78	817.78	759.67
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	817.81	817.81	759.70
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	820.42	820.42	762.10
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	820.11	820.11	761.81
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	820.25	820.25	761.95
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	820.25	820.25	761.95
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	2.21	2.21	2.12
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	11.83	11.83	11.23

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.66	1.66	1.57
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	38.45	38.45	35.59
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	21.38	21.38	19.75
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.86	0.86	0.82
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.67	0.67	0.64
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.53	1.53	1.47
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	55.40	55.40	52.95
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.86	5.86	5.57
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	3.39	3.39	3.13
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	3.39	3.39	3.13
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.66	0.66	0.61
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.85	0.85	0.82
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	41.77	41.77	38.87
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	45.26	45.26	42.19
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.14
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.13	0.13	0.13
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.14	0.14	0.14
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.18	2.18	2.06
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	64.55	64.55	60.11
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	56.91	56.91	52.78
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	62.93	62.93	58.55
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	126.97	126.97	118.19
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	129.12	129.12	120.15
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.70	1.70	1.59
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.75	1.75	1.64
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.50	4.50	4.24
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.59	0.59	0.57
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.27	3.27	3.02
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.39	3.39	3.14
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.27	0.27	0.26
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.09	0.09	0.08
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.08
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.17
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.21	0.21	0.20
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.36	0.36	0.34
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.63	2.63	2.47
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.73	0.73	0.70
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.07
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	5.62	5.62	5.19
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.81	0.81	0.78
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.81	0.81	0.78
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.22
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	8.40	8.40	8.06
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.81	1.81	1.67
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.56	2.56	2.46
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	100.42	100.42	94.92
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	206.23	206.23	194.51
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	208.25	208.25	196.45
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	206.20	206.20	194.48
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.19
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	30.41	30.41	28.64
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.01	1.01	0.96
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.01	1.01	0.96
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	6.21	6.21	5.74
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	22.68	22.68	20.97
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.46	0.46	0.44
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.45	0.45	0.41
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.45	0.45	0.41
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.93	0.93	0.87
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.48	0.48	0.44
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	26.96	26.96	24.91
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.77	3.77	3.50
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	33.57	33.57	31.32
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	126.50	126.50	117.15
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	156.98	156.98	145.94
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	297.50	297.50	276.53
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	297.49	297.49	276.52
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	54.32	54.32	51.91

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	55.55	55.55	53.09
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	56.05	56.05	53.57
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	16.61	16.61	15.33
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.03
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.46	0.46	0.44
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.04	2.04	1.96
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.25	0.25	0.24
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	21.58	21.58	19.99
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	99.45	99.45	92.41
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	96.73	96.73	89.84
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.01	0.01	0.01
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.19	0.19	0.18
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	30.69	30.69	28.85
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.65	0.65	0.62
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.51	1.51	1.45
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	14.26	14.26	13.36
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.08
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	18.09	18.09	17.36
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	14.14	14.14	13.05
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	78.06	78.06	72.17
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.83	3.83	3.64
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.23	0.23	0.22
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	5.40	5.40	5.14
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	5.40	5.40	5.14
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	6.12	6.12	5.84
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	819.75	819.75	761.47
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	16.10	16.10	14.87
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	6.09	6.09	5.63
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	36.40	36.40	34.00
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	106.37	106.37	98.88
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	106.37	106.37	98.87
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	53.23	53.23	49.59
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	104.28	104.28	96.93
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.29	2.29	2.20
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	14.68	14.68	13.63
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	31.43	31.43	29.62



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	22.43	22.43	21.06
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	22.43	22.43	21.06
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	63.59	63.59	59.30
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	169.81	169.81	156.92
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	38.63	38.63	36.65
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	38.57	38.57	36.60
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	38.54	38.54	36.57
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	311.05	311.05	289.23
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	310.66	310.66	288.87
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	311.31	311.31	289.47
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	294.63	294.63	273.96
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	286.89	286.89	266.08
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	286.89	286.89	266.08
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	286.89	286.89	266.08
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	286.88	286.88	266.07
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	286.88	286.88	266.07
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	135.05	135.05	124.68
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	135.05	135.05	124.68
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.20	0.20	0.19
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.59	1.59	1.47
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.19
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	3.03	3.03	2.88
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	44.09	44.09	41.71
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.87	0.87	0.83
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.94	0.94	0.87
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.79	0.79	0.75
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.17
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.29
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.10
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	14.26	14.26	13.36
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.07	0.07	0.07
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.99	2.99	2.87
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	2.97	2.97	2.85
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.75	1.75	1.66
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	13.49	13.49	12.46
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.94	0.94	0.88
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.07	0.07	0.07
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	20.83	20.83	19.47
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	143.64	143.64	133.42

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	144.81	144.81	134.54
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.83	3.83	3.55
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.63	2.63	2.46
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	6.46	6.46	6.07
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.23	0.23	0.22
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.53	4.53	4.32
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	21.08	21.08	19.63
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.21	0.21	0.20
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.55	0.55	0.53
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.87	0.87	0.84
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	8.87	8.87	8.19
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.67	0.67	0.64
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	58.19	58.19	53.72
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	9.25	9.25	8.81
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.69	3.69	3.42
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	6.57	6.57	6.06
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	6.57	6.57	6.06
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	4.13	4.13	3.83
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	10.52	10.52	9.72
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	17.21	17.21	16.09
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	14.92	14.92	13.87
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	167.57	167.57	154.92
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	167.55	167.55	154.90
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.13
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.11	1.11	1.07
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.95	0.95	0.90
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.35	0.35	0.33
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	19.50	19.50	18.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	19.56	19.56	18.06
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	19.58	19.58	18.08
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	6.13	6.13	5.88
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	49.97	49.97	47.83
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	50.03	50.03	47.89

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	3.87	3.87	3.68
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	21.34	21.34	19.72
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.53	0.53	0.51
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.17	0.17	0.16
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	34.30	34.30	31.66
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.17	5.17	4.94
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.26	2.26	2.16
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.84	0.84	0.81
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.29	0.29	0.28
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	3.33	3.33	3.12
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.00	1.00	0.96
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.51	1.51	1.45

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-10. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Volatile Organic Compounds (VOCs), 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	13.32	13.32	12.91
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	54.60	54.60	52.85
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.07
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	83.01	83.01	77.92
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.59	1.59	1.57
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	9.19	9.19	8.60
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	123.59	123.59	115.70
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.09	2.09	1.95
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	15.75	15.75	14.73
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	111.71	111.71	104.34
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	113.32	113.32	105.93
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	15.39	15.39	14.27
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.25	3.25	3.06
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	3.80	3.80	3.67
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.20
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	22.49	22.49	22.20
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.04	4.04	3.77
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.09	0.09	0.09
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.19
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	219.55	219.55	211.49
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	189.82	189.82	182.15
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.86	0.86	0.85
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	96.69	96.69	90.30
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.49	0.49	0.47
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	180.34	180.34	170.62
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	180.58	180.58	170.86
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	314.99	314.99	293.26
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.34	0.34	0.33
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.53	0.53	0.52
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.95	5.95	5.78
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	19.85	19.85	18.52
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	11.50	11.50	10.66
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	487.91	487.91	454.10
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	13.32	13.32	12.91
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	24.60	24.60	23.90

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	6.36	6.36	5.90
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.03
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.27	0.27	0.27
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.17	2.17	2.02
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	17.36	17.36	16.30
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	3.18	3.18	3.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.18	3.18	3.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.13	0.13	0.13
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.58	0.58	0.57
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	22.72	22.72	21.43
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	4.01	4.01	3.96
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.16	0.16	0.16
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	5.68	5.68	5.54
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	40.77	40.77	40.03
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	71.11	71.11	69.81
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	628.19	628.19	591.65
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	638.20	638.20	601.07
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	17.36	17.36	16.30
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.56	1.56	1.53
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	17.20	17.20	16.14
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	9.69	9.69	9.48
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	45.21	45.21	43.87
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	56.48	56.48	54.91
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	69.85	69.85	67.31
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	42.49	42.49	40.75
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	140.82	140.82	133.81
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	51.70	51.70	49.65
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	143.49	143.49	136.41
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	139.00	139.00	132.02
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.33	0.33	0.32
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	15.27	15.27	14.98
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	122.91	122.91	116.44
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	120.43	120.43	113.99
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	8.18	8.18	7.69
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	23.47	23.47	21.90
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	80.51	80.51	74.66
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	42.59	42.59	40.85
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	34.66	34.66	33.24
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	445.49	445.49	423.48
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	441.87	441.87	419.93
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	16.43	16.43	15.99
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	100.23	100.23	93.40

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	349.35	349.35	328.99
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	84.73	84.73	82.46
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	345.58	345.58	325.48
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	156.82	156.82	147.52
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	273.42	273.42	259.20
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	45.79	45.79	42.71
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	274.45	274.45	260.17
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	11.13	11.13	10.33
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	1.08	1.08	1.06
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.27	0.27	0.27
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.50	0.50	0.49
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.09	12.09	11.32
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	15.69	15.69	14.58
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.03
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	80.97	80.97	75.12
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	69.99	69.99	65.65
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	15.63	15.63	14.56
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	88.14	88.14	82.72
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.14	5.14	5.08
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.86	0.86	0.85
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.54	1.54	1.52
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.14
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.87	0.87	0.86
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.72	3.72	3.67
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.21	0.21	0.21
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.90	7.90	7.34
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.95	0.95	0.94
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	32.10	32.10	30.49
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.31	0.31	0.30
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	7.07	7.07	6.60
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.74	0.74	0.73
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	9.47	9.47	8.78

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	34.30	34.30	33.86
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	34.34	34.34	33.89
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	271.04	271.04	251.86
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	2.66	2.66	2.48
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.69	2.69	2.51
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	23.66	23.66	23.20
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	24.12	24.12	23.81
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.23	0.23	0.23
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.39	0.39	0.38
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.23	0.23	0.23
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.23	0.23	0.22
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	45.75	45.75	42.45
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	45.34	45.34	42.05
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1314.5 1	1314.5 1	1227.6 2
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1304.8 4	1304.8 4	1218.3 8
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	23.28	23.28	21.59
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.10	1.10	1.07
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.34	1.34	1.29
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	5.56	5.56	5.17
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	86.78	86.78	80.79
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	86.66	86.66	80.68
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	69.73	69.73	64.92
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	69.73	69.73	64.92
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	82.73	82.73	77.02
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	81.84	81.84	75.94
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.59	1.59	1.57
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	15.30	15.30	14.94
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	1.59	1.59	1.56
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	8.08	8.08	7.50
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.01	2.01	1.95
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.49	3.49	3.45
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	29.77	29.77	27.78
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.08
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.56	1.56	1.54
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.25	3.25	3.06
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.43	2.43	2.40
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.73	0.73	0.72
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.20
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	175.61	175.61	162.96

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	175.61	175.61	162.96
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.44	0.44	0.43
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.28	0.28	0.28
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.11	1.11	1.09
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.12	1.12	1.09
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.27	1.27	1.24
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	17.47	17.47	17.24
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	21.75	21.75	21.44
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.66	1.66	1.62
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.82	0.82	0.80
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	72.54	72.54	67.84
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	6.01	6.01	5.86
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.03	1.03	1.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	51.87	51.87	48.47
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.37	0.37	0.36
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.83	0.83	0.81
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.66	0.66	0.65
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	11.83	11.83	11.56
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	11.81	11.81	11.55
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.15	5.15	5.08
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	69.96	69.96	67.42
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	69.85	69.85	67.31
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	11.74	11.74	10.89
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	2.47	2.47	2.44
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	41.95	41.95	39.10
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	2.09	2.09	1.95
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	2.82	2.82	2.79
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	7.04	7.04	6.63
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.72	1.72	1.66
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	253.70	253.70	236.18
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	253.69	253.69	236.17
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	1272.0 3	1272.0 3	1198.5 6
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	1272.0 7	1272.0 7	1198.5 9
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1275.6 6	1275.6 6	1201.9 2
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1275.1 6	1275.1 6	1201.4 5



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1275.4 7	1275.4 7	1201.7 5
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1275.4 7	1275.4 7	1201.7 5
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	5.15	5.15	5.07
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	25.24	25.24	24.63
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.38	3.38	3.28
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	56.14	56.14	52.44
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	30.18	30.18	28.05
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.13	2.13	2.11
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1.54	1.54	1.51
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	3.73	3.73	3.68
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	129.05	129.05	126.87
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	12.64	12.64	12.35
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	4.84	4.84	4.51
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	4.84	4.84	4.51
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.01	1.01	0.95
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.12	2.12	2.09
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	66.99	66.99	63.38
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	74.71	74.71	70.94
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.39	0.39	0.39
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.35	0.35	0.34
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.37	0.37	0.37
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.61	4.61	4.49
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	104.48	104.48	98.97
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	85.79	85.79	80.52
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	100.47	100.47	95.00
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	204.35	204.35	193.42
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	206.42	206.42	195.23
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.14	3.14	3.02
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.23	3.23	3.10
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	8.79	8.79	8.50
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.48	1.48	1.46
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	4.57	4.57	4.24
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.89	4.89	4.56
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.04
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.66	0.66	0.66
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.18	0.18	0.17
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.17	0.17	0.17

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.42	0.42	0.42
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.45	0.45	0.44
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.77	0.77	0.74
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.91	4.91	4.73
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.06	0.06	0.06
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.81	1.81	1.79
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.19	0.19	0.19
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	7.67	7.67	7.12
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	1.93	1.93	1.90
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.93	1.93	1.91
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.56	0.56	0.55
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	20.42	20.42	20.14
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.54	2.54	2.36
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	6.25	6.25	6.17
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	203.13	203.13	197.20
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	404.95	404.95	391.98
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	410.14	410.14	397.13
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	404.93	404.93	391.97
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.50	0.50	0.50
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	58.52	58.52	56.53
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.12	2.12	2.06
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.12	2.12	2.06
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	8.97	8.97	8.35
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	32.72	32.72	30.47
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	1.12	1.12	1.11
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.63	0.63	0.58
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.63	0.63	0.58
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.66	1.66	1.59
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.68	0.68	0.63
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	38.47	38.47	35.78
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.71	5.71	5.36
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	56.06	56.06	53.31
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	186.06	186.06	174.05

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	247.04	247.04	233.18
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	467.07	467.07	440.73
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	467.05	467.05	440.71
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	126.41	126.41	124.27
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	129.35	129.35	127.16
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	130.58	130.58	128.38
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	23.03	23.03	21.36
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	1.00	1.00	0.98
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	5.04	5.04	4.98
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.59	0.59	0.58
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	31.97	31.97	29.93
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	155.06	155.06	146.19
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	149.78	149.78	141.08
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.03	0.03	0.03
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.46	0.46	0.46
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	57.76	57.76	55.66
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.09
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.60	1.60	1.58
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	3.71	3.71	3.66
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	25.48	25.48	24.42
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.22
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	44.17	44.17	43.60
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	19.59	19.59	18.17
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	111.33	111.33	103.69
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	8.52	8.52	8.34
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.57	0.57	0.56
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	12.06	12.06	11.82
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	12.06	12.06	11.82
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	13.76	13.76	13.49
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1274.10	1274.10	1200.39
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	22.60	22.60	20.99
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	8.45	8.45	7.84
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	61.92	61.92	59.01
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	167.06	167.06	157.65
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	167.05	167.05	157.64

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	87.45	87.45	82.93
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	163.97	163.97	154.72
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.67	5.67	5.59
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	22.48	22.48	21.14
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	61.02	61.02	59.00
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	41.38	41.38	39.79
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	41.39	41.39	39.81
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	105.52	105.52	100.26
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	237.90	237.90	221.25
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	82.24	82.24	80.23
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	82.13	82.13	80.12
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	82.09	82.09	80.09
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	491.15	491.15	463.79
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	490.56	490.56	463.23
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	491.59	491.59	464.20
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	465.46	465.46	439.51
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	433.33	433.33	406.80
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	433.33	433.33	406.80
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	433.33	433.33	406.80
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	433.33	433.33	406.80
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	433.33	433.33	406.80
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	187.11	187.11	173.53
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	187.11	187.11	173.53
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.43	0.43	0.43
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.30	2.30	2.14
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.51	0.51	0.50
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	6.68	6.68	6.54
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	90.34	90.34	87.79
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.93	1.93	1.88
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.47	1.47	1.38
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	1.75	1.75	1.71
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.44	0.44	0.43
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.73	0.73	0.72
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.27	0.27	0.26
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	25.48	25.48	24.42
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.16	0.16	0.15
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	7.35	7.35	7.25
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	7.29	7.29	7.20

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.86	3.86	3.78
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	18.95	18.95	17.61
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.76	1.76	1.70
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.19	0.19	0.18
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	35.77	35.77	34.12
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	222.76	222.76	209.87
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	225.43	225.43	212.48
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	5.68	5.68	5.32
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.38	4.38	4.16
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	12.25	12.25	11.81
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.56	0.56	0.55
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	10.32	10.32	10.13
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	34.03	34.03	32.22
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.46	0.46	0.45
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.36	1.36	1.34
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	2.17	2.17	2.14
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.09	0.09	0.09
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	12.30	12.30	11.40
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.63	1.63	1.61
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	80.58	80.58	74.73
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	20.90	20.90	20.48
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	5.58	5.58	5.24
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	9.10	9.10	8.44
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	9.10	9.10	8.44
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	6.30	6.30	5.92
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.15
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	14.72	14.72	13.67
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	29.62	29.62	28.26
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	23.48	23.48	22.16
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	238.63	238.63	222.20
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	238.60	238.60	222.16
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.35	0.35	0.34
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.71	2.71	2.68
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.08	0.08	0.07
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.93	1.93	1.88
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.75	0.75	0.73

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 VOC Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	27.03	27.03	25.07
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	27.19	27.19	25.23
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	27.25	27.25	25.28
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	14.97	14.97	14.77
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	118.49	118.49	116.68
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	118.60	118.60	116.78
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	8.60	8.60	8.42
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	30.02	30.02	27.91
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.33	1.33	1.31
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.37	0.37	0.36
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.21	0.21	0.21
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	47.50	47.50	44.05
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	11.91	11.91	11.70
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	5.39	5.39	5.30
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.08	2.08	2.06
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.71	0.71	0.71
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	6.06	6.06	5.82
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.39	2.39	2.35
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.64	3.64	3.59

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-11. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Acetaldehyde, 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.06	0.06	0.06
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.10	0.10	0.10
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.64	0.64	0.61
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.50	0.50	0.48
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.26	0.26	0.25
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.26	0.26	0.25
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.10
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.13	0.13	0.12
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.03
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.02	0.02	0.02
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.16
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.30	0.30	0.29
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.69	0.69	0.66
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.70	0.70	0.67
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.15	0.15	0.14
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.19	0.19	0.18
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.19	0.19	0.18
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.24	0.24	0.23
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.13	0.13	0.12
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.25	0.25	0.24
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.24	0.24	0.23
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.19	0.19	0.18
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.18	0.18	0.17
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.08
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.80	0.80	0.77
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.79	0.79	0.75
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.05
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.03	0.03	0.03



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.40	0.40	0.38
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.30	0.30	0.29
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.39	0.39	0.38
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.16	0.16	0.15
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.44	0.44	0.42
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.44	0.44	0.42
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.05
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.07	0.07	0.07
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.01	0.01	0.01
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.05	0.05	0.05
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.15	0.15	0.15
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.15	0.15	0.15
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.10
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.66	0.66	0.63
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.64	0.64	0.61
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.06	0.06	0.05
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.08	0.08	0.08
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.04	0.04	0.04
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.19	0.19	0.18
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.19	0.19	0.18
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.01
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.08
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.08
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	1.45	1.45	1.39
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	1.45	1.45	1.39
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.45	1.45	1.39
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1.45	1.45	1.39
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.45	1.45	1.39
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1.45	1.45	1.39
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.09

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.54	0.54	0.52
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.09
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.13	0.13	0.12
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.16	0.16	0.15
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.07
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.14	0.14	0.13
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.28
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.29	0.29	0.27
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.02
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.09	0.09	0.09
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.67	0.67	0.64
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.25	1.25	1.20
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.27	1.27	1.22
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.25	1.25	1.20
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.17	0.17	0.16
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.11	0.11	0.11
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.31	0.31	0.30
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.57	0.57	0.55
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.57	0.57	0.55
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.53	0.53	0.51

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.54	0.54	0.52
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.55	0.55	0.53
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.02	0.02	0.02
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.19	0.19	0.18
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.17
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.15
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.06	0.06	0.06
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.20	0.20	0.19
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.05	0.05	0.05
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.05	0.05	0.05
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.06	0.06	0.05
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.45	1.45	1.39
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.21	0.21	0.20
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.21	0.21	0.20
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.13
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.19
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.02
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.18	0.18	0.17

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.10
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.11	0.11	0.10
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.18	0.18	0.17
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.05
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.30	0.30	0.29
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.30	0.30	0.29
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.30	0.30	0.29
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.63	0.63	0.60
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.63	0.63	0.60
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.63	0.63	0.60
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.59	0.59	0.57
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.38	0.38	0.36
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.38	0.38	0.36
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.38	0.38	0.36
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.38	0.38	0.36
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.38	0.38	0.36
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.02
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.30	0.30	0.29
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.06
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.25	0.25	0.24

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.26	0.26	0.25
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.51	0.51	0.49
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.51	0.51	0.49



Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-12. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Acetaldehyde, 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.20
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.10	0.10	0.10
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.07	0.07	0.07
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.12	0.12	0.12
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County: Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.75	0.75	0.76
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.59	0.59	0.60
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.30	0.30	0.31
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.30	0.30	0.31
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.12	0.12	0.12
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.15	0.15	0.15
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.03
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.03
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.20	0.20	0.20
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.35	0.35	0.36
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.81	0.81	0.82
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.82	0.82	0.83
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.17	0.17	0.17
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.22	0.22	0.23
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.22	0.22	0.23
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.12
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.28	0.28	0.29
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.15	0.15	0.15
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.29	0.29	0.30
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.27	0.27	0.28
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.22	0.22	0.22
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.21	0.21	0.21
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.12
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.10	0.10	0.10
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.94	0.94	0.95
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.92	0.92	0.93
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.07	0.07	0.07
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.04	0.04	0.04

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.46	0.46	0.47
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.35	0.35	0.35
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.46	0.46	0.47
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.19	0.19	0.19
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.52	0.52	0.53
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Detroit-Ann Arbor, MI	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.52	0.52	0.53
Dona Ana County; Anthony, NM	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.09	0.09	0.09
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM <sub>2.5</sub> (2006 24-hour)	Nonattainment, Serious	100	0	0.01	0.01	0.01
Flathead County; Columbia Falls and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fremont County; Canon City Area, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.01
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.06	0.06	0.06
Gila County (part); Payson, AZ	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.18	0.18	0.18
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.18	0.18	0.18
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.11
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.13
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.77	0.77	0.78
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.74	0.74	0.76
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.07	0.07	0.07
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.09	0.09	0.09
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.11	0.11	0.11
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.05	0.05	0.05
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.22	0.22	0.23
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.22	0.22	0.23
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.02
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.09	0.09	0.09
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	1.71	1.71	1.73
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	1.71	1.71	1.73
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.71	1.71	1.73
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1.71	1.71	1.73
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.71	1.71	1.73
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1.71	1.71	1.73
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.11	0.11	0.11

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.63	0.63	0.64
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.06
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.11
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.15	0.15	0.15
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.18	0.18	0.19
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.08	0.08	0.09
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.16	0.16	0.16
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.34	0.34	0.35
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.33	0.33	0.34
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.11
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.79	0.79	0.80
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.46	1.46	1.48
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.49	1.49	1.51
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.46	1.46	1.48
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.20	0.20	0.20
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.12
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.13	0.13	0.13
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.36	0.36	0.37
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.67	0.67	0.68
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.67	0.67	0.68
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.62	0.62	0.63



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.63	0.63	0.64
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.64	0.64	0.65
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.23	0.23	0.23
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.21
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.19
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.07	0.07	0.07
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.23	0.23	0.24
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.04	0.04	0.04
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.06	0.06	0.06
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.06	0.06	0.06
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.07	0.07	0.07
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.70	1.70	1.72
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.14
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.24	0.24	0.24
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.24	0.24	0.24
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.16
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.23	0.23	0.24
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.21	0.21	0.22

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.13	0.13	0.13
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.21	0.21	0.22
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.35	0.35	0.35
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.35	0.35	0.35
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.35
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.73	0.73	0.74
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.73	0.73	0.74
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.73	0.73	0.75
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.69	0.69	0.70
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.44	0.44	0.45
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.44	0.44	0.45
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.44	0.44	0.45
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.44	0.44	0.45
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.44	0.44	0.45
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.35	0.35	0.36
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.07	0.07	0.07
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.09
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.29	0.29	0.29

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.30	0.30	0.31
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.10
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.09
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.09
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.60	0.60	0.61
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.60	0.60	0.61

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acetaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-13. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Acrolein, 2035**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County: Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.01	0.01	0.01
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.04	0.04	0.04
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.02	0.02	0.02
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.04	0.04	0.03
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.08	0.08	0.07
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.00
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.01
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.04	0.04	0.03
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.07	0.07	0.06
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.07	0.07	0.06
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.06
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.08	0.08	0.07
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.01	0.01	0.01
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.01	0.01	0.01
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.02	0.02	0.02
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.02	0.02	0.02
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.03	0.03	0.03
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.03	0.03	0.03

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-14. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Acrolein, 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.04	0.04	0.04
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.02	0.02	0.02
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.01



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.04	0.04	0.04
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.02
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.05	0.05	0.05
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.03	0.03	0.03
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Gila County (part): Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.00
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.04	0.04	0.04
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.09	0.09	0.09
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.09	0.09	0.09
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.04	0.04	0.04
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.08
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.08	0.08	0.08
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.08
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.04
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.04
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Rhinelander, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.09	0.09	0.09
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.01	0.01	0.01
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.01	0.01	0.01
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.02	0.02	0.02
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.02	0.02	0.02
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.02



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.01
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.03	0.03	0.03
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Acrolein Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-15. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Benzene, 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.52	0.52	0.49
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.24
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.28	0.28	0.27
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.18
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.22	0.22	0.21
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.06	0.06	0.05
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.08	0.08	0.08
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.31	0.31	0.30
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	2.01	2.01	1.91
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	1.57	1.57	1.49
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.14	0.14	0.13
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.83	0.83	0.79
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.84	0.84	0.80
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.62	0.62	0.58
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.07
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.09
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.48	0.48	0.45
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.16
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.28	0.28	0.27

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.05	0.05	0.04
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.12	0.12	0.11
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.06	0.06	0.06
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.09	0.09	0.08
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.53	0.53	0.50
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.98	0.98	0.94
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.33	2.33	2.21
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	2.36	2.36	2.25
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.05	0.05	0.04
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.53	0.53	0.50
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.69	0.69	0.65
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.70	0.70	0.66
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.44	0.44	0.41
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.96	0.96	0.91
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.53	0.53	0.51
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.99	0.99	0.94
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.93	0.93	0.88
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.17
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.70	0.70	0.67
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.66	0.66	0.62
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.44	0.44	0.41
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.36	0.36	0.34
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	2.60	2.60	2.47
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.55	2.55	2.42
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.19	0.19	0.18
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.17	0.17	0.16

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.20	1.20	1.14
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.90	0.90	0.86
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.20	1.20	1.14
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.54	0.54	0.51
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	1.51	1.51	1.43
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.06	0.06	0.06
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.52	1.52	1.44
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.01	0.01	0.01
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.19
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.26	0.26	0.25
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.09	0.09	0.08
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.04	0.04	0.04
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.16	0.16	0.16
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.51	0.51	0.48
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.51	0.51	0.48
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.16
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.33	0.33	0.31
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.34
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.08	3.08	2.90
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.00	3.00	2.83
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.11	0.11	0.10
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.07
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.07	0.07	0.07
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.05
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.06	0.06	0.05
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.07	0.07	0.06
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.18	0.18	0.17
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.04	0.04	0.04
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.05	0.05	0.05
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.30	0.30	0.29
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.36	0.36	0.34
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.17	0.17	0.16
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.07
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.11
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.16	0.16	0.15
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.16	0.16	0.15
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.08
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.70	0.70	0.67
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.70	0.70	0.66
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.03	0.03	0.03
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.10	0.10	0.09
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.04
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.24	0.24	0.23
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.24	0.24	0.23
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	4.20	4.20	4.00
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	4.20	4.20	4.00
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	4.20	4.20	4.00
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	4.19	4.19	4.00
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	4.20	4.20	4.00
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	4.20	4.20	4.00
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.07	0.07	0.07
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.31	0.31	0.29

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.12	0.12	0.11
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.02	0.02	0.02
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.06	0.06	0.06
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	1.64	1.64	1.56
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.14
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.01
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.03
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.34
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.49	0.49	0.46
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.53	0.53	0.50
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.25	0.25	0.24
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.47	0.47	0.45
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.06	1.06	1.00
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.03	1.03	0.97
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.07
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.29	0.29	0.27
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	2.10	2.10	2.00
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.94	3.94	3.75
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.02	4.02	3.82
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.95	3.95	3.76
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.75	0.75	0.71
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.03
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.36	0.36	0.34
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.38	0.38	0.36
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.08	1.08	1.02
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	1.96	1.96	1.87
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.96	1.96	1.87
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	1.60	1.60	1.53

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	1.64	1.64	1.56
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	1.66	1.66	1.58
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.07	0.07	0.07
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.65	0.65	0.62
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.60	0.60	0.57
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.55	0.55	0.52
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.05	0.05	0.05
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.20	0.20	0.19
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.63	0.63	0.60
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.12	0.12	0.12
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.12	0.12	0.11
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.14	0.14	0.13
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.14	0.14	0.13
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.16	0.16	0.15
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	4.18	4.18	3.99
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.38	0.38	0.36
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.64	0.64	0.61
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.64	0.64	0.61
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.42	0.42	0.40
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.62	0.62	0.59
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.09
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.20	0.20	0.19
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.79	0.79	0.74

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.52	0.52	0.49
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.52	0.52	0.49
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.70	0.70	0.66
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.17	0.17	0.17
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.90	0.90	0.85
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.89	0.89	0.85
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.89	0.89	0.85
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.87	1.87	1.79
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	1.87	1.87	1.78
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	1.88	1.88	1.79
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.77	1.77	1.69
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.16	1.16	1.10
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.16	1.16	1.10
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1.16	1.16	1.10
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.16	1.16	1.10
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1.16	1.16	1.10
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.09	0.09	0.08
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.18	1.18	1.12
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.20	0.20	0.19
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.12
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.13	0.13	0.12
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.15	0.15	0.14
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.32	0.32	0.30
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.90	0.90	0.85

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.93	0.93	0.88
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.05
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.12
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.20
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.01	0.01	0.01
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.02
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.27	0.27	0.25
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.01
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.03
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.10	0.10	0.09
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.19
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.09
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.23	0.23	0.22
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.23	0.23	0.22
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.21	0.21	0.20
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	1.66	1.66	1.58
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	1.66	1.66	1.58

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.12	0.12	0.11
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.15	0.15	0.15
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.06
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.07	0.07	0.06

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-16. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Benzene, 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.23
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.72	0.72	0.72
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.35	0.35	0.35
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.39	0.39	0.39
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.27	0.27	0.27
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.30	0.30	0.30
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.07
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.11	0.11	0.11
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.43	0.43	0.43
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	2.79	2.79	2.77
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	2.18	2.18	2.17
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.19	0.19	0.20
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	1.16	1.16	1.15
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.17	1.17	1.16
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.85	0.85	0.82
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.10
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.14	0.14	0.13
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.03
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.66	0.66	0.65
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.23	0.23	0.23
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.39	0.39	0.39

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.06
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.16	0.16	0.16
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.08
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.12	0.12	0.12
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.74	0.74	0.73
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.37	1.37	1.36
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.24	3.24	3.22
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	3.28	3.28	3.26
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.06
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.18
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.74	0.74	0.73
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.96	0.96	0.95
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.98	0.98	0.96
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.60	0.60	0.59
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.33	1.33	1.31
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.74	0.74	0.72
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.38	1.38	1.35
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.28	1.28	1.26
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.26
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.97	0.97	0.96
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.91	0.91	0.90
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.08
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.60	0.60	0.59
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.49	0.49	0.48
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.61	3.61	3.59
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.54	3.54	3.52
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.27	0.27	0.27
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.24	0.24	0.23

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.67	1.67	1.67
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	1.26	1.26	1.26
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.67	1.67	1.66
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.75	0.75	0.74
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	2.10	2.10	2.08
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.09	0.09	0.09
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.10	2.10	2.08
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.02	0.02	0.02
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.28	0.28	0.27
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.36	0.36	0.36
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.13	0.13	0.12
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.05	0.05	0.05
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.23	0.23	0.23
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.70	0.70	0.70
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.71	0.71	0.70
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.24	0.24	0.23
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.02
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.46	0.46	0.46
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.49	0.49	0.49
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.01	0.01	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	4.24	4.24	4.13
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.13	4.13	4.02
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.15	0.15	0.14
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.02	0.02	0.02
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.10
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.10	0.10	0.10
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.08	0.08	0.08
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.09	0.09	0.09
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.25	0.25	0.25
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.06	0.06	0.06
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.07	0.07	0.06
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.06
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.42	0.42	0.41
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.50	0.50	0.50
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.23	0.23	0.23
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.11	0.11	0.10
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.22	0.22	0.22
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.22
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.12
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.98	0.98	0.97
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.98	0.98	0.96
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.04	0.04	0.04
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.13	0.13	0.13
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.05
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.32	0.32	0.32
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.32	0.32	0.32
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	5.86	5.86	5.88
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	5.86	5.86	5.88
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	5.86	5.86	5.88
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	5.86	5.86	5.88
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	5.87	5.87	5.88
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	5.87	5.87	5.88
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.09
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.43	0.43	0.43

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.16	0.16	0.16
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.08	0.08	0.08
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.29	2.29	2.29
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.21	0.21	0.21
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.49	0.49	0.48
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.67	0.67	0.66
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.09	0.09	0.08
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.73	0.73	0.73
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.35	0.35	0.34
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.65	0.65	0.65
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.47	1.47	1.45
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	1.42	1.42	1.41
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.11
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.40	0.40	0.40
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.12	0.12	0.12
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	2.92	2.92	2.91
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	5.49	5.49	5.47
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	5.59	5.59	5.57
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.49	5.49	5.48
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.03	1.03	1.01
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.03	0.03	0.03
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.50	0.50	0.50
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.53	0.53	0.52
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	1.49	1.49	1.48
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	2.73	2.73	2.71
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.73	2.73	2.71
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	2.23	2.23	2.24

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	2.29	2.29	2.29
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	2.32	2.32	2.32
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.10	0.10	0.10
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.10
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.91	0.91	0.90
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.83	0.83	0.82
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.77	0.77	0.76
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.07	0.07	0.07
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.28	0.28	0.27
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.88	0.88	0.88
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.17	0.17	0.17
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.16
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.19	0.19	0.19
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.19	0.19	0.19
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.22	0.22	0.22
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	5.84	5.84	5.85
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.53	0.53	0.53
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.89	0.89	0.89
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.89	0.89	0.89
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.59	0.59	0.59
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.87	0.87	0.87
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.14	0.14	0.13
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.27	0.27	0.26
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.09	1.09	1.06

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.72	0.72	0.70
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.72	0.72	0.70
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.96	0.96	0.95
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.24	0.24	0.23
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	1.25	1.25	1.25
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	1.25	1.25	1.25
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.25	1.25	1.25
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	2.61	2.61	2.62
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.61	2.61	2.61
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	2.62	2.62	2.62
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.47	2.47	2.47
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.62	1.62	1.61
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.62	1.62	1.61
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1.62	1.62	1.61
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.62	1.62	1.61
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1.62	1.62	1.61
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.12	0.12	0.12
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.64	1.64	1.61
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.04	0.04	0.04
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.28	0.28	0.27
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.17
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.18	0.18	0.17
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.20	0.20	0.19
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.03	0.03	0.03
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.44	0.44	0.43
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	1.25	1.25	1.23

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.29	1.29	1.28
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.07	0.07	0.07
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.14
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.18
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.30	0.30	0.29
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.01	0.01	0.01
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.03
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.37	0.37	0.37
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.05
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.13	0.13	0.12
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.28	0.28	0.28
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.13
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.32	0.32	0.32
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.32	0.32	0.32
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.06
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.29	0.29	0.29
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	2.31	2.31	2.30
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	2.31	2.31	2.30

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Benzene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.16	0.16	0.16
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.21	0.21	0.21
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.10
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.06	0.06	0.06
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.09

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.



Table F-17. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—1,3-Butadiene, 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.04	0.04	0.04
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.23	0.23	0.22
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.18	0.18	0.17
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.10	0.10	0.09
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.09
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.04
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.01
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.11	0.11	0.10
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.26	0.26	0.25
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.26	0.26	0.25
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.05	0.05	0.05
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.07	0.07	0.07
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.07	0.07	0.07
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.09
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.09	0.09	0.09
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.09	0.09	0.08
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.07	0.07	0.07
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.07	0.07	0.06
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.29	0.29	0.28
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.29	0.29	0.27
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.14	0.14	0.14
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.11	0.11	0.11
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.14	0.14	0.14
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.16	0.16	0.15
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.16	0.16	0.15
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.02	0.02	0.02
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.06
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.06
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.03
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.28	0.28	0.27
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.27	0.27	0.26
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.03	0.03	0.03
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.03
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.07	0.07	0.07
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.54	0.54	0.51
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	0.54	0.54	0.51
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.54	0.54	0.51
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.54	0.54	0.51
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.54	0.54	0.51
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.54	0.54	0.51
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.20	0.20	0.19
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.03
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.05	0.05	0.04
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.06
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.05
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.11
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.11	0.11	0.10
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.25	0.25	0.24
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.46	0.46	0.44
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.47	0.47	0.45
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.46	0.46	0.44
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.06
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.04	0.04	0.04
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.12	0.12	0.11
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.21	0.21	0.20
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.21	0.21	0.20
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.20	0.20	0.19

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.19
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.20	0.20	0.20
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.07	0.07	0.06
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.01	0.01	0.01
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.02	0.02	0.02
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.02	0.02	0.02
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.53	0.53	0.51
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.07
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.07
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.08	0.08	0.07
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.07	0.07	0.07



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.04	0.04	0.04
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.06
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.11	0.11	0.11
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.11	0.11	0.11
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.11
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.23	0.23	0.22
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.23	0.23	0.22
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.23	0.23	0.22
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.22	0.22	0.21
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.14	0.14	0.13
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.14	0.14	0.13
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.14	0.14	0.13
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.14	0.14	0.13
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.14	0.14	0.13
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.11	0.11	0.11
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.09

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.09
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Tacoma, WA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Union County; LaGrande, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Utah County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.02
Vermillion County; Part of Clinton Township, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Walla Walla County; Wallula, WA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.02
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.19	0.19	0.18
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.19	0.19	0.18

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-18. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—1,3-Butadiene, 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.28	0.28	0.28
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.22	0.22	0.22
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.12	0.12	0.12
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.12	0.12	0.12
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.04	0.04	0.04
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.06
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.08	0.08	0.08
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.13	0.13	0.14
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.32	0.32	0.32
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.32	0.32	0.33
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.07	0.07	0.07
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.09	0.09	0.09
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.09	0.09	0.09
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.11
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.12	0.12	0.12
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.11	0.11	0.11
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.09	0.09	0.09
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.08	0.08	0.08
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.36	0.36	0.37
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.35	0.35	0.36
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.02	0.02	0.02

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.18	0.18	0.18
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.14	0.14	0.14
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.18	0.18	0.18
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.20	0.20	0.20
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.20	0.20	0.20
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.03	0.03	0.03
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.35	0.35	0.35
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.34	0.34	0.34
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.04	0.04	0.04
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.09	0.09	0.09
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.09
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.66	0.66	0.67
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	0.66	0.66	0.67
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.66	0.66	0.67
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.66	0.66	0.67
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.66	0.66	0.67
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.66	0.66	0.67
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.25	0.25	0.25
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.06	0.06	0.06
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.07	0.07	0.07
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.06
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.14
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.13	0.13	0.13
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.31	0.31	0.31
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.57	0.57	0.58
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.58	0.58	0.59
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.57	0.57	0.58
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.08
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.05
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.14
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.26	0.26	0.27
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.26	0.26	0.27
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.24	0.24	0.25

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.25	0.25	0.25
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.25	0.25	0.26
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.08	0.08	0.08
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.01	0.01	0.01
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.03	0.03	0.03
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.09
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.02	0.02	0.02
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.66	0.66	0.67
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.09	0.09	0.10
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.10
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.09	0.09	0.09
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.09	0.09	0.09

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.05	0.05	0.05
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.09
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.14	0.14	0.14
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.14	0.14	0.14
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.14	0.14	0.14
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.29	0.29	0.29
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.29	0.29	0.29
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.29	0.29	0.29
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.27	0.27	0.28
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.17	0.17	0.18
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.17	0.17	0.18
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.17	0.17	0.18
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.17	0.17	0.18
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.17	0.17	0.18
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.14	0.14	0.14
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.12

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.12	0.12	0.12
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.24	0.24	0.24
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.24	0.24	0.24

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 1,3-Butadiene Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

Table F-19. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Diesel Particulate Matter (DPM), 2035

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.95	1.95	1.81
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	19.19	19.19	17.82
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.66	0.66	0.62
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	8.82	8.82	8.19
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.14
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.03	1.03	0.96
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	4.75	4.75	4.42
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	4.76	4.76	4.42
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.19	1.19	1.10
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.14	0.14	0.13
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	6.22	6.22	5.78
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	6.21	6.21	5.77
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.25	2.25	2.09
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	3.61	3.61	3.35
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.61	3.61	3.35
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	21.12	21.12	19.62
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.69	2.69	2.49
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.69	2.69	2.49
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	25.44	25.44	23.63
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.16	0.16	0.15
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.07	0.07	0.07
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.18	0.18	0.16
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.14	0.14	0.13
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.14	0.14	0.13
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.79	0.79	0.73
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	27.96	27.96	25.97
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	28.54	28.54	26.51
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.18	0.18	0.16
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.18	0.18	0.16
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.80	2.80	2.60
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	2.80	2.80	2.60
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	2.80	2.80	2.60
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.16
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	3.11	3.11	2.89
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	3.11	3.11	2.89
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.36	0.36	0.33
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.51	1.51	1.40
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.14	2.14	1.99
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	14.66	14.66	13.62
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	14.66	14.66	13.62
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	5.60	5.60	5.20



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	22.82	22.82	21.20
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	1.97	1.97	1.83
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	22.11	22.11	20.54
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	7.46	7.46	6.93
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	10.30	10.30	9.57
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	2.69	2.69	2.50
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	10.35	10.35	9.61
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	2.17	2.17	2.02
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.42	0.42	0.39
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.23	1.23	1.14
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	2.15	2.15	2.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	10.42	10.42	9.68
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.82	2.82	2.62
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	12.98	12.98	12.05
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.20	0.20	0.18
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.50	0.50	0.47
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.52	0.52	0.48
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.84	1.84	1.71

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	22.80	22.80	21.18
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.04	0.04	0.04
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.78	1.78	1.65
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.78	1.78	1.65
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	72.87	72.87	67.69
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	72.79	72.79	67.62
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.68	0.68	0.63
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.45	0.45	0.42
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	18.35	18.35	17.05
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	18.33	18.33	17.03
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	14.64	14.64	13.60
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	14.64	14.64	13.60
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	17.47	17.47	16.22
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.15	2.15	2.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.24	0.24	0.23
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.15	0.15	0.14
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	6.76	6.76	6.28
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	6.76	6.76	6.28
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.82	4.82	4.48
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.52	3.52	3.27
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	2.69	2.69	2.49
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.39	2.39	2.22
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.15	0.15	0.14
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.43	0.43	0.40
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	10.70	10.70	9.94
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	10.70	10.70	9.94
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	47.19	47.19	43.84
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	47.19	47.19	43.84
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	47.28	47.28	43.92
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	47.26	47.26	43.91
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	47.27	47.27	43.91
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	47.27	47.27	43.91
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	2.80	2.80	2.60
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.20	2.20	2.05
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.02	0.02	0.02
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.09
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.09
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.18	1.18	1.10
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.18	1.18	1.10
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.28	3.28	3.05
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.28	3.28	3.04
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	3.28	3.28	3.05
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	13.92	13.92	12.93
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	14.51	14.51	13.48
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.08
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.09
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.47	0.47	0.44
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.37	1.37	1.27
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	3.42	3.42	3.18
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	3.42	3.42	3.18
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.41	3.41	3.18
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	2.87	2.87	2.66
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.08	1.08	1.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.93	3.93	3.65
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.05	0.05	0.05
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.05	0.05	0.05
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	3.01	3.01	2.80
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.13	0.13	0.12
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.62	1.62	1.50
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.80	4.80	4.46
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	9.87	9.87	9.17
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	14.68	14.68	13.64
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	14.68	14.68	13.64
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.79	0.79	0.74
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.31	2.31	2.14
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	8.86	8.86	8.23
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	8.71	8.71	8.09
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.81	2.81	2.61
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	2.41	2.41	2.24
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.51	2.51	2.33
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	4.13	4.13	3.84
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	47.28	47.28	43.92
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.12	2.12	1.97
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.09	0.09	0.08
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.50	1.50	1.40
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	7.82	7.82	7.26
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	7.82	7.82	7.26
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	3.57	3.57	3.32
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	7.66	7.66	7.11
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.86	2.86	2.66
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	2.87	2.87	2.66

Appendix F Air Quality Nonattainment Area Results

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.86	2.86	2.66
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	2.86	2.86	2.66
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	3.00	3.00	2.78
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	10.24	10.24	9.51
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.13	0.13	0.13
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.13	0.13	0.13
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.13
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	12.48	12.48	11.59
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	12.46	12.46	11.58
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	12.49	12.49	11.60
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	11.81	11.81	10.97
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	10.44	10.44	9.70
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	10.44	10.44	9.70
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	10.44	10.44	9.70
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	10.44	10.44	9.70
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	10.44	10.44	9.70
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	3.70	3.70	3.44
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.70	3.70	3.44
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.81	0.81	0.75
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.13
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	2.41	2.41	2.24
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.54	0.54	0.50
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.01
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.17	1.17	1.08
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	12.35	12.35	11.47

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	12.35	12.35	11.47
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.10	0.10	0.09
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.04	0.04	0.04
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.21	0.21	0.20
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.80	0.80	0.74
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	2.41	2.41	2.24
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	2.15	2.15	2.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.10	0.10	0.09
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.05	0.05	0.05
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.05	0.05	0.05
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.10	0.10	0.10
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	1.42	1.42	1.32
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	2.52	2.52	2.34
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.80	2.80	2.60
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	7.63	7.63	7.09
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	7.63	7.63	7.09
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.14
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.15	0.15	0.14
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.15	0.15	0.14
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.02	0.02	0.02
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.02	0.02	0.02



Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.90	1.90	1.76
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.72	2.72	2.53
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.06
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-20. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Diesel Particulate Matter (DPM), 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.83	2.83	2.56
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	27.92	27.92	25.31
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.97	0.97	0.88
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	12.83	12.83	11.63
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.22	0.22	0.20
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	1.51	1.51	1.37
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	6.92	6.92	6.27
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	6.92	6.92	6.27
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	1.73	1.73	1.57
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.21	0.21	0.19
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	9.03	9.03	8.18
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	9.02	9.02	8.17
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.27	3.27	2.96
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	5.24	5.24	4.75
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	5.24	5.24	4.75
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	30.73	30.73	27.86
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.91	3.91	3.54
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.91	3.91	3.54
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	37.02	37.02	33.56
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.23	0.23	0.21
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.09
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.25	0.25	0.23
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.21	0.21	0.19
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.21	0.21	0.19
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	1.14	1.14	1.04
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	40.67	40.67	36.87
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	41.50	41.50	37.63
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.25	0.25	0.23
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.25	0.25	0.23
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.06	4.06	3.68
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	4.06	4.06	3.68
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.06	4.06	3.68
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.25	0.25	0.23
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	4.51	4.51	4.09
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	4.51	4.51	4.09
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.52	0.52	0.47
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.19	2.19	1.98
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.12	3.12	2.83
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	21.29	21.29	19.30
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	21.29	21.29	19.30
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	8.14	8.14	7.38

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	33.19	33.19	30.09
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	2.85	2.85	2.58
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	32.21	32.21	29.20
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	10.85	10.85	9.84
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	14.97	14.97	13.57
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	3.90	3.90	3.54
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	15.04	15.04	13.63
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	3.16	3.16	2.86
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.62	0.62	0.56
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.78	1.78	1.62
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	3.13	3.13	2.83
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	15.22	15.22	13.80
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.10	4.10	3.72
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	18.88	18.88	17.12
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.29	0.29	0.26
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.73	0.73	0.67
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.75	0.75	0.68
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	2.68	2.68	2.43

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	33.19	33.19	30.09
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.06	0.06	0.05
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.05
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.59	2.59	2.35
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	2.59	2.59	2.35
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	106.04	106.04	96.13
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	105.92	105.92	96.02
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.99	0.99	0.90
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.66	0.66	0.59
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	26.71	26.71	24.22
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	26.68	26.68	24.18
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	21.62	21.62	19.60
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	21.62	21.62	19.60
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	25.46	25.46	23.08
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.13	3.13	2.84
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.36	0.36	0.32
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.21	0.21	0.19
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.05
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	9.84	9.84	8.92
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	9.84	9.84	8.92
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	7.02	7.02	6.37
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	5.12	5.12	4.64
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	3.91	3.91	3.54
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.49	3.49	3.16
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.22	0.22	0.20
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.63	0.63	0.57
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	15.43	15.43	13.99
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	15.43	15.43	13.99
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	68.77	68.77	62.35
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	68.78	68.78	62.35
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	68.90	68.90	62.47
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	68.88	68.88	62.44
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	68.89	68.89	62.45
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	68.89	68.89	62.45
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.08	4.08	3.70
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.22	3.22	2.92
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	1.72	1.72	1.56
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	1.72	1.72	1.56
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.77	4.77	4.32
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.76	4.76	4.32
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.77	4.77	4.32
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	20.27	20.27	18.37
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	21.11	21.11	19.14
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.12
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.14	0.14	0.13
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.14	0.14	0.13
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.67	0.67	0.61
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.06	0.06	0.05
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.96	1.96	1.77
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	4.91	4.91	4.45
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	4.92	4.92	4.46
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.91	4.91	4.45
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.17	4.17	3.78
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.59	1.59	1.44
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	5.79	5.79	5.25
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.08	0.08	0.07
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.08	0.08	0.07
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	4.42	4.42	4.01
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.18	0.18	0.17
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	2.35	2.35	2.13
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	6.98	6.98	6.33
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	14.36	14.36	13.01
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	21.34	21.34	19.35
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	21.34	21.34	19.35
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	1.16	1.16	1.05
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	3.36	3.36	3.04
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	12.89	12.89	11.69
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	12.67	12.67	11.49
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.08	4.08	3.70
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.00	0.00	0.00
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	3.51	3.51	3.18
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.65	3.65	3.31
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	6.01	6.01	5.45
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	68.90	68.90	62.46
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	3.08	3.08	2.79
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.13	0.13	0.12
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.18	2.18	1.98
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	11.37	11.37	10.31
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	11.37	11.37	10.31
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	5.24	5.24	4.75
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	11.16	11.16	10.12
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	4.16	4.16	3.77
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	4.17	4.17	3.78

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	4.16	4.16	3.78
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	4.16	4.16	3.78
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	4.35	4.35	3.95
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	14.74	14.74	13.37
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.18	0.18	0.16
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.18	0.18	0.16
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.18	0.18	0.16
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	18.13	18.13	16.44
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	18.10	18.10	16.41
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	18.14	18.14	16.45
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	17.17	17.17	15.57
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	15.17	15.17	13.75
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	15.17	15.17	13.75
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	15.17	15.17	13.75
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	15.17	15.17	13.75
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	15.17	15.17	13.75
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	5.39	5.39	4.88
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	5.39	5.39	4.88
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.07
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	1.16	1.16	1.05
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.19
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	3.51	3.51	3.18
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.79	0.79	0.71
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	1.70	1.70	1.54
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	17.96	17.96	16.28

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	17.96	17.96	16.28
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.14	0.14	0.13
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.05
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.31	0.31	0.28
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	1.16	1.16	1.05
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	3.51	3.51	3.18
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	3.13	3.13	2.84
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.14	0.14	0.13
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.07	0.07	0.07
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.07	0.07	0.07
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.15	0.15	0.14
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	2.07	2.07	1.88
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	3.66	3.66	3.32
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	4.08	4.08	3.70
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	11.11	11.11	10.07
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	11.11	11.11	10.07
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.21	0.21	0.19
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.21	0.21	0.19
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.21	0.21	0.19
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.01	0.01	0.01
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.01	0.01	0.01

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 DPM Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	2.76	2.76	2.51
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	3.96	3.96	3.59
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.09
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-21. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Formaldehyde, 2035**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.10	0.10	0.10
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.05	0.05	0.05
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.05	0.05	0.05
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Armstrong County; Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.70	0.70	0.66
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.61	0.61	0.57
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.02
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.16	0.16	0.16
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.16	0.16	0.16
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.18	0.18	0.17
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.09	0.09	0.09
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County; Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.02	0.02	0.02
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.05	0.05	0.04
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.09	0.09	0.09
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.22	0.22	0.21
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.41	0.41	0.39
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.41	0.41	0.40
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.08	0.08	0.07
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.10
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.11	0.11	0.11
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.13	0.13	0.13
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.14	0.14	0.13
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.13	0.13	0.12
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.13	0.13	0.12
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.12	0.12	0.11
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.50	0.50	0.47
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.49	0.49	0.47
Dane County; Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.02	0.02	0.02

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.33	0.33	0.31
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.19	0.19	0.18
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.32	0.32	0.31
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.10	0.10	0.09
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.32	0.32	0.31
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Detroit-Ann Arbor, MI	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.33	0.33	0.31
Dona Ana County; Anthony, NM	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.03	0.03	0.03
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM <sub>2.5</sub> (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.03	0.03	0.03
Gila County (part); Payson, AZ	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.08
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.08
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.13	0.13	0.12
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.43	0.43	0.41
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.37	0.37	0.36
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.03	0.03	0.03
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.01	0.01	0.01
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.04	0.04	0.04
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.02
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.11	0.11	0.11
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.11	0.11	0.11
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.06	0.06	0.06
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.06	0.06	0.06
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.84	0.84	0.80
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	0.84	0.84	0.80
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.84	0.84	0.80
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.84	0.84	0.80
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.84	0.84	0.80
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.84	0.84	0.80
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.05

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.29	0.29	0.28
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.02
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.09	0.09	0.08
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.08	0.08	0.08
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.07	0.07	0.07
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.15
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.15	0.15	0.15
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.41	0.41	0.39
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.72	0.72	0.69
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.73	0.73	0.70
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.72	0.72	0.69
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.09	0.09	0.09
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.00
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.06
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.17	0.17	0.16
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.31	0.31	0.29
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.31	0.31	0.29
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.28	0.28	0.27

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.29	0.29	0.28
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.29	0.29	0.28
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.01	0.01	0.01
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.18	0.18	0.17
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.15	0.15	0.14
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.08
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.01	0.01	0.01
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.04	0.04	0.03
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.11	0.11	0.10
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.04	0.04	0.04
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.03	0.03	0.03
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.03	0.03	0.03
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.03	0.03	0.03
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.84	0.84	0.80
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.12	0.12	0.11
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.12	0.12	0.11
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.08	0.08	0.07
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.12	0.12	0.11
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.01
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.10	0.10	0.10

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.06	0.06	0.06
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.09
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.05	0.05	0.05
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.16	0.16	0.15
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.16	0.16	0.15
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.16	0.16	0.15
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.34	0.34	0.33
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.34	0.34	0.33
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.34	0.34	0.33
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.32	0.32	0.31
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.22	0.22	0.21
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.22	0.22	0.21
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.22	0.22	0.21
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.22	0.22	0.21
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.22	0.22	0.21
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.16	0.16	0.15
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.03
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.02
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.02
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.13	0.13	0.13

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.14	0.14	0.13
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.00	0.00	0.00
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.06
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.00
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.04	0.04	0.04
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.03	0.03	0.03
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.05	0.05	0.05
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.03
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.28	0.28	0.27
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.28	0.28	0.27

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2035 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.01
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

Notes:  
<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.  
<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.  
<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.  
CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

**Table F-22. Changes in Emissions from U.S. Passenger Cars and Light Trucks by Nonattainment or Maintenance Area and Alternative, Proposed Action Impacts—Formaldehyde, 2050**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Ada County; Boise, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Adams, Denver, and Boulder Counties; Denver Metropolitan area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.13	0.13	0.13
Ajo (Pima County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Albuquerque, NM	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05
Allegan County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Allegheny County Air Basin: Hazelwood monitor, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Allegheny County, PA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.06	0.06	0.06
Allegheny County; Liberty, Lincoln, Port Vue, Glassport, Clairton, PA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Allegheny, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Allentown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.04	0.04	0.04
Allentown-Bethlehem-Easton, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.04	0.04	0.04
Alton Township, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Amador County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Anchorage, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.01	0.01	0.01
Anchorage; Eagle River, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Anne Arundel County and Baltimore County, MD	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.07	0.07	0.07
Archuleta County; Pagosa Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Armstrong County: Madison, Mahoning, Boggs, Washington, Pine, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Aroostock County; City of Presque Isle, ME	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Atlanta, GA	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.90	0.90	0.87
Atlanta, GA	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.79	0.79	0.75
Atlantic City, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Bakersfield, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Baltimore, MD	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Baltimore, MD	Ozone (2008 8-hour)	Nonattainment, Moderate	50	0	0.20	0.20	0.20
Baltimore, MD	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.21	0.21	0.20
Baton Rouge, LA	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.23	0.23	0.22
Beaver, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Benton County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Berrien County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.03	0.03	0.03
Billings, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Billings, MT	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Birmingham, AL	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.11	0.11	0.11
Boise-Northern Ada County, ID	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.03	0.03	0.03
Bonner County; The Sandpoint Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Boston, MA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.05	0.05	0.05



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Boyd County (part), KY	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Brooke; Follansbee area, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Brown County: Green Bay, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Burlington, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Butte County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Calaveras County, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Calaveras County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Cambria-Westmoreland Area, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Campbell-Clermont Counties, KY-OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Canton-Massillon, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.02	0.02	0.02
Central New Hampshire, NH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Central Steptoe Valley, NV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Charleston, WV	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.06	0.06	0.06
Charlotte, NC	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.11	0.11	0.11
Charlotte-Rock Hill, NC-SC	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.28	0.28	0.28
Chicago, IL-IN-WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.51	0.51	0.51
Chicago-Naperville, IL-IN-WI	Ozone (2008 8-hour)	Maintenance, Serious	100	0	0.51	0.51	0.52
Chico (Butte County), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Chico, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Chico, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Cincinnati, OH-KY (KY portion)	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Cincinnati, OH-KY (OH portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.10	0.10	0.10
Cincinnati, OH-KY-IN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.13	0.13	0.13
Clark County; Las Vegas planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.14	0.14	0.14
Cleveland, OH	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Cleveland, OH	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.16	0.16	0.17
Cleveland, OH	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Cleveland-Akron-Lorain, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.17	0.17	0.17
Cleveland-Akron-Lorain, OH	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.16	0.16	0.16
Cochise County; Paul Spur/Douglas planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Colorado Springs, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Columbus, OH	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.16	0.16	0.16
Columbus, OH	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.15	0.15	0.15
Cook County; Lyons Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cook County; Southeast Chicago, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Coshocton County; Franklin Township, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Coso Junction, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Cuyahoga County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.07	0.07	0.07
Cuyahoga County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Dallas-Fort Worth, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.62	0.62	0.62
Dallas-Fort Worth, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.61	0.61	0.61
Dane County: Madison sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Delaware County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.02	0.02	0.02

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Denver Metro/North Front Range, CO	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.41	0.41	0.40
Denver-Boulder, CO	CO (1971 8-hour)	Maintenance, Serious	100	0	0.23	0.23	0.23
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.41	0.41	0.40
Detroit, MI	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.12	0.12	0.12
Detroit, MI	Ozone (2015 8-hour)	Maintenance, Moderate	100	0	0.41	0.41	0.40
Detroit, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Detroit-Ann Arbor, MI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.41	0.41	0.40
Dona Ana County; Anthony, NM	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Door County, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Door County-Revised, WI	Ozone (2015 8-hour)	Maintenance, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Douglas (Cochise County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Dukes County, MA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.00	0.00	0.00
Duluth, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
East Chicago, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
East Helena Area, MT	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
East Kern County, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
El Paso County, TX	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.04	0.04	0.04
El Paso, TX	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
El Paso-Las Cruces, TX-NM	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.05	0.05	0.05
Eugene-Springfield, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Evangeline Parish (Partial), LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fairbanks, AK	CO (1971 8-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Fairbanks, AK	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Flathead County; Columbia Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Kalispell and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Flathead County; Whitefish and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fort Collins, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Freehold, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Freestone and Anderson Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Fremont County; Canon City Area, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Fresno, CA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.04	0.04	0.04
Gila County (part); Payson, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Giles County, VA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Grant County, NM	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Grants Pass, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Great Falls, MT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Greater Connecticut, CT	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.10
Greater Connecticut, CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.10
Greeley, CO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.17	0.17	0.16
Hancock County (part): Weirton, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Hancock and Brooke Counties (Part); The city of Weirton, WV	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Harrisburg-Lebanon-Carlisle-York, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
Hartford-New Britain-Middletown, CT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Hayden (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Hayden, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Hayden, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Henderson-Webster Counties, KY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hillsborough County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Hillsborough-Polk County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Houston-Galveston-Brazoria, TX	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.54	0.54	0.54
Houston-Galveston-Brazoria, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.46	0.46	0.46
Howard County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Humphreys County; (part) TVA Johnsonville, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Huntington, IN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Hutchinson County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Imperial County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
Imperial County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.02	0.02	0.02
Imperial County, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial County, CA	PM2.5 (2012 Annual)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Imperial Valley, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Indian Wells, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Indiana, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
Indianapolis, IN	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Indianapolis, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.04	0.04	0.04
Inland Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Inyo County; Owens Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.00	0.00	0.00
Jackson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jackson County; Medford-Ashland (including White City), OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Jamestown, NY	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.01	0.01	0.01
Jefferson County, KY	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, MO	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Jefferson County, OH	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Jefferson County; (part) Steubenville & Mingo Junction, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Johnstown, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Josephine County; Grants Pass, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Juneau; Mendenhall Valley area, AK	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Kern County (Eastern Kern), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.02	0.02	0.02
Kern County (Eastern Kern), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.02	0.02	0.02
King County; Kent, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
King County; Seattle, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Klamath Falls, OR	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Knoxville, TN	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.05	0.05	0.05
Knoxville-Sevierville-La Follette, TN	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.06	0.06	0.06
La Porte County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
LaSalle County; Oglesby, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County (part); Lakeview, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lake County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.04	0.04	0.04
Lake County, OH	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Lake County; (part) Eastlake, Timberlake, Lakeline, Willoughby, Mentor, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Lake County; Cities of East Chicago, Hammond, Whiting, and Gary, IN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Lake County; Polson, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake County; Ronan, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lake Tahoe North Shore, CA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lake Tahoe South Shore, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Lake Tahoe, NV	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Lancaster, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.03	0.03	0.03
Lancaster, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Lane County (part); Oakridge, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Lane County; Eugene/Springfield, OR	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Las Vegas, NV	CO (1971 8-hour)	Maintenance, Serious	100	0	0.14	0.14	0.14
Las Vegas, NV	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.14	0.14	0.14
Laurel Area (Yellowstone County), MT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary	100	0	0.00	0.00	0.00
Lebanon County, PA	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Lemont, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.02	0.02	0.02
Liberty-Clairton, PA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Lincoln County; Libby and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Logan, UT-ID	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Longmont, CO	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Lorain County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.07
Los Angeles-San Bernardino Counties (West Mojave Desert), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.08	0.08	0.07
Los Angeles-South Coast Air Basin, CA	CO (1971 8-hour)	Maintenance, Serious	100	0	1.04	1.04	1.05
Los Angeles-South Coast Air Basin, CA	NO <sub>2</sub> (1971 Annual)	Maintenance, Primary	100	0	1.04	1.04	1.05
Los Angeles-South Coast Air Basin, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	1.04	1.04	1.05
Los Angeles-South Coast Air Basin, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	1.04	1.04	1.05
Los Angeles-South Coast Air Basin, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	1.04	1.04	1.05
Los Angeles-South Coast Air Basin, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	1.04	1.04	1.05
Louisville, KY-IN (IN portion)	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.01	0.01	0.01
Louisville, KY-IN (KY portion)	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.06

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Lowell, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Lucas County, OH	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.02	0.02	0.02
Madison County; Granite City Township and Nameoki Township, IL	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Manchester, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Manitowoc County, WI	Ozone (2015 8-hour)	Maintenance, Marginal	100	0	0.00	0.00	0.00
Marathon County: Rothschild Sub-city area, Rib Mountain, Weston, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.01	0.01	0.01
Maricopa and Pinal Counties; Phoenix planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.35	0.35	0.36
Marion County: Lawrence, Washington, and Warrant Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.03	0.03	0.03
Mariposa County, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mariposa County, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Marshall, WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.01	0.01	0.01
Medford, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Memphis, TN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.06	0.06	0.06
Memphis, TN-MS-AR	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.11	0.11	0.11
Miami (Gila County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Miami, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Miami, AZ	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Millinocket AQCR 109, ME	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Milwaukee, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.10	0.10	0.10
Milwaukee, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.05	0.05	0.05
Milwaukee-Racine, WI	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.09	0.09	0.09
Minneapolis-St. Paul, MN	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.19	0.19	0.20
Minneapolis-St. Paul, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.19	0.19	0.19
Missoula, MT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.01	0.01	0.01
Missoula, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Modesto, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Mohave County (part); Bullhead City, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.01
Mono Basin, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Mono County; Mammoth Lake planning area, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Morenci (Greenlee County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Morgan County, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.00	0.00	0.00
Morongo Band of Mission Indians, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.00
Morristown, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Muscatine County, IA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Muscatine, IA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Muskegon County, MI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Muskingum River, OH	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Nashua, NH	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
Nassau County, FL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Navarro County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Nevada County (Western part), CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
Nevada County (Western part), CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.01	0.01	0.01
New Haven County, CT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
New Haven-Meriden-Waterbury, CT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.06	0.06	0.06
New Madrid County, MO	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
New Manchester-Grant magisterial district in Hancock County, WV	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
New York County, NY	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.02	0.02	0.02
New York-N. New Jersey-Long Island, NY-NJ-CT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.50	0.50	0.50
New York-N. New Jersey-Long Island, NY-NJ-CT	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.89	0.89	0.89
New York-N. New Jersey-Long Island, NY-NJ-CT	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.90	0.90	0.91
New York-Northern New Jersey-Long Island, NY-NJ-CT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.89	0.89	0.89
Nogales, AZ	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Northern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.12	0.12	0.12
Oakridge, OR	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Ogden, UT	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.00	0.00	0.00
Ogden, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Olmsted County; City of Rochester, MN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Oneida County: Rhinelander Sub-city area, WI	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation, CA	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pekin, IL	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Penns Grove, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Peoria County: Hollis twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Peoria, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Perth Amboy, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Philadelphia-Camden County, PA-NJ	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.07	0.07	0.07
Philadelphia-Wilmington, PA-NJ-DE (NJ portion)	PM2.5 (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.07	0.07	0.08
Philadelphia-Wilmington, PA-NJ-DE (PA, DE portions)	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.21	0.21	0.21
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.38	0.38	0.38
Philadelphia-Wilmington-Atlantic City, PA-NJ-MD-DE	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.38	0.38	0.38
Phoenix, AZ	CO (1971 8-hour)	Maintenance, Serious	100	0	0.35	0.35	0.35

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Phoenix-Mesa, AZ	Ozone (2008 8-hour)	Nonattainment, Moderate	100	0	0.35	0.35	0.36
Phoenix-Mesa, AZ	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.36	0.36	0.36
Pierce County; Tacoma, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Ajo planning area, AZ	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Pima County; Rillito planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Pinal County (part); West Pinal, AZ	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.02	0.02	0.02
Pitkin County; Aspen, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Pittsburgh, PA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Pittsburgh-Beaver Valley, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.23	0.23	0.22
Pittsburgh-Beaver Valley, PA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.19	0.19	0.19
Plumas County, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.00	0.00	0.00
Polk County, TN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Portland, OR	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.10	0.10	0.10
Power-Bannock Counties; Fort Hall Indian Reservation, ID	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Power-Bannock Counties; Portneuf Valley Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Provo, UT	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.01	0.01	0.01
Provo, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.04	0.04	0.04
Prowers County; Lamar, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Raleigh-Durham, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.13	0.13	0.13
Ramsey County, MN	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Reading, PA	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.05	0.05	0.05
Reno, NV	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Rhineland, WI	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Riverside County (Coachella Valley), CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.04	0.04	0.04
Riverside County (Coachella Valley), CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.04	0.04	0.04
Riverside County; Coachella Valley planning area, CA	PM10 (1987 24-hour)	Nonattainment, Serious	70	0	0.04	0.04	0.04
Riverside, Los Angeles, Orange, & San Bernardino Counties; South Coast Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	1.04	1.04	1.04
Rosebud County; Lame Deer, MT	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Routt County (part); Steamboat Springs, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.02	0.02	0.02
Rusk and Panola Counties, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.00
Sacramento County, CA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.09	0.09	0.09
Sacramento Metro, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.15	0.15	0.15
Sacramento Metro, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.15	0.15	0.15
Sacramento, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.09
Sacramento, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.15	0.15	0.15
Salem, OR	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Salt Lake City, UT	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Salt Lake City, UT	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.12	0.12	0.13

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Salt Lake County, UT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.08	0.08	0.08
Salt Lake County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.08	0.08	0.08
San Antonio, TX	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.12	0.12	0.12
San Bernardino County, CA	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.06	0.06	0.06
San Diego County, CA	Ozone (2008 8-hour)	Nonattainment, Severe 15	25	0	0.20	0.20	0.20
San Diego County, CA	Ozone (2015 8-hour)	Nonattainment, Severe 15	25	0	0.19	0.19	0.20
San Diego, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.19	0.19	0.20
San Francisco Bay Area, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.42	0.42	0.43
San Francisco Bay Area, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.42	0.42	0.43
San Francisco Bay Area, CA	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.42	0.42	0.43
San Francisco-Oakland-San Jose, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.40	0.40	0.40
San Joaquin Valley Air Basin, CA	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.27	0.27	0.27
San Joaquin Valley, CA	Ozone (2008 8-hour)	Nonattainment, Extreme	10	0	0.27	0.27	0.27
San Joaquin Valley, CA	Ozone (2015 8-hour)	Nonattainment, Extreme	10	0	0.27	0.27	0.27
San Joaquin Valley, CA	PM2.5 (2006 24-hour)	Nonattainment, Serious	100	0	0.27	0.27	0.27
San Joaquin Valley, CA	PM2.5 (2012 Annual)	Nonattainment, Serious	100	0	0.27	0.27	0.27
San Luis Obispo (Eastern San Luis Obispo), CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Luis Obispo (Eastern part), CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
San Manuel (Pinal County), AZ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
San Miguel County; Telluride, CO	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Sanders County (part); Thompson Falls and vicinity, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Santa Cruz County; Nogales planning area, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Seaford, DE	Ozone (2008 8-hour)	Nonattainment, Marginal	50	0	0.02	0.02	0.02
Seattle-Tacoma, WA	CO (1971 8-hour)	Maintenance, Moderate > 12.7 ppm	100	0	0.20	0.20	0.20
Sheboygan County, WI	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.00	0.00	0.01
Sheridan County; City of Sheridan, WY	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoreline Sheboygan County, WI	Ozone (2008 8-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; City of Pinehurst, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Shoshone County; Pinehurst Expansion Area, ID	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Silver Bow County; Butte, MT	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Somerville, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Southern Wasatch Front, UT	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
Southwest Indiana, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Spokane County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Spokane, WA	CO (1971 8-hour)	Maintenance, Serious	100	0	0.03	0.03	0.03
Springfield, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.01	0.01	0.01
St. Bernard Parish, LA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.01	0.01	0.01
St. Clair, MI	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.02	0.02	0.02
St. Lawrence County, NY	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
St. Louis, MO	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
St. Louis, MO-IL	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.16	0.16	0.16



**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
St. Louis-St. Charles-Farmington, MO-IL	Ozone (2008 8-hour)	Maintenance, Marginal	100	0	0.17	0.17	0.17
Steubenville, OH-WV	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Steubenville-Weirton, OH-WV	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Former Subpart 1	100	0	0.01	0.01	0.01
Stockton, CA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Sullivan County, TN	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Sutter Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Syracuse, NY	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.09	0.09	0.09
Tacoma, WA	PM <sub>2.5</sub> (2006 24-hour)	Maintenance, Moderate	100	0	0.03	0.03	0.03
Tazewell County: Groveland twp, IL	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Terre Haute, IN	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Thurston County; Cities of Olympia, Tumwater, and Lacey, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Titus County, TX	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Toms River, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Tooele County, UT	SO <sub>2</sub> (1971 24-hour/Annual)	Nonattainment, Primary, Secondary	100	0	0.00	0.00	0.00
Trenton, NJ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Trona, CA	PM <sub>10</sub> (1987 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
Tucson, AZ	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.05	0.05	0.05
Tuolumne County, CA	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.00	0.00	0.00
Tuscan Buttes, CA	Ozone (2015 8-hour)	Nonattainment, Marginal (Rural Transport)	100	0	0.00	0.00	0.00
Uinta Basin, UT	Ozone (2015 8-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01
Union County; LaGrande, OR	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Upper Green River Basin Area, WY	Ozone (2008 8-hour)	Nonattainment, Marginal	100	0	0.04	0.04	0.04
Utah County, UT	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.05	0.05	0.05
Vancouver, WA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.02	0.02	0.02
Ventura County, CA	Ozone (2008 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.06
Ventura County, CA	Ozone (2015 8-hour)	Nonattainment, Serious	50	0	0.06	0.06	0.06
Vermillion County; Part of Clinton Township, IN	PM <sub>10</sub> (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Vigo County, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.01	0.01	0.01
Walla Walla County; Wallula, WA	PM <sub>10</sub> (1987 24-hour)	Maintenance, Serious	100	0	0.00	0.00	0.00
Waltham, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Warren County, NJ	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren County: Conewago Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
Warren County: Warren Boro, Pleasant Twp, Glade Twp, PA	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary, Secondary	100	0	0.00	0.00	0.00
Warren, PA	SO <sub>2</sub> (2010 1-hour)	Nonattainment, --	100	0	0.00	0.00	0.00
Washington, DC-MD-VA	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.04	0.04	0.04
Washington, DC-MD-VA	Ozone (2008 8-hour)	Maintenance, Marginal	50	0	0.34	0.34	0.35
Washington, DC-MD-VA	Ozone (2015 8-hour)	Nonattainment, Moderate	50	0	0.34	0.34	0.35

**Appendix F Air Quality Nonattainment Area Results**

Nonattainment or Maintenance Area	NAAQS Pollutant (Standard)	Status, Severity Classification <sup>a</sup>	General Conformity Threshold <sup>b</sup>	2050 Formaldehyde Emission Changes by Alternative (tons per year) <sup>c</sup>			
				No-Action	Alt. 1	Alt. 2	Alt. 3
Washoe County; Reno planning area, NV	PM10 (1987 24-hour)	Maintenance, Serious	100	0	0.02	0.02	0.02
Wayne County, MI	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Wayne County: Boston, Center, Franklin, Wayne & Webster Townships, IN	SO <sub>2</sub> (1971 24-hour/Annual)	Maintenance, Primary	100	0	0.00	0.00	0.00
West Central Pinal, AZ	PM2.5 (2006 24-hour)	Nonattainment, Moderate	100	0	0.00	0.00	0.00
West Silver Valley, ID	PM2.5 (2012 Annual)	Maintenance, Moderate	100	0	0.00	0.00	0.00
Whatcom County, WA	SO <sub>2</sub> (2010 1-hour)	Maintenance, --	100	0	0.00	0.00	0.00
Winston-Salem, NC	CO (1971 8-hour)	Maintenance, Moderate <= 12.7 ppm	100	0	0.03	0.03	0.03
Worcester, MA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.02	0.02	0.02
Yakima County, WA	PM10 (1987 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yakima, WA	CO (1971 8-hour)	Maintenance, Not Classified	100	0	0.00	0.00	0.00
Yuba City-Marysville, CA	PM2.5 (2006 24-hour)	Maintenance, Moderate	100	0	0.01	0.01	0.01
Yuma, AZ	Ozone (2015 8-hour)	Nonattainment, Marginal	100	0	0.01	0.01	0.01
Yuma, AZ	PM10 (1987 24-hour)	Nonattainment, Moderate	100	0	0.01	0.01	0.01

Notes:

<sup>a</sup> Nonattainment or maintenance status as of 2 May 2025. Source: EPA, The Green Book Nonattainment Areas for Criteria Pollutants; <https://www.epa.gov/green-book>. "--" indicates that no severity classification has been established for the NAAQS pollutant. The moderate severity classifications for CO distinguish areas with air quality design values below 12.7 ppm from those with design values of 12.7 ppm or greater.

<sup>b</sup> Emissions thresholds in tons per year. Where the threshold differs by precursor pollutant, the smallest of the precursor thresholds is shown. These thresholds are provided for information only; a general conformity determination is not required for the Proposed Action. Source: 40 CFR 93.153.

<sup>c</sup> Positive values are emissions increases; negative values are emissions decreases.

CO = carbon monoxide; NAAQS = National Ambient Air Quality Standard; NO<sub>2</sub> = nitrogen dioxide; PM2.5 = particulate matter less than 2.5 microns in size; PM10 = particulate matter less than 10 microns in size; ppm = parts per million; SO<sub>2</sub> = sulfur dioxide.

# **APPENDIX G**

## **References**

## APPENDIX G REFERENCES

- Abdelshafy, A., D. Franzen, A. Mohaupt, J. Schussler, A. Buhrig-Polaczek, and G. Walther. 2022. A Feasibility Study to Minimize the Carbon Footprint of Cast Iron Production While Maintaining the Technical Requirements. *Journal of Sustainability Metallurgy*. 9:249–265. Available at: <https://doi.org/10.1007/s40831-022-00642-5>. (Accessed: October 16, 2025).
- ACC (American Chemistry Council). 2020. Automotive plastics & polymer composites: A roadmap for future mobility. Available at: <https://www.americanchemistry.com/content/download/16354/file/Automotive-Plastics-&-Polymer-Composites-A-Roadmap-for-Future-Mobility.pdf>. (Accessed: October 16, 2025).
- ACC. 2024. Chemistry and automobiles 2024: Driving the future. Available at: <https://www.americanchemistry.com/content/download/16352/file/Chemistry-and-Automobiles-2024.pdf>. (Accessed: October 16, 2025).
- ACHP (Advisory Council on Historic Preservation). 2021. *Protecting Historic Properties: A Citizen's Guide to Section 106 Review*. Available at: [https://www.achp.gov/sites/default/files/documents/2021-01/CitizenGuide2021\\_011321.pdf](https://www.achp.gov/sites/default/files/documents/2021-01/CitizenGuide2021_011321.pdf). (Accessed: October 16, 2025).
- Adebiyi, F.M. 2022. Air quality and management in petroleum refining industry: A review. *Environmental Chemistry and Ecotoxicology*. 4:89–96. Available at: <https://doi.org/10.1016/j.eneco.2022.02.001>. (Accessed: October 16, 2025).
- AFDC (Alternative Fuels Data Center). 2017. Biodiesel Blends. U.S. Department of Energy, Energy Efficiency and Renewable Energy. Available at: [http://www.afdc.energy.gov/fuels/biodiesel\\_blends.html](http://www.afdc.energy.gov/fuels/biodiesel_blends.html). (Accessed: October 16, 2025).
- Aichberger, C., and G. Jungmeier. 2020. Environmental life cycle impacts of automobile batteries based on a literature review. *Energies*. 13(23):6345. Doi:10.3390/en13236345. (Accessed: April 20, 2023).
- Al-Rubaye, A., D. Jasim, S.A. Jassam, H.M. Jasim, H.F.M. Ameen, and H.A. Al-Robai. 2023. The Side Effect of Oil Refineries on Environment: As a mini Review. *Earth and Environmental Science*. Available at: <https://doi.org/10.1088/1755-1315/1262/2/022024>. (Accessed: August 11, 2025).
- Alexeef, S.E., B.A. Coull, A. Gryparis, H. Suh, D. Sparrow, P.S. Vokonas, and J. Schwartz. 2011. Medium-term exposure to traffic-related air pollution and markers of inflammation and endothelial function. *Environmental Health Perspectives*. 119(4):481–486. Doi:10.1289/ehp.1002560. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3080929/>. (Accessed: October 16, 2025).

- Aluminum Association. 2021. Aluminum Castings. Available at:  
<https://www.aluminum.org/taxonomy/term/121>. (Accessed: November 13, 2025).
- Ambrose, H., and A. Kendall. 2016. Effects of battery chemistry and performance on the life cycle greenhouse gas intensity of electric mobility. *Transportation Research Part D: Transport and Environment* 47:182-194, ISSN 1361-9209. Available at:  
<https://doi.org/10.1016/j.trd.2016.05.009>. (Accessed: October 16, 2025).
- Anderson, P.A., I.K. Berzins, F. Fogarty, H.J. Hamlin, and L.J. Guillette Jr. 2011. Sound, stress, and seahorses: The consequences of a noisy environment to animal health. *Aquaculture*. 311(1–4):129–138. Available at:  
<https://www.sciencedirect.com/science/article/abs/pii/S004484861000760X>. (Accessed: October 16, 2025).
- Aniziol. 2020. A Comprehensive List of Ferromagnetic Materials. Moley Magnetics, Inc. Available at: <https://www.moleymagneticsinc.com/a-comprehensive-list-of-ferromagnetic-materials/>. (Accessed: October 16, 2025).
- ANL (Argonne National Laboratory). 2019. Updates for Battery Recycling and Materials in GREET 2019. Argonne National Laboratory. Available at: [https://greet.es.anl.gov/publication-battery\\_recycling\\_materials\\_2019](https://greet.es.anl.gov/publication-battery_recycling_materials_2019). (Accessed: October 16, 2025).
- ANL. 2022. Wheel-to-Wheel Calculator. Argonne National Laboratory. Available at: <https://greet.es.anl.gov/tools>. (Accessed: October 16, 2025).
- ANL. 2023. The Greenhouse Gases, Regulated Emissions and Energy Use in Transportation (GREET) Model. Argonne National Laboratory. Last revised: December 2023. Available at: <http://greet.es.anl.gov/>. (Accessed: October 16, 2025).
- ANL. 2025. R&D GREET Model: Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies Model. Argonne National Laboratory. Last revised: May 2025. Available at: <https://greet.es.anl.gov/>. (Accessed: July 24, 2025).
- Apte, J.S., K.P. Messier, S. Gani, M. Brauer, T.W. Kirchstetter, M.M. Lunden, J.D. Marshall, C.J. Portier, R.C.H. Vermeulen, and S.P. Hamburg. 2017. High-Resolution Air Pollution Mapping with Google Street View Cars: Exploiting Big Data. *Environmental Science & Technology*. 51:6999–7008. Available at: <https://doi.org/10.1021/acs.est.7b00891>. (Accessed: October 16, 2025).
- Atoufi, H., and D. Lampert. 2020. Impacts of oil and gas production on contaminant levels in sediment. *Current Pollution Reports*. 6:43–53. Available at:  
<https://link.springer.com/article/10.1007/s40726-020-00137-5>. (Accessed: October 16, 2025).
- Bailo, C., S. Modi, M. Schultz, T. Fiorelli, B. Smith, and N. Snell. 2020. Vehicle mass reduction roadmap study 2025–2035. Center for Automotive Research. Available at:

- <https://www.cargroup.org/wp-content/uploads/2021/04/Mass-Reduction-roadmap-report-final-Nov10.pdf>. (Accessed: October 16, 2025).
- Bakke, T., J. Klungsoyr, and S. Sanni. 2013. Environmental impacts of produced water and drilling waste discharges from the Norwegian offshore petroleum industry. *Marine Environmental Research*. 92(2013):154–169. Doi:10.1016/j.marenvres.2013.09.012. Available at: <https://www.sciencedirect.com/science/article/pii/S0141113613001621>. (Accessed: October 16, 2025).
- Battery Council International. 2020. State Recycling Laws. Available at: [https://batteryCouncil.org/?page=State\\_Recycling\\_Laws](https://batteryCouncil.org/?page=State_Recycling_Laws). (Accessed: October 16, 2025).
- Baynard, C. 2011. The landscape infrastructure footprint of oil development: Venezuela’s heavy oil belt. *Ecological Indicators*. 11(3):789–810. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S1470160X10001767?via%3Dihub>. (Accessed: October 16, 2025).
- Benavides, K., A. Gurgel, J. Morris, B. Mignone, B. Chapman, H. Khesghi, H. Herzog, and S. Paltsev. 2024. Mitigating emissions in the global steel industry: Representing CCS and Hydrogen Technologies in Integrated Assessment Modeling. *International Journal of Greenhouse Gas Control*. 131:103963. Available at: <https://doi.org/10.1016/j.ijggc.2023.103963>. (Accessed: October 16, 2025).
- Bertram, M., K. Buxmann, and P. Furrer. 2009. Analysis of greenhouse gas emissions related to aluminum transport applications. *The International Journal of Life Cycle Assessment*. 14(1):62–69. Doi:10.1007/s11367-008-0058-0.
- Beyer, J., H. Trannum, T. Bakke, P. Hodson, and T. Collier. 2016. Environmental effects of the Deepwater Horizon oil spill: A review. *Marine Pollution Bulletin*. 110(1):28–51. Available at: <https://doi.org/10.1016/j.marpolbul.2016.06.027>. (Accessed: October 16, 2025).
- Beyer, J., K.E. Ellingsen, N.G. Yoccoz, P. Buhl-Mortensen, and T. Bakke. 2025. Environmental effects monitoring of offshore oil and gas activities on the Norwegian continental shelf: A review. *Marine Environmental Research*. 209:107166. Available at: <https://doi.org/10.1016/j.marenvres.2025.107166>. (Accessed: October 16, 2025).
- Bird, R., Z.J. Baum, X. Yu, and J. Ma. 2022. The Regulatory Environment for Lithium-Ion Battery Recycling. *ACS Publications*. 7(2):736–740. Available at: <https://pubs.acs.org/doi/10.1021/acsenerylett.1c02724>. (Accessed: October 16, 2025).
- BNEF (Bloomberg New Energy Finance). 2023. Zero-Emission Vehicles Factbook: A BloombergNEF special report prepared for COP28. Available at: <https://assets.bbhub.io/professional/sites/24/2023-COP28-ZEV-Factbook.pdf>. (Accessed: October 16, 2025).

- Boothe, V.L., T.K. Boehmer, A.M. Wendel, and F.Y. Yip. 2014. Residential traffic exposure and childhood leukemia: A systematic review and meta-analysis. *American Journal of Preventive Medicine*. 46(4):413–422. doi:10.1016/j.amepre.2013.11.004.
- Bruckner, L., J. Frank, and T. Elwert. 2020. Industrial Recycling of Lithium-Ion Batteries: A Critical Review of Metallurgical Process Routes. Available at: <https://www.mdpi.com/2075-4701/10/8/1107>. (Accessed: October 16, 2025).
- Burnham, A., M.Q. Wang, and Y. Wu. 2006. *Development and Applications of GREET 2.7 - The Transportation Vehicle-Cycle Model*. Report ANL/ESD/06-5. Argonne National Laboratory. Available at: <https://greet.es.anl.gov/publication-1klbbrwj>. (Accessed: October 16, 2025).
- Cadle, S.H., P. Mulawa, E.C. Hunsanger, K. Nelson, R.A. Ragazzi, R. Barrett, G.L. Gallagher, D.R. Lawson, K.T. Knapp, and R. Snow. 1999. Light-Duty Motor Vehicle Exhaust Particulate Matter Measurement in the Denver, Colorado, Area. *Journal of the Air & Waste Management Association*. 49(9):164–174. doi: 10.1080/10473289.1999.10463872
- Cardamone, G.F., F. Ardolino, and U. Arena. 2022. Can plastics from end-of-life vehicles be managed in a sustainable way? *Sustainable Production and Consumption*. 29:115–127.
- CCSP (U.S. Climate Change Science Program). 2008. Analyses of the Effects of Global Change on Human Health and Welfare and Human Systems. Final Report, Synthesis and Assessment Product 4.6. Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. Prepared by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. [J. L. Gamble, K. L. Ebi, F. G. Sussman and T. J. Wilbanks (Eds.)]. Washington, D.C. U.S. Environmental Protection Agency. 204 pgs. Available at: <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=197244&CFID=60998353&CFTOKEN=54437556>. (Accessed: October 16, 2025).
- Cederwall, J., T. Black, J. Blais, M. Hanson, B. Hollebone, V. Palace, J. Rodriguez-Gil, C. Greer, C. Maynard, A. Ortmann, R. Rooney, and D. Orihel. 2020. Life under an oil slick: response of a freshwater food web to simulated spills of diluted bitumen in field mesocosms. *Canadian Journal of Fisheries and Aquatic Sciences*. 77(2). doi.org/10.1139/cjfas-2019-0224.
- Chambliss, S.E., C.P.R. Pinon, K.P. Messier, B. LaFranchi, C.R. Upperman, M.M. Lunden, A.L. Robinson, J.D. Marshall, and J.S. Apte. 2021. Local- and regional-scale racial and ethnic disparities in air pollution determined by long-term mobile monitoring. *Proceedings of the National Academy of Sciences* 118(37):e2109249118. doi: 10.1073/pnas.2109249118. PMID: 34493674; PMCID: PMC8449331. Available at: <https://doi.org/10.1073/pnas.2109249118>. (Accessed: October 16, 2025).
- Cheah, L. 2010. Cars on a Diet: The material and energy impacts of passenger vehicle weight reduction in the U.S. submitted to the engineering systems division in partial fulfillment of the requirements of the requirements for the degree of Doctor of Philosophy in engineering

- systems at the Massachusetts Institute of Technology. Available at:  
<https://dspace.mit.edu/handle/1721.1/62760>. (Accessed: October 17, 2025).
- Cherr, G., E. Fairbair, and A. Whitehead. 2017. Impacts of Petroleum-Derived Pollutants on Fish Development. *Annual Review of Animal Biosciences*. 5:185–203. doi.org/10.1146/annurev-animal-022516-022928.
- Cobalt Institute. 2019. Life Cycle Assessment. Available at:  
<https://www.cobaltinstitute.org/sustainability/life-cycle-assessment/>. (Accessed: October 16, 2025).
- Congressional Research Service. 2020. Environmental Effects of Battery Electric and Internal Combustion Engine Vehicles, R46420. Last revised: June 16, 2020. Available at:  
<https://fas.org/sgp/crs/misc/R46420.pdf>. (Accessed: October 16, 2025).
- Cook, R., J.S. Touma, A. Beidler, and M. Strum. 2006. Preparing highway emissions inventories for urban scale modeling: A case study in Philadelphia. *Transportation Research Part D: Transport and Environment*. 11(6):396–407. doi:10.1016/j.trd.2006.08.001.
- Dabek-Zlotorzynska, E., V. Celo, L. Ding, D. Herod, C.-H. Jeong, G. Evans, and N. Hilker. 2019. Characteristics and sources of PM<sub>2.5</sub> and reactive gases near roadways in two metropolitan areas in Canada. *Atmospheric Environment*. 218:116980. Available at:  
<https://doi.org/10.1016/j.atmosenv.2019.116980>. (Accessed: October 16, 2025).
- Das, S. 2014. Life Cycle energy and environmental assessment of aluminum-intensive vehicle design. *SAE International Journal of Material Manufacturing*. 7(3):588–595. doi:10.4271/2014-01-1004.
- Dehghani-Sanij, A.R., E. Tharumalingam, M.B. Dusseault, and R. Fraser. 2019. Study of energy storage systems and environmental challenges of batteries. *Renewable and Sustainable Energy Reviews*. 104:192–208. doi: 10.1016/j.rser.2019.01.023.
- Delogu, M., L. Zanchi, S. Maltese, A. Bonoli, and M. Pierini. 2016. Environmental and economic life cycle assessment of lightweight solutions for an automotive component: A comparison between talc-filled and hollow glass microspheres-reinforced polymer composites. *Journal of Cleaner Production*. 139:548–560. Available at:  
<https://doi.org/10.1016/j.jclepro.2016.08.079>. (Accessed: October 16, 2025).
- Demetillo, M.A., C. Harkins, B.C. McDonald, P.S. Chodrow, K. Sun, and S.E. Pusede. 2021. Space-based observational constraints on NO<sub>2</sub> air pollution inequality from diesel traffic in major US cities. *Geophysical Research Letters*. 48:e2021GL094333. Available at:  
<https://doi.org/10.1029/2021GL094333>. (Accessed: October 16, 2025).
- Dickson, A.G., and F.J. Millero. 1987. A comparison of the equilibrium constants for the dissociation of carbonic acid in seawater media. *Deep-Sea Res.* 34:1733–1743.



- DOE (U.S. Department of Energy). No date. Funding Selections: Infrastructure Investment and Jobs Act Battery Recycling, Reprocessing, and Battery Collection Funding Opportunity. Available at: <https://www.energy.gov/eere/vehicles/funding-selections-infrastructure-investment-and-jobs-act-battery-recycling>. (Accessed: July 8, 2025).
- DOE. 2019. *Research Plan to Reduce, Recycle, and Recover Critical Materials in Lithium-Ion Batteries*. U.S. Department of Energy Office of Energy Efficiency and Renewable Energy, Vehicle Technologies Office. June. Available at: <https://www.energy.gov/eere/vehicles/articles/vehicle-technologies-offices-research-plan-reduce-recycle-and-recover>. (Accessed: October 16, 2025).
- DOE. 2022. Platinum Group Metal Catalysts: Supply Chain Deep Dive Assessment. Available at: <https://www.energy.gov/sites/default/files/2022-02/PGM%20catalyst%20supply%20chain%20report%20-%20final%20draft%202.25.22.pdf>. (Accessed: October 16, 2025).
- DOE. 2023a. Batteries for Electric Vehicles. Available at: [https://afdc.energy.gov/vehicles/electric\\_batteries.html](https://afdc.energy.gov/vehicles/electric_batteries.html). (Accessed: October 16, 2025).
- DOE. 2023b. At a Glance: Electric Vehicles. Available at: [https://afdc.energy.gov/files/u/publication/electric-drive\\_vehicles.pdf](https://afdc.energy.gov/files/u/publication/electric-drive_vehicles.pdf). (Accessed: October 16, 2025).
- DOE. 2024. Light Duty Vehicle Greenhouse Gas Life Cycle Assessment: An Assessment Using R&D GREET 2024. Available at: <https://www.energy.gov/eere/rd-greet-life-cycle-assessment-model>. (Accessed: July 2, 2025).
- DOE. 2025a. A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate. July 23, 2025. Climate Working Group. Available at: [https://www.energy.gov/sites/default/files/2025-07/DOE\\_Critical\\_Review\\_of\\_Impacts\\_of\\_GHG\\_Emissions\\_on\\_the\\_US\\_Climate\\_July\\_2025.pdf](https://www.energy.gov/sites/default/files/2025-07/DOE_Critical_Review_of_Impacts_of_GHG_Emissions_on_the_US_Climate_July_2025.pdf). (Accessed: September 13, 2025).
- DOE. 2025b. GREET. Available at: <https://www.energy.gov/eere/greet>. (Accessed: September 4, 2025).
- Dubreuil, A., L. Bushi, S. Das, A. Tharumarajah, and G. Xianzheng. 2010. A Comparative Life Cycle Assessment of Magnesium Front End Autoparts: A Revision to 2010-01-0275. P. SAE Technical Paper 2012-01-2325. SAE International. doi:10.4271/2012-01-2325.
- Ducker. 2023. The North American Light Vehicle Aluminum Content and Outlook. Prepared by Ducker for the Aluminum Association. April. Available at: <https://drivealuminum.org/wp-content/uploads/2023/05/Ducker-ATG-2023-Summary-Report-April-2023.pdf>. (Accessed: October 16, 2025).

- Dunn, J., L. Gaines, J. Sullivan, and M. Wang. 2012. Impact of Recycling on Cradle-to-Gate Energy Consumption and Greenhouse Gas Emissions of Automotive Lithium-Ion Batteries. *Environmental Science and Technology*. 46:12704–12710. Available at: <https://doi.org/10.1021/es302420z>. (Accessed: October 16, 2025).
- Dunn, J.B., L. Gaines, J.C. Kelly, C. James, and K.G. Gallagher. 2015. The significance of Li-ion batteries in electric vehicle life-cycle energy and emissions and recycling's role in its reduction. *Energy and Environmental Science*. 8(1):158–168. doi:10.1039/C4EE03029J. Available at: <https://pubs.rsc.org/en/content/articlelanding/2015/ee/c4ee03029j>. (Accessed: October 17, 2025).
- Eckel, S.P., K. Berhane, M.T. Salam, E.B. Rappaport, W.S. Linn, T.M. Bastain, Y. Zhang, F. Lurmann, E.L. Avol, and F.D. Gilliland. 2011. Residential traffic-related pollution exposure and exhaled nitric oxide in the children's health study. *Environmental Health Perspectives*. 119(10):1472–1477. doi:10.1289/ehp.1103516. Available at: <http://ehp.niehs.nih.gov/1103516/>. (Accessed: October 16, 2025).
- EIA (U.S. Energy Information Administration). 2016. Hydraulic Fracturing accounts for about half of current U.S. crude oil production. U.S. Energy Information Administration. Last revised: March 15, 2016. Available at: <http://www.eia.gov/todayinenergy/detail.php?id=25372>. (Accessed: October 16, 2025).
- EIA. 2020. Biofuels Explained. U.S. Energy Information Administration. Last revised: November 4, 2020. Available at: <https://www.eia.gov/energyexplained/biofuels/>. (Accessed: April 20, 2023).
- EIA. 2022. *Annual Energy Outlook 2022*. EIA. Available at: [https://www.eia.gov/outlooks/aeo/pdf/AEO2022\\_Narrative.pdf](https://www.eia.gov/outlooks/aeo/pdf/AEO2022_Narrative.pdf). (Accessed: October 16, 2025).
- EIA. 2023a. Gasoline Explained: Use of gasoline. Available at: <https://www.eia.gov/energyexplained/gasoline/use-of-gasoline.php>. (Accessed: October 16, 2025).
- EIA. 2023b. Oil and petroleum products explained: Where our oil comes from. Available at: <https://www.eia.gov/energyexplained/oil-and-petroleum-products/where-our-oil-comes-from.php>. (Accessed: October 16, 2025).
- EIA. 2023c. Domestic renewable diesel capacity could more than double through 2025. Available at: <https://www.eia.gov/todayinenergy/detail.php?id=55399>. (Accessed: October 16, 2025).
- EIA. 2024a. U.S. Utility-Scale Electricity Generation by Source, Amount, and Share of Total in 2023. U.S. Energy Information Administration. Last updated: February 29, 2024. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=427&t=8>. (Accessed: June 25, 2025).

- EIA. 2024b. *Coal Explained: Coal and the environment*. EIA. Available at: <https://www.eia.gov/energyexplained/coal/coal-and-the-environment.php>. (Accessed: July 8, 2025).
- EIA. 2024c. *Solar Explained: Solar Energy and the Environment*. Last revised: February 25, 2022. U.S. Energy Information Administration. Available at: <https://www.eia.gov/energyexplained/solar/solar-energy-and-the-environment.php>. (Accessed: July 8, 2025).
- EIA. 2024d. Latest EIA Monthly Energy Review reports 2024 distillate fuel consumption CO<sub>2</sub> emissions as 438 million metric tons. Available at: <https://www.eia.gov/totalenergy/data/monthly/>. (Accessed: October 16, 2025).
- EIA. 2024e. Biofuels explained: Biodiesel, renewable diesel, and other biofuels. Available at: <https://www.eia.gov/energyexplained/biofuels/biodiesel-rd-other-basics.php>. (Accessed: July 8, 2025).
- EIA. 2024f. How Much Carbon Dioxide is Produced when Different Fuels are Burned? Frequently Asked Questions. Last revised: July 10, 2024. U.S. Energy Information Administration. Available at: <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>. (Accessed: July 8, 2025).
- EIA. 2024g. *Natural Gas Explained*. Available at: <https://www.eia.gov/energyexplained/natural-gas/>. (Accessed: July 9, 2025).
- EIA. 2024h. How much of the crude oil produced in the United States is consumed in the United States? Available at: <https://www.eia.gov/tools/faqs/faq.php?id=268&t=6>. (Accessed: October 16, 2025).
- EIA. 2025a. Energy Consumption by Sector and Source. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2025&region=1-0&cases=nocaa111~alttrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: November 13, 2025).
- EIA. 2025b. Renewable Energy Consumption by Sector and Source. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=24-AEO2025&region=0-0&cases=alttrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: June 20, 2025).
- EIA. 2025c. Transportation Sector Energy Use by Mode and Type. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=45-AEO2025&region=0-0&cases=alttrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: June 20, 2025).
- EIA. 2025d. Light-Duty Vehicle Miles Traveled by Technology Type. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=51-AEO2025&region=0-0&cases=alttrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: June 18, 2025).

- EIA. 2025e. Short-Term Energy Outlook. Release Date: September 9, 2025. Available at: [https://www.eia.gov/outlooks/steo/?utm\\_medium=PressOps](https://www.eia.gov/outlooks/steo/?utm_medium=PressOps). (Accessed: September 30, 2025).
- EIA. 2025f. Total Energy Supply, Disposition, and Price Summary. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=1-AEO2025&region=0-0&cases=altrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025g. Oil and Gas Supply. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=14-AEO2025&region=0-0&cases=highprice~lowprice~highogs~lowogs~nocaa111~altrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025h. Petroleum and Other Liquids Supply and Disposition. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2025&region=0-0&cases=altrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: June 20, 2025).
- EIA. 2025i. Transportation Sector Energy Use by Fuel Type Within a Mode. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=46-AEO2025&region=0-0&cases=nocaa111~altrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025j. Light-Duty Vehicle Stock by Technology Type. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=49-AEO2025&region=0-0&cases=nocaa111~altrnp&start=2023&end=2050&f=A&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025k. Electricity Supply, Disposition, Prices, and Emissions. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=8-AEO2025&cases=nocaa111&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025l. Renewable Energy Generating Capacity and Generation. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=16-AEO2025&cases=nocaa111&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025m. Electricity Generating Capacity. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=9-AEO2025&cases=ref2025~hm2025~lm2025~highprice~lowprice~highogs~lowogs~highZTC~lowZTC~nocaa111~altrnp&sourcekey=0>. (Accessed: October 16, 2025).
- EIA. 2025n. Electricity Data Browser. Net generation, United States, all sectors, annual. Data for 2024. Available at: <https://www.eia.gov/electricity/data/browser/#/topic/0?agg=2,0,1&fuel=vvg&geo=g&sec=g&linechart=ELEC.GEN.ALL-US-99.A~ELEC.GEN.COW-US-99.A~ELEC.GEN.NG-US-99.A~ELEC.GEN.NUC-US-99.A~ELEC.GEN.HYC-US-99.A&columnchart=ELEC.GEN.ALL-US->

- 99.A~ELEC.GEN.COW-US-99.A~ELEC.GEN.NG-US-99.A~ELEC.GEN.NUC-US-99.A~ELEC.GEN.HYC-US-99.A&map=ELEC.GEN.ALL-US-99.A&freq=A&start=2001&end=2024&chartindexed=0&ctype=linechart&ltype=pin&rtype=s&maptype=0&rse=0&pin=. (Accessed: August 18, 2025).
- EIA. 2025o. Electricity: Form EIA-861M (formerly EIA-826) detailed data. Available at: <https://www.eia.gov/electricity/data/eia861m/>. (Accessed: October 16, 2025).
- EIA. 2025p. Refining Industry Energy Consumption. Available at: <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=35-AEO2025&region=0-0&cases=altrnp&start=2023&end=2050&f=A&sourcekey=0%20>. (Accessed: July 1, 2025).
- EIA. 2025q. Petroleum and Other Liquids: U.S. Oxygenate Plant Production of Fuel Production. Available at: [https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M\\_EPOOXE\\_YOP\\_NUS\\_2&f=A](https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=M_EPOOXE_YOP_NUS_2&f=A). (Accessed: July 1, 2025).
- EIA. 2025r. Monthly Energy Review. Available at: <https://www.eia.gov/totalenergy/data/monthly/>. (Accessed: October 16, 2025).
- EIA. 2025s. U.S. Renewable Diesel Fuel and Other Biofuels Plant Production Capacity. Available at: <https://www.eia.gov/biofuels/renewable/capacity/>. (Accessed: July 1, 2025).
- Energy Star. 2015. Industrial Insights: Automobile Assembly Plants. Available at: [https://www.energystar.gov/buildings/tools-and-resources/industrial\\_insights\\_automobile\\_assembly\\_plants](https://www.energystar.gov/buildings/tools-and-resources/industrial_insights_automobile_assembly_plants). (Accessed: October 16, 2025).
- Eno Center for Transportation. 2019. U.S. VMT Per Capita By State, 1981–2017. June 07, 2019 | *ENO Center for Transportation*. Available at: <https://enotrans.org/eno-resources/u-s-vmt-per-capita-by-state-1981-2017/>. (Accessed: October 17, 2025).
- EPA (U.S. Environmental Protection Agency). 2004. The Particle Pollution Report: Current Understanding of Air Quality and Emissions through 2003. EPA 454-R-04-002. December 2004. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Emissions, Monitoring, and Analysis Division. Research Triangle Park, NC. Available at: [https://www.epa.gov/sites/production/files/2017-11/documents/pp\\_report\\_2003.pdf](https://www.epa.gov/sites/production/files/2017-11/documents/pp_report_2003.pdf). (Accessed: October 16, 2025).
- EPA. 2007. Control of Hazardous Air Pollutants from Mobile Sources: Final Rule to Reduce Mobile Source Air Toxics. EPA 420-F-07-017. Last revised: February 26, 2007. U.S. Environmental Protection Agency. Washington, D.C. Available at: <https://www.epa.gov/mobile-source-pollution/final-rule-control-hazardous-air-pollutants-mobile-sources>. (Accessed: October 16, 2025).

- EPA. 2010a. Integrated Science Assessment for Carbon Monoxide. Final Report. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-09/019F. Available at: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=218686>.
- EPA. 2010b. Summary of the Updated Regulatory Impact Analysis (RIA) for the Reconsideration of the 2008 Ozone National Ambient Air Quality Standard (NAAQS). U.S. Environmental Protection Agency. Available at: [https://www3.epa.gov/ttnecas1/regdata/RIAs/s1-supplemental\\_analysis\\_summary11-5-09.pdf](https://www3.epa.gov/ttnecas1/regdata/RIAs/s1-supplemental_analysis_summary11-5-09.pdf). (Accessed: October 16, 2025).
- EPA. 2010c. Regulatory Impact Analysis: Amendments to the National Emission Standards for Hazardous Air Pollutants and New Source Performance Standards (NSPS) for the Portland Cement Manufacturing Industry: Final Report. August 2010. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards (OAQPS), Air Benefit and Cost Group. Research Park Triangle, NC. Available at: [https://www.epa.gov/sites/production/files/2016-04/documents/ria\\_cement-2010.pdf](https://www.epa.gov/sites/production/files/2016-04/documents/ria_cement-2010.pdf). (Accessed: October 16, 2025).
- EPA. 2010d. Final Regulatory Impact Analysis (RIA) for the NO<sub>2</sub> National Ambient Air Quality Standards (NAAQS). January 2010. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Health and Environmental Impact Division. Air Benefit-Cost Group. Research Triangle Park, NC. Available at: <https://www3.epa.gov/ttnecas1/regdata/RIAs/FinalNO2RIAFulldocument.pdf>. (Accessed: October 16, 2025).
- EPA. 2013a. Application of Life-Cycle Assessment for Nanoscale Technology: Lithium-ion Batteries for Electric Vehicles. U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics and Office of Research and Development. Available at: [https://archive.epa.gov/epa/sites/production/files/2014-01/documents/lithium\\_batteries\\_lca.pdf](https://archive.epa.gov/epa/sites/production/files/2014-01/documents/lithium_batteries_lca.pdf). (Accessed: October 16, 2025).
- EPA. 2013b. Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter. EPA-452/R-12-005. December 2012. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Health and Environmental Impacts Division. Available at: <https://www3.epa.gov/ttnecas1/regdata/RIAs/finalria.pdf>. (Accessed: October 16, 2025).
- EPA. 2014. Control of Air Pollution from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards; Final Rule, 79 FR 23414 (April 28, 2014).
- EPA. 2016. Integrated Science Assessment for Oxides of Nitrogen – Health Criteria. Final Report. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-15/068. <https://www.federalregister.gov/documents/2016/01/28/2016-01548/integrated-science-assessment-for-oxides-of-nitrogen-health-criteria>

- EPA. 2017a. Integrated Science Assessment (ISA) for Sulfur Oxides – Health Criteria. Final Report. December 2017. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-17/451.
- EPA. 2017b. Effects of Acid Rain. Acid Rain. U.S. Environmental Protection Agency. Last revised: May 4, 2020. Available at: <https://www.epa.gov/acidrain/effects-acid-rain>. (Accessed: October 16, 2025).
- EPA. 2018a. Technical Support Document: EPA’s 2014 National Air Toxics Assessment. Available at: [https://www.epa.gov/sites/default/files/2018-09/documents/2014\\_nata\\_technical\\_support\\_document.pdf](https://www.epa.gov/sites/default/files/2018-09/documents/2014_nata_technical_support_document.pdf). (Accessed: October 16, 2025).
- EPA. 2018b. Technical Support Document: Estimating the Benefit per Ton of Reducing PM<sub>2.5</sub> Precursors from 17 Sectors. Table 2. February. U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Air Quality Planning and Standards. Research Triangle Park, NC. Available at: [https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd\\_2018.pdf](https://www.epa.gov/sites/production/files/2018-02/documents/sourceapportionmentbpttsd_2018.pdf). (Accessed: October 16, 2025).
- EPA. 2018c. Model Guidance for Demonstrating Air Quality Goals for Ozone, PM<sub>2.5</sub> and Regional Haze. Memorandum. Research Triangle Park, NC. Available at: [https://www.epa.gov/sites/production/files/2020-10/documents/o3-pm-rh-modeling\\_guidance-2018.pdf](https://www.epa.gov/sites/production/files/2020-10/documents/o3-pm-rh-modeling_guidance-2018.pdf). (Accessed: October 16, 2025).
- EPA. 2019. Chapter 12: Populations and Lifestages Potentially at Increased Risk of a Particulate Matter-Related Health Effect. Integrated Science Assessment for Particulate Matter. Research Triangle Park, NC: United States Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment-RTP Division. Available at: <https://www.epa.gov/isa/integrated-science-assessment-isa-particulate-matter>. (Accessed: October 16, 2025).
- EPA. 2020a. Integrated Science Assessment (ISA) for Ozone and Related Photochemical Oxidants. (Final Report). EPA/600/R-20/012. Available at: <https://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=348522>. (Accessed: October 16, 2025).
- EPA. 2020b. Integrated Science Assessment for Particulate Matter (EPA/600/R-19/188). Available at: <https://www.federalregister.gov/documents/2020/01/27/2020-01223/integrated-science-assessment-for-particulate-matter>. (Accessed: October 20, 2025).
- EPA. 2021. Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards. EPA–HQ–OAR–2021–0208. December 2021. U.S. Environmental Protection Agency. Washington, D.C. Available at: [www.govinfo.gov/content/pkg/FR-2021-12-30/pdf/2021-27854.pdf](http://www.govinfo.gov/content/pkg/FR-2021-12-30/pdf/2021-27854.pdf). (Accessed: October 16, 2025).

- EPA. 2022a. Criteria Air Pollutants. Available at: <https://www.epa.gov/criteria-air-pollutants>. (Accessed: October 16, 2025).
- EPA. 2022b. Supplement to the 2019 Integrated Science Assessment for Particulate Matter (Final Report, 2022). EPA/635/R-22/028, 2022. Available at: <https://assessments.epa.gov/risk/document/&deid=354490>. (Accessed: October 16, 2025).
- EPA. 2023a. Lithium Battery Recycling Regulatory Status and Frequently Asked Questions. May 24, 2023. Available at: <https://rcrapublic.epa.gov/files/14957.pdf>. (Accessed: October 16, 2025).
- EPA. 2023b. Lifecycle Greenhouse Gas Results. Available at: <https://www.epa.gov/fuels-registration-reporting-and-compliance-help/lifecycle-greenhouse-gas-results>. (Accessed: July 10, 2025).
- EPA. 2024a. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022. U.S. Environmental Protection Agency, EPA 430-R-24-004. Available at: [https://www.epa.gov/system/files/documents/2024-04/us-ghg-inventory-2024-main-text\\_04-18-2024.pdf](https://www.epa.gov/system/files/documents/2024-04/us-ghg-inventory-2024-main-text_04-18-2024.pdf). (Accessed: October 16, 2025).
- EPA. 2024b. Motor Vehicle Emission Simulator: MOVES5. Office of Transportation and Air Quality. US Environmental Protection Agency. Ann Arbor, MI. November 2024. Available at: <https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>. (Accessed: June 9, 2025).
- EPA. 2024c. Regulatory Impact Analysis for Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles. EPA-420-R-24-004. March. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf>. (Accessed: October 16, 2025).
- EPA. 2024d. Air Emission Inventories, Air Pollutant Emissions Trends Data, Criteria Pollutants National Tier 1 for 1970–2023, February 9, 2024. Data file `national_tier1_caps_09feb2024_0.xlsx`. Available at: <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data>. (Accessed: October 16, 2025).
- EPA. 2025a. Air Emission Inventories, Air Pollutant Emissions Trends Data, Criteria Pollutants National Tier 1 for 1970–2024, February, 2025. Data file `national_tier1_caps_21feb2025.xlsx`. Available at: <https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data>. (Accessed: June 16, 2025).
- EPA. 2025b. Air Emissions Modeling: 2022v1 Platform. Available at: <https://www.epa.gov/air-emissions-modeling/2022v1-emissions-modeling-platform>. Data file: <https://awsedap.epa.gov/public/single/?appid=a2771e5d-51cf-4af8-a237-b521f789b8eb&sheet=5d3fdda7-14bc-4284-a9bb-cfd856b9348d&opt=ctxmenu,currsel>. (Accessed: May 13, 2025).



- EPA. 2025c. What is Acid Rain? Available at: <https://www.epa.gov/acidrain/what-acid-rain>. (Accessed: October 16, 2025).
- EPA. 2025d. Sulfur Dioxide Basics. Available at: <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>. (Accessed: July 8, 2025).
- EPA. 2025e. Emissions & Generation Resource Integrated Database (eGRID). Available at: <https://www.epa.gov/egrid>. (Accessed: July 8, 2025).
- EPA. 2025f. Learn About Impacts of Diesel Exhaust and the Diesel Emissions Reduction Act (DERA). Available at: <https://www.epa.gov/dera/learn-about-impacts-diesel-exhaust-and-diesel-emissions-reduction-act-dera>. (Accessed: July 8, 2025).
- EPA. 2025g. Renewable Fuel Annual Standards. Available at: <https://www.epa.gov/renewable-fuel-standard/renewable-fuel-annual-standards>. (Accessed: October 16, 2025).
- EPA. 2025h. E85 Fuel. Available at: <https://www.epa.gov/renewable-fuel-standard/e85-fuel>. (Accessed: August 26, 2025).
- EPA. 2025i. Biofuels and the Environment: Third Triennial Report to Congress. Available at: <https://assessments.epa.gov/biofuels/document/&deid=363940>. (Accessed: July 8, 2025).
- EPA. 2025j. The Green Book Nonattainment Areas for Criteria Pollutants. U.S. Environmental Protection Agency. Last revised: April 30, 2025. Available at: <https://www.epa.gov/green-book>. (Accessed: May 2, 2025).
- EPA. 2025k. Heavy-Duty Vehicles, Powering the Great American Comeback Fact Sheet. March 12, 2025. Available at: <https://www.epa.gov/system/files/documents/2025-03/heavy-duty-vehicles-powering-the-great-american-comeback-factsheet.pdf>. (Accessed: August 19, 2025).
- EPA. 2025l. EPA Launches Biggest Deregulatory Action in U.S. History. Press release, March 12, 2025. Available at: <https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history>. (Accessed: August 19, 2025).
- Epstein, P., J. Selber, S. Borasin, S. Foster, K. Jobarteh, N. Link, J. Miranda, E. Pomeranse, J. Rabke-Verani, D. Reyes, S. Sodha, and P. Somaia. 2002. Oil: A life cycle analysis of its health and environmental impacts. The Center for Health and the Global Environment, Harvard Medical School. Available at: [https://climatenexus.org/files/w/file/fetch/11680650/oil\\_impacts\\_full%20report.pdf](https://climatenexus.org/files/w/file/fetch/11680650/oil_impacts_full%20report.pdf). (Accessed: October 17, 2025).
- Fann, N., C.M. Fulcher, and B.J. Hubbell. 2009. The influence of location, source, and emission type in estimates of the human health benefits of reducing a ton of air pollution. *Air Quality, Atmosphere & Health*. 2(3):169–176. doi:10.1007/s11869-009-0044-0. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2770129/>. (Accessed: October 16, 2025).

- Fann, N.L., C.G. Nolte, M.C. Sarofim, J. Martinich, and N.J. Nassikas. 2021. Associations between simulated future changes in climate, air quality, and human health. *JAMA Netw Open*. 4(1):e2032064. doi:10.1001/jamanetworkopen.2020.32064. PMID: 33394002; PMCID: PMC7783541.
- Federal Consortium for Advanced Batteries. 2021. *National Blueprint for Lithium Batteries 2021-2030*. Federal Consortium for Advanced Batteries. June. Available at: <https://www.energy.gov/eere/vehicles/articles/national-blueprint-lithium-batteries>. (Accessed: October 16, 2025).
- FHWA (Federal Highway Administration). 2023. Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Available at: [https://www.fhwa.dot.gov/environment/air\\_quality/air\\_toxics/policy\\_and\\_guidance/msat/fhwa\\_nepa\\_msat\\_memorandum\\_2023.pdf](https://www.fhwa.dot.gov/environment/air_quality/air_toxics/policy_and_guidance/msat/fhwa_nepa_msat_memorandum_2023.pdf). (Accessed: October 16, 2025).
- Fox, M.R., and A.V. Lamm. 2021. Keystone Pipeline Rupture Investigation. *Journal of Failure Analysis and Prevention*. 21:738–746. Available at: <https://link.springer.com/article/10.1007/s11668-021-01143-5>. (Accessed: October 16, 2025).
- Franco-Suglia, S.A., A. Gryparis, R.O. Wright, J. Schwartz, and R.J. Wright. 2007. Association of black carbon with cognition among children in a prospective birth cohort study. *American Journal of Epidemiology*. 167(3):280–286. doi:10.1093/aje/kwm308. Available at: <http://aje.oxfordjournals.org/content/167/3/280.full.pdf+html>. (Accessed: October 16, 2025).
- Fricko, O., P. Havlik, J. Rogelj, Z. Klimont, M. Gusti, N. Johnson, P. Kolp, M. Strubegger, H. Valin, M. Amann, T. Ermolieva, N. Forsell, M. Herrero, C. Heyes, G. Kindermann, V. Krey, D.L. McCollum, M. Obersteiner, S. Pachauri, S. Rao, and K. Riahi. 2017. The marker quantification of the Shared Socioeconomic Pathway 2: A middle-of-the-road scenario for the 21st century. *Global Environmental Change*. 42:251–267. Available at: <https://doi.org/10.1016/j.gloenvcha.2016.06.004>. (Accessed: October 16, 2025).
- Fujimori, S., T. Hasegawa, T. Masui, K. Takahashi, D. Silva Herran, H. Dai, Y. Hijioka, and M. Kainuma. 2017. SSP3: AIM implementation of Shared Socioeconomic Pathways. *Global Environmental Change*. 42:268–283. Available at: <https://doi.org/10.1016/j.gloenvcha.2016.06.009>. (Accessed: October 16, 2025).
- Gaines, L., Q. Dai, J.T. Vaughey, and S. Gillard. 2021. Direct Recycling R&D at the ReCell Center. *Recycling*. 6(31). Available at: <https://doi.org/10.3390/recycling6020031>. (Accessed: October 16, 2025).
- Gao, J. 2020. Global 1-km Downscaled Population Base Year and Projection Grids Based on the Shared Socioeconomic Pathways, Revision 01. Palisades, New York: NASA Socioeconomic

- Data and Applications Center (SEDAC). Available at: <https://doi.org/10.7927/q7z9-9r69>. (Accessed: October 16, 2025).
- Gartland, N., H.E. Aljofi, K. Dienes, L.A. Munford, A.L. Theakston, and M. van Tongeren. 2022. The effects of traffic air pollution in and around schools on executive function and academic performance in children: a rapid review. *International Journal of Environmental Research and Public Health*. 19:749. Available at: <https://doi.org/10.3390/ijerph19020749>. (Accessed: October 17, 2025).
- GCRP (Global Change Research Program). 2023. *Fifth National Climate Assessment*. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA. Available at: <https://toolkit.climate.gov/NCA5>. (Accessed: October 17, 2025).
- Geyer, R. 2007. Life Cycle Greenhouse Gas Emission Assessments of Automotive Materials: The Example of Mild Steel, Advanced High Strength Steel and Aluminum in Body in White Applications, Methodology Report. University of California–Santa Barbara. Santa Barbara, California.
- Geyer, R. 2008. Parametric assessment of climate change impacts of automotive material substitution. *Environmental Science & Technology* 42(18):6973–6979. doi:10.1021/es800314w.
- Giampieri, A., J. Ling-Chin, Z. Ma, A. Smallbone, and A.P. Roskilly. 2020. A review of the current automotive manufacturing practice from an energy perspective. *Applied Energy*. 261. Available at: <https://www.sciencedirect.com/science/article/pii/S0306261919317611>. (Accessed: October 17, 2025).
- Gillett, D.J., L. Gilbane, and K.C. Schiff. 2020. Benthic habitat condition of the continental shelf surrounding oil and gas platforms in the Santa Barbara Channel, Southern California. *Marine Pollution Bulletin*. 160:111662. Available at: <https://doi.org/10.1016/j.marpolbul.2020.111662>. (Accessed: October 16, 2025).
- Glöser, S., M. Soulier, and L.A. Tercero Espinoza. 2013. Dynamic analysis of global copper flows. Global stocks, postconsumer material flows, recycling indicators, and uncertainty evaluation. *Environmental Science & Technology*. 47(12):6564–6572. doi:10.1021/es400069b. Available at: <https://pubs.acs.org/doi/10.1021/es400069b>. (Accessed: October 16, 2025).
- Gohlke, D., R.K. Iyer, J. Kelly, Jarod, A.P.N. Monthe, X. Wu, T.A. Barlock, and C. Mansour. 2024. *Quantification of Commercially Planned Battery Component Supply in North America through 2035*. United States. Available at: <https://doi.org/10.2172/2319242>. (Accessed: October 16, 2025).

- Hardwick, A.P., and T. Outteridge. 2015. Vehicle lightweighting through the use of molybdenum-bearing advanced high-strength steels. *International Journal of Life Cycle Assessment*. 21:1616–1623.
- Harmon, J.E. 2024. Cathode innovation makes sodium-ion battery an attractive option for electric vehicles. Argonne National Laboratory. January 8, 2024. Available at: <https://www.anl.gov/article/cathode-innovation-makes-sodiumion-battery-an-attractive-option-for-electric-vehicles>. (Accessed: October 16, 2025).
- Harper, G., R. Sommerville, E. Kendrick, L. Driscoll, P. Slater, R. Stolkin, A. Walton, P. Christensen, O. Heidrich, S. Lambert, A. Abbott, K. Ryder, L. Gaines, and P. Anderson. 2019. Recycling lithium-ion batteries from electric vehicles. *Nature*. 575:75–86.
- Harrison, T. 2021. Explainer: How ‘shared socioeconomic pathways’ explore future climate change. Carbon Brief. Published October 11, 2021. Available at: <https://www.carbonbrief.org/explainer-how-shared-socioeconomic-pathways-explore-future-climate-change/>. (Accessed: October 16, 2025).
- Hasan, A.M.A., A.M. Nassar, N. Maysour, and M.E. Abdel-Raouf. 2025. Environmental impacts for the transportation of crude oil and refined products. *Environmental Science and Pollution Research* 32:17869–17896. Available at: <https://doi.org/10.1007/s11356-025-36574-2>. (Accessed: October 16, 2025).
- Hawkins, T., O. Gausen, and A. Stromman. 2012. Environmental impacts of hybrid and electric vehicles—a review. *The International Journal of Life Cycle Assessment*. 17(8):997–1014. doi:10.1007/s11367-012-0440-9.
- Hendrickson, T.P., O. Kavvada, N. Shah, R. Sathre, and C.D. Scown. 2015. Life-cycle implications and supply chain logistics of electric vehicle battery recycling in California. *Environmental Research Letters*. 10(1):014011. doi:10.1088/1748-9326/10/1/014011. Available at: <http://iopscience.iop.org/article/10.1088/1748-9326/10/1/014011/pdf>. (Accessed: October 16, 2025).
- Hilpert, M., and P. Breysse. 2014. Infiltration and evaporation of small hydrocarbon spills at gas stations. *Journal of Contaminant Hydrology*. 170:39. doi.org/10.1016/j.jconhyd.2014.08.004.
- Hilpert, M., B. Mora, A. Rule, and K. Nachman. 2015. Hydrocarbon Release During Fuel Storage and Transfer at Gas Stations: Environmental and Health Effects. *Current Environmental Health Reports*. 2:412–422. doi.org/10.1007/s40572-015-0074-8.
- Hu, S., S. Fruin, K. Kozawa, S. Mara, S.E. Paulson, and A.M. Winer. 2009. A wide area of air pollutant impact downwind of a freeway during pre-sunrise hours. *Atmospheric Environment*. 43(16):2541–2549. doi:10.1016/j.atmosenv.2009.02.033.

- Hu, S., S.E. Paulson, S. Fruin, K. Kozawa, S. Mara, and A.M. Winer. 2012. Observation of elevated air pollutant concentrations in a residential neighborhood of Los Angeles California using a mobile platform. *Atmospheric Environment*. 51:311–319. doi:10.1016/j.atmosenv.2011.12.055. Available at: <http://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC3755476&blobtype=pdf>. (Accessed: October 16, 2025).
- IEA (International Energy Agency). 2020. Global EV Outlook 2020. International Energy Agency. Paris, France. Available at: <https://www.iea.org/reports/global-ev-outlook-2020>. (Accessed: October 17, 2025).
- IEA. 2021. *Average GHG emissions intensity for production of selected commodities*, IEA, Paris. Licence: CC BY 4.0. Available at: <https://www.iea.org/data-and-statistics/charts/average-ghg-emissions-intensity-for-production-of-selected-commodities>. (Accessed: October 17, 2025).
- IEA. 2022. Minerals used in electric cars compared to conventional cars, IEA, Paris. Available at: <https://www.iea.org/data-and-statistics/charts/minerals-used-in-electric-cars-compared-to-conventional-cars>. (Accessed: October 17, 2025).
- IEA. 2025. Global Hydrogen Review 2024. Available at: <https://www.iea.org/reports/global-hydrogen-review-2024>. (Accessed: October 17, 2025).
- Ilutiu-Varvara, D.-A., and C. Aciu. 2022. Metallurgical Wastes as Resources for Sustainability of the Steel Industry. *Sustainability*. 14:5488. Available at: <https://doi.org/10.3390/su14095488>. (Accessed: October 16, 2025).
- International Copper Association Australia. 2020. Zero Emission Copper Mine of the Future. Available at: <https://copperalliance.org/wp-content/uploads/2020/07/Emissions-Copper-Mine-of-the-Future-Report.pdf>. (Accessed: October 16, 2025).
- International Lead Association. 2022. Lead batteries: the most recycled consumer product in the US. Available at: <https://ila-lead.org/lead-batteries-the-most-recycled-consumer-product-in-the-us/>. (Accessed: October 16, 2025).
- IPCC (Intergovernmental Panel on Climate Change). 2006. 2006 IPCC Guidance for National Greenhouse Gas Inventories. Intergovernmental Panel on Climate Change. Available at: <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>. (Accessed: October 16, 2025).
- IPCC. 2018. Global Warming of 1.5°C: An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. Working Group I Technical Support Unit. Available at:

- [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15\\_Full\\_Report\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf). (Accessed: October 16, 2025).
- IPCC. 2019a. Summary for Policymakers. In: IPCC Special Report on the Ocean and Cryosphere in a Changing Climate [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, M. Nicolai, A. Okem, J. Petzold, B. Rama, N. Weyer (Eds.)]. In press. 42 pp.
- IPCC. 2019b. Summary for Policymakers. In: IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems. Approved Draft. Available at: [https://www.ipcc.ch/site/assets/uploads/2019/08/3.-Summary-of-Headline-Statements.pdf?mod=article\\_inline](https://www.ipcc.ch/site/assets/uploads/2019/08/3.-Summary-of-Headline-Statements.pdf?mod=article_inline). (Accessed: October 16, 2025).
- IPCC. 2021a. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (Eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. 2391 pp. doi:10.1017/9781009157896. In Press.
- IPCC. 2021b. Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (Eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. pp. 3–32. doi:10.1017/9781009157896.001. In Press.
- IPCC. 2022. Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (Eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA. 3056 pp. doi:10.1017/9781009325844.
- ITOPF. 2025. Oil Tanker Spill Statistics 2024. Available at: <https://www.itopf.org/knowledge-resources/data-statistics/oil-tanker-spill-statistics-2024/>. (Accessed: September 5, 2025).
- Jhariya, D., R. Khan, and G.S. Thakur. 2016. Impact of Mining Activity on Water Resource: An Overview Study. *Recent Practices and Innovations in Mining Industry*. Available at: [https://www.researchgate.net/publication/301522857\\_Impact\\_of\\_Mining\\_Activity\\_on\\_Water\\_Resource\\_An\\_Overview\\_study#:~:text=Perhaps%20the%20most%20significant%20imp](https://www.researchgate.net/publication/301522857_Impact_of_Mining_Activity_on_Water_Resource_An_Overview_study#:~:text=Perhaps%20the%20most%20significant%20imp)

- act%20of%20a%20mining,table%2C%20subsidence%2C%20disturbance%20on%20hydrological%20cycle%20and%20rainfall. (Accessed: October 16, 2025).
- Jia, C., X. Fu, B. Chauhan, Z. Xue, R.J. Kedia, and C.S. Mishra. 2022. Exposure to volatile organic compounds (VOCs) at gas stations: a probabilistic analysis. *Air Quality, Atmosphere & Health*. 15:465–477. Available at: <https://doi.org/10.1007/s11869-021-01124-5>. (Accessed: October 16, 2025).
- Kawamoto, R., H. Mochizuki, Y. Moriguchi, T. Nakano, M. Motohashi, Y. Sakai, and A. Inaba. 2019. Estimation of CO<sub>2</sub> emissions of internal combustion engine vehicle and battery electric vehicle using LCA. *Sustainability*. 11(9):2690. Available at: <https://www.mdpi.com/2071-1050/11/9/2690>. (Accessed: October 16, 2025).
- Kelly, J.C., J.L. Sullivan, A. Burnham, and A. Elgowainy. 2015. Impacts of vehicle weight reduction via material substitution on life-cycle greenhouse gas emissions. *Environmental Science and Technology*. 49(20):12535–12542. doi:10.1021/acs.est.5b03192.
- Kelly, J.C., Q. Dai, Q. and M. Wang. 2020. Globally regional life cycle analysis of automotive lithium-ion nickel manganese cobalt batteries. *Mitigation and Adaptation Strategies for Global Change*. 25:371–396. Available at: <https://doi.org/10.1007/s11027-019-09869-2>. (Accessed: October 16, 2025).
- Kelly, J., A. Elgowainy, R. Isaac, J. Ward, E. Islam, A. Rousseau, I. Sutherland, T. Wallington, M. Alexander, M. Muratori, M. Franklin, J. Adams, N. Rustagi. 2023. Cradle-to-Grave Lifecycle Analysis of U.S. Light-Duty Vehicle-Fuel Pathways: A Greenhouse Gas Emissions and Economic Assessment of Current (2020) and Future (2030–2035) Technologies. Argonne National Laboratory. Available at: [https://greet.es.anl.gov/publication-c2g\\_lca\\_us\\_ldv](https://greet.es.anl.gov/publication-c2g_lca_us_ldv). (Accessed: October 16, 2025).
- Kentucky Division of Waste Management. 2017. Lead Acid Batteries. Available at: <http://waste.ky.gov/RLA/Documents/Fact%20Sheets/LeadAcidBatt.pdf>. (Accessed: October 16, 2025).
- Kerr, G.H., D.L. Goldberg, and S.C. Anenberg. 2021. COVID-19 pandemic reveals persistent disparities in nitrogen dioxide pollution. *Proceedings of the National Academy of Sciences*. 118. Available at: <https://doi.org/10.1073/pnas.2022409118>. (Accessed: October 16, 2025).
- Khanna, V., and B.R. Bakshi. 2009. Carbon nanofiber polymer composites: Evaluation of life cycle energy use. *Environmental Science and Technology*. 43(6):2078–2084. doi:10.1021/es802101x.
- Kharaka, Y., J. Thordsen, E. Kakouros, and W. Herkelrath. 2005. Impacts of petroleum production on ground and surface waters: Results from the Osage–Skiatook Petroleum Environmental Research A site, Osage County, Oklahoma. *Environmental Geosciences (DEG)*. doi:10.1306/eg.11160404038.

- Kim, H.J., C. McMillian, G.A. Keoleian, and S.J. Skerlos. 2010. Greenhouse gas emissions payback for lightweighted vehicles using aluminum and high-strength steel. *Journal of Industrial Ecology*. 14(6):929–946. doi:10.1111/j.1530-9290.2010.00283.x.
- Kishore, P.S., and K. Arun. 2025. Managing Marine Oil Pollution: Safeguarding Aquaculture. *World Aquaculture*. Volume 56(1). Available at: [https://www.researchgate.net/publication/390298940\\_Managing\\_Marine\\_Oil\\_Pollution\\_Safeguarding\\_Aquaculture](https://www.researchgate.net/publication/390298940_Managing_Marine_Oil_Pollution_Safeguarding_Aquaculture). (Accessed: September 14, 2025).
- Koffler, C., and J. Provo. 2012. Comparative Life Cycle Assessment of Aluminum and Steel Truck Wheels. Prepared by PE International, Inc., and Five Winds Strategic Consulting for Alcoa, Inc. Available at: [https://www.alcoawheels.com/north-america/en/wp-content/uploads/sites/27/2023/07/Alcoa\\_Comparative\\_LCA\\_of\\_Truck\\_Wheels\\_with\\_CR\\_statement.pdf](https://www.alcoawheels.com/north-america/en/wp-content/uploads/sites/27/2023/07/Alcoa_Comparative_LCA_of_Truck_Wheels_with_CR_statement.pdf). (Accessed: October 17, 2025).
- Krewski, D., M. Jerrett, R.T. Burnett, R. Ma, E. Hughes, Y. Shi, M.C. Turner, C.A. Pope III, G. Thurston, E.E. Calle, and M.J. Thun. 2009. Extended Follow-up and Spatial Analysis of the American Cancer Society Study Linking Particulate Air Pollution and Mortality. *Health Effects Institute Research Report* 140. Health Effects Institute: Boston, MA. Available at: <https://pubmed.ncbi.nlm.nih.gov/19627030/>. (Accessed: October 17, 2025).
- Lark, T.J. 2023. Interactions between U.S. biofuels policy and the Endangered Species Act. *Biological Conservation*. 279:109869. Available at: <https://doi.org/10.1016/j.biocon.2022.109869>. (Accessed: October 16, 2025).
- Lavigne, É., M.-A. Bélair, M. Do, D.M. Stiebb, P. Hystad, A. van Donkelaar, R.V. Martin, D.L. Crouse, E. Crighton, H. Chen, J. R. Brook, R.T. Burnett, S. Weichenthal, P.J. Villeneuve, T. To, S. Cakmak, M. Johnson, A.S. Yasseen III, K. C. Johnson, M. Ofner, L. Xie, and M. Walker. 2017. Maternal exposure to ambient air pollution and risk of early childhood cancers: A population-based study in Ontario, Canada. *Environment International*. 100:139–147. Available at: <http://dx.doi.org/10.1016/j.envint.2017.01.004>. (Accessed: October 16, 2025).
- Lehr, W., and D. Simecek-Beatty. 2004. Comparison of hypothetical LNG and fuel oil fires on water. *Journal of Hazardous Materials*. 107(1–2):3–9. Available at: <https://doi.org/10.1016/j.jhazmat.2003.11.006>. (Accessed: October 16, 2025).
- Lewis, G., C. Buchanan, K. Jhaveri, J. Sullivan, J. Kelly, S. Das, A. Taub, and G. Keoleian. 2019. Green Principles for Vehicle Lightweighting. *Environmental Science and Technology*. 53(8):4063–4077. doi:10.1021/acs.est.8b05897.
- Liu, G., and D. Müller. 2012. Addressing sustainability in the aluminum industry: A critical review of life cycle assessments. *Journal of Cleaner Production*. 35:108–117. doi:10.1016/j.jclepro.2012.05.030.



- Liu, L., L.M. Kauri, M. Mahmud, S. Weichenthal, S. Cakmak, R. Shutt, H. You, E. Thomson, R. Vincent, P. Kumarathasan, G. Broad, and R. Dales. 2014. Exposure to air pollution near a steel plant and effects on cardiovascular physiology: a randomized crossover study. *International Journal of Hygiene and Environmental Health*. 217(2-3):279–286. Available at: <https://doi.org/10.1016/j.ijheh.2013.06.007>. (Accessed: October 16, 2025).
- Llamas-Orozco, J.A., F. Meng, A. Abdul-Manan, H.L. MacLean, I.D. Posen, and J. McKechnie. 2023. Estimating the environmental impacts of global lithium-ion battery supply chain: A temporal, geographical, and technological perspective. *PNAS Nexus*. 2(11):pgad361. Available at: <https://pmc.ncbi.nlm.nih.gov/articles/PMC10683946/#:~:text=Elsewhere%20in%20the%20global%20supply,life%20cycle%20emissions%20than%20ICEVs>. (Accessed: August 5, 2025).
- Lloyd, S.M., and L.B. Lave. 2003. Life Cycle Economic and Environmental Implications of Using Nanocomposites in Automobiles. *Environmental Science and Technology*. 37(15):3458–3466. doi:10.1021/es026023q.
- Los Angeles County. 2015. Spent Lead-Acid Battery Management. Los Angeles County Certified Unified Program Agency, Health Hazardous Materials Division. Available at: <https://fire.lacounty.gov/wp-content/uploads/2019/08/HHMD-Fact-Sheet-Spent-Lead-Acid-Battery-Management.pdf>. (Accessed: October 16, 2025).
- Madanhire, I., and C. Mbohwa. 2016. *Mitigating Environmental Impact of Petroleum Lubricants*. Available at: <https://link.springer.com/content/pdf/10.1007/978-3-319-31358-0.pdf>. (Accessed: October 16, 2025).
- Masnadi, M.S., H.M. El-Houjeiri, D. Schunack, Y. Li, J.G. Englander, A. Badahdah, J.-C. Monfort, J.E. Anderson, T.J. Wallington, J.A. Bergerson, D. Gordon, J. Koomey, S. Przesmitzki, I.L. Azevedo, X.T. Bi, J.E. Duffy, G.A. Heath, G.A. Keoleian, C. McGlade, D.N. Meehan, S. Yeh, F. You, M. Wang, and A.R. Brandt. 2018. Global carbon intensity of crude oil production. *Science*. 361(6405):851–853. Available at: <https://www.science.org/doi/abs/10.1126/science.aar6859>. (Accessed: October 16, 2025).
- Mayyas, A.T., A. Qattawi, A.R. Mayyas, and M.A. Omar. 2012. Life cycle assessment-based selection for sustainable lightweight body-in-white design. *Energy*. 39(1):412–425. doi:10.1016/j.energy.2011.12.033.
- McCormick, R., and K. Moriarty. 2023. *Biodiesel Handling and Use Guide: Sixth Edition*. Available at: <https://doi.org/10.2172/2001221>. (Accessed: October 16, 2025).
- McKenna, R., J. Lilliestam, H.U. Heinrichs, J. Weinand, J. Schmidt, I. Staffell, A.N. Hahmann, P. Burgherr, A. Burdack, M. Bucha, R. Chen, M. Klingler, P. Lehmann, J. Lowitzsch, R. Novo, J. Price, R. Sacchi, P. Scherhauser, E.M. Schöll, P. Visconti, P. Velasco-Herrejón, M. Zeyringer, and L.R. Camargo. 2025. System impacts of wind energy developments: Key Research

- Challenges and opportunities. *Joule*. 9(1):101799. Available at: <https://doi.org/10.1016/j.joule.2024.11.016>. (Accessed: October 16, 2025).
- Meinshausen, M., Z.R.J. Nicholls, J. Lewis, M.J. Gidden, E. Vogel, M. Freund, U. Beyerle, C. Gessner, A. Nauels, N. Bauer, J.G. Canadell, J.S. Daniel, A. John, P.B. Krummel, G. Luderer, N. Meinshausen, S.A. Montzka, P.J. Rayner, S. Reimann, S.J. Smith, M. van den Berg, G.J.M. Velders, M.K. Vollmer, and R.H.J. Wang. 2020. The shared socio-economic pathway (SSP) greenhouse gas concentrations and their extensions to 2500. *Geoscientific Model Development*. 13(8):3571–3605. Available at: <https://doi.org/10.5194/gmd-13-3571-2020>. (Accessed: October 16, 2025).
- Meng, F., J. McKechnie, T. Turner, K.H. Wong, and S.J. Pickering. 2017. Environmental aspects of use of recycled carbon fiber composites in automotive applications. *Environmental Science & Technology*. 51(21):12727–12736. Available at: <https://pubs.acs.org/doi/10.1021/acs.est.7b04069>. (Accessed: October 16, 2025).
- Milovanoff, A., H.C. Kim, R. De Kleine, T.J. Wallington, I.D. Posen, and H.L. MacLean. 2019. A dynamic fleet model of U.S. light-duty vehicle lightweighting and associated greenhouse gas emissions from 2016 to 2050. *Environmental Science and Technology*. 53(4):2199–2208. [doi.org/10.1021/acs.est.8b04249](https://doi.org/10.1021/acs.est.8b04249).
- Mistry, M., J. Gediga, and S. Boonzaier. 2016. Life cycle assessment of nickel products. *International Journal of Life Cycle Assessment*. 21:1559–1572. Available at: <https://doi.org/10.1007/s11367-016-1085-x>. (Accessed: October 16, 2025).
- Mitterpach, J., E. Hroncová, J. Ladomerský, and K. Balco. 2017. Environmental Evaluation of Grey Cast Iron Via Life Cycle Assessment. *Journal of Cleaner Production*. 148:324–335. Available at: <https://doi.org/10.1016/j.jclepro.2017.02.023>. (Accessed: October 16, 2025).
- Modaresi, R., S. Pauliuk, A.N. Løvik, and D.B. Müller. 2014. Global carbon benefits of material substitution in passenger cars until 2050 and the impact on the steel and aluminum industries. *Environmental Science and Technology*. 48(18):10776–10784. [doi:10.1021/es502930w](https://doi.org/10.1021/es502930w). Available at: <http://pubs.acs.org/doi/pdf/10.1021/es502930w>. (Accessed: October 16, 2025).
- Modi, S., and A. Vadhavkar. 2019. *Technology Roadmap: Materials and Manufacturing*. Center for Automotive Research, Ann Arbor, MI. Center for Automotive Research, Ann Arbor, MI. Available at: [https://www.cargroup.org/wp-content/uploads/2019/10/Technology-Roadmap\\_Materials-and-Manufacturing.pdf](https://www.cargroup.org/wp-content/uploads/2019/10/Technology-Roadmap_Materials-and-Manufacturing.pdf). (Accessed: October 10, 2025).
- Moriarty, K., T. McCarran, A. Bhatt, J. Kenny, L. Tao, and A. Milbrandt. 2024. 2022 Bioenergy Industry Status Report. Golden, CO: National Renewable Energy Laboratory. NREL/TP-5400-88998. Available at: <https://www.nrel.gov/docs/fy24osti/88998.pdf>. (Accessed: October 16, 2025).

- Moss, R.H., and S.H. Schneider. 2000. Uncertainties in the IPCC TAR: Recommendations to Lead Authors for More Consistent Assessment and Reporting. In: Guidance Papers on the Crosscutting Issues of the Third Assessment Report of the IPCC. [Pachauri, R., T. Taniguchi, and K. Tanaka (Eds.)] World Meteorological Organization: Geneva, Switzerland. 33–51 pp. Available at: [http://stephenschneider.stanford.edu/Publications/PDF\\_Papers/UncertaintiesGuidanceFinal2.pdf](http://stephenschneider.stanford.edu/Publications/PDF_Papers/UncertaintiesGuidanceFinal2.pdf). (Accessed: October 16, 2025).
- Moutinho, J.L., D. Liang, R. Golan, S.E. Sarnat, R. Weber, J.A. Sarnat, and A.G. Russell. 2020. Near-Road Vehicle Emissions Air Quality Monitoring for Exposure Modeling. *Atmospheric Environment*. 224:117318. Available at: <https://doi.org/10.1016/j.atmosenv.2020.117318>. (Accessed: October 16, 2025).
- Mudd, G.M. 2010. Global trends and environmental issues in nickel mining: Sulfides versus laterites. *Ore Geology Reviews*. 38(1-2):9–26. Available at: <https://doi.org/10.1016/j.oregeorev.2010.05.003>. (Accessed: October 16, 2025).
- Mudumba, T., B. Stimpson, S. Jingo, and R.A. Montgomery. 2023. The implications of global oil exploration for the conservation of terrestrial wildlife. *Environmental Challenges*. 11:100710. Available at: <https://doi.org/10.1016/j.envc.2023.100710>. (Accessed: October 16, 2025).
- Munawer, M.E. 2018. Human health and environmental impacts of coal combustion and post-combustion wastes. *Journal of Sustainable Mining*. 17(2):87–96. Available at: <https://doi.org/10.1016/j.jsm.2017.12.007>. (Accessed: October 16, 2025).
- Murry, M., J. Allan, and M. Child. 2018. Potential Ecological Impacts of Crude Oil Transport in the Great Lakes Basin. Great Lakes Science Advisory Board, Science Priority Committee. Available at: <https://www.ijc.org/sites/default/files/2019-01/Potential%20Ecological%20Impacts%20of%20Crude%20Oil%20Transport%20in%20the%20Great%20Lakes%20Basin%20-%20Oct%202018.pdf>. (Accessed: October 16, 2025).
- National Center for Biotechnology Information. 2023. PubChem Compound Summary for CID 174, Ethylene Glycol. Available at: <https://pubchem.ncbi.nlm.nih.gov/compound/Ethylene-Glycol>. (Accessed: October 16, 2025).
- Nealer, R., and T.P. Hendrickson. 2015. Review of recent lifecycle assessments of energy and greenhouse gas emissions for electric vehicles. *Current Sustainable/Renewable Energy Reports*. 2:66–73. doi:10.1007/s40518-015-0033-x. Available at: <https://link.springer.com/content/pdf/10.1007/s40518-015-0033-x.pdf>. (Accessed: October 16, 2025).
- Nexant. 2019. Plastics in the Automotive Industry – Which Materials Will be the Winners and Losers? Available at: <https://www.nexanteca.com/reports/plastics-automotive-industry-which-materials-will-be-winners-and->



- [https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-04/Final-SEIS-Complete\\_CAFE-MY-2024-2026.pdf](https://www.nhtsa.gov/sites/nhtsa.gov/files/2022-04/Final-SEIS-Complete_CAFE-MY-2024-2026.pdf). (Accessed: October 16, 2025).
- NHTSA. 2024. Final Environmental Impact Statement for Corporate Average Fuel Economy Standards for Passenger Cars and Light Trucks, Model Years 2027 and Beyond, and Fuel Efficiency Standards for Heavy-Duty Pickup Trucks and Vans, Model Years 2030 and Beyond. Docket No. NHTSA-2022-0075. Available at: [https://www.nhtsa.gov/sites/nhtsa.gov/files/2024-06/CAFE-2027-2031-HDPUV-2030-2035\\_Complete-Final-Environmental-Impact-Statement.pdf](https://www.nhtsa.gov/sites/nhtsa.gov/files/2024-06/CAFE-2027-2031-HDPUV-2030-2035_Complete-Final-Environmental-Impact-Statement.pdf). (Accessed: October 16, 2025).
- Nickel Institute. 2023a. *Life cycle data summary update*. Available at: <https://nickelinstitute.org/media/fbmdel4y/2025-lifecycledata-executive-summary.pdf>. (Accessed: October 17, 2025).
- Nickel Institute. 2023b. About nickel. Nickel Industry News, Views and Commentary. Available at: <https://nickelinstitute.org/en/about-nickel-and-its-applications/>. (Accessed: October 17, 2025).
- NREL (National Renewable Energy Laboratory). 2021. Life Cycle Greenhouse Gas Emissions from Electricity Generation: Update. Available at: <https://www.nrel.gov/docs/fy21osti/80580.pdf>. (Accessed: October 17, 2025).
- NREL. 2025. NAATBatt Lithium-Ion Battery Supply Chain Database. Available at: <https://www.nrel.gov/transportation/li-ion-battery-supply-chain-database-online>. (Accessed: July 8, 2025).
- OECD (Organisation for Economic Co-operation and Development). 2019. Reducing The Health Risks Of The Copper, Rare Earth And Cobalt Industries. Available at: [https://www.oecd.org/en/publications/reducing-the-health-risks-of-the-copper-rare-earth-and-cobalt-industries\\_88ce1db4-en.html](https://www.oecd.org/en/publications/reducing-the-health-risks-of-the-copper-rare-earth-and-cobalt-industries_88ce1db4-en.html). (Accessed: January 11, 2023).
- Oh, S.C., and A. Hildreth. 2014. Estimating the technical improvement of energy efficiency in the automotive industry- stochastic and deterministic frontier benchmarking approaches. *Energies*. 7(9):6196–6222. Available at: [https://www.researchgate.net/publication/277674122\\_Estimating\\_the\\_Technical\\_Improvement\\_of\\_Energy\\_Efficiency\\_in\\_the\\_Automotive\\_Industry-Stochastic\\_and\\_Deterministic\\_Frontier\\_Benchmarking\\_Approaches](https://www.researchgate.net/publication/277674122_Estimating_the_Technical_Improvement_of_Energy_Efficiency_in_the_Automotive_Industry-Stochastic_and_Deterministic_Frontier_Benchmarking_Approaches). (Accessed: October 17, 2025).
- O'Rourke, D., and S. Connolly. 2003. Just Oil? The Distribution of Environmental and Social Impacts of Oil Production and Consumption. *Annual Review of Environment and Resources*. 28(1):587–617. doi:10.1146/annurev.energy.28.050302.105617.
- Orr, J.C., J.M. Epitalon, and J.P. Gattuso. 2015. Comparison of ten packages that compute ocean carbonate chemistry. *Biogeosciences*. 12:1483–1510. doi:10.5194/bg-12-1483-2015.

- Overly, J.G., R. Dhingra, G.A. Davis, and S. Das. 2002. Environmental evaluation of lightweight exterior body panels in new generation vehicles. Paper 2002-01-1965. SAE International. doi:10.4271/2002-01-1965.
- Palazzo, J., and R. Geyer. 2019. Consequential life cycle assessment of automotive material substitution: Replacing steel with aluminum in production in north American vehicles. *Environmental Impact Assessment Review*. 75:47–58. doi.org/10.1016/j.eiar.2018.12.001.
- Park, C.-K., C.-D. Kan, W. Hollowell, and S.I. Hill. 2012. Investigation of Opportunities for Lightweight Vehicles Using Advanced Plastics and Composites. Report DOT HS 811 692. National Highway Traffic Safety Administration. Washington, D.C. Available at: <https://www.nhtsa.gov/DOT/NHTSA/NVS/Crashworthiness/Plastics/811692.pdf>. (Accessed: October 17, 2025).
- Pathak, M., R. Slade, P.R. Shukla, J. Skea, R. Pichs-Madruga, and D. Üрге-Vorsatz. 2022. *Technical Summary*. In: *Climate Change 2022: Mitigation of Climate Change*. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (Eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA. Available at: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_TechnicalSummary.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_TechnicalSummary.pdf). (Accessed: October 17, 2025).
- Peters, A., D.W. Dockery, J.E. Muller, and M.A. Mittleman. 2001. Increased particulate air pollution and the triggering of myocardial infarction. *Circulation*. 103(23):2810–2815. doi:10.1161/01.CIR.103.23.2810. Available at: <https://doi.org/10.1161/01.CIR.103.23.2810>. (Accessed: October 17, 2025).
- PHMSA (Pipeline and Hazardous Materials Safety Administration). 2025a. Annual Report Mileage for Hazardous Liquid or Carbon Dioxide Systems. July 1, 2025. Available at: <https://www.phmsa.dot.gov/data-and-statistics/pipeline/annual-report-mileage-hazardous-liquid-or-carbon-dioxide-systems>. (Accessed: July 8, 2025).
- PHMSA. 2025b. National Pipeline Performance Measures. Available at: <https://www.phmsa.dot.gov/data-and-statistics/pipeline/national-pipeline-performance-measures>. (Accessed: October 17, 2025).
- Poberezhna, L., L. Poberezhnyi, L. Shkitsa, A. Hrytsanchuk, O. Korol, B. Berezhenko, and E. Berezhenko. 2024. Predicting environmental risks in case of oil and gas equipment failures. *Procedia Structural Integrity*. 59:739–744. Available at: <https://doi.org/10.1016/j.prostr.2024.04.105>. (Accessed: October 17, 2025).
- Power, M.C., M.G. Weisskopf, S.E. Alexeef, B.A. Coull, A. Spiro III, and J. Schwartz. 2011. Traffic-related air pollution and cognitive function in a cohort of older men. *Environmental Health*

- Perspectives*. 119(5):682–687. doi:10.1289/ehp.1002767. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3094421/>. (Accessed: October 17, 2025).
- Puett, R.C., J.D. Yanosky, M.A. Mittleman, J. Montresor-Lopez, R.A. Bell, T.L. Crume, D. Dabelea, L.M. Dolan, R.B. D'Agostino Jr, C. Pihoker, K. Reynolds, E. Urbina, and A.D. Liese. 2019. Inflammation and acute traffic-related air pollution exposures among a cohort of youth with type 1 diabetes. *Environment International*. 132(2019):105064. Available at: <https://doi.org/10.1016/j.envint.2019.105064>. (Accessed: October 17, 2025).
- Rattigan, O.V., A.C. Carpenter, K.L. Civerolo, and H.D. Felton. 2020. Pollutant measurements at near road and urban background sites in New York, USA. *Atmospheric Pollution Research*. 11(5):859–870. Available at: <https://doi.org/10.1016/j.apr.2020.01.014>. (Accessed: October 17, 2025).
- Raugei, M., D. Morrey, A. Hutchinson, and P. Winfield. 2015. A coherent life cycle assessment of a range of lightweighting strategies for compact vehicles. *Journal of Cleaner Production*. 108(Part A):1168–1176. doi:10.1016/j.jclepro.2015.05.100.
- Rehman, K., F. Fatima, I. Waheed, and M.S.H. Akash. 2018. Prevalence of exposure of heavy metals and their impact on health consequences. *Journal of Cellular Biochemistry*. 119(1):157–184. Available at: <https://doi.org/10.1002/jcb.26234>. (Accessed: October 17, 2025).
- Riahi, K., D.P. Van Vuuren, E. Kriegler., J. Edmonds, B.C. O'Neill, S. Fujimori, N. Bauer, K. Calvin, R. Dellink, O. Fricko, and W. Lutz. 2017. The shared socioeconomic pathways and their energy, land use, and greenhouse gas emissions implications: an overview. *Global Environmental Change*. 42:153–168. Available at: <https://doi.org/10.1016/j.gloenvcha.2016.05.009>. (Accessed: October 17, 2025).
- Riediker, M. 2007. Cardiovascular effects of fine particulate matter components in highway patrol officers. *Inhalation Toxicology*. 19:99–105. doi:10.1080/08958370701495238.
- Rikhter, P., I. Dinc, Y. Zhang, T. Jiang, B. Miyashiro, S. Walsh, R. Wang, Y. Dinh, and S. Suh. 2022. Life Cycle Environmental Impacts of Plastics: A Review. Available at: <https://nvlpubs.nist.gov/nistpubs/gcr/2022/NIST.GCR.22-032.pdf>. (Accessed: October 17, 2025).
- Rivera, J., and T. Reyes-Carrillo. 2014. A framework for environmental and energy analysis of the automobile painting process. 21st CIRP Conference on Life Cycle Engineering. *Procedia CIRP*. 15:171–175. Available at: <https://www.sciencedirect.com/science/article/pii/S2212827114004454>. (Accessed: October 17, 2025).

- Salvi, A., and S. Salim. 2019. Neurobehavioral Consequences of Traffic-Related Air Pollution. *Frontiers in Neuroscience*. 13:1232. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6881276/>. (Accessed: October 17, 2025).
- Sambamurthy, S., S. Raghuvanshi, and K. S. Sangwan. 2021. Environmental Impact of Recycling Spent Lithium-Ion Batteries. 28<sup>th</sup> CIRP Conference on Life Cycle Engineering. *Procedia CIRP*. 98:631–636. Available at: <https://doi.org/10.1016/j.procir.2021.01.166>. (Accessed: October 17, 2025).
- Savinova, E., C. Evans, E. Lèbre, M. Stringer, M. Azadi, and R.K. Valenta. 2023. Will global cobalt supply meet demand? The geological, Mineral Processing, production and geographic risk profile of cobalt. *Resources, Conservation and Recycling*. 190:106855. Available at: <https://doi.org/10.1016/j.resconrec.2022.106855>. (Accessed: October 17, 2025).
- Sebastian, B.M., and M.A. Thimons. 2017. Life Cycle Greenhouse Gas and Energy Study of Automotive Lightweighting. Prepared for Steel Recycling Institute. Available at: <https://shop.steel.org/products/life-cycle-greenhouse-gas-and-energy-study-of-automotive-lightweighting-full-report>. (Accessed: October 17, 2025).
- Shinde, P., K. Ravis, N. Nehru, S. Pawar, B. Balakrishnan, and V. Nair. 2016. Light weight BIW solutions for improving functional properties: A review. SAE Paper 2016-01-8138. Society of Automotive Engineers (SAE). doi:10.4271/2016-01-8138.
- Silva, F.J. de L., F.L.N. Attademo, S.A. Gavilan, S. Rossi, D.S.D. de Farias, A. da C. Bomfim, R.M. de Oliveira, A.B.L. Fragoso, G.C. Corrêa, G.A. Santoro, G.M.L. Ambrósio, M.A. Lima, S.A. Lima, and R.E. Matias de Oliveira. 2024. Overview of oil spills worldwide and impacts on marine megafauna. *Brazilian Journal of Case Reports*. 4(1):78–94. Available at: <https://doi.org/10.52600/2763-583X.bjcr.2024.4.1.78-94>. (Accessed: October 17, 2025).
- Singh, H., J. Davies, D. Kramer, A. Fisher, M. Paramasuwom, V. Mogal, L. Gradischnig, P. Wood, J. Giroux, A. Mudalagi, and V. Ganesan. 2018. Mass Reduction for Light-Duty Vehicles for Model Years 2017-2025 (Report No. DOT HS 812 487). Washington, D.C.: National Highway Traffic Safety Administration, U.S. Department of Transportation. February. Available at: <https://www.regulations.gov/document/EPA-HQ-OAR-2018-0283-0062>. (Accessed: October 17, 2025).
- Slack, J.F., B.E. Kimball, and K.B. Shedd. 2017. Critical mineral resources of the United States—Economic and environmental geology and prospects for future supply: U.S. Geological Survey Professional Paper 1802, p. F1–F40. Cobalt, chap. F of Schulz, K.J., J.H. DeYoung, Jr., R.R. Seal, II, and D.C. Bradley (Eds.). Available at: <https://doi.org/10.3133/pp1802F>. (Accessed: October 17, 2025).
- Smirnov, E.N., V.A. Sklyar, M.V. Mitrofanov, O.E. Smirnov, V.A. Belevitin, and A.N. Smirnov. 2018. Complete Evaluation of Extruded Aluminum Section and Semiproduct Mechanical



- Properties Under Conditions of Typical Regional Manufacturer Altek. *Metallurgist*. 61(9/10):878–883.
- Stenson, C., A.J. Wheeler, A. Carver, D. Donaire-Gonzalez, M. Alvarado-Molina, M. Nieuwenhuijsen, and R. Tham. 2021. The impact of traffic-related air pollution on child and adolescent academic performance: a systematic review. *Environment International*. 155:106696. Available at: <https://doi.org/10.1016/j.envint.2021.106696>. (Accessed: October 17, 2025).
- Stout, S.A. 2020. Chemical composition of Bakken crude oil burn residue: Environmental relevance following train derailment fires. *Environmental Forensics*. 21(3–4):386–405. Available at: <https://doi.org/10.1080/15275922.2020.1806149>. (Accessed: October 17, 2025).
- Strack, M., S. Hayne, J. Lovitt, G. McDermid, M. Rahman, S. Saraswati, and B. Xu. 2019. Petroleum exploration increases methane emissions from northern peatlands. *Nature Communications*. 10:2804. Available at: <https://www.nature.com/articles/s41467-019-10762-4>. (Accessed: October 17, 2025).
- Strezov, V., and C. Chaudhary. 2017. Impacts of iron and steelmaking facilities on soil quality. *Journal of Environmental Management*. 203(2017):1158–1162. Available at: <https://doi.org/10.1016/j.jenvman.2017.02.040>. (Accessed: October 17, 2025).
- Striegel, M.F., E.B. Guin, K. Hallett, D. Sandoval, R. Swingle, K. Knox, F. Best, and S. Fornea. 2003. Air Pollution, Coatings, and Cultural Resources. *Progress in Organic Coatings*. 48(2–4):281–288. doi:10.1016/j.porgcoat.2003.05.001.
- Sullivan, J., J. Kelly, and A. Elgowainy. 2018. Vehicle Materials: Material Composition of Powertrain Systems. Argonne National Laboratory.
- Tamayo-Uria, I., E. Boldo, J. García-Pérez, D. Gómez-Barroso, E.P. Romaguera, M. Cirach, and R. Ramis. 2018. Childhood leukaemia risk and residential proximity to busy roads. *Environment International*. 121(1):332–339. Available at: <https://www.sciencedirect.com/science/article/pii/S0160412018308304>. (Accessed: October 17, 2025).
- Tawalbeh, M., A. Al-Othman, F. Kafiah, E. Abdelsalam, F. Almomani, and M. Alkasrawi. 2021. Environmental impacts of solar photovoltaic systems: A critical review of recent progress and future outlook. *Science of The Total Environment*. 759:143528. Available at: <https://doi.org/10.1016/j.scitotenv.2020.143528>. (Accessed: October 17, 2025).
- Tempelman, E. 2011. Multi-Parametric Study of the Effect of Materials Substitution on Life Cycle Energy Use and Waste Generation of Passenger Car Structures. *Transportation Research Part D*. 16(7):479–485. doi:10.1016/j.trd.2011.05.007.

- USGS (U.S. Geological Survey). 2025a. Mineral commodity summaries 2025: Cobalt. U.S. Department of the Interior. Available at: <https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-cobalt.pdf>. (Accessed: October 17, 2025).
- USGS. 2025b. Mineral commodity summaries 2025: Lead. U.S. Department of the Interior. Available at: <https://pubs.usgs.gov/periodicals/mcs2025/mcs2025-lead.pdf>. (Accessed: October 17, 2025).
- Valentini, F., and A. Pegoretti. 2022. End-of-life options of tyres. A review. *Advanced Industrial and Engineering Polymer Research*. Available at: <https://doi.org/10.1016/j.aiepr.2022.08.006>. (Accessed: October 17, 2025).
- Van Vuuren, D.P., E. Stehfest, D. Gernaat, J.C. Doelman, M. van den Berg, M. Harmsen, H. Sytze de Boer, L.F. Bouwman, V. Daioglou, O.Y. Edelenbosch, B. Girod, T. Kram, L. Lassaletta, P.L. Lucas, H. van Meijl, C. Müller, B.J. van Ruijven, S. van der Sluis, and A. Tabeau. 2017. Energy, Land-Use and Greenhouse Gas Emissions Trajectories under a Green Growth Paradigm. *Global Environmental Change*. 42:237–250. Available at: <https://doi.org/10.1016/j.gloenvcha.2016.05.008>. (Accessed: October 17, 2025).
- Vasta, E., and V. Bhatt. 2025. Chapter 28 - Human health and environmental perspectives on exposure to benzene: A review. *Hazardous Chemicals*, 405–425. Available at: <https://doi.org/10.1016/B978-0-323-95235-4.00011-6>. (Accessed: October 17, 2025).
- Walker, A. H., C. Stern, D. Scholz, E. Nielsen, F. Csulak, and R. Gaudiosi. 2016. Consensus Ecological risk assessment of potential transportation-related bakken and dilbit crude oil spills in the Delaware Bary Watershed, USA. *Journal of Marine Science and Engineering*. 4:1–26. Available at: <https://www.mdpi.com/2077-1312/4/1/23>. (Accessed: October 17, 2025).
- Wang, M. 2022. “The Environmental Footprint of Semi-Fabricated Aluminum Products in North America.” The Aluminum Association. January 2022. Available at: [https://www.aluminum.org/sites/default/files/2022-01/2022\\_Semi-Fab\\_LCA\\_Report.pdf](https://www.aluminum.org/sites/default/files/2022-01/2022_Semi-Fab_LCA_Report.pdf). (Accessed: October 17, 2025).
- Wang, M. 2023. The Impacts of Offshore Oil Spills on Marine Life and Humans and Solutions. In: Li, X., Yuan, C., Kent, J. (eds) *Proceedings of the 6th International Conference on Economic Management and Green Development*. Applied Economics and Policy Studies. Springer, Singapore. Available at: [https://doi.org/10.1007/978-981-19-7826-5\\_11](https://doi.org/10.1007/978-981-19-7826-5_11). (Accessed: October 17, 2025).
- Wang, S., and S. Wang. 2015. Impacts of wind energy on environment: A review. *Renewable and Sustainable Energy Reviews*. 49:437–443. Available at: <https://doi.org/10.1016/j.rser.2015.04.137>. (Accessed: October 17, 2025).

- Weiss, M.A., J.B. Heywood, E.M. Drake, A. Schafer, and F.F. AuYeung. 2000. On the Road in 2020: A Lifecycle Analysis of New Automobile Technologies. Energy Laboratory Report # MIT EL 00-003: Massachusetts Institute of Technology. Cambridge, MA. Available at: <http://web.mit.edu/energylab/www/pubs/el00-003.pdf>. (Accessed: October 17, 2025).
- Winslow, K., S. Laux, and T. Townsend. 2017. A review on the growing concern and potential management strategies of waste lithium-ion batteries. *Resources, Conservation, & Recycling*. 129:263–277. Available at: <https://doi.org/10.1016/j.resconrec.2017.11.001>. (Accessed: October 17, 2025).
- Witik, R.A., J. Payet, V. Michaud, C. Ludwig, and J.A.E. Manson. 2011. Assessing the Life Cycle Costs and Environmental Performance of Lightweight Materials in Automotive Applications. *Composites: Part A* 42:1694–1709. doi:10.1016/j.compositesa.2011.07.024. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S1359835X11002302>. (Accessed: October 17, 2025).
- Wolfe, P., K. Davidson, C. Fulcher, N. Fann, M. Zawacki, and K.R. Baker. 2019. Monetized health benefits attributable to mobile source emissions reductions across the United States in 2025. *Science of the Total Environment*. 650(2):2490–2498. Available at: <https://pubmed.ncbi.nlm.nih.gov/30296769/>. (Accessed: October 17, 2025).
- World Steel Association. 2024. Sustainability indicators 2024 report. Available at: <https://worldsteel.org/wp-content/uploads/Sustainability-Indicators-report-2024.pdf>. (Accessed: October 17, 2025).
- Wright, R.J., L.H. Hsiao-Hsien, M.C. Yueh-Hsiu, B.A. Coull, M.C. Simon, N. Hudda, J. Schwartz, I. Kloog, and J.L. Durant. 2021. Prenatal Ambient Ultrafine Particle Exposure and Childhood Asthma in the Northeastern United States. *American Journal of Respiratory and Critical Care Medicine*. Available at: <https://www.atsjournals.org/doi/full/10.1164/rccm.202010-3743OC>. (Accessed: October 17, 2025).
- Wu, J., M. Wilhelm, J. Chung, and B. Ritz. 2011. Comparing exposure assessment methods for traffic-related air pollution in and adverse pregnancy outcome study. *Environmental Response*. 111(5):685–692. doi:10.1016/j.envres.2011.03.008.
- Xu, X., S.U. Ha, and R. Basnet. 2016. A Review of Epidemiological Research on Adverse Neurological Effects of Exposure to Ambient Air Pollution. *Frontiers in Public Health*. August 5, 2016. Available at: <https://www.frontiersin.org/articles/10.3389/fpubh.2016.00157/full>. (Accessed: October 17, 2025).
- Xu, C., Q. Dai, L. Gaines, M. Hu, A. Tukker, and B. Steubing. 2020. Future material demand for automotive lithium-based batteries. *Communications Materials*. 1:99. Available at: <https://doi.org/10.1038/s43246-020-00095-x>. (Accessed: October 17, 2025).

- Xu, H., L. Ou, Y. Li, T.R. Hawkins, and M. Wang. 2022. Life cycle greenhouse gas emissions of biodiesel and renewable diesel production in the United States. *Environmental Science & Technology*. 56(12):7512–7521. Available at: <https://pubs.acs.org/doi/10.1021/acs.est.2c00289>. (Accessed: October 17, 2025).
- Yu, W., and L. Jiang. 2024. Application of carbon fiber reinforced aluminum matrix composites in automotive industry. *International Journal of Automotive Manufacturing and Materials*. 3(2):3. Available at: <https://doi.org/10.53941/ijamm.2024.100009>. (Accessed: October 17, 2025).
- Yu, M., B. Bai, and X. Ma. 2020. Evaluating Remanufacturing Lithium-Ion Batteries. In: Gutierrez R.M. (eds) *Wastewater Technologies and Environmental Treatment. Springer Proceedings in Earth and Environmental Sciences*. Springer, Cham. pp 77-85. Available at: [https://doi.org/10.1007/978-3-030-61989-3\\_8](https://doi.org/10.1007/978-3-030-61989-3_8). (Accessed: October 17, 2025).
- Yu, X., W. Li, V. Gupta, H. Gao, D. Tran, S. Sarwar, and Z. Chen. 2022. Current challenges in efficient lithium-ion batteries' recycling: A perspective. *Global Challenges*. 6:2200099. Available at: <https://doi.org/10.1002/gch2.202200099>. (Accessed: October 17, 2025).
- Zapelini de Melo, A.P., R.B. Hoff, L. Molognoni, T. de Oliveira, H. Daguer, and P.L.M. Barreto. 2022. Disasters with oil spills in the oceans: Impacts on food safety and analytical control methods. *Food Research International*. 157:111366. Available at: <https://doi.org/10.1016/j.foodres.2022.111366>. (Accessed: October 17, 2025).
- Zhang, J., J.E. McCreanor, P. Cullinan, K.F. Chung, P. Ohman-Strickland, I-K. Han, L. Järup, and M.J. Nieuwenhuijsen. 2009. Health Effects of Real-World Exposure Diesel Exhaust in Persons with Asthma. Health Effects Institute, Research Report 138. Available at: <https://www.healtheffects.org/publication/health-effects-real-world-exposure-diesel-exhaust-persons-asthma>. (Accessed: October 17, 2025).
- Zhang, Y., Y. Wang, and L. Wang. 2018. Comparison of mechanical properties of high strength steel and mild steel under dynamic loading. *IOP Conference Series: Materials Science and Engineering*. 392(2):022008.
- Zwolinski, P., and S. Tichkiewitch. 2019. An agile model for the eco-design of electric vehicle Li-ion batteries. *CIRP Annals*. 68(1):161–164. doi:10.1016/j.cirp.2019.04.009.

# **APPENDIX H**

## **Distribution List**

## **APPENDIX H     DISTRIBUTION LIST**

NHTSA is mailing notification of the availability of this Draft SEIS, as well as instructions on how to access it, to the elected officials and federally recognized Native American Tribes listed in this appendix. NHTSA is also sending an electronic notification of the availability of this Draft SEIS and instructions on how to access it to the federally recognized Native American Tribes listed in this appendix. NHTSA will send electronic notification to the agencies and other stakeholders listed in this appendix, which includes individuals who submitted comments in response to NHTSA's August 2022 notice of intent to prepare an EIS<sup>1</sup> and August 2023 notice of availability of the Draft EIS,<sup>2</sup> and provided an email address.

### **H.1 Federal Agencies**

- Advisory Council on Historic Preservation, Office of Federal Agency Programs
- Appalachian Regional Commission, Office of the General Counsel
- Argonne National Laboratory
- Armed Forces Retirement Home, Campus Operations
- Board of Governors of the Federal Reserve System, Division of Consumer and Community Affairs
- Board of Governors of the Federal Reserve System, Engineering and Facilities
- Board of Governors of the Federal Reserve System, Facility Business Operations
- Central Intelligence Agency, Environmental and Compliance Branch
- Committee for Purchase From People Who Are Blind or Severely Disabled/U.S. AbilityOne Commission, Office of the General Counsel
- Consumer Product Safety Commission, Directorate for Economic Analysis
- Defense Nuclear Facilities Safety Board
- Delaware River Basin Commission
- Denali Commission
- Executive Office of the President, Office of Science and Technology Policy
- Export-Import Bank of the United States, Environmental and Social Policy and Review Program
- Federal Communications Commission, Office of General Counsel

---

<sup>1</sup> Notice of Intent To Prepare an Environmental Impact Statement for Model Years 2027 and Beyond Corporate Average Fuel Economy Standards and Model Years 2029 and Beyond Heavy-Duty Pickup Trucks and Vans Vehicle Fuel Efficiency Improvement Program Standards, 87 FR 50386 (Aug. 16, 2022).

<sup>2</sup> Notice of Availability of an Environmental Impact Statement for Model Years 2027 and Beyond Corporate Average Fuel Economy Standards and Model Years 2029 and Beyond Heavy-Duty Pickup Trucks and Vans Vehicle Fuel Efficiency Improvement Program Standards, 88 FR 51812 (Aug. 4, 2023).

- Federal Communications Commission, Wireless Telecommunications Commission, Competition and Infrastructure Policy Division
- Federal Deposit Insurance Corporation, Corporate Services Branch, Administration Division, Health, Safety and Environmental Programs Unit
- Federal Maritime Commission
- Federal Trade Commission, General Counsel for Litigation
- General Services Administration, Federal Permitting Improvement Steering Council
- General Services Administration, Public Buildings Service, Office of Portfolio Management and Customer Engagement
- International Boundary and Water Commission, U.S. & Mexico, Environmental Management Division
- International Trade Commission, Office of External Relations
- Marine Mammal Commission, Office of the General Counsel
- Millennium Challenge Corporation, Environmental and Social Assessment
- National Aeronautics and Space Administration, Environmental Management Division, Office of Strategic Infrastructure
- National Capital Planning Commission, Office of Urban Design and Plan Review Division
- National Credit Union Administration, Office of General Counsel, Division of Operations
- National Endowment for the Arts
- National Endowment for the Humanities
- National Indian Gaming Commission, Office of the General Counsel
- National Indian Gaming Commission, Office of the Chief of Staff
- National Institutes of Health, Division of Environmental Protection
- National Science Foundation, Office of the General Counsel
- Nuclear Regulatory Commission, Office of Nuclear Material Safety and Safeguards
- Oak Ridge National Laboratory
- Overseas Private Investment Corporation, Environmental Group
- Presidio Trust, NEPA Compliance
- Small Business Administration, Office of the General Counsel, Department of Litigation
- Social Security Administration, Office of Environmental Health and Occupational Safety
- Tennessee Valley Authority, Environmental Policy and Planning
- U.S. Access Board (Architectural and Transportation Barriers Compliance Board), Office of the General Counsel
- U.S. Agency for International Development
- U.S. Chamber of Commerce

- U.S. Department of Agriculture, Agriculture Research Service, Natural Resources and Sustainable Agricultural Systems
- U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Environmental Risk and Analysis Services
- U.S. Department of Agriculture, Farm Service Agency
- U.S. Department of Agriculture, National Institute of Food and Agriculture,
- U.S. Department of Agriculture, Natural Resources Conservation Service, Ecological Services Division
- U.S. Department of Agriculture, Rural Development, Rural Utilities Service, Engineering and Environmental Staff
- U.S. Department of Agriculture, U.S. Forest Service—Ecosystem Management Coordination
- U.S. Department of Commerce, Economic Development Administration
- U.S. Department of Commerce, Energy and Environmental Law Division, Office of the General Counsel for Administration and Transactions
- U.S. Department of Commerce, First Responder Network Authority (FirstNet)
- U.S. Department of Commerce, National Institute of Standards and Technology, Office of Safety, Health, and Environment
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Review and Coordination Section, Office of the General Counsel
- U.S. Department of Defense, Army Corps of Engineers (Civil Works), Office of the Assistant Secretary of the Army
- U.S. Department of Defense, Army Corps of Engineers, Planning and Policy Division, Office of Water Project Review
- U.S. Department of Defense, Defense Logistics Agency, DLA Installation Support, Environmental Management
- U.S. Department of Defense, Department of Air Force, Air Force Civil Engineer, Strategic Plans and Programs Division, DCS/Logistics, Installations, and Mission Support
- U.S. Department of Defense, Department of Air Force, NEPA Center
- U.S. Department of Defense, Department of the Army, Office of the Assistant Secretary of the Army for Installations, Energy, and Environment
- U.S. Department of Defense, Department of the Navy, Office of the Deputy Assistant Secretary of the Navy, Environmental Planning and Terrestrial Resources
- U.S. Department of Defense, Department of the Navy, Office of the Chief of Naval Operations, Energy and Environmental Readiness Division, Environmental Planning and Conservation Branch
- U.S. Department of Defense, Missile Defense Agency, Environmental Management
- U.S. Department of Defense, National Guard Bureau



- U.S. Department of Defense, National Guard Bureau, Military Construction Branch, Installations and Environment Division
- U.S. Department of Defense, National Guard Bureau, Real Estate Branch Installations and Environment Division
- U.S. Department of Defense, National Guard Bureau, Environmental Installations and Environment Division
- U.S. Department of Defense, National Security Agency
- U.S. Department of Defense, Office of the Deputy Assistant Secretary of Defense, Environment, Safety, and Occupational Health
- U.S. Department of Defense, U.S. Marine Corps, Headquarters
- U.S. Department of Education, Office of the General Counsel
- U.S. Department of Energy, Bonneville Power Administration, Environmental Planning and Analysis
- U.S. Department of Energy, Office of the General Counsel, Office of NEPA Policy and Compliance
- U.S. Department of Energy, Office of General Counsel, National Nuclear Security Administration, NEPA Program
- U.S. Department of Energy, Office of Environmental Management
- U.S. Department of Energy, Western Area Power Administration
- U.S. Department of Health and Human Services
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office of Safety, Security, and Asset Management
- U.S. Department of Health and Human Services, Food and Drug Administration, Center for Food Safety and Applied Nutrition
- U.S. Department of Health and Human Services, Health Resources and Services Administration, Strategic Initiatives and Planning Division
- U.S. Department of Health and Human Services, Indian Health Service, Division of Sanitation Facilities Construction
- U.S. Department of Health and Human Services, National Institute of Health
- U.S. Department of Health and Human Services, Planning and Logistics Division, Office of Refugee Resettlement
- U.S. Department of Health and Human Services, U.S. Public Health Service, Real Property Management Service
- U.S. Department of Homeland Security
- U.S. Department of Homeland Security, Customs and Border Protection
- U.S. Department of Homeland Security, Environmental Planning and Historic Preservation Program

- U.S. Department of Homeland Security, Federal Emergency Management Agency—Office of Environmental Planning and Historic Preservation
- U.S. Department of Homeland Security, Federal Law Enforcement Training Center, Environmental and Safety Division
- U.S. Department of Homeland Security, Immigration and Customs Enforcement, Environmental Program
- U.S. Department of Homeland Security, Transportation Security Administration, Office of Occupational Safety, Health and Environment
- U.S. Department of Homeland Security, U.S. Citizenship and Immigration Services, Facilities Management Division, Planning, Programming & Environmental Branch
- U.S. Department of Homeland Security, U.S. Coast Guard, Office of Environmental Management
- U.S. Department of the Interior, Bureau of Indian Affairs, Division of Environmental and Cultural Resources Management, Office of Trust Services
- U.S. Department of the Interior, Bureau of Indian Education
- U.S. Department of the Interior, Bureau of Land Management, Division of Decision Support, Planning, and NEPA
- U.S. Department of the Interior, Bureau of Ocean Energy Management, Office of Environmental Programs
- U.S. Department of the Interior, Bureau of Ocean Energy Management, Branch of Environmental Coordination, Division of Environmental Assessment
- U.S. Department of the Interior, Bureau of Reclamation
- U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, Environmental Compliance Division
- U.S. Department of the Interior, National Park Service, Environmental Planning and Compliance Branch
- U.S. Department of the Interior, Office of Environmental Policy and Compliance
- U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, Division of Regulatory Support
- U.S. Department of the Interior, U.S. Fish and Wildlife Service
- U.S. Department of the Interior, U.S. Geological Survey, Environmental Management Branch
- U.S. Department of Justice, Drug Enforcement Administration, Civil Litigation Section
- U.S. Department of Justice, Environment and Natural Resources Division
- U.S. Department of Justice, Federal Bureau of Investigation, Occupational Safety & Environmental Programs Unit, Environmental Compliance Program
- U.S. Department of Justice, Federal Bureau of Prisons, Real Estate and Environmental Law
- U.S. Department of Justice, Justice Management Division, Environmental and Sustainability Services

- U.S. Department of Labor, Office of the Assistant Secretary for Administration and Management
- U.S. Department of Labor, Office of the Assistant Secretary for Policy
- U.S. Department of State, Bureau of Oceans and International Environmental and Scientific Affairs
- U.S. Department of Transportation, Infrastructure Permitting Improvement Center
- U.S. Department of Transportation, Federal Aviation Administration, Environmental Policy and Operations, Office of Environment and Energy
- U.S. Department of Transportation, Federal Highway Administration, Office of Project Development and Environmental Review
- U.S. Department of Transportation, Federal Motor Carrier Safety Administration, Regulatory and Legislative Affairs Division, Office of the Chief Counsel
- U.S. Department of Transportation, Federal Railroad Administration, Environmental and Corridor Planning, Office of Program Delivery
- U.S. Department of Transportation, Federal Transit Administration, Office of Environmental Programs
- U.S. Department of Transportation, Maritime Administration, Office of Environment
- U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration, Hazardous Materials Safety
- U.S. Department of Transportation, Saint Lawrence Seaway Development Corporation, Office of the Chief Counsel
- U.S. Department of Transportation, Volpe Center, Policy Analysis and Strategic Planning Division
- U.S. Department of the Treasury, Office of Environment, Safety, and Health
- U.S. Department of Veterans Affairs, Green Management Program Service
- U.S. Department of Veterans Affairs, Office of Construction and Facilities Management
- U.S. Department of Veterans Affairs, Veterans Health Administration, Office of General Counsel
- U.S. Environmental Protection Agency
- U.S. Environmental Protection Agency, Office of Policy
- U.S. Environmental Protection Agency, NEPA Compliance Division, Office of Federal Activities
- U.S. Environmental Protection Agency, NEPA Office Region 1
- U.S. Environmental Protection Agency, NEPA Office Region 2
- U.S. Environmental Protection Agency, NEPA Office Region 3
- U.S. Environmental Protection Agency, NEPA Office Region 4
- U.S. Environmental Protection Agency, NEPA Office Region 5

- U.S. Environmental Protection Agency, NEPA Office Region 6
- U.S. Environmental Protection Agency, NEPA Office Region 7
- U.S. Environmental Protection Agency, NEPA Office Region 8
- U.S. Environmental Protection Agency, NEPA Office Region 9
- U.S. Environmental Protection Agency, NEPA Office Region 10
- U.S. Postal Service, Environmental Compliance/Risk Management
- U.S. Securities and Exchange Commission, Office of Support Operations

## **H.2 State and Local Government Organizations**

- American Samoa Office of Grants Policy/Office of the Governor, Department of Commerce, American Samoa Government
- Arizona Department of Environmental Quality
- Arkansas Department of Environmental Quality
- Arkansas Office of Intergovernmental Services, Department of Finance and Administration
- Boulder County Public Health
- California Air Resources Board
- California State Clearinghouse, Office of Planning and Research, Grants Coordination
- California Office of the Attorney General
- City of Los Angeles, City Attorney's Office
- County of Los Angeles, Public Health
- Connecticut Department of Environmental Protection
- Connecticut Department of Transportation
- Connecticut Office of the Attorney General
- Delaware Department of Justice
- Delaware Office of Management and Budget, Budget Development, Planning, and Administration
- District of Columbia Office of the City Administrator
- District of Columbia Office of the Attorney General
- Florida State Clearinghouse, Florida Department of Environmental Protection
- Guam State Clearinghouse, Office of I Segundo na Maga'lahaen Guahan, Office of the Governor
- Hawaii Office of the Attorney General
- Hawaii Office of Environmental Quality
- Illinois Office of the Attorney General
- Iowa Department of Management
- Iowa Office of the Attorney General

- Los Angeles County, Public Health
- Maine Department of Environmental Protection
- Maine State Planning Office
- Maine Office of the Attorney General
- Maryland Department of Planning
- Maryland Department of Transportation
- Maryland State Clearinghouse for Intergovernmental Assistance
- Maryland Office of the Attorney General
- Massachusetts Office of the Attorney General
- Michigan Department of Transportation
- Minnesota Department of Commerce, Division of Energy Resources
- Minnesota Department of Environmental Protection
- Minnesota Office of the Attorney General
- Missouri Federal Assistance Clearinghouse, Office of Administration, Commissioner's Office
- Nevada Division of State Lands
- New Hampshire Department of Energy
- New Jersey Environmental Practice Group, Division of Law
- New York State Department of Environmental Conservation
- New York Office of the Attorney General
- North Carolina Department of Environmental Quality
- North Carolina Department of Justice
- North Dakota Department of Commerce
- Oakland City Attorney
- Oregon Department of Environmental Quality
- Oregon Office of the Attorney General
- Oregon Department of Justice, Natural Resources Section
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Transportation
- Pennsylvania Office of the Attorney General
- Pima County, Department of Environmental Quality
- Puerto Rico Highway and Transportation Authority
- Puerto Rico Planning Board, Federal Proposals Review Office
- Regional Air Pollution Control Agency, Clark, Darke, Greene, Miami, Montgomery, and Preble Counties, Ohio
- Rhode Island Office of the Attorney General

- Rhode Island Division of Planning
- Sacramento Municipal Utility District
- San Francisco Office of the City Attorney
- San Jose Office of the City Attorney
- South Carolina Office of State Budget
- Southeast Michigan Council of Governments
- State of Vermont Agency of Natural Resources
- The Governor of Kentucky's Office for Local Development
- Town of Brookhaven, Planning, Environment, and Land Management
- Town of Brookline
- Utah State Clearinghouse, Governor's Office of Planning and Budget Utah State
- Vermont Office of the Attorney General
- Virginia Office of the Attorney General
- Virgin Islands, Office of Management and Budget
- Washington State Department of Ecology
- Washington State Office of the Attorney General
- West Virginia Development Office
- Wisconsin Department of Natural Resources

### **H.3 Elected Officials**

- The Honorable Brian Schwalb, Attorney General of the District of Columbia
- The Honorable Brenna Bird, Attorney General of Iowa
- The Honorable Aaron Frey, Attorney General of Maine
- The Honorable Anthony Brown, Attorney General of Maryland
- The Honorable Andrea Campbell, Attorney General of Massachusetts
- The Honorable Letitia James, Attorney General of New York
- The Honorable Dan Rayfield, Attorney General of Oregon
- The Honorable Dave Sunday, Attorney General of Pennsylvania
- The Honorable Charity Clark, Attorney General of Vermont
- The Honorable Nick Brown, Attorney General of Washington
- The Honorable Kay Ivey, Governor of Alabama
- The Honorable Michael Dunleavy, Governor of Alaska
- The Honorable Pula'ali'i Nikolao Iuli Tuiteleleapaga Pula, Governor of American Samoa
- The Honorable Katie Hobbs, Governor of Arizona
- The Honorable Sarah Huckabee Sanders, Governor of Arkansas

- The Honorable Gavin Newsom, Governor of California
- The Honorable Jared Polis, Governor of Colorado
- The Honorable Ned Lamont, Governor of Connecticut
- The Honorable Matt Meyer, Governor of Delaware
- The Honorable Ron DeSantis, Governor of Florida
- The Honorable Brian Kemp, Governor of Georgia
- The Honorable Lourdes Leon Guerrero, Governor of Guam
- The Honorable Josh Green, Governor of Hawaii
- The Honorable Brad Little, Governor of Idaho
- The Honorable JB Pritzker, Governor of Illinois
- The Honorable Mike Braun, Governor of Indiana
- The Honorable Kim Reynolds, Governor of Iowa
- The Honorable Laura Kelly, Governor of Kansas
- The Honorable Andy Beshear, Governor of Kentucky
- The Honorable Jeff Landry, Governor of Louisiana
- The Honorable Janet Mills, Governor of Maine
- The Honorable Wes Moore, Governor of Maryland
- The Honorable Maura Healey, Governor of Massachusetts
- The Honorable Gretchen Whitmer, Governor of Michigan
- The Honorable Tim Walz, Governor of Minnesota
- The Honorable Tate Reeves, Governor of Mississippi
- The Honorable Mike Kehoe, Governor of Missouri
- The Honorable Greg Gianforte, Governor of Montana
- The Honorable Jim Pillen, Governor of Nebraska
- The Honorable Joe Lombardo, Governor of Nevada
- The Honorable Kelly Ayotte, Governor of New Hampshire
- The Honorable Philip Murphy, Governor of New Jersey
- The Honorable Michelle Lujan Grisham, Governor of New Mexico
- The Honorable Kathy Hochul, Governor of New York
- The Honorable Josh Stein, Governor of North Carolina
- The Honorable Kelly Armstrong, Governor of North Dakota
- The Honorable Arnold Palacios, Governor of the Commonwealth of the Northern Mariana Islands
- The Honorable Michael DeWine, Governor of Ohio
- The Honorable Kevin Stitt, Governor of Oklahoma

- The Honorable Tina Kotek, Governor of Oregon
- The Honorable Josh Shapiro, Governor of Pennsylvania
- The Honorable Jenniffer González Colón, Governor of Puerto Rico
- The Honorable Daniel McKee, Governor of Rhode Island
- The Honorable Henry McMaster, Governor of South Carolina
- The Honorable Larry Rhoden, Governor of South Dakota
- The Honorable Bill Lee, Governor of Tennessee
- The Honorable Greg Abbott, Governor of Texas
- The Honorable Albert Bryan, Governor of the United States Virgin Islands
- The Honorable Spencer Cox, Governor of Utah
- The Honorable Phil Scott, Governor of Vermont
- The Honorable Glenn Youngkin, Governor of Virginia
- The Honorable Bob Ferguson, Governor of Washington
- The Honorable Patrick Morrisey, Governor of West Virginia
- The Honorable Tony Evers, Governor of Wisconsin
- The Honorable Mark Gordon, Governor of Wyoming
- The Honorable Muriel Bowser, Mayor of the District of Columbia

#### **H.4 Federally Recognized Native American Tribes**

- Absentee-Shawnee Tribe of Indians of Oklahoma
- Agdaagux Tribe of King Cove
- Agua Caliente Band of Cahuilla Indians of the Agua Caliente Indian Reservation, California
- Ak-Chin Indian Community
- Akiachak Native Community
- Akiak Native Community
- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Alatna Village
- Algaaciq Native Village (St. Mary's)
- Allakaket Village
- Alturas Indian Rancheria, California
- Alutiiq Tribe of Old Harbor
- Angoon Community Association
- Anvik Village
- Apache Tribe of Oklahoma



- Arctic Village
- Asa'carsarmiut Tribe
- Assiniboine & Sioux Tribes of the Fort Peck Indian Reservation, Montana
- Augustine Band of Cahuilla Indians, California
- Bad River Band of the Lake Superior Tribe of Chippewa Indians
- Bay Mills Indian Community, Michigan
- Bear River Band of the Rohnerville Rancheria, California
- Beaver Village
- Berry Creek Rancheria of Maidu Indians of California
- Big Lagoon Rancheria, California
- Big Pine Paiute Tribe of the Owens Valley
- Big Sandy Rancheria of Western Mono Indians of California
- Big Valley Band of Pomo Indians of the Big Valley Rancheria, California
- Birch Creek Tribe
- Bishop Paiute Tribe
- Blackfeet Tribe of the Blackfeet Indian Reservation of Montana
- Blue Lake Rancheria, California
- Bridgeport Indian Colony
- Buena Vista Rancheria of Me-wuk Indians of California
- Burns Paiute Tribe
- Cabazon Band of Cahuilla Indians
- Cachil DeHe Band of Wintun Indians of the Colusa Indian Community of the Colusa Rancheria, California
- Caddo Nation of Oklahoma
- Cahto Tribe of the Laytonville Rancheria
- Cahuilla Band of Indians
- California Valley Miwok Tribe, California
- Campo Band of Diegueno Mission Indians of the Campo Indian Reservation, California
- Capitan Grande Band of Diegueno Mission Indians of California (Barona Group of Capitan Grande Band of Mission Indians of the Barona Reservation, California)
- Capitan Grande Band of Diegueno Mission Indians of California: Viejas (Barona Long) Group of Capitan Grande Band of Mission Indians of the Viejas Reservation, California
- Catawba Indian Nation
- Cayuga Nation
- Cedarville Rancheria, California
- Central Council of the Tlingit & Haida Indian Tribes

- Chalkyitsik Village
- Cheesh-Na Tribe
- Chemehuevi Indian Tribe of the Chemehuevi Reservation, California
- Cher-Ae Heights Indian Community of the Trinidad Rancheria, California
- Cherokee Nation
- Chevak Native Village
- Cheyenne and Arapaho Tribes, Oklahoma
- Cheyenne River Sioux Tribe of the Cheyenne River Reservation, South Dakota
- Chickahominy Indian Tribe
- Chickahominy Indian Tribe—Eastern Division
- Chickaloon Native Village
- Chicken Ranch Rancheria of Me-wuk Indians of California
- Chignik Bay Tribal Council
- Chignik Lake Village
- Chilkat Indian Village (Klukwan)
- Chilkoot Indian Association (Haines)
- Chinik Eskimo Community (Golovin)
- Chippewa Cree Indians of the Rocky Boy's Reservation, Montana
- Chitimacha Tribe of Louisiana
- Chuloonawick Native Village
- Circle Native Community
- Citizen Potawatomi Nation, Oklahoma
- Cloverdale Rancheria of Pomo Indians of California
- Cocopah Tribe of Arizona
- Coeur D'Alene Tribe
- Cold Springs Rancheria of Mono Indians of California
- Colorado River Indian Tribes of the Colorado Indian Reservation, Arizona and California
- Comanche Nation, Oklahoma
- Confederated Salish and Kootenai Tribes of the Flathead Reservation
- Confederated Tribes and Bands of the Yakama Nation
- Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians
- Confederated Tribes of Siletz Indians of Oregon
- Confederated Tribes of the Chehalis Reservation
- Confederated Tribes of the Colville Reservation
- Confederated Tribes of the Goshute Reservation, Nevada and Utah

- Confederated Tribes of the Grand Ronde Community of Oregon
- Confederated Tribes of the Umatilla Indian Reservation
- Confederated Tribes of the Warm Springs Reservation of Oregon
- Coquille Indian Tribe
- Coshatta Tribe of Louisiana
- Cow Creek Band of Umpqua Tribe of Indians
- Cowlitz Indian Tribe
- Coyote Valley Band of Pomo Indians of California
- Craig Tribal Association
- Crow Creek Sioux Tribe of the Crow Creek Reservation, South Dakota
- Crow Tribe of Montana
- Curyung Tribal Council
- Delaware Nation, Oklahoma
- Delaware Tribe of Indians
- Douglas Indian Association
- Dry Creek Rancheria Band of Pomo Indians, California
- Duckwater Shoshone Tribe
- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Eastern Shoshone Tribe of the Wind River Reservation, Wyoming
- Egegik Village
- Eklutna Native Village
- Elem Indian Colony of Pomo Indians of the Sulphur Bank Rancheria, California
- Elk Valley Rancheria, California
- Ely Shoshone Tribe of Nevada
- Emmonak Village
- Enterprise Rancheria of Maidu Indians of California
- Evansville Village (aka Bettles Field)
- Ewiiapaayp Band of Kumeyaay Indians, California
- Federated Indians of Graton Rancheria, California
- Flandreau Santee Sioux Tribe of South Dakota
- Forest County Potawatomi Community, Wisconsin
- Fort Belknap Indian Community of the Fort Belknap Reservation of Montana
- Fort Bidwell Indian Community of the Fort Bidwell Reservation of California

- Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation, California
- Fort McDermitt Paiute and Shoshone Tribes of the Fort McDermitt Indian Reservation, Nevada and Oregon
- Fort McDowell Yavapai Nation, Arizona
- Fort Mojave Indian Tribe of Arizona, California and Nevada
- Fort Sill Apache Tribe of Oklahoma
- Gila River Indian Community of the Gila River Indian Reservation, Arizona
- Grand Traverse Band of Ottawa and Chippewa Indians, Michigan
- Greenville Rancheria
- Grindstone Indian Rancheria of Wintun-Wailaki Indians of California
- Guidiville Rancheria of California
- Gulkana Village Council
- Habematolel Pomo of Upper Lake, California
- Hannahville Indian Community, Michigan
- Havasupai Tribe of the Havasupai Reservation, Arizona
- Healy Lake Village
- Ho-Chunk Nation of Wisconsin
- Hoh Indian Tribe
- Holy Cross Tribe
- Hoonah Indian Association
- Hoopa Valley Tribe, California
- Hopi Tribe of Arizona
- Hopland Band of Pomo Indians, California
- Houlton Band of Maliseet Indians
- Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona
- Hughes Village
- Huslia Village
- Hydaburg Cooperative Association
- Igiugig Village
- Iipay Nation of Santa Ysabel, California
- Inaja Band of Diegueno Mission Indians of the Inaja and Cosmit Reservation, California
- Inupiat Community of the Arctic Slope
- Ione Band of Miwok Indians of California
- Iowa Tribe of Kansas and Nebraska

- Iowa Tribe of Oklahoma
- Iqugmiut Traditional Council
- Ivanof Bay Tribe
- Jackson Band of Miwuk Indians
- Jamestown S’Klallam Tribe
- Jamul Indian Village of California
- Jena Band of Choctaw Indians
- Jicarilla Apache Nation, New Mexico
- Kaguyak Village
- Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona
- Kaktovik Village (aka Barter Island)
- Kalispel Indian Community of the Kalispel Reservation
- Karuk Tribe
- Kashia Band of Pomo Indians of the Stewarts Point Rancheria, California
- Kasigluk Traditional Elders Council
- Kaw Nation, Oklahoma
- Kenaitze Indian Tribe
- Ketchikan Indian Community
- Keweenaw Bay Indian Community, Michigan
- Kialegee Tribal Town
- Kickapoo Traditional Tribe of Texas
- Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas
- Kickapoo Tribe of Oklahoma
- King Island Native Community
- King Salmon Tribe
- Kiowa Indian Tribe of Oklahoma
- Klamath Tribes
- Klawock Cooperative Association
- Kletsel Dehe Wintun Nation of the Cortina Rancheria (previously listed as Kletsel Dehe Band of Wintun Indians)
- Knik Tribe
- Koi Nation of Northern California
- Kokhanok Village
- Kootenai Tribe of Idaho
- Koyukuk Native Village

- La Jolla Band of Luiseno Indians, California
- La Posta Band of Diegueno Mission Indians of the La Posta Indian Reservation, California
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
- Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
- Lac Vieux Desert Band of Lake Superior Chippewa Indians of Michigan
- Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony, Nevada
- Levelock Village
- Lime Village
- Little River Band of Ottawa Indians, Michigan
- Little Shell Tribe of Chippewa Indians of Montana
- Little Traverse Bay Bands of Odawa Indians, Michigan
- Lone Pine Paiute-Shoshone Tribe
- Los Coyotes Band of Cahuilla and Cupeno Indians, California
- Loudon Tribe
- Lovelock Paiute Tribe of the Lovelock Indian Colony, Nevada
- Lower Brule Sioux Tribe of the Lower Brule Reservation, South Dakota
- Lower Elwha Tribal Community
- Lower Sioux Indian Community in the State of Minnesota
- Lummi Tribe of the Lummi Reservation
- Lytton Rancheria of California
- Makah Indian Tribe of the Makah Indian Reservation
- Manchester Band of Pomo Indians of the Manchester Rancheria, California
- Manley Hot Springs Village
- Manokotak Village
- Manzanita Band of Diegueno Mission Indians of the Manzanita Reservation, California
- Mashantucket Pequot Indian Tribe
- Mashpee Wampanoag Tribe
- Match-e-be-nash-she-wish Band of Pottawatomis Indians of Michigan
- McGrath Native Village
- Mechoopda Indian Tribe of Chico Rancheria, California
- Menominee Indian Tribe of Wisconsin
- Mentasta Traditional Council
- Mesa Grande Band of Diegueno Mission Indians of the Mesa Grande Reservation, California
- Mescalero Apache Tribe of the Mescalero Reservation, New Mexico

- Metlakatla Indian Community, Annette Island Reserve
- Miami Tribe of Oklahoma
- Miccosukee Tribe of Indians
- Middletown Rancheria of Pomo Indians of California
- Mi'kmaq Nation
- Minnesota Chippewa Tribe
- Minnesota Chippewa Tribe—Bois Forte Band (Nett Lake)
- Minnesota Chippewa Tribe—Fond du Lac Band
- Minnesota Chippewa Tribe—Grand Portage Band
- Minnesota Chippewa Tribe—Leech Lake Band
- Minnesota Chippewa Tribe—Mille Lacs Band
- Minnesota Chippewa Tribe—White Earth Band
- Mississippi Band of Choctaw Indians
- Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada
- Mohegan Tribe of Indians of Connecticut
- Modoc Nation
- Monacan Indian Nation
- Mooretown Rancheria of Maidu Indians of California
- Morongo Band of Mission Indians, California
- Muckleshoot Indian Tribe
- Naknek Native Village
- Nansemond Indian Nation
- Narragansett Indian Tribe
- Native Village of Afognak
- Native Village of Akhiok
- Native Village of Akutan
- Native Village of Aleknagik
- Native Village of Ambler
- Native Village of Atka
- Native Village of Atqasuk
- Native Village of Barrow Inupiat Traditional Government
- Native Village of Belkofski
- Native Village of Brevig Mission
- Native Village of Buckland
- Native Village of Cantwell

- Native Village of Chenega (aka Chanega)
- Native Village of Chignik Lagoon
- Native Village of Chitina
- Native Village of Chuathbaluk (Russian Mission, Kuskokwim)
- Native Village of Council
- Native Village of Deering
- Native Village of Diomedede (aka Inalik)
- Native Village of Eagle
- Native Village of Eek
- Native Village of Ekuk
- Native Village of Ekwok
- Native Village of Elim
- Native Village of Eyak (Cordova)
- Native Village of False Pass
- Native Village of Fort Yukon
- Native Village of Gakona
- Native Village of Gambell
- Native Village of Georgetown
- Native Village of Goodnews Bay
- Native Village of Hamilton
- Native Village of Hooper Bay
- Native Village of Kanatak
- Native Village of Karluk
- Native Village of Kiana
- Native Village of Kipnuk
- Native Village of Kivalina
- Native Village of Kluti Kaah (aka Copper Center)
- Native Village of Kobuk
- Native Village of Kongiganak
- Native Village of Kotzebue
- Native Village of Koyuk
- Native Village of Kwigillingok
- Native Village of Kwinhagak (aka Quinhagak)
- Native Village of Larsen Bay
- Native Village of Marshall (aka Fortuna Ledge)



- Native Village of Mary's Igloo
- Native Village of Mekoryuk
- Native Village of Minto
- Native Village of Nanwalek (aka English Bay)
- Native Village of Napaimute
- Native Village of Napakiak
- Native Village of Napaskiak
- Native Village of Nelson Lagoon
- Native Village of Nightmute
- Native Village of Nikolski
- Native Village of Noatak
- Native Village of Nuiqsut (aka Nooiksut)
- Native Village of Nunam Iqua
- Native Village of Nunapitchuk
- Native Village of Ouzinkie
- Native Village of Paimiut
- Native Village of Perryville
- Native Village of Pilot Point
- Native Village of Point Hope
- Native Village of Point Lay
- Native Village of Port Graham
- Native Village of Port Heiden
- Native Village of Port Lions
- Native Village of Ruby
- Native Village of Saint Michael
- Native Village of Savoonga
- Native Village of Scammon Bay
- Native Village of Selawik
- Native Village of Shaktoolik
- Native Village of Shishmaref
- Native Village of Shungnak
- Native Village of Stevens
- Native Village of Tanacross
- Native Village of Tanana
- Native Village of Tatitlek

- Native Village of Tazlina
- Native Village of Teller
- Native Village of Tetlin
- Native Village of Tuntutuliak
- Native Village of Tununak
- Native Village of Tyonek
- Native Village of Unalakleet
- Native Village of Unga
- Native Village of Venetie Tribal Government (Arctic Village and Village of Venetie)
- Native Village of Wales
- Native Village of White Mountain
- Navajo Nation, Arizona, New Mexico and Utah
- Nenana Native Association
- New Koliganek Village Council
- New Stuyahok Village
- Newhalen Village
- Newtok Village
- Nez Perce Tribe
- Nikolai Village
- Ninilchik Village
- Nisqually Indian Tribe
- Nome Eskimo Community
- Nondalton Village
- Nooksack Indian Tribe
- Noorvik Native Community
- Northern Arapaho Tribe of the Wind River Reservation, Wyoming
- Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana
- Northfork Rancheria of Mono Indians of California
- Northway Village
- Northwestern Band of the Shoshone Nation
- Nottawaseppi Huron Band of the Potawatomi, Michigan
- Nulato Village
- Nunakauyarmiut Tribe
- Oglala Sioux Tribe
- Ohkay Owingeh, New Mexico

- Omaha Tribe of Nebraska
- Oneida Indian Nation
- Oneida Nation
- Onondaga Nation
- Organized Village of Grayling (aka Holikachuk)
- Organized Village of Kake
- Organized Village of Kasaan
- Organized Village of Kwethluk
- Organized Village of Saxman
- Orutsararmiut Traditional Native Council
- Oscarville Traditional Village
- Otoe-Missouria Tribe of Indians, Oklahoma
- Ottawa Tribe of Oklahoma
- Paiute Indian Tribe of Utah (Cedar Band of Paiutes, Kanosh Band of Paiutes, Koosharem Band of Paiutes, Indian Peaks Band of Paiutes, and Shivwits Band of Paiutes)
- Paiute-Shoshone Tribe of the Fallon Reservation and Colony, Nevada
- Pala Band of Mission Indians
- Pamunkey Indian Tribe
- Pascua Yaqui Tribe of Arizona
- Paskenta Band of Nomlaki Indians of California
- Passamaquoddy Tribe
- Pauloff Harbor Village
- Pauma Band of Luiseno Mission Indians
- Pawnee Nation of Oklahoma
- Pechanga Band of Indians
- Pedro Bay Village
- Penobscot Nation
- Peoria Tribe of Indians of Oklahoma
- Petersburg Indian Association
- Picayune Rancheria of Chukchansi Indians of California
- Pilot Station Traditional Village
- Pinoleville Pomo Nation, California
- Pit River Tribe, California (includes XL Ranch, Big Bend, Likely, Lookout, Montgomery Creek, and Roaring Creek Rancherias)
- Pitka's Point Traditional Council

- Platinum Traditional Village
- Poarch Band of Creek Indians
- Pokagon Band of Potawatomi Indians, Michigan & Indiana
- Ponca Tribe of Indians of Oklahoma
- Ponca Tribe of Nebraska
- Port Gamble S'Klallam Tribe
- Portage Creek Village (aka Ohgsenakale)
- Potter Valley Tribe, California
- Prairie Band of Potawatomi Nation
- Prairie Island Indian Community in the State of Minnesota
- Pribilof Islands Aleut Communities of St. Paul and St. George Islands (Saint George Island and Saint Paul Island)
- Pueblo of Acoma, New Mexico
- Pueblo of Cochiti, New Mexico
- Pueblo of Isleta, New Mexico
- Pueblo of Jemez, New Mexico
- Pueblo of Laguna, New Mexico
- Pueblo of Nambe, New Mexico
- Pueblo of Picuris, New Mexico
- Pueblo of Pojoaque, New Mexico
- Pueblo of San Felipe, New Mexico
- Pueblo of San Ildefonso, New Mexico
- Pueblo of Sandia, New Mexico
- Pueblo of Santa Ana, New Mexico
- Pueblo of Santa Clara, New Mexico
- Pueblo of Taos, New Mexico
- Pueblo of Tesuque, New Mexico
- Pueblo of Zia, New Mexico
- Puyallup Tribe of the Puyallup Reservation
- Pyramid Lake Paiute Tribe of the Pyramid Lake Reservation, Nevada
- Quapaw Nation
- Qagan Tayagungin Tribe of Sand Point
- Qawalangin Tribe of Unalaska
- Quartz Valley Indian Community of the Quartz Valley Reservation of California
- Quechan Tribe of the Fort Yuma Indian Reservation, California and Arizona

- Quileute Tribe of the Quileute Reservation
- Quinault Indian Nation
- Ramona Band of Cahuilla, California
- Rampart Village
- Rappahannock Tribe, Inc.
- Red Cliff Band of Lake Superior Chippewa Indians of Wisconsin
- Red Lake Band of Chippewa Indians, Minnesota
- Redding Rancheria, California
- Redwood Valley or Little River Band of Pomo Indians of the Redwood Valley Rancheria California
- Reno-Sparks Indian Colony, Nevada
- Resighini Rancheria, California
- Rincon Band of Luiseno Mission Indians of Rincon Reservation, California
- Robinson Rancheria
- Rosebud Sioux Tribe of the Rosebud Indian Reservation, South Dakota
- Round Valley Indian Tribes, Round Valley Reservation, California
- Sac & Fox Tribe of the Mississippi in Iowa
- Sac and Fox Nation of Missouri in Kansas and Nebraska
- Sac and Fox Nation, Oklahoma
- Saginaw Chippewa Indian Tribe of Michigan
- Saint George Island (Pribilof Islands Aleut Communities of St. Paul and St. George Islands)
- Saint Paul Island (Pribilof Islands Aleut Communities of St. Paul and St. George Islands)
- Saint Regis Mohawk Tribe
- Salamatof Tribe
- Salt River Pima-Maricopa Indian Community of the Salt River Reservation, Arizona
- Samish Indian Nation
- San Carlos Apache Tribe of the San Carlos Reservation, Arizona
- San Juan Southern Paiute Tribe of Arizona
- San Pasqual Band of Diegueno Mission Indians of California
- Santa Rosa Band of Cahuilla Indians, California
- Santa Rosa Indian Community of the Santa Rosa Rancheria, California
- Santa Ynez Band of Chumash Mission Indians of the Santa Ynez Reservation, California
- Santee Sioux Nation, Nebraska
- Santo Domingo Pueblo
- Sauk-Suiattle Indian Tribe

- Sault Ste. Marie Tribe of Chippewa Indians, Michigan
- Scotts Valley Band of Pomo Indians of California
- Seldovia Village Tribe
- Seminole Tribe of Florida
- Seneca Nation of Indians
- Seneca-Cayuga Nation
- Shageluk Native Village
- Shakopee Mdewakanton Sioux Community of Minnesota
- Shawnee Tribe
- Sherwood Valley Rancheria of Pomo Indians of California
- Shingle Springs Band of Miwok Indians, Shingle Springs Rancheria (Verona Tract), California
- Shinnecock Indian Nation
- Shoalwater Bay Indian Tribe of the Shoalwater Bay Indian Reservation
- Shoshone-Bannock Tribes of the Fort Hall Reservation
- Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada
- Sisseton-Wahpeton Oyate of the Lake Traverse Reservation, South Dakota
- Sitka Tribe of Alaska
- Skagway Village
- Skokomish Indian Tribe
- Skull Valley Band of Goshute Indians of Utah
- Snoqualmie Indian Tribe
- Soboba Band of Luiseno Indians, California
- Sokaogon Chippewa Community, Wisconsin
- South Naknek Village
- Southern Ute Indian Tribe of the Southern Ute Reservation, Colorado
- Spirit Lake Tribe, North Dakota
- Spokane Tribe of the Spokane Reservation
- Squaxin Island Tribe of the Squaxin Island Reservation
- St. Croix Chippewa Indians of Wisconsin
- Standing Rock Sioux Tribe of North and South Dakota
- Stebbins Community Association
- Stillaguamish Tribe of Indians of Washington
- Stockbridge Munsee Community, Wisconsin
- Summit Lake Paiute Tribe of Nevada
- Sun'aq Tribe of Kodiak

- Suquamish Indian Tribe of the Port Madison Reservation
- Susanville Indian Rancheria, California
- Swinomish Indian Tribal Community
- Sycuan Band of the Kumeyaay Nation
- Table Mountain Rancheria
- Takotna Village
- Tangirnaq Native Village
- Tejon Indian Tribe
- Telida Village
- Te-Moak Tribe of Western Shoshone Indians of Nevada (four constituent bands: Battle Mountain Band, Elko Band, South Fork Band, and Wells Band)
- The Chickasaw Nation
- The Choctaw Nation of Oklahoma
- The Muscogee (Creek) Nation
- The Osage Nation
- The Seminole Nation of Oklahoma
- Thlopthlocco Tribal Town
- Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota
- Timbisha Shoshone Tribe
- Tohono O'odham Nation of Arizona
- Tolowa Dee-Ni' Nation
- Tonawanda Band of Seneca
- Tonkawa Tribe of Indians of Oklahoma
- Tonto Apache Tribe of Arizona
- Torres Martinez Desert Cahuilla Indians, California
- Traditional Village of Togiak
- Tulalip Tribes of Washington
- Tule River Indian Tribe of the Tule River Reservation, California
- Tuluksak Native Community
- Tunica-Biloxi Indian Tribe
- Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California
- Turtle Mountain Band of Chippewa Indians of North Dakota
- Tuscarora Nation
- Twenty-Nine Palms Band of Mission Indians of California
- Twin Hills Village

- Ugashik Village
- Umkumiut Native Village
- United Auburn Indian Community of the Auburn Rancheria of California
- United Keetoowah Band of Cherokee Indians in Oklahoma
- Upper Mattaponi Tribe
- Upper Sioux Community, Minnesota
- Upper Skagit Indian Tribe
- Ute Indian Tribe of the Uintah & Ouray Reservation, Utah
- Ute Mountain Ute Tribe
- Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation, California
- Village of Alakanuk
- Village of Anaktuvuk Pass
- Village of Aniak
- Village of Atmautluak
- Village of Bill Moore's Slough
- Village of Chefornak
- Village of Clarks Point
- Village of Crooked Creek
- Village of Dot Lake
- Village of Iliamna
- Village of Kalskag
- Village of Kaltag
- Village of Kotlik
- Village of Lower Kalskag
- Village of Ohogamiut
- Village of Red Devil
- Village of Sleetmute
- Village of Solomon
- Village of Stony River
- Village of Venetie
- Village of Wainwright
- Walker River Paiute Tribe of the Walker River Reservation, Nevada
- Wampanoag Tribe of Gay Head (Aquinnah)
- Washoe Tribe of Nevada and California (Carson Colony, Dresslerville Colony, Woodfords Community, Stewart Community, and Washoe Ranches)



- White Mountain Apache Tribe of the Fort Apache Reservation, Arizona
- Wichita and Affiliated Tribes
- Wilton Rancheria, California
- Winnebago Tribe of Nebraska
- Winnemucca Indian Colony of Nevada
- Wiyot Tribe, California
- Wrangell Cooperative Association
- Wyandotte Nation
- Yakutat Tlingit Tribe
- Yankton Sioux Tribe of South Dakota
- Yavapai-Apache Nation of the Camp Verde Indian Reservation, Arizona
- Yavapai-Prescott Indian Tribe
- Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch, Nevada
- Yocha Dehe Wintun Nation, California
- Yomba Shoshone Tribe of the Yomba Reservation, Nevada
- Ysleta del Sur Pueblo
- Yuhaaviatam of San Manuel Nation
- Yupiit of Andreafski
- Pulikla Tribe of the Yurok People
- Zuni Tribe of the Zuni Reservation, New Mexico

## **H.5 Manufacturers**

- American Honda Motor Company, Inc.
- Aston Martin Lagonda
- BMW of North America, LLC
- BYD Motors, Inc.
- Daimler/ Mercedes-Benz USA, LLC
- Elux Automotive
- FCA US LLC (dba Stellantis North America)
- Ferrari North America, Inc.
- Ford Motor Company
- General Motors, LLC
- Hyundai Kia America Technical Center, Inc.
- Jaguar Land Rover North America, LLC
- Koenigsegg Automotive AB

- Lotus Cars USA, Inc.
- Mazda North American Operations
- McLaren Automotive Limited
- Mitsubishi Motors North America, Inc.
- Nissan North America, Inc.
- RUF Automobile GmbH
- Subaru of America, Inc.
- Suzuki Motor of America, Inc.
- Tesla Motors, Inc.
- Toyota Motor Engineering & Manufacturing North America, Inc.
- Volkswagen Group of America, Inc.
- Volvo Car USA, LLC

## **H.6 Stakeholders**

- AAA Mid-Atlantic
- Alaska Public Interest Research Group
- Alliance for Automotive Innovation
- Alliance to Save Energy
- Allison Transmission, Inc.
- American Association of Blacks in Energy
- American Chemistry Council
- American Council for an Energy-Efficient Economy
- American Fuel & Petrochemical Manufacturers
- American Gas Association
- American International Automobile Dealers Association
- American Iron and Steel Institute
- American Jewish Committee
- American Lung Association
- American Petroleum Institute
- Association of International Automobile Manufacturers, Inc.
- Association of Metropolitan Planning Organizations
- Auto Research Center
- BlueGreen Alliance
- Border Valley Trading LTD
- Boyden Gray & Associates PLLC

- Bridgestone Americas Tire Operations Product Development Group
- California Air Pollution Control Officers Association
- CALSTART
- Cato Institute
- Center for Biological Diversity
- Center for Biological Diversity, Climate Campaign
- Central States Air Resources Agencies
- Ceres and the Investor Network on Climate Risk (INCR)
- ChargePoint, Inc.
- Clean Fuel Development Coalition
- Commission for Environmental Cooperation
- Competitive Enterprise Institute
- Conservation Law Foundation
- Consumer Action
- Consumer Assistance Council of Cape Cod
- Consumer Federation of America
- Consumer Federation of the Southeast
- Consumers for Auto Reliability and Safety
- Consumers Union
- Con-way Inc
- CoPIRG Foundation
- Criterion Economics, L.L.C.
- CSRA
- Dallas Clean Energy LLC
- Dana Holding Corporation
- Defenders of Wildlife
- Ecology Center
- Edison Electric Institute
- Electric Applications Inc.
- Electric Power Research Institute
- Emmett Institute on Climate Change and the Environment
- Empire State Consumer Association
- Environment America
- Environment Illinois
- Environmental Defense Fund

- Environmental Law & Policy Center
- Evangelical Environmental Network
- Evangelical Lutheran Church in America
- FedEx Corporation
- Florida Consumer Action Network
- Florida Power & Light Co.
- FreedomWorks Foundation
- Friends Committee on National Legislation
- Gibson, Dunn & Crutcher LLP
- Greater Washington Interfaith Power and Light c/o Interfaith Conference of Metropolitan Washington
- Growth Energy
- HayDay Farms, Inc.
- Honeywell Transportation Systems
- Hyundai Motor America
- ICM
- Illinois Trucking Association
- Illinois Public Interest Research Group
- Indiana Corn Growers Association
- Indiana University
- Ingevity
- Institute for Policy Integrity at New York University School of Law
- Justice and Witness Ministries
- Kirkland & Ellis LLP
- Manufacturers of Emission Controls Association
- Maryknoll Office of Global Concerns
- Maryland Consumer Rights Coalition
- Maryland Public Interest Research Group
- Massachusetts Consumers Council
- Massachusetts Public Interest Research Group
- MECA Clean Mobility
- Mercatus Center, George Mason University
- Metro 4/SESARM
- Michigan Tech University
- Mid-America Regional Council

- Mid-Atlantic Regional Air Management Association, Inc.
- National Alliance of Forest Owners
- National Association of Counties
- National Association of Regulatory Utility Commissioners
- National Association of State Energy Officials
- National Automobile Dealers Association
- National Biodiesel Board
- National Conference of State Legislatures
- National Corn Growers Association
- National Council of Churches USA
- National Governors Association
- National Groundwater Association
- National Propane Gas Association
- National Wildlife Federation
- Natural Gas Vehicles (NGV) America
- Natural Resources Canada
- Natural Resources Defense Council
- Natural Resources Defense Council, Climate Center
- New York Corn & Soybean Growers Association
- Northeast Ohio Areawide Coordinating Agency
- Northeast States for Coordinated Air Use Management
- Novation Analytics
- NTEA - The Association for the Work Truck Industry
- New York Public Interest Research Group
- Ohio Corn and Wheat
- Pew Environment Group
- Pierobon & Partners
- Plastics Industry Association
- Pollution Probe
- Presbyterian Church (USA)
- Public Citizen
- Recreation Vehicle Industry Association
- Renewable Fuels Association
- Resources for the Future
- Rocky Mountain Institute

- Rubber Manufacturers Association
- Santa Clara Pueblo
- Securing America's Future Energy
- Sierra Club
- Socially Responsible Investing
- SUN DAY Campaign
- Susquehanna River Basin Commission
- Teamsters Joint Council 25
- The Accord Group
- The Aluminum Association, Inc.
- The Council of State Governments
- The Episcopal Church
- The Lee Auto Malls
- The Pew Charitable Trusts
- The United Methodist Church General
- TIAX LLC
- Trillium Asset Management Corporation
- Truck Manufacturer's Association
- Tufts University
- U.S. Chamber of Commerce
- U.S. Conference of Mayors
- U.S. Public Interest Research Group
- Union for Reform Judaism
- Union of Concerned Scientists
- United Auto Workers
- United Automobile, Aerospace and Agricultural Workers of America (UAW)
- United Church of Christ
- United Steelworkers
- University of Colorado School of Law
- University of Michigan Center for Sustainable Systems
- University of Michigan Transportation Research Institute
- University of Southern California
- Utility Consumers Action Network
- Vermont Public Interest Research Group
- Victims Committee for Recall of Defective Vehicles

- Virginia Citizens Consumer Council
- Wayne Stewart Trucking Company
- West Virginia University
- Western Regional Air Partnership
- Wisconsin Consumers League
- World Auto Steel
- World Resources Institute
- Zero Emission Transportation Association (ZETA)

## **H.7 Individuals**

Individual commenters are not named in this distribution list for their privacy. NHTSA will provide notification of the availability of this Draft SEIS electronically by email to individual commenters who provided an email address.