Air Emissions Guide for Air Force Mobile Sources

Methods for Estimating Emissions of Air Pollutants For Mobile Sources at U.S. Air Force Installations

Air Force Civil Engineer Center
Compliance Technical Support Branch
250 Goodrich Drive; Building #1650
San Antonio, TX 78226

October 2014

This page intentionally left blank

AIR EMISSIONS GUIDE FOR AIR FORCE MOBILE SOURCES

Prepared For:

FRANK CASTANEDA, III, P.E., GS-14, DAF
Air Quality Subject Matter Expert
Air Force Civil Engineer Center,
Compliance Technical Support Branch
(AFCEC/CZTQ)
250 Goodrich Drive; Building #1650
San Antonio, TX 78226

and

CH2M HILL
12301 Research Boulevard, Building 4, Suite 250
Austin, TX 8759

Prepared By:

Solutio Environmental, Inc.
13003 Jones-Maltsberger Road
San Antonio, TX 78247
http://www.solutioenv.com

Table of Contents

ACRONYMS x
BREVITY CODES xii
ABBREVIATIONS xvi
1 INTRODUCTION 2
1.1 Background and Purpose 2
1.2 Mobile Sources 3
1.3 Air Emissions Inventories (AEIs) 3
1.3.1 Title II – Emission Standards for Moving Sources 3
1.3.2 General Conformity 4
1.3.3 Implementation Plans 4
1.3.4 National Environmental Policy Act (NEPA) 5
1.3.5 Other Inventory Uses 5
1.3.5.1 Pollution Prevention (P2) Opportunities 5
1.3.5.2 Emissions Trading 5
1.3.5.3 Risk Assessments 6
1.3.5.4 Environmental Auditing 6
1.4 Emissions Inventory Methodologies 6
1.5 Pollutants 7
1.5.1 Criteria Pollutants 7
1.5.2 Hazardous Air Pollutants (HAPs) 9
1.5.3 Greenhouse Gases (GHGs) 10
1.6 References 11
2 AIRCRAFT FLIGHT OPERATIONS (AOPS) 12
2.1 Introduction 12
2.1.1 Landing and Takeoff Cycle (LTO) 12
2.1.2 Touch and Go (TGO) and Low Fly By (LFB) Cycles 14
2.2 Mixing Zone Height and Time in Mode (TIM) 15
2.3 Fuel Flow Rate 15
2.3.1 Jet Fuel 15

2.3.2 Synthetic Aviation Fuel 16
2.4 Emission Factors 16
2.5 Emissions Calculation 17
2.5.1 Aircraft Emissions 17
2.5.1.1 Land and Takeoff Cycle (LTO) 17
2.5.1.2 Touch and Go (TGO) and Low Fly By (LFB) 19
2.5.1.3 Low Flight Pattern (LFP) 19
2.5.2 Auxiliary Power Units 20
2.5.3 Trim Pad and On-Wing Testing 21
2.5.4 Calculating SO_2 Emissions 22
2.5.5 Calculating HAP Emissions 24
2.5.6 Lead (Pb) Emissions 24
2.5.7 Greenhouse Gas (GHG) Emissions 24
2.5.8 VOC Speciation (Addendum) 24
2.5.9 International Civil Aviation Organization (ICAO) Emission Factors (Addendum) 26
2.6 Information Resources 30
2.7 Example Calculations 30
2.7.1 Problem 1 - Landing and Takeoff Cycle Emissions 30
2.7.2 Problem 2 - Auxiliary Power Unit Emissions 33
2.7.3 Problem 3 - On-Wing Engine Testing 35
2.8 References 129
3 FLIGHTLINE GROUND SUPPORT EQUIPMENT (AGE) 132
3.1 Introduction 132
3.2 Emission Factors 133
3.3 Emissions Calculation 133
3.3.1 Sortie/LTO Method (Preferred Method) 133
3.3.2 Horsepower/Load Factor Method 134
3.3.3 Fuel Consumption Method 135
3.3.4 Calculating SO_2 Emissions 137
3.3.5 Calculating Emissions from Synthetic Aviation Fuel 138
3.4 Information Resources 138

3.5 Example Calculations 138
3.5.1 Problem 1 - Sortie/LTO Method 139
3.5.2 Problem 2 - Horsepower/Load Factor Method 141
3.5.3 Problem 3 - Fuel Consumption Method 142
3.5.4 Problem 4 - Estimating SO_2 Emissions 142
3.6 References 170
4 NON-ROAD ENGINES AND EQUIPMENT (NRDE) 172
4.1 Introduction 172
4.2 Emission Factors 173
4.2.1 Alternative Fuels and Emissions Reduction 174
4.3 Emissions Calculation 175
4.3.1 Emissions Estimation Using the EPA NONROAD Model 175
4.3.2 Horsepower/Load Factor Method 176
4.3.3 Fuel Consumption Method 176
4.3.4 VOC and HAP Speciation 177
4.4 Information Resources 178
4.5 Example Calculations 179
4.5.1 Problem 1 - Estimating Emissions Using the Horsepower/Load Factor Method 180
4.5.2 Problem 2 - Estimating Emissions Using Fuel Consumption 180
4.5.3 Problem 3 - Estimating SO_x Emissions 181
4.5.4 Problem 4 - Estimating Emissions from the Use of B20 182
4.6 References 198
5 ON-ROAD VEHICLES (VEHE) 200
5.1 Introduction 200
5.1.1 Vehicle Categories 202
5.1.2 Vehicle Fleet Characterization 202
5.2 Emission Factors 206
5.2.1 Vehicle Exhaust Emissions 206
5.2.1.1 Vehicle Exhaust Emissions – Normal Vehicle Operation 206
5.2.1.2 Vehicle Exhaust Emissions – Idling 207
5.2.1.3 Alternative Fuel Emission Reduction Factors 209

5.2.2 Fugitive Particulate Matter (PM) Emissions 211
5.2.2.1 Corrected Emission Factors Accounting for Precipitation 213
5.3 Emissions Calculation 215
5.3.1 Vehicle Exhaust Emissions – Typical Vehicle Operation 215
5.3.1.1 Using Air Force/State/Territory Composite Emission Factors (Preferred Method) 215
5.3.1.2 Using Specific Vehicle Mix Data 219
5.3.1.3 Using Air Force Typical Vehicle Mix Data 221
5.3.2 Vehicle Exhaust Emissions (Idling) 223
5.3.2.1 Using Specific Vehicle Mix Data 224
5.3.2.2 Using Air Force Typical Vehicle Mix Data 224
5.3.3 Fugitive PM Emissions 225
5.3.4 VOC Speciation 226
5.4 Information Resources 227
5.5 Example Problems 228
5.5.1 Problem 1 – Calculating POV and GOV Emissions – Air Force/State/Territory Composite Emission Factor Method 228
5.5.2 Problem 2 – Calculating GOV Emissions – Using Specific Vehicle Mix Data 230
5.5.3 Problem 3 – Calculating POV Emissions – Using Specific Vehicle Mix Data 233
5.5.4 Problem 4 – Calculating POV Emissions – Using Typical Vehicle Mix Data 237
5.5.5 Problem 5 – Calculating Fugitive PM Emissions 240
5.6 References 472
6 FUEL DISPENSING (FDSP, FLD) – Excludes On-Road Vehicle Refueling 474
6.1 Introduction 474
6.2 Emission Factors 477
6.3 Emission Calculations 480
6.3.1 VOC Emissions Calculations (Preferred Method) 480
6.3.2 VOC Emissions Calculations (Emission Factor Method) 481
6.3.3 HAP Emissions Calculation 482
6.4 Information Resources 483
6.5 Example Problems 483

6.5.1 Problem 1 – Preferred Method 483
6.5.2 Problem 2 – Emission Factor Method 485
6.6 References 487

List of Tables

Table 2-1. Comparison of Commercial and Military LTO Cycle Modes 14
Table 2-2. Fuel Emission Reduction Factors (FERFs) for JP-8/Synthetic Fuel Blends 16
Table 2-3. Average Sulfur Content of JP-8 23
Table 2-4. Default Time-in-Mode for Various Aircraft Categories 38
Table 2-5. Military Airframe/Engine/APU Combinations[1] 39
Table 2-6. Military Helicopter/Engine/APU Combinations[1] 49
Table 2-7. Commercial Airframe/Engine/APU Combinations1 52
Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs 57
Table 2-9. VOC and HAP Emission Factors for Select Engines 100
Table 2-10. Criteria Pollutant and Ozone Precursor Emission Factors for APUs[1] 122
Table 2-11. VOC Weight Fractions for Turbofan Engines 123
Table 2-12. VOC Weight Fractions for Turboprop for Large Aircraft 124
Table 2-13. VOC Weight Fractions for Turboprop for Small Aircraft 125
Table 2-14. VOC Weight Fraction for Turbojet Engines 126
Table 3-1. Typical Heating Values and BSFC for GSE Fuels 136
Table 3-2. Average Fuel Density and Weight Percent Sulfur in Non-Road Fuels 138
Table 3-3. Military Aircraft and GSE Assignments 144
Table 3-4. Military Aircraft GSE Emission Factors 158
Table 3-5. Typical Commercial Aircraft GSE Assignments 161
Table 3-6. Common GSE Operating Parameters 162
Table 3-7. Common GSE Emission Factors 165
Table 3-8. Uncontrolled HAP Emission Factors for Select Military GSE 167
Table 3-9. EPA Emission Factors for Uncontrolled Diesel Reciprocating IC Engines 167
Table 3-10. Speciated HAP Emission Factors for Uncontrolled Diesel Reciprocating Internal Combustion Engines 168
Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment 184
Table 4-2. Pre-1998 Non-Road CI Engine Criteria Pollutant Emission Factors 194
Table 4-3. Weight Percent Speciation of VOC Emissions Non-Road Engines 196
Table 5-1. Air Force On-Road Vehicle Categories 204
Table 5-2. Typical Air Force POV & GOV Mix 205
Table 5-3. MOBILE6 Inputs Used to Generate On-Road Vehicle Emission Factors 207
Table 5-4. Idling Emission Factors for On-Road Vehicles During Summer Conditions 208
Table 5-5. Idling Emission Factors for On-Road Vehicles During Winter Conditions 208
Table 5-6. Average Idling Emission Factors for On-Road Vehicles 209
Table 5-7. Alternative Fuel Emission Reduction Factors (FERFs) 211
Table 5-8. Fugitive PM Emission Factors 212
Table 5-9. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2013 POV 243

Table 5-10. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2014 POV 244
Table 5-11. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2015 POV 245
Table 5-12. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2016 POV 246
Table 5-13. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2017 POV 247
Table 5-14. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2018 POV 248
Table 5-15. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2019 POV 249
Table 5-16. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2020 POV 250
Table 5-17. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2013 GOV 251
Table 5-18. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2014 GOV 252
Table 5-19. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2015 GOV 253
Table 5-20. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2016 GOV 254
Table 5-21. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2017 GOV 255
Table 5-22. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2018 GOV 256
Table 5-23. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2019 GOV 257
Table 5-24. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2020 GOV 258
Table 5-25. On-Road Vehicle Emission Factors – 2013 POV 259
Table 5-26. On-Road Vehicle Emission Factors – 2014 POV 272
Table 5-27. On-Road Vehicle Emission Factors – 2015 POV 285
Table 5-28. On-Road Vehicle Emission Factors – 2016 POV 298
Table 5-29. On-Road Vehicle Emission Factors – 2017 POV 311
Table 5-30. On-Road Vehicle Emission Factors – 2018 POV 324
Table 5-31. On-Road Vehicle Emission Factors – 2019 POV 337
Table 5-32. On-Road Vehicle Emission Factors – 2020 POV 350
Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV 363
Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV 376

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV 389
Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV 402
Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV 415
Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV 428
Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV 441
Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV 454
Table 5-41. OCONUS On-Road Composite Vehicle Emission Factors - POV 467
Table 5-42. OCONUS On-Road Composite Vehicle Emission Factors - GOV 467
Table 5-43. On Road Vehicle Speciated VOC Weight Fractions 468
Table 6-1. Fuel Loading Saturation Factors 477
Table 6-2. Vapor Pressures for Various Fuels 478
Table 6-3. Typical Fuel Truck Capture Efficiencies 479
Table 6-4. Typical Fuel Transfer Control Efficiencies 479
Table 6-5. VOC Emission Factors for Fuel Dispensing/Loading 480
Table 6-6. Weight Percent of HAPs in Fuels Commonly Used at Air Force Installations 482

List of Figures

Figure 2-1. Example Data Collection Form for On-Wing Engine Testing 127
Figure 2-2. Example Data Collection Form for Aircraft Movements 128
Figure 3-1. Example Data Collection Form for Aerospace Ground Support Equipment 169
Figure 4-1. Example Data Collection Form for Non-Road Vehicles and Equipment 197
Figure 5-1. Mean Number of Days in the Year with Precipitation of 0.01 Inches or More 214
Figure 5-2. Data Collection Form for Government Owned Vehicles (GOV's) 470
Figure 5-3. Example Data Collection Form for Privately Owned Vehicles (POVs) 471
Figure 6-1. Simple Fuel Dispensing Control Volume 474
Figure 6-2. Typical On-Base Fuel Transfer Activities and Destinations. 475
Figure 6-3. Fuel Dispensing Control Volume – Loading Losses Method 481
Figure 6-4. Fuel Dispensing Control Volume – Emission Factor Method 481

ACRONYMS (Words formed from the initial letters of a name or parts of a series of words.)

AAFES	Army & Air Force Exchange Service
AFCEC	Air Force Civil Engineer Center
AGE	Aerospace Ground Equipment
ALAPCO	Association of Local Air Pollution Control Officials
AMX	Aircraft Maintenance Squadron
BEE	Bioenvironmental Engineer
BOOS	Burners Out Of Service
CAIR	Clean Air Interstate Rule
CAS	Chemical Abstracts Service
CONUS	Continental United States
DAC	Defense Ammunition Center
EPAct	Energy Policy Act
EPCRA	Emergency Planning and Community Right-to-Know Act
FESOP	Federally Enforceable State Operating Permit
FIRE	Factor Information Retrieval System
HAP	Hazardous Air Pollutant
HAZMAT	Hazardous Materials
HEPA	High Efficiency Particulate Air
HVAC	Heating, Ventilating, and Air Conditioning
ICAO	International Civil Aviation Organization
MAJCOM	Major Command
MEM	Mass of Energetic Material
MIDAS	Munitions Items Disposition Action System
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
OCONUS	Outside Continental United States
OTAQ	Office of Transportation and Air Quality
PEMS	Predictive Emission Monitoring System
RAP	Reclaimed Asphalt Pavement
SAR	Second Assessment Report
SAW	Submerged Arc Welding
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SMAW	Shielded Metal Arc Welding
STAPPA	State and Territorial Air Pollution Program Administrators

TAR	Third Assessment Report
USAF	United States Air Force
VIN	Vehicle Identification Number

BREVITY CODES (Shortened form of a frequently used group of words, phrase, or sentence consisting of entirely upper case letters. Each letter is spoken individually.)

AB	Afterburner
AEI	Air Emissions Inventory
AFB	Air Force Base
AFI	Air Force Instruction
AFRL	Air Force Research Laboratory
AGSE	Aerospace Ground Support Equipment
APU	Auxiliary Power Unit
AVGAS	Aviation Gasoline
BMP	Best Management Practices
BSFC	Brake-Specific Fuel Consumption
CAA	Clean Air Act
CAAA	Clean Air Act Amendments (of 1990)
CBPO	Consolidated Base Personnel Office
CE	Civil Engineering
CEMS	Continuous Emission Monitoring System
CEV	Civil Engineering Environmental
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CFRM	Continuous Flow Rate Monitor
CI	Compression Ignition
CNG	Compressed Natural Gas
DCA	Defense Commissary Agency
DESC	Defense Energy Support Center
DLA	Defense Logistics Agency
DNA	Defense Nuclear Agency
DOD	Department of Defense
DOE	Department of Energy
EA	Environmental Assessment
EDMS	Emissions and Dispersion Modeling System
EDP	Electrodeposition
EF	Emission Factor
EGBE	Ethylene Glycol Butyl Ether
EIIP	Emissions Inventory Improvement Program
EIP	Emissions Inventory Plan
EIR	Emissions Inventory Report
EIS	Environmental Impact Statement
EOD	Explosive Ordnance Disposal

EPA	Environmental Protection Agency
EPAct	Energy Policy Act
ERC	Emission Reduction Credit
ESP	Electrostatic Precipitator
ESTCP	Environmental Security Technology Certification Program
FAA	Federal Aviation Administration
FBC	Fluidized Bed Combustor
FCAW	Flux-Cored Arc Welding
FF	Fabric Filter
FFV	Flexible Fuel Vehicles
FGD	Flue Gas Desulphurization
FGR	Flue Gas Recirculation
FT	Fischer-Tropsch
GHG	Greenhouse Gas
GMAW	Gas Metal Arc Welding
GOV	Government Owned Vehicles
GSA	General Services Administration
GSE	Ground Support Equipment
GVW	Gross Vehicle Weight
HBFC	Hydrobromofluorocarbons
HC	Hydrocarbon
HCFC	Hydrochlorofluorocarbons
HCP	Hard Chrome Plating
HEI	High Explosive Incendiary
HEV	Hybrid Electric Vehicles
HHV	High Heat Value
HMA	Hot Mix Asphalt
HVLP	High Volume Low Pressure
HVOF	High Velocity Oxy-Fuel
IC	Internal Combustion
ICAO	International Civil Aviation Organization
IPCC	Intergovernmental Panel on Climate Change
IRP	Installation Restoration Program
LDF	Liquid Drift Factors
LEL	Lower Explosive Limit
LFB	Low Flyby
LFG	Landfill Gas
LFP	Low Flight Pattern
LGRVM	Vehicle Management Flight Vehicle Maintenance
LNB	Low NOX Burner

LPG	Liquefied Petroleum Gas
LTO	Landing and Takeoff
MB	Material Burned
MC	Medium Cure
MEK	Methyl Ethyl Ketone
Mg	Megagram(s) [i.e., metric ton]
mg	Milligram(s)
MIDAS	Munitions Items Disposition Action System
MEK	Methyl Ethyl Ketone
MM	Minutemen Missiles
MMBtu	Million British Thermal Units
Mn	Manganese
MPF	Military Personnel Flight
MPO	Metropolitan Planning Office
MSDS	Material Safety Data Sheet
MSW	Municipal Solid Waste
NACAA	National Association of Clean Air Agencies
NDI	Non-destructive Inspection
NEI	National Emission Inventory
NMHC	Non-methane Hydrocarbons
NMOC	Non-methane Organic Compounds
NSCR	Nonselective Catalytic Reduction
NSPS	New Source Performance Standards
NSR	New Source Review
OB/OD	Open Burning/Open Detonation
OBODM	Open Burning/Open Detonation Model
OCA	Off-Site Consequences Analysis
ODS	Ozone Depleting Substances
OIAI	Once In Always In
OLVIMS	On-line Vehicle Interactive Management System
P2	Pollution Prevention
PAH	Polycyclic Aromatic Hydrocarbon
PBT	Persistent Bioaccumulative and Toxic
PEMS	Predictive Emission Monitoring System
PM	Particulate Matter – Aerodynamic diameter unspecified
PM10	Particulate Matter – Aerodynamic diameter < 10 micrometers
PM2.5	Particulate Matter – Aerodynamic diameter < 2.5 micrometers
POM	Polycyclic Organic Matter
POTW	Publicly Owned Treatment Works
POV	Privately Owned Vehicles

PTE	Potential-To-Emit
RC	Rapid Cure
REO	Regional Environmental Offices
REEDM	Rocket Exhaust Effluent Diffusion Model
RMP	Risk Management Plan
RVP	Reid Vapor Pressure
SC	Slow Cure
SCC	Source Classification Code
SCR	Selective Catalytic Reduction
SI	Spark Ignition
SOCMI	Synthetic Organic Chemical Manufacturing Industry
SVE	Soil Vapor Extraction
TCLP	Toxicity Characteristics Leaching Procedure
TDS	Total Dissolved Solids
TGO	Touch-and-Go
THC	Total Hydrocarbons
TIM	Time In Mode
TLG	Total Landfill Gas
TNMOC	Total Non-methane Organic Compounds
T.O.	Technical Order
TOC	Total Organic Compounds
TRI	Toxic Release Inventory
TSD	Treatment, Storage, & Disposal
TSP	Total Suspended Particulate
ULSD	Ultra Low Sulfur Diesel
U.S.	United States
UST	Underground Storage Tanks
VKT	Vehicle Kilometers Traveled
VMIF	Vehicle Maintenance Index File
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compound

ABBREVIATIONS (Shortened form of a word or phrase)

µg	Microgram(s)
µm	Micrometer(s)
A-hr	Ampere-hours
Btu	British Thermal Unit
ºC	Degrees Celsius
CH4	Methane
CO	Carbon Monoxide
Co	Cobalt
Cr	Chromium
dscf	Dry Standard Cubic Feet
dscfm	Dry Standard Cubic Feet per Minute
EtO	Ethylene Oxide
ºF	Degrees Fahrenheit
ft.	Foot (Feet)
g/L	Grams per Liter
gal	Gallon(s)
HCl	Hydrochloric Acid
hp	Horse Power
hr	Hour(s)
kW	Kilowatt(s)
lb	Pound(s)
Mg	Megagram(s) [i.e., metric ton]
mg	Milligram(s)
MMBtu	Million British Thermal Units
Mn	Manganese
NH3	Ammonia
Ni	Nickel
N2O	Nitrous Oxide
NO2	Nitrogen Dioxide
NOX	Nitrogen Oxides
Pb	Lead
ppm	Parts per Million
ppmv	Parts per Million by Volume
psi	Pounds per Square Inch
ºR	Degrees Rankin
scf	Standard Cubic Foot
SO2	Sulfur Dioxide
SOX	Sulfur Oxides

tpy	Tons per Year
yr	Year(s)

This page intentionally left blank

1 INTRODUCTION

1.1 Background and Purpose

The Clean Air Act (CAA) established the requirements to quantify and report air pollutant emissions from mobile and stationary sources. The purpose of the CAA was to protect public health by addressing the risks posed by certain air pollutants. The EPA has established National Ambient Air Quality Standards (NAAQS) which require facility managers to know at all times if they are in compliance with air regulations. The EPA regulates most mobile sources of air pollution (e.g., automobiles at 40 CFR 85-86, airplanes at 40 CFR 87, etc.) under Title II of the CAA. Performance standards issued by the EPA limit the emissions of certain pollutants from these sources. Fuel-related requirements under Title II at 40 CFR 79-80 are designed to further reduce emissions from mobile sources.

For an installation, such as an Air Force base, the total air pollutant emissions are determined by conducting an air emissions inventory (AEI). An air emissions inventory is the sum of all air pollutant emissions from each source (both mobile and stationary) over a stated period of time, typically one year. Air quality regulations vary from region to region and the local regulatory agency should be consulted prior to conducting an AEI since some local agencies have specific data reporting requirements or protocols that the installation must obey. An AEI must be periodically updated as required by federal, state, and local regulations. Each installation must record the collected data and calculations must be performed in the Air Program Information Management System (APIMS). Installations located in a foreign territory must abide by the requirements of the host government. If there is not a regulatory periodic emission inventory requirement, then APIMS must be updated no less than every three years to accurately reflect the current emissions. Additionally, AEIs must be updated any time there is a change in mission, equipment, and/or operating procedures that result in a substantial change (approximately 5%) in air emissions.

The purpose of this document is to provide a uniform approach to calculating air pollutant emissions for the most common mobile sources found at Air Force installations. This guide is the Air Force's single authoritative resource for mobile source emission estimating algorithms and emission factors.

Any questions concerning this document, and/or requests for additional information pertaining to Air Force air emission inventories, should be directed to the Air Quality Subject Matter Expert; AFCEC Compliance Technical Support Branch (AFCEC/CZTQ); 250 Goodrich Drive; Building #1650 San Antonio, TX 78226.

1.2 Mobile Sources

A mobile source is defined as any type of non-stationary equipment that may emit an air pollutant subject to regulation by the CAA. These mobile sources include aircraft and aircraft support equipment, on-road vehicles, and non-road engines. This document only addresses mobile emission sources typically found on Air Force installations. Description of stationary sources contributing to air emissions and the method for calculating these emissions may be found in the stationary source guide.

1.3 Air Emissions Inventories (AEIs)

AFI 32-7040, Air Quality Compliance And Resource Management, states the following: "Prepare and periodically update an AEI of all installation stationary and Air Force owned or operated mobile sources at the frequency required by federal, state and local regulations, via APIMS." If no periodic emission inventory requirements apply, it is recommended that APIMS be updated no less frequently than every three years to accurately reflect current emissions. Overseas installations shall conduct AEIs in accordance with Foreign Governing Standards or Host Nation agreements. Mandatory emissions reports will be provided to federal, state and local (including Metropolitan Planning Organization or other regional) regulatory agencies as required. GHG reporting mandated by Executive Order (E.O.) 13514, Federal Leadership in Environmental, Energy, and Economic Performance, will be accomplished at the SAF/HAF level. GHG reporting mandated by Title 40, Code of Federal Regulations, Part 98, Mandatory Reporting of Greenhouse Gases, shall be accomplished by the affected installations. Installation AEI data must be stored in APIMS and available for use as needed by Air Force Civil Engineer Center (AFCEC) and higher headquarters.

This document is concerned with "actual emissions" (i.e., from existing sources) and projected emissions (i.e., from projected federal actions). AEIs of these emissions may be required to fulfill a requirement for reporting for a certain period and frequency (e.g., reported for the previous calendar year on an annual basis). AEIs are usually accomplished to meet one or more regulatory requirement(s). The most common regulatory requirements for conducting a mobile source AEI are summarized below:

1.3.1 Title II – Emission Standards for Moving Sources

The EPA regulates most mobile sources of air pollution (e.g., automobiles at 40 CFR 85-86, airplanes at 40 CFR 87, etc.) under Title II of the CAA which sets the standards for motor vehicle and aircraft emissions. Under Title II, the standards are set in order to control emissions that may endanger public health and welfare and that these standards may be amended, as needed, after being carefully considered. Title II goes on to state that for motor vehicles, it is the

manufacturer's responsibility to establish and perform tests which evaluate the emissions from the device. All testing results are to be maintained and must be made available to any agent of the enforcement authority when requested. Similarly, Title II of the CAA states that the Secretary of Transportation will work to ensure that all aircraft emissions are in compliance with the established air pollution standards.

1.3.2 General Conformity

The general conformity program (found in 40 CFR 93) requires all significant Federal actions in nonattainment and maintenance areas to comply with the applicable State or Federal Implementation Plan. The Federal agency responsible for the action is required to perform a determination to verify that the action(s) conform. An emissions inventory is usually required as part of the conformity determination to identify/quantify air emissions associated with the Federal action(s). An air emissions inventory conducted as part of a conformity determination usually addresses both direct and indirect emissions from all pollutant sources (i.e., stationary and mobile) associated with the Federal action(s).

1.3.3 Implementation Plans

As specified under Section 110 of the Clean Air Act, all States are required to submit a plan to the EPA which provides for the protection and enhancement of air quality so as to promote public health and welfare. This plan, called a State Implementation Plan (SIP), provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS). For areas in the State that are classified as nonattainment with any NAAQS, the SIP must provide strategies for obtaining attainment. For areas in the State that are already classified as being in attainment, the SIP must provide strategies for maintaining attainment status. All SIPs and SIP revisions must be reviewed and approved by the EPA. If the EPA considers a SIP to be incomplete or inadequate, they may issue their own plan called a Federal Implementation Plan (FIP).

Historically, most control strategies incorporated into implementation plans have targeted stationary sources. However, due to the constant increase in the number of air pollution sources, the issuance of new ambient air quality standards, and the fact that mobile sources emit a majority of the overall emissions, more control strategies targeting mobile sources are now being incorporated into implementation plans. Since air emission inventories are typically used to assess the effect of control strategies, an increase in the number of control strategies pertaining to mobile sources will result in an increase in requirements to conduct mobile source air emission inventories.

1.3.4 National Environmental Policy Act (NEPA)

NEPA requires Federal agencies to evaluate the environmental impacts associated with major actions that they either fund, support, permit, or implement. As part of the NEPA process, an Environmental Assessment (EA) is required if it is determined that the Federal action may potentially have a significant effect on the environment (i.e., cannot be categorically excluded).

An EA is a study that provides background information and preliminary analyses of the potential impact of a proposed Federal action. If the results of the EA indicate that further study of the proposed action is necessary (i.e., a Finding of No Significant Impact is not warranted), then a more comprehensive Environmental Impact Statement (EIS) must be prepared. The EIS addresses all possible impacts (both beneficial and adverse) which may result from the proposed action as well as possible alternatives to the action. Data from air emissions inventories can be used in EAs and EISs to help identify possible environmental consequences associated with air emissions from proposed Federal actions. Typically, all possible sources of air emissions (stationary and mobile) must be evaluated.

1.3.5 Other Inventory Uses

Complying with environmental regulations is not the only reason air emissions inventories are conducted. An air emissions inventory can be a useful tool in helping industrial facilities implement various environmental programs. The most common programs that may involve mobile source emission inventories are summarized below:

1.3.5.1 Pollution Prevention (P2) Opportunities

An air emissions inventory can be a useful tool in identifying air-related P2 opportunities on military installations. The inventory identifies the types of air pollution sources on base and their accompanying emissions. Due to the large amount of emissions produced from mobile sources, as well as emerging technologies/strategies for reducing mobile source emissions, implementing P2 opportunities for mobile sources is becoming more commonplace.

1.3.5.2 Emissions Trading

Some States have adopted emissions trading programs that apply to mobile sources. These programs are usually applicable to fleet vehicles in nonattainment areas. The emissions trading programs allow entities to generate emission reduction credits by converting to low emission vehicles. The credits may be banked, purchased, sold, or traded to meet clean air mandates for specified air programs. Mobile source air emissions inventories provide important data needed for calculating mobile emission reduction credits.

1.3.5.3 Risk Assessments

In certain cases it may be necessary to assess the risk(s) that air emissions from a military installation pose to specific public receptors. Data from air emissions inventories can be used in conjunction with approved dispersion models to perform these risk assessments. Due to the large amount of emissions from mobile sources (especially from installations with a high amount of aircraft traffic), as well as the fact that many Air Force installations are located near high population areas, some installations may have a need to conduct risk assessments which include mobile sources.

1.3.5.4 Environmental Auditing

An environmental audit is an objective review of a facility's operations and practices done in order to determine if the facility is meeting its environmental requirements. Audits can be designed to verify compliance with environmental requirements, evaluate the effectiveness of environmental management systems already in place, or assess risks from regulated and unregulated materials and practices. In addition, the audit can be used by management to plan environmental activities for the future. Data from air emissions inventories, including inventories for mobile sources, can be used in the audit process to help identify current and/or potential air pollution problems associated with a facility's operations and practices.

1.4 Emissions Inventory Methodologies

When conducting an AEI, the quantity of regulated pollutants emitted from all emission sources located on an Air Force installation (except those sources which are specifically exempt) must be determined. Several methods can be used to quantify air pollutants from emission sources. Data from source-specific emission tests or continuous emission monitors are usually preferred for estimating a source's emissions because that data provides the best representation of the tested source's emissions. However, source-specific emission tests or continuous emission monitoring of mobile sources at a large installation, such as an Air Force base, may be impractical. Therefore, emission factors and/or material balance calculations are frequently the best or only method available for estimating emissions, despite their limitations.

An emission factor is a representative value that attempts to relate the quantity of a pollutant released with the activity associated with the release of that pollutant. These factors are usually expressed as the weight of pollutant released per a unit weight, volume, distance, or duration of the activity emitting the pollutant (e.g., pounds of a pollutant emitted per 1000 pounds of fuel burned). In most cases, these factors are simply averages of all available data of acceptable quality, and are generally assumed to be representative of long-term averages for all processes in the source category (i.e., a population average).

The general equation for emission estimation using an emission factor is:

$$E = A \times EF \times N$$

Equation 1-1

Where,

E = Emissions
A = Activity rate
EF = Emission factor
N = Number of engines/aircraft/equipment

For some sources, a mass balance approach may provide a better, more accurate estimate of emissions than emission tests would. In general, material balances are appropriate for use in situations where a high percentage of material is lost to the atmosphere (e.g., sulfur in fuel). As the term implies, all the materials going into and coming out of the process must be taken into account to allow an emission estimation to be credible.

1.5 Pollutants

Although there are several types (groups/classes) of federal and state regulated pollutants which may be addressed in an air emissions inventory, this document focuses on criteria pollutants, hazardous air pollutants (HAPs), and volatile organic compounds (VOCs). The document also addresses greenhouse gases (GHGs) to a lesser degree.

1.5.1 Criteria Pollutants

In 1971, the EPA established National Ambient Air Quality Standards (NAAQS) for six pollutants which are termed criteria pollutants. These include carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, lead, and particulate matter. These pollutants can harm your health and the environment, and cause property damage. EPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. These criteria pollutants are:

Particle Pollution (often referred to as particulate matter):

- Includes the very fine dust, soot, smoke, and droplets formed from chemical reactions and incomplete burning of fuels.
- The fine particles can get deep into the lungs, causing increased respiratory illnesses and tens of thousands of deaths each year.
- Particulate matter is defined as any particle with an equivalent diameter which is $\leq$ 10 microns (**PM_{10}**) and is further subdivided to include a separate standard for particles with an equivalent aerodynamic diameter of $\leq$ 2.5 microns (**$PM_{2.5}$**).

Ground-Level Ozone (O_3):

- A primary component of smog that can cause human health problems and damage forests and agricultural crops.
- Repeated exposure to ozone can make people more susceptible to respiratory infections and lung inflammation.
- Though there is a NAAQS, ozone is not emitted directly into the air.
- Two types of chemicals that are the main ingredients (precursors) in forming ground-level ozone
    - **Volatile organic compounds (VOCs):** Sources include vehicles burning gasoline, petroleum refineries, chemical manufacturing plants, industrial plants, solvents used in paints, and an assortment of consumer and business products.
    - **Nitrogen oxides (NO_X):** Produced when vehicles and other sources like power plants and industrial boilers burn fuels such as gasoline, coal, or oil. Nitrogen Oxides produce the reddish-brown tint in smog.

Carbon Monoxide (CO):

- Produced when fossil fuel burns incompletely due to insufficient oxygen.
- Wood/coal/charcoal fires and gasoline engines always produce carbon monoxide.
- Nationally, particularly in urban areas, the majority of CO air emissions are from mobile sources.
- Can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues.

Sulfur oxides (SO_X):

- A group of highly reactive gases known as “oxides of sulfur”.
- Emissions are produced from fossil fuel combustion at power plants (73%) and other industrial facilities (20%).
- SO_2 is linked to a number of adverse effects on the respiratory system.
- SO_2 in the ambient air is just one of several oxides of sulfur that contribute to air quality issues.

Nitrogen oxides (NO_X):

- A subgroup of nitrogen oxides, NO_2 is the component of greatest interest and the indicator for the larger group of nitrogen oxides.
- NO_2 forms quickly from vehicle emissions, power plants, and off-road equipment.
- Also contribute to the formation of ground-level ozone, and fine particle pollution.
- Linked with a number of adverse effects on the respiratory system.
- NO_2 in the ambient air is just one of several oxides of nitrogen that contribute to air quality issues.

Lead (Pb):

- A metal found naturally in the environment as well as in manufactured products.
- Prior to 1980, the major source of Pb was vehicles; as a result EPA removed Pb from gasoline.
- Pb emissions from vehicles declined by 95% between 1980 and 1999.
- Today, the major sources of Pb are ore and metals processing (e.g. lead smelters).
- Depending on the level of exposure, Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems and the cardiovascular system.

1.5.2 Hazardous Air Pollutants (HAPs)

According to the EPA (USEPA 2000), "Toxic air pollutants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects to humans or the environment, such as reproductive effects or birth defects, or adverse environmental effects." Unlike criteria pollutants, HAPs are primarily chemical-specific pollutants (versus classes of pollutants) and many of the HAPs are actually constituent chemicals that are a subset of a criteria pollutant. This is found primarily with the VOCs (numerous constituent chemicals considered HAPs) and PM_{10} (primarily heavy metals). Pb is both a criteria pollutant and HAP.

HAPs include the toxic compounds regulated under Section 112(b) of the CAA. The EPA has been charged with continually analyzing available data on HAPs and revising the regulated list. There are established procedures for both "listing" and "delisting" compounds. In fact, when the amendments were originally promulgated in 1990, there were 189 chemical compounds listed as HAPs. Since then, four have been removed from this list: Hydrogen Sulfide in December 1991, Caprolactam in June 1996 (61FR30816), Ethylene Glycol Monobutyl Ether (EGBE) in November 2004 (69FR69320), and Methyl Ethyl Ketone (MEK) in December 2005 (70FR75047). Changes to the HAPs list are found in 40 CFR Part 63, subpart C.

1.5.3 Greenhouse Gases (GHGs)

Global climate change is becoming one of the most important and discussed issues of the 21st century. Some GHGs, such as carbon dioxide, occur naturally and are emitted to the atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities are carbon dioxide (CO_2), methane (CH_4), Nitrous Oxide (N_2O), and fluorinated gases.

- CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and also as a result of other chemical reactions (e.g., manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and other agricultural practices and by the decay of organic waste in municipal solid waste landfills.
- N_2O is emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances discussed earlier (i.e., CFCs, HCFCs, and halons). These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as High Global Warming Potential gases ("High GWP gases").

The EPA is diligently attempting to have more accurate estimations and reporting of GHG emissions. The Emission Inventory Improvement Program, Technical Report Series Volume 8, "Estimating Greenhouse Gas Emissions" is undergoing revision to (1) increase consistency with the national inventory of GHG emissions and sinks, (2) incorporate state-level data sources, methods and emission factors where applicable, (3) update the text and examples for clarity, and (4) to include references to a MS Excel® based tool designed to assist states in the estimation of emissions. The revisions include a number of methodological improvements and improved compatibility with international inventory guidelines and the Good Practice Guidance published by the Intergovernmental Panel on Climate Change (IPCC).

1.6 References

USEPA 2000, "Taking Toxics Out of the Air." United States Environmental Protection Agency, Office of Air Quality, Planning and Standards, August 2000

2 AIRCRAFT FLIGHT OPERATIONS (AOPS)

2.1 Introduction

Emissions from based aircraft and transient aircraft operations typically account for the bulk of the mobile source emissions associated with an Air Force base. Emissions from aircraft operations include emissions from aircraft training and flight operations, engine testing, and emissions from each aircraft's associated auxiliary power units (APUs). Aircraft operations result in the release of criteria pollutants, greenhouse gases (GHGs), and HAPs to the atmosphere.

Aircraft emissions can be classified as being either stationary or mobile in nature depending upon whether the engine is physically attached to the aircraft, or removed from the aircraft and secured to a stationary device such as a test stand. Emissions from Air Force aircraft training and flight operations, as well as trim pad and on-wing engine testing, are considered mobile in nature because the engine is secured to a mobile source (the aircraft). Operations in which the engine is removed from the aircraft and secured to a non-mobile device (i.e. in engine test cells or on outdoor test pads) result in emissions which are regarded as stationary. **Calculations of these emissions are described in the Stationary Guide**.

Additionally, aircraft are also outfitted with small turbine engines known as auxiliary power units that provide auxiliary power to the aircraft while on the ground, and occasionally through takeoff and climb out. These APUs are air pollution emission sources and, unless physically removed from an aircraft and operated in a test cell or on an outdoor trim pad, emissions from the operation of APUs should be treated as mobile sources for inventory purposes.

2.1.1 Landing and Takeoff Cycle (LTO)

The Environmental Protection Agency (EPA) has established formal procedures for calculating exhaust emissions associated with aircraft operations based on a Landing and Takeoff (LTO) cycle *(*USEPA 1992). Under the EPA procedures, an emissions inventory for aircraft operations focuses on the emissions in the vertical column of air referred to as the "mixing zone" or "inversion layer". Exhaust emissions occurring within this area are calculated for one complete LTO cycle for each aircraft type by applying aircraft engine-specific emission factors derived from fuel flow rates, the period of time (or time-in-mode, TIM) that each engine operates at a particular power setting during an LTO, and activity based operational data such as the number of aircraft, the number of engines per aircraft, the annual number of sorties or LTOs, etc. Emissions occurring above the mixing zone are typically not considered during the emissions inventory process.

Each LTO cycle is comprised of five operating modes/power settings: approach, taxi/idle-in, taxi/idle out, takeoff, and climb out. The five operating modes and corresponding TIM are:

- **Approach:** The period of time from the moment the aircraft enters the mixing zone until the aircraft lands
- **Taxi/Idle In:** The period of time spent after landing until the aircraft is parked and the engines are turned off
- **Taxi/Idle Out:** The period of time from engine startup to takeoff
- **Takeoff:** Characterized by full engine thrust, the period of time it takes the aircraft to reach between 500 and 1000 feet above ground level. This transition height is fairly standard and does not vary much from location to location or among aircraft categories
- **Climb Out:** The period of time following takeoff that concludes when an aircraft exits the mixing zone and continues on to cruise altitude

Due to operational safety considerations, commercial aircraft may sometimes apply engine thrust reversal for 15-20 seconds upon landing as a means of quickly slowing down an aircraft to a safe taxi speed. Thus a sixth operating mode, reverse thrust, may need to be included when estimating emissions for an LTO cycle for commercial aircraft. Military aircraft do not typically employ reverse thrusters for deceleration, but use aerodynamic braking and wheel brakes to slow down. Some aircraft may, however, employ reverse thrusters as a means of backing up when on the ground. Reverse thrust should only be included in emission calculation procedures as a sixth operating mode if the practice is commonly applied by the aircraft in question. Engine operating conditions for reverse thrust are similar to those occurring during takeoff, thus TIM for reverse thrust should be combined with takeoff mode emission factors and fuel flow as a means of accounting for reverse thrust mode emissions.

The fuel flow rate of each engine power setting is the fuel rate used during emissions sampling and emission factor development. Average power settings of Air Force turbofan engines used on high performance jet aircraft and turboprop engines used on transport and cargo aircraft vary slightly during the takeoff mode. While Air Force jet aircraft typically use 100% of the engine's rated thrust during takeoff, some high-performance aircraft will takeoff using the full afterburner setting, which introduces fuel at a substantially higher rate. By contrast, turboprop aircraft typically employ a de-rated takeoff procedure that uses less than full power. Commercial and Military LTO cycle modes and typical Air Force aircraft engine power settings are presented in Table 2-1.

Table 2-1. Comparison of Commercial and Military LTO Cycle Modes

Engine Type	Commercial LTO Cycle Modes	Military LTO Cycle Modes	Typical Engine Power Setting (%)
Turbofan	Taxi/Idle-out	Idle	7
	Takeoff	Military or Afterburner (AB)	100 or 110-150[(1)]
	Climb out	Intermediate	70-85[(1)]
	Approach	Approach	30
	Taxi/Idle-in	Idle	7
Turboprop	Taxi/Idle-out	Idle	7
	Takeoff	Military	90
	Climb out	Intermediate	70-85[(1)]
	Approach	Approach	30
	Taxi/Idle-in	Idle	7

SOURCE: *Airport Air Quality Manual*, International Civil Aviation Organization, 2011, except where noted.

1. Power setting percentage from *Air Emissions Factor Guide to Air Force Mobile Sources*, 2009 which cites Emissions and Dispersion Modeling System (EDMS) as the original source.

Helicopter engines are typically operated at settings that, while similar, reflect operational differences between fixed-wing aircraft and rotorcraft. These settings may include ground idle, flight idle, normal, and military (and sometimes overspeed) power settings. APUs, however, operate either under a no load or a constant load (typically maximum load) power setting.

2.1.2 Touch and Go (TGO) and Low Fly By (LFB) Cycles

Training operations and other contingencies at Air Force installations may dictate the need to conduct aircraft operations that deviate from a standard LTO cycle. For purposes of developing a comprehensive inventory, emissions should also be calculated for these military operations and training procedures. A Touch and Go (TGO) cycle is similar to an LTO cycle, but does not include taxi time. It includes the TIM when an aircraft enters the atmospheric mixing zone, briefly lands, then immediately takes off, and climbs out through the atmospheric mixing zone.

A Low Flyby (LFB) cycle is similar to an LTO and TGO cycle, but less time is spent in the takeoff mode, and the aircraft stays in approach mode below the mixing zone height for a longer period of time. For the purpose of developing a base emission inventory, only that portion of an LFB cycle that occurs within the actual air space of the Air Force base is of concern. If, however, the emission inventory is being created as part of a "regional" inventory development effort by regulators, it may also be necessary to estimate aircraft emissions that occur outside of a base's air space but under the mixing zone height.

2.2 Mixing Zone Height and Time in Mode (TIM)

Under the EPA procedures, an emissions inventory for aircraft operations focuses on the emissions in the vertical column of air where pollutant chemical reactions occur. This portion of the atmosphere, which begins at the earth's surface and can range from several hundred to several thousand feet in altitude, is commonly referred to as the "mixing zone" or "inversion layer". Because estimating emissions using an LTO approach accounts for exhaust emissions associated with aircraft operations occurring both on the ground and up to the mixing zone height, the choice of a mixing zone height will have a direct impact on total emissions. Mixing zone height is used to adjust the TIM during the approach and climb out modes of an LTO when calculating emissions. Thus a shallow mixing zone height will result in a shorter TIM (and fewer emissions), and a high mixing zone height will result in a longer TIM (and more emissions). While emissions occurring anywhere within this zone will impact ground-level pollutant concentrations, emissions occurring above it will generally not be mixed to the ground. Because atmospheric stability (and hence inversions) is a function of temperature, mixing zone height depends on location, hour, and season, and is affected by local topography, time of day, and time of year. Per EPA guidance, a default mixing zone height of 3000 feet should be used. However, if NOX emissions are considered an important component of the emission inventory, specific mixing height data may be gathered and applied (Procedures for Emission Inventory Preparation-Volume IV: Mobile Sources). The Federal Aviation Administration (FAA) has adopted this EPA default value in its recommended procedures (FAA 2000). To maximize the accuracy of the inventory through use of specific mixing height data, contact the AFCEC Air Quality Subject Matter Expert to obtain approval and location-specific meteorological data for seasonal or annual average mixing heights. Typical TIM estimates are provided in Table 2-4 for different types of commercial and military aircraft that may be used when base-specific data is unavailable.

2.3 Fuel Flow Rate

It is also important to note that emission factors are derived for specific fuel flow rates, not power settings, and that actual fuel flow rates used during aircraft operation and testing at different installations may vary from those used to derive emission factors. If available, aircraft- and base-specific TIM data and fuel flow rates (using the emission factor for the closest engine-specific fuel flow rate) should be used to enhance the accuracy of the emissions inventory. Once all necessary operating parameters are identified, total emissions from aggregated aircraft operations may be calculated.

2.3.1 Jet Fuel

Military turbofan and turboprop engines and APUs consume JP-8 fuel, while their commercial counterparts consume a nearly identical fuel known as Jet-A. While the vast majority of aircraft

operations involve engines that use either JP-8 or Jet-A fuel, small, piston engine-driven planes that consume aviation grade gasoline, or AVGAS, may periodically operate on an Air Force installation. In addition, recent Air Force and commercial initiatives are expected to result in the increased use of so-called synthetic aviation fuel or "synfuel" over the next several years. These "synfuels" are derived from either coal or natural gas using the Fischer-Tropsch process and burn much cleaner than fuels produced from crude oil. Regardless of fuel type, emissions of concern from aircraft operations include the criteria pollutants (VOC, CO, NO_X, $PM_{2.5}$, PM_{10}, and SO_2), and HAPs that are commonly associated with fuel combustion processes (including, but not limited to, benzene, 1, 3-butadiene and naphthalene).

2.3.2 Synthetic Aviation Fuel

On-going DoD and Air Force initiatives to reduce dependency on foreign petroleum sources are developing battlefield fuels with essentially no sulfur and reduced aromatic content using Fischer-Tropsch (FT) gasification technology on domestic energy sources such as coal and natural gas. These "synthetic" fuels will increasingly be used to offset conventional JP-8 and diesel fuels in Air Force equipment, particularly aircraft. Testing and certification of 50-50 blends of petroleum- and FT-based JP-8 in B-52s has recently been completed by the Air Force Research Laboratory (AFRL), and data indicates the 50-50 blend reduces SO_2, CO_2, and PM emissions considerably (USAF 2007). When collecting information on aircraft operations, if synthetic fuel blended with petroleum JP-8 was used, the following emission reduction factors should be applied when calculating emissions:

Table 2-2. Fuel Emission Reduction Factors (FERFs) for JP-8/Synthetic Fuel Blends

Pollutant	Reduction Factor (%)
PM	35
SO_2	50
CO_2	1.8

SOURCE: USAF Air Force Alternative Fuels Program, AFRL/WS/06-0078. 22nd Annual UC Symposium on Aviation Noise and Air Quality. March 2007.

2.4 Emission Factors

Air emission factors for aircraft operations include emissions from the aircraft engines (either fixed wing or rotary) and any APUs used on the airframe. The emission factors have been developed through testing from a variety of sources including the engine manufacturers themselves. Criteria pollutant emission factors for each engine are provided in Table 2-8 while

speciated VOC and HAP emission factors are given in Table 2-9. Similarly, for APUs, criteria pollutant emission factors are provided in Table 2-10.

2.5 Emissions Calculation

Emission calculation procedures for different aircraft operations under various operational cycles and mobile testing conditions are described in the following paragraphs. Default data for calculating emissions for specific aircraft engines can be found in Table 2-8. For engine models not in Table 2-8, contact the Air Quality Subject Matter Expert for assistance in selecting a representative surrogate engine.

2.5.1 Aircraft Emissions

Emissions from an aircraft engine are based on that engine's emission factors for each pollutant. These emission factors have been determined through testing and may be found in a variety of sources. It is important to note that some sources, such as the Airport Air Quality Manual and International Civil Aviation Organization (ICAO) do not provide PM_{10} and $PM_{2.5}$ emission factors directly (ICAO 2011). For those sources, the total particulate matter was calculated and was conservatively assumed to be equal to PM_{10}. A similarly conservative estimate was made for $PM_{2.5}$ by assuming that 90% of the total PM_{10} is composed of $PM_{2.5}$. These assumptions are noted in the appropriate tables. Additionally, there are several engines for which some emission factor data may have been missing. For these engines, either the emission factors from a surrogate were used or the missing data was interpolated. These values are clearly marked in the tables with an (S) for emission factors in which a surrogate was used or a (C) when the values were calculated. The engines used as surrogates are clearly stated in the notes for that engine.

2.5.1.1 Land and Takeoff Cycle (LTO)

LTO emissions are calculated based on the type of aircraft, the engine model, the operational mode and TIM for each mode, the power setting associated with each operational mode, the fuel flow rate associated with each power setting, engine-specific emission factors, the mixing zone height, and the number of LTO cycles conducted during the course of a year. As TIM and fuel flow rate for each power setting varies among aircraft engines and airframes, the calculation procedure will need to be repeated for individual aircraft types.

To calculate LTO emissions using base- and aircraft-specific data, the following data is required: the average TIM spent in each LTO cycle mode, the average fuel flow rate associated with each mode (based on engine power setting), the fuel used (if synthetic fuel, apply fuel reduction factors), and the base's mixing zone height. Every effort should be made to use more accurate, base-specific data, however, in the absence of available data, default values such as EPA and Air

Force established TIM (Table 2-4), fuel flow rates (Table 2-8), and an average mixing zone height of 3000 feet may be used.

Emissions are calculated using a three step approach that consists of: 1) calculating pollutant emissions for each applicable mode of the LTO cycle; 2) summing emissions from each mode to obtain a LTO cycle value; and 3) multiplying the LTO emissions by the number of annual LTO cycles to obtain annual emissions. The following equations are applied to each individual aircraft and pollutant for which emissions are being calculated:

Step 1 - Calculate pollutant emissions for individual LTO cycle modes:

$$E(Pol)_{Mode} = \frac{TIM}{60} \times \frac{FFR}{1000} \times EF(Pol) \times \frac{FERF(Pol)}{100} \times N$$

Equation 2-1

Where,

$E(Pol)_{Mode}$ = Pollutant emissions for the operational mode per cycle (lb/cycle)
TIM = Time spent in each mode per LTO cycle (min/cycle)
60 = Factor converting minutes into hours (min/hr)
FFR = Fuel flow rate during operational mode per aircraft engine (lb/hr)
1000 = Factor for converting lb to 10^3 lb (lb/10^3 lb)
EF(Pol) = Pollutant emission factor (lb/10^3 lb fuel burned)
FERF(Pol) = Fuel emission reduction factor (%). In cases where the vehicle does not use alternative fuel, then a value of 100% must be used.
100 = Factor to convert percent to a fraction (%)
N = Number of engines per aircraft

Step 2 - Calculate the pollutant emissions for a single LTO:

$$E(Pol)_{LTO} = \sum_{i=1}^{n} \left[E(Pol)_{Mode_i} + \cdots + E(Pol)_{Mode_n} \right]$$

Equation 2-2

Where,

$E(Pol)_{LTO}$ = Emissions of individual pollutant per LTO (lb/cycle)
$E(Pol)_{Mode\ i/n}$ = Sum of pollutant emissions across operational modes, i.e. approach, idle-in/out, takeoff, and climb out (lb/cycle)

Step 3 – Calculate the total pollutant emissions from the annual operations of a particular aircraft:

$$E(Pol)_{LTO-Total} = E(Pol)_{LTO} \times NC_{LTO}$$

Equation 2-3

Where,

$E(Pol)_{LTO-Total}$	=	Annual emissions of pollutant from LTO cycles (lb/yr)
$E(Pol)_{LTO}$	=	Emissions of individual pollutant per LTO (lb/cycle)
NC_{LTO}	=	Number of LTO cycles conducted during the year (cycles/yr)

The standard values required to calculate emissions per LTO cycle may be found in the following tables:

- TIM spent in each LTO cycle mode is found in Table 2-4
- Fuel flow rates for each LTO cycle mode and associated engine-specific emission factors are found in Table 2-8 and Table 2-9

2.5.1.2 Touch and Go (TGO) and Low Fly By (LFB)

TGO and LFB emissions are calculated in essentially the same manner as LTO emissions. Due to the nature of the operational and training requirements for the cycle, however**, the taxi/idle-in and taxi/idle-out modes are excluded**. Also, the TIM may vary from a typical LTO and should be adjusted accordingly whenever possible.

2.5.1.3 Low Flight Pattern (LFP)

LFP emissions that occur within the airspace of a base are calculated in essentially the same manner as TGO emissions. Due to the nature of the operational and training requirements for the cycle, however, typically less time is spent in the takeoff mode and more time is spent in the approach mode. Some regulatory authorities may also require emissions from LFP operations to be calculated for that period of time when aircraft are operating outside of, but adjacent to, the airspace of the base. In such instances, the average time the aircraft spends in the mixing zone in the additional non-base airspace is used to adjust TIM. When calculating emissions in this manner, one must know both the number of flights per year and the average time each flight operates in the base's airspace. The following equation is used:

$$E(Pol)_{LFP} = \frac{AT}{60} \times NF_{LFP} \times \frac{FFR}{1000} \times EF(Pol) \times N$$

Equation 2-4

Where,

$E(Pol)_{LFP}$ = Annual emissions of pollutant from LFP (lb/yr)
AT = Average time per LFP flight by applicable aircraft within base airspace (min/flight)
60 = Factor converting minutes into hours (min/hr)
NF_{LFP} = Number of LFP flights within base airspace (flight/yr)
FFR = Fuel flow rate per engine (lb/hr)
1000 = Factor for converting lb to 10^3 lb ($lb/10^3$ lb)
EF(Pol) = Pollutant emission factor ($lb/10^3$ lb fuel burned)
N = Number of engines per aircraft

The fuel flow rates and engine-specific emission factors required to calculate emissions using Equation 2-4 may be found in Table 2-8 and Table 2-9.

2.5.2 Auxiliary Power Units

APU emissions are based on the APU model associated with each aircraft type, emission factors, and the length of time the APU was operating during an LTO cycle. The emission factors for APUs are presented in units of lb/hr, so the operating time for each APU must be known. When conducting an AEI, one must gather specific information about the APU's used on each aircraft and the time each APU was in operation for the most accurate emissions calculations possible. In the absence of available data, common aircraft/APU combinations and the typical APU operating times are found in Table 2-5, Table 2-6, and Table 2-7. The following equations and steps are used to calculate the total emissions from an APU:

Step 1 - Calculate pollutant emissions for a single LTO Cycle:

$$E(Pol)_{APU} = OT \times EF(Pol) \times N$$

Equation 2-5

Where,

$E(Pol)_{APU}$ = Emissions for each individual pollutant produced by the APU model installed on each aircraft type for one LTO cycle (lb/cycle)
OT = Operating time per LTO cycle (hr/cycle)
EF(Pol) = APU-specific emission factor for each pollutant (lb/hr)
N = Number of APUs on each aircraft

Step 2 – Calculate the pollutant emissions from annual APU operations:

$$E(Pol)_{APU-Total} = E(Pol)_{APU} \times NC_{LTO}$$

Equation 2-6

Where,

$E(Pol)_{APU-Total}$ = Total annual emissions of each individual pollutant (lb/yr)
$E(Pol)_{APU}$ = Emissions for each individual pollutant produced by the APU model installed on each aircraft type for one LTO cycle (lb/cycle)
NC_{LTO} = Number of LTO cycles conducted during the year (cycles/yr)

2.5.3 Trim Pad and On-Wing Testing

Emissions associated with trim pad and on-wing testing are calculated based on the type of aircraft, engine model, testing times, the power settings and associated fuel flow rate, and engine-specific emission factors. Emissions are calculated by multiplying the fuel flow rate at the selected power setting by the amount of time the engine is operated at that power setting, and applying pollutant-specific emission factors. After the emissions are calculated for a particular pollutant at each power setting, the values are summed to obtain the total annual emissions for that pollutant. For this method, one must know both the duration of the test at each power setting and the number of tests performed over the calculation period (i.e. over the course of one year). The following equations are used:

Step 1 - Calculate annual operating times:

$$T_{test} = N_{Test} \times \sum \left(\frac{D_{Test}}{60} \right)$$

Equation 2-7

Where,

T_{Test} = Total annual time engine testing occurred at specific power setting (hr/yr)
N_{Test} = Number of tests performed annually (tests/yr)
D_{Test} = Duration of tests at each power setting (min/test)
60 = Factor for converting minutes to hours (min/hr)

Step 2 – Calculate pollutant emissions:

$$E(Pol)_{Setting} = \frac{(FFR \times T_{Test})}{1000} \times EF(Pol)$$

Equation 2-8

Where,

$\mathbf{E(Pol)_{Setting}}$	=	Emissions of each pollutant at a specific power setting (lb/yr)
FFR	=	Fuel flow rate per engine (lb/hr)
$\mathbf{T_{test}}$	=	Total annual time engine testing occurred at specified power setting (hr/yr)
1000	=	Factor for converting lb to 10^3 lb (lb/10^3 lb)
EF(Pol)	=	Emission factor (lb/10^3 lb fuel burned)

The fuel flow rate and engine-specific emission factors required to calculate emissions using Equation 2-8 may be found in Table 2-8 and Table 2-9.

2.5.4 Calculating SO_2 Emissions

SO_2 emissions are created when sulfur in the fuel reacts and combines with oxygen during the combustion process. Fuels with higher sulfur contents will produce higher amounts of SO_2 than low-sulfur fuels. It is generally assumed that during combustion, all sulfur in the fuel reacts to form SO_2 or sulfates. The sulfur content in commercial jet fuel is limited to 0.3 weight percent (wt. %); however, the sulfur content for most in-use fuel is significantly less than this limit. The national average sulfur content for JP-8 is 0.053 wt. %, based on values obtained from Defense Logistics Agency, Defense Energy Support Center, *Petroleum Quality Information System Fuels Data* (1998-2009). **Based on this national weighted-average, a national emission factor was derived at 1.06 lb SO_X per 1,000 lb fuel burned (1.06lb/10^3 lb), which is used as the default value for all aircraft engines within the continental United States.**

For OCONUS AEIs and NEPA/General Conformity assessments, it may be more appropriate to derive a SO_2 emission factor specific for the JP-8 at the installation's geographic location. Since the sulfur content varies from supplier to supplier and the geographic location where the fuel is produced, it is possible for one to calculate a more accurate sulfur emission factor in cases when greater accuracy is needed. In these instances, the national or regional average sulfur content value for the most appropriate geographic area listed in Table 2-3 may be used. For enhanced accuracy, the sulfur content of the fuel may also be obtained directly from the fuel supplier. With the sulfur content provided, and the assumption that all sulfur in the fuel is converted to SO_2 during the combustion process, the SO_X emission factor may be calculated using the following equation:

$$\mathbf{EF}(\boldsymbol{SO_X}) = \boldsymbol{S} \times \mathbf{20}$$

Equation 2-9

Where,

EF(SO_X) = SO_X emission factor (lb $SO_2/10^3$ lb fuel burned)

S = Weight percent sulfur content of the fuel

20 = Conversion factor derived by converting the weight percent of sulfur to a weight fraction, converting this into units of lb/1000lb, and then multiplying by the ratio of the molecular weight of SO_2 to the molecular weight of sulfur.

Table 2-3. Average Sulfur Content of JP-8

Geographic Region	States or Countries	Weighted-Average Sulfur Content (Weight %)	Emission Factor (lb/10^3 lb fuel)
National Average		**0.053**	**1.06**
1. East Coast U.S.	ME, VT, NH, MA, RI, CT, NY, PA, NJ, DE, MD, VA, WV, NC, SC, GA, FL	0.051	1.02
2. East Central U.S.	ND, SD, MN, IA, NE, WI, MI, OH, KY, TN, IN, IL, MO, KS, OK	0.080	1.60
3. Gulf Coast U.S.	AL, MS, AR, LA, TX, NM, AZ	0.048	0.96
4. West Central U.S.	MT, ID, WY, UT, CO	0.025	0.50
5. West Coast U.S.	WA, OR, CA, NV	0.055	1.10
Middle East	Kuwait, Bahrain, Pakistan, United Arab Emirates	0.090	1.80
European	Europe, Israel, Turkey	0.089	1.78
Pacific	Korea, Japan, HI, AK, Australia, Russia, Singapore	0.078	1.56
Caribbean	Coastal Aruba	0.045	0.90

Source: "Petroleum Quality Information System Fuels Data." Defense Logistics Agency, Defense Energy Support Center, April 2006

2.5.5 Calculating HAP Emissions

There is not an abundance of information available for aircraft engine-specific or APU-specific HAP emissions. This document provides HAP emission factors for several engines and APUs in Table 2-9. In instances where determination of a particular HAP is required for an engine or APU not listed in the table, then it is recommended that a thorough review of current data be made to determine if any new documentation regarding HAPs emissions exists. In the absence of such data, then an appropriate engine or APU should be selected as a surrogate. The method for calculation is the same as outlined above using Equation 2-1 and Equation 2-8.

2.5.6 Lead (Pb) Emissions

Prolonged exposure to high levels of lead may result in harmful health effects, especially in young children. Though lead is a criteria pollutant, this document does not provide any lead emission factors for aircraft and APUs since the transition to unleaded aviation fuel.

2.5.7 Greenhouse Gas (GHG) Emissions

Since greenhouse gas (GHG) emissions are becoming increasingly more important, it is becoming more common to record the CO_2, CH_4, and N_2O produced when measuring emissions from mobile and stationary sources. It is also common practice to report GHG emissions in terms of equivalent CO_2 (CO_2e). Each greenhouse gas has a global warming potential (GWP) which is a measure of the heat that gas traps in the atmosphere over a determined time period. A carbon dioxide equivalent is the quantity of CO_2 needed to equal the same GWP as the greenhouse gas in question. For CH_4 and N_2O, the GWP used to calculate CO_2e are 25 and 298 respectively for a 100 year time period. This document provides a total GHG composite emission factor consisting of CO_2, CH_4, and N_2O presented in CO_2e for aircraft engines in Table 2-8 and Table 2-10 for APUs. The total greenhouse gas emissions may then be calculated using Equation 2-1, Equation 2-5, or Equation 2-8.

2.5.8 VOC Speciation (Addendum)

Though VOC emissions have been speciated for some engines, there is very little data available for most aircraft engines likely found at air force installations. Whenever the quantity of speciated compounds is required to be calculated, the average percentage of each species within the total VOC may be used as a gross estimate of the emissions of that compound. This section should only be used if an aircraft engine used on an Air Force base does not have any EF data or surrogate EF data listed in Table 2-9. The percentages for VOC emissions are based on the following categories: Turbofan, large aircraft Turboprop, small aircraft Turboprop, and Turbojet.

The following equations were used to calculate the weighted percentage of each pollutant based on the total or the average volatile organic compounds (VOCs) from those engines which had speciation data. To compute the average VOC percentage, first the average of all reported emission factors for each pollutant was calculated (Equation 2-10) for each engine at each mode. Second, a total of the average VOCs was calculated using the average from each pollutant (Equation 2-11). Finally, the average for each pollutant was divided by the average VOC total to derive each pollutants percentage of total VOCs (Equation 2-12).

$$\boldsymbol{EF(Pol)_{Avg.}} = \frac{\mathbf{1}}{\boldsymbol{n}} \times \sum_{\boldsymbol{i=1}}^{\boldsymbol{n}} [\boldsymbol{EF(Pol)_i} + \cdots + \boldsymbol{EF(Pol)_n}]$$

Equation 2-10

Where,

$EF(Pol)_{Avg.}$ = Average emission factors for a pollutant at a specified mode/power setting ($lb/10^3$ lb fuel burned)

$EF(Pol)_{i/n}$ = Reported emission factor for the i/n^{th} engine at a specified mode/power setting ($lb/10^3$ lb fuel burned)

n = Number of emission factors calculated at that mode

$$\boldsymbol{EF(VOC)_{Total}} = \sum_{\boldsymbol{i=1}}^{\boldsymbol{n}} \left[\boldsymbol{EF(Pol_i)_{Avg.}} + \ldots + \boldsymbol{EF(Pol_n)_{Avg.}}\right]$$

Equation 2-11

Where,

$EF(VOC)_{Total}$ = Sum of the average emission factors for all pollutants classified as VOCs. ($lb/10^3$ lb fuel burned)

$EF(Pol_{i/n})_{Avg.}$ = Average of emission factor for pollutant i/n classified as VOC as calculated in Equation 2-10.

$$\mathbf{P(Pol)} = \frac{\mathbf{EF}(\boldsymbol{Pol})_{\boldsymbol{Avg.}}}{\boldsymbol{EF(VOC)_{Total}}}$$

Equation 2-12

Where,

P(Pol) = Weighted percentage of a given pollutant (%)

Finally, speciated VOCs are calculated by taking the product of the total VOCs and the weighted percentage of the individual VOC as follows:

$$\mathbf{E(Pol)} = \mathbf{E(VOC)} \times \frac{\mathbf{P(Pol)}}{\mathbf{100}}$$

Equation 2-13

Where,

E(Pol) = Emissions of speciated VOC (lb/yr)
100 = Factor for converting percent to a fraction (%)
$\mathbf{E_{VOC}}$ **-=** Emissions of total VOC (lb/yr)

The percentages of each VOC to total VOC based on engine type (Turbofan, large aircraft Turboprop, small aircraft Turboprop, and Turbojet) are provided in Table 2-11, Table 2-12, Table 2-13, and Table 2-14.

2.5.9 International Civil Aviation Organization (ICAO) Emission Factors (Addendum)

The International Civil Aviation Organization (ICAO) is a United Nations Specialized Agency that was created in 1944, with the goal of encouraging the safe and orderly development of international civil aviation. The organization develops and maintains safety standards, practices, and procedures for a safe and efficient air transport network that supports global, social, and economic priorities. As the need to develop aviation security policies and measures arose in the late 1960s, ICAO developed enhanced, uniform security measures, policies, and guidelines to address any acts of unlawful interference within the aviation system. All security initiatives placed by ICAO rely on the cooperation and commitment among all of the member states.

To make advances in environmental stewardship, ICAO has developed additional standards, policies and guidance material to specifically address aircraft noise and engine emissions. Most of ICAO's work within the environmental field is undertaken by the ICAO Committee on Aviation Environmental Protection (CAEP), including the collection of aircraft exhaust data from engine manufacturers for engines that have entered production. Many of these engines are used on military aircraft found at Air Force bases, and are often given a military designation to differentiate them from their civilian engine counterparts. Frequently, military-sponsored emissions tests have not been conducted on these engines and emission factors have not been developed for them. The data collected by CAEP may then be utilized to assist in the calculation of aircraft engine emissions. This document includes emission factors that have been developed from various studies as well as those provided by ICAO. This section of this document serves to briefly describe how the ICAO emission factors were calculated so they may be used to calculate emissions from aircraft flight operations.

The aircraft exhaust data gathered by CAEP has been standardized per engine based on percent engine thrust. These values are used with the emission data sheets provided by ICAO to calculate aircraft engine emissions. ICAO emissions data sheets provide NO_x and CO emission indices but do not provide VOC or PM emission indices directly. Rather, ICAO provides hydrocarbon emission indices which are multiplied by a scaling factor of 1.15 to estimate VOCs. This scaling factor is provided by a combined Federal Aviation Administration (FAA) and US Environmental Protection Agency (EPA) report titled *Recommended Best Practice for Quantifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines.*

ICAO does not directly provide Particulate Matter (PM) emissions, but the organization is currently developing PM standards which will drive manufacturers to test their engines and develop PM emission indices. Until ICAO has adopted and implemented a PM standard, ICAO has provided a method for calculating the emission index of PM in the interim. ICAO describes three types of PM, and outlines a method to calculate each. The first type of PM consists mainly of black carbon and is designated as non-volatile ($EI(PM)_{nvol}$). The second type of PM is designated volatile sulfate ($EI(PM)_{vol\text{-}FSC}$) and is dependent on the sulfur content of the fuel burned in the engine. The last type of PM is designated organic volatiles ($EI(PM)_{vol\text{-}FuelOrganics}$) and results from the incomplete combustion of fuel. The sum of these three values is assumed to equal PM_{10}, and $PM_{2.5}$ is then assumed to equal 90% of the PM_{10} total.

When calculating the non-volatile portion of the PM emissions indices, the first step is to verify that a smoke number (SN) has been provided for each mode. If not, the *ICAO Airport Air Quality Manual* may be consulted to estimate those SNs that are missing. Next, calculate the carbon index (CI), which is "a measure of the black carbon mass per standard volume of flow" (ICAO 2011). Depending on the value of the SN, two different equations are used to calculate CI. For those smoke numbers ≤30, Equation 2-14 should be used, while Equation 2-15 should be used for those smoke numbers >30.

$$\boldsymbol{CI = 0.6949(SN)^{1.234}}$$

Equation 2-14

$$\boldsymbol{CI = 0.0297(SN)^2 - 1.803(SN) + 31.94}$$

Equation 2-15

Where,

CI = Carbon Index (mg/m^3)
SN = Smoke Number

The volumetric flow rate may then be calculated according to the engine type reported on the ICAO data sheet, or in the database. For engines listed as TF, Q_{Core} is calculated using Equation

2-16. For those listed as MTF, Q_{Mixed} may be calculated using Equation 2-17. The Air-Fuel Ratio (AFR) used in calculations is usually proprietary information, but ICAO has developed average AFR values that may be used, which are provided in the *ICAO Airport Air Quality Manual*.

$$\boldsymbol{Q_{Core} = 0.776(AFR) + 0.877}$$

Equation 2-16

$$\boldsymbol{Q_{Mixed} = 0.7769(AFR)(1 + BPR) + 0.877}$$

Equation 2-17

Where,

Q_{Core} = Volumetric flow rate for TF engine (m^3/kg)
Q_{Mixed} = Volumetric flow rate for MTF engine (m^3/kg)
AFR = Air-fuel ratio as given in ICAO
BPR = Bypass Ratio as provided on ICAO datasheet or in ICAO database

Finally, the emission index for non-volatile PM ($EI(PM)_{nvol}$) is calculated by multiplying the CI found in either Equation 2-14 or Equation 2-15 by the volumetric flow rate calculated from either Equation 2-16 or Equation 2-17, as shown in Equation 2-18.

$$\boldsymbol{EI(PM)_{nvol} = CI \times Q}$$

Equation 2-18

Where,

$EI(PM)_{nvol}$ = Emission Index for non-volatile PM (mg/kg)
CI = Carbon Index calculated from either Equation 2-14 or Equation 2-15
Q = Volumetric flow rate; either Q_{Core} from Equation 2-16 or Q_{Mixed} from Equation 2-17

The volatile PM sulfate portion of the PM emission index ($EI(PM)_{vol\text{-}FSC}$) is a function of the fuel sulfur content and the fuel sulfur conversion efficiency. If the sulfur content is unknown, a national average value of 0.053 wt.% may be used in the calculations. Similarly, if the fuel sulfur conversion efficiency is unknown, ICAO recommends that a median value of 2.4 wt.% be used. Equation 2-19 may then be employed to determine $EI(PM)_{vol\text{-}FSC}$.

$$\boldsymbol{EI(PM)_{vol-FSC} = (10)^6 \times \left[\frac{(FSC/100)\times(\varepsilon/100)\times 96}{32}\right]}$$

Equation 2-19

Where,

$EI(PM)_{vol\text{-}FSC}$	=	Emission index for volatile sulfate PM (mg/kg)
FSC	=	Fuel sulfur content. **Use 0.053 if unknown (%)**
$(10)^6$	=	Factor for converting units to mg/kg
100	=	Factor converting percent to a fraction (%)
ε	=	Fuel sulfur conversion efficiency. **Use 2.4 if unknown (%)**
96	=	Molecular weight of sulfate (g/mol)
32	=	Molecular weight of sulfur (g/mol)

Finally, the organic volatiles ($EI(PM)_{vol\text{-}FuelOrganics}$) portion of the PM emission indices is calculated using the hydrocarbon (HC) emission indices provided by ICAO. These HC emission indices are multiplied by the ratio of $EI(PM)_{vol\text{-}FuelOrganics}$ to the HC EI of a reference engine. ICAO uses the CFM56-2-C1 as the reference engine for this ratio. The calculation of $EI(PM)_{vol\text{-}FuelOrganics}$ is shown in Equation 2-20.

$$EI(PM)_{vol-FuelOrganics} = \delta \times EI_{HC}$$

Equation 2-20

Where,

$EI(PM)_{vol\text{-}FuelOrganics}$	=	Emission index for PM from fuel organics (mg/kg)
δ	=	Ratio of $EI_{PMvol\text{-}FuelOrganics}$ to EI_{HC} for the CFM56-2-C1 engine
EI_{HC}	=	Hydrocarbon emission index of the engine

After $EI(PM)_{nvol}$, $EI(PM)_{vol\text{-}FSC}$, and $EI(PM)_{vol\text{-}FuelOrganics}$ are calculated, the emission index for PM_{10} may then be estimated by summing these values and converting into the correct units, as shown in Equation 2-21:

$$\mathbf{EI}(PM_{10}) = \frac{[EI(PM)_{nvol} + EI(PM)_{vol-FSC} + EI(PM)_{vol-FuelOrganics}]}{1000}$$

Equation 2-21

Where,

$EI(PM_{10})$	=	Emission index for PM_{10} (g/kg)
$EI(PM)_{nvol}$	=	Emission index for non-volatile PM (mg/kg)
$EI(PM)_{vol\text{-}FSC}$	=	Emission index for volatile sulfate PM (mg/kg)
$EI(PM)_{vol\text{-}FuelOrganics}$	=	Emission index for volatile fuel organic PM (mg/kg)
1000	=	Factor to convert units from mg to g (g/mg)

$PM_{2.5}$ may then been determined from PM_{10} by assuming $PM_{2.5}$ is equal to 90% of the PM_{10} value, as shown in Equation 2-22.

$$\mathbf{EI(PM_{2.5}) = EI(PM_{10}) \times 0.90}$$

Equation 2-22

Where,

$EI(PM_{2.5})$ = Emission index for $PM_{2.5}$ (g/kg)
$EI(PM_{10})$ = Emission index for PM_{10} (g/kg)
0.90 = Fraction of total $PM_{2.5}$ to PM_{10}

Emission factors have been calculated using ICAO data for engines that are most likely to be found at Air Force installations. These have been added to emission factors that have already been developed from government-subsidized studies. For any engine whose emission factor is not listed, if ICAO emissions data is available, the emission factors may be calculated as described in this section as needed.

2.6 Information Resources

The Flightline Operations Group and aircraft pilots should be contacted to obtain the information required to calculate emissions from aircraft flying operations (i.e., the number of LTOs, TGOs, LFBs, TIM, etc.). The Aircraft Maintenance organization should be contacted to obtain the information needed to calculate emissions from on-wing engine testing operations, including the types of engines tested, the number of tests conducted during the year on each engine type, the average time spent at each power setting during a typical test, and the associated fuel flow rate at each power setting. Finally, the base's Weather Detachment should be contacted to obtain the average mixing zone height for the base.

2.7 Example Calculations

The following section provides example calculations for aircraft operations.

2.7.1 Problem 1 - Landing and Takeoff Cycle Emissions

Anytown AFB needs to calculate the annual CO and benzene emissions from LTO operations associated with their F-15D aircraft. The following information was obtained from the base:

Aircraft Model: F-15D
Engine Model: F100-PW-220
Number of Engines 2
Number of Annual LTOs 2500

Anytown AFB gathered the Time-in-Mode data for this aircraft so estimates from Table 2-4 are not needed. This data and the mode specific fuel flow rates and emission factors from Table 2-8 for the F-100-PW-220 engine are presented below:

LTO Mode	Average TIM (min.)	Typical Power Setting	Average Fuel Flow Rate (lb/hr)	CO Emission Factor ($lb/1000lb_{fuel}$)
Taxi/Idle-out	30	Idle	1084	35.30
Takeoff	1.0	Military	9679	0.86
Climb out	0.5	Intermediate	5770	0.86
Approach	3.0	Approach	3837	1.92
Taxi/Idle-in	10	Idle	1084	35.30

Step 1 – Calculate CO pollutant emissions for each mode in the LTO cycle. Using Equation 2-1 this is accomplished as follows:

$$E(Pol)_{mode} = \frac{TIM}{60} \times \frac{FFR}{1000} \times EF(Pol) \times N$$

$$\boldsymbol{E(CO)_{Approach}} = \frac{3.0\left(\frac{min}{cycle}\right)}{60\left(\frac{min}{hr}\right)} \times \frac{3837\left(\frac{\text{lb fuel}}{hr}\right)}{1000\left(\frac{\text{lb fuel}}{10^3\ lb\ fuel}\right)} \times 1.92\left(\frac{lb}{10^3\ lb\ fuel}\right) \times 2 = \mathbf{0.74}\ \frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

$$\boldsymbol{E(CO)_{Idle-In}} = \frac{10\left(\frac{min}{cycle}\right)}{60\left(\frac{min}{hr}\right)} \times \frac{1084\left(\frac{\text{lb fuel}}{hr}\right)}{1000\left(\frac{\text{lb fuel}}{10^3\ lb\ fuel}\right)} \times 35.30\left(\frac{lb}{10^3\ lb\ fuel}\right) \times 2 = \mathbf{12.76}\ \frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

$$\boldsymbol{E(CO)_{Idle-Out}} = \frac{30\left(\frac{min}{cycle}\right)}{60\left(\frac{min}{hr}\right)} \times \frac{1084\left(\frac{\text{lb fuel}}{hr}\right)}{1000\left(\frac{\text{lb fuel}}{10^3\ lb\ fuel}\right)} \times 35.30\left(\frac{lb}{10^3\ lb\ fuel}\right) \times 2 = \mathbf{38.27}\ \frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

$$\boldsymbol{E(CO)_{Takeoff}} = \frac{1.0\left(\frac{min}{cycle}\right)}{60\left(\frac{min}{hr}\right)} \times \frac{9679\left(\frac{\text{lb fuel}}{hr}\right)}{1000\left(\frac{\text{lb fuel}}{10^3\ lb\ fuel}\right)} \times 0.86\left(\frac{lb}{10^3\ lb\ fuel}\right) \times 2 = \mathbf{0.28}\ \frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

$$\boldsymbol{E(CO)_{Climb\ out}} = \frac{0.5\left(\frac{min}{cycle}\right)}{60\left(\frac{min}{hr}\right)} \times \frac{5770\left(\frac{\text{lb fuel}}{hr}\right)}{1000\left(\frac{\text{lb fuel}}{10^3\ lb\ fuel}\right)} \times 0.86\left(\frac{lb}{10^3\ lb\ fuel}\right) \times 2 = \mathbf{0.08}\ \frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

Step 2– Calculate the total CO emissions for a single F-15D LTO. Using Equation 2-2, the total CO emissions is calculated as follows:

$$E(Pol)_{LTO} = \sum_{i=1}^{n}\left[E(Pol)_{Mode_i} + \cdots + E(Pol)_{Mode_n}\right]$$

$$\boldsymbol{E(CO)_{LTO}} = (0.74 + 12.76 + 38.27 + 0.28 + 0.08)\frac{lb}{cycle} = \mathbf{52.13}\,\boldsymbol{\frac{lb}{cycle}}$$

Step 3 – Determine the total CO emissions from annual F-15D operations. The total CO emissions is the product of the total emissions per LTO and the total LTO's per year as demonstrated in Equation 2-3:

$$E(Pol)_{Total} = E(Pol)_{LTO} \times NC_{LTO}$$

$$E(CO)_{Total} = 52.13\left(\frac{lb}{\cancel{cycle}}\right) \times 2500\left(\frac{\cancel{cycles}}{yr}\right)$$

$$\boxed{\boldsymbol{E(CO)_{Total} = 130,325\,\frac{lb}{yr}}}$$

Since not all aircraft engines have had HAP emission factors, it may be necessary to choose a surrogate engine with similar fuel flow rates. Table 2-9 does not provide the HAP speciation profile for the F100-PW-220 engine. For this example, the F100-PW-200 engine is selected as the surrogate since it: 1) is an engine made by the same manufacturer, 2) is in the same family as the F100-PW-220, 3) has similar fuel flow rates, and 4) is used on the same aircraft.

Step 4 – Record the benzene emission factors for each LTO cycle mode. For idle, approach, intermediate, and military power settings, the emission factors are **0.047, 0.000387, 0.000189, and 0.000490 lb/1000 lb fuel** respectively.

Step 5 – Calculate benzene emissions for individual F-15D LTO cycle modes. This is accomplished using the emission factors recorded in step 4 and Equation 2-1:

$$E(Pol)_{mode} = \frac{TIM}{60} \times \frac{FFR}{1000} \times EF(Pol) \times N$$

$$\boldsymbol{E(Benzene)_{Approach}} = \frac{3.0\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{3251\left(\frac{\cancel{\text{lb fuel}}}{\cancel{hr}}\right)}{1000\left(\frac{\cancel{\text{lb fuel}}}{\cancel{10^3}\,\cancel{lb\ fuel}}\right)} \times 0.000387\left(\frac{lb}{\cancel{10^3}\,\cancel{lb\ fuel}}\right) \times 2 =$$

$$\mathbf{0.00013}\,\boldsymbol{\frac{lb}{cycle}}$$

$$\boldsymbol{E(Benzene)_{Idle-In}} = \frac{10\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{1006\left(\frac{\cancel{\text{lb fuel}}}{\cancel{hr}}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3}\,\cancel{lb\ fuel}}\right)} \times 0.047\left(\frac{lb}{\cancel{10^3}\,\cancel{lb\ fuel}}\right) \times 2 = \mathbf{0.016}\,\boldsymbol{\frac{lb}{cycle}}$$

$$\boldsymbol{E(Benzene)_{Idle-Out}} = \frac{30\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{1006\left(\frac{\cancel{\text{lb fuel}}}{\cancel{hr}}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3}\,\cancel{lb\ fuel}}\right)} \times 0.047\left(\frac{lb}{\cancel{10^3}\,\cancel{lb\ fuel}}\right) \times 2 =$$

$$\mathbf{0.047}\,\boldsymbol{\frac{lb}{cycle}}$$

$$\boldsymbol{E(Benzene)_{Military}} = \frac{1\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{8888\left(\frac{\cancel{\text{lb fuel}}}{\cancel{hr}}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.000490\left(\frac{lb}{\cancel{10^3\ lb\ fuel}}\right) \times 2 =$$

$$\boldsymbol{0.00015\frac{lb}{cycle}}$$

$$\boldsymbol{E(Benzene)_{Intermediate}} = \frac{0.5\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{5651\left(\frac{\cancel{\text{lb fuel}}}{\cancel{hr}}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.000189\left(\frac{lb}{\cancel{10^3\ lb\ fuel}}\right) \times 2 =$$

$$\boldsymbol{0.000018\frac{lb}{cycle}}$$

<u>Step 5</u> – Calculate the total benzene pollutant emissions for a single F-15D LTO. This is accomplished using Equation 2-2:

$$E(Pol)_{LTO} = \sum_{i=1}^{n}\left[E(Pol)_{Mode_i} + \cdots + E(Pol)_{Mode_n}\right]$$

$$\boldsymbol{E_{LTO}} = (0.00013 + \ 0.016 + 0.047 + 0.00015 + 0.000018)\frac{lb}{cycle} = \boldsymbol{0.063\ \frac{lb}{cycle}}$$

<u>Step 6</u> – Calculate total benzene pollutant emissions from annual F-15D operations. The total benzene emitted is calculated using Equation 2-3 and the benzene emitted per LTO as calculated in step 5 above:

$$E(Pol)_{Total} = E(Pol)_{LTO} \times NC_{LTO}$$

$$E(Benzene)_{Total} = 0.063\ \left(\frac{lb}{\cancel{cycle}}\right) \times 2500\left(\frac{\cancel{cycle}}{yr}\right)$$

$$\boxed{\boldsymbol{E(Benzene)_{Total} = 157.5\ \frac{lb}{yr}}}$$

2.7.2 Problem 2 - Auxiliary Power Unit Emissions

Anytown AFB also needs to calculate the annual NO_X and styrene emissions associated with the operation of the APUs on their aircraft. The following information was obtained:

APU Model	GTCP165-1
# APU per aircraft	1
Power Setting	Constant
Operating Time per LTO	15 minutes
Number of Aircraft	130

Step 1 – Convert the operating time into the correct units. The operating time is provided in minutes, so first convert this to units of hours as follows:

$$\boldsymbol{OT} = 15\left(\frac{\cancel{min}}{cycle}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) = \mathbf{0.25}\ \frac{\boldsymbol{hr}}{\boldsymbol{cycle}}$$

Step 2 – Record the NO_X emission factor for the GTCP165-1. Table 2-10 lists the NO_X emission factor as **1.22lb/hr**.

Step 3 - Calculate NO_X pollutant emissions for a single LTO cycle. Use Equation 2-5 and the emission factor recorded in Step 2 as follows:

$$E(Pol)_{APU} = OT \times EF(Pol) \times N$$

$$\boldsymbol{E(NO_X)_{APU}} = 0.25\left(\frac{\cancel{hr}}{cycle}\right) \times 1.22\left(\frac{\text{lb}}{\cancel{\text{hr}}}\right) \times 1 = \mathbf{0.305}\frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

Step 4 – Calculate the NO_X pollutant emissions from annual APU operations. Use Equation 2-6 and the NO_X emissions per LTO cycle calculated in Step 3 as follows:

$$E(Pol)_{Total} = \ E(Pol)_{APU} \times NC_{LTO}$$

$$E(NO_X)_{Total} = 0.305\left(\frac{lb}{\cancel{cycle}}\right) \times 130\left(\frac{\cancel{cycles}}{yr}\right)$$

$$\boxed{\boldsymbol{E(NO_X)_{Total}} = \mathbf{39.7}\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Step 5 – Record the styrene emission factor and fuel flow rate for the GTCP165-1. Table 2-9 lists these as **0.00224lb/10^3 lb fuel and 273 lb/hr** respectively.

Step 6 – Calculate styrene emissions. Use the emission factor recorded in Step 5 (Note that the APU operates in only one "mode", so use operating time in place of "TIM") and Equation 2-1 as follows:

$$E(Pol)_{Mode} = \frac{TIM}{60} \times \frac{FFR}{1000} \times EF(Pol) \times N$$

$$\boldsymbol{E(Styrene)_{APU}} = \frac{15\left(\frac{\cancel{min}}{cycle}\right)}{60\left(\frac{\cancel{min}}{\cancel{hr}}\right)} \times \frac{273\left(\frac{\text{lb fuel}}{\cancel{hr}}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3 lb\ fuel}}\right)} \times 0.00224\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) \times 1 = \mathbf{0.00015}\frac{\boldsymbol{lb}}{\boldsymbol{cycle}}$$

Step 7 – Calculate the styrene pollutant emissions from annual APU operations. Using Equation 2-3 and the styrene emissions calculated in Step 6 above, this is accomplished as follows:

$$E(Pol)_{Total} = E(Pol)_{APU} \times NC_{LTO}$$

$$E(Styrene)_{Total} = 0.00015\left(\frac{lb}{\cancel{cycle}}\right) \times 130\left(\frac{\cancel{cycles}}{yr}\right)$$

$$\boxed{\boldsymbol{E(Styrene)_{Total} = 0.02\frac{lb}{yr}}}$$

2.7.3 Problem 3 - On-Wing Engine Testing

Anytown AFB performs on-wing evaluations of the F110-GE-100 engines used on their F-16D aircraft. The base must calculate CO and SO_X emissions from on-wing testing operations for a NEPA assessment. The base and the fuel supplier are located in Louisiana and the state wants the SO_X emissions specific for Louisiana sulfur content. According to records obtained from base personnel, 100 on-wing engine tests were conducted during the year. The average operating time for each engine test cycle was approximately the same. The following information was obtained from the base:

Power Setting	Average Fuel Flow Rate (lb/hr)	Average Operating Time per Test (minutes)
Approach	4209.52	20
Idle	1147.66	45
Intermediate	6681.33	15
Military	10,070.45	15
Afterburner	16,532.47	5

<u>Step 1</u> – Calculate annual operating times. Use Equation 2-7 and the information provided:

$$T_{test} = N_{test} \times \sum\left(\frac{D_{test}}{60}\right)$$

$$\boldsymbol{T_{Test}(Idle)} = 100\left(\frac{\cancel{test}}{yr}\right) \times 45\left(\frac{\cancel{min}}{\cancel{test}}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) = \mathbf{75}\ \frac{\boldsymbol{hr}}{\boldsymbol{yr}}$$

$$\boldsymbol{T_{Test}(Approach)} = 100\left(\frac{\cancel{test}}{yr}\right) \times 20\left(\frac{\cancel{min}}{\cancel{test}}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) = \mathbf{33.33}\ \frac{\boldsymbol{hr}}{\boldsymbol{yr}}$$

$$\boldsymbol{T_{Test}(Intermediate)} = 100\left(\frac{\cancel{test}}{yr}\right) \times 15\left(\frac{\cancel{min}}{\cancel{test}}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) = \mathbf{25}\ \frac{\boldsymbol{hr}}{\boldsymbol{yr}}$$

$$\boldsymbol{T_{Test}(Military)} = 100\left(\frac{\cancel{test}}{yr}\right) \times 15\left(\frac{\cancel{min}}{\cancel{test}}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) = \mathbf{25}\ \frac{\boldsymbol{hr}}{\boldsymbol{yr}}$$

$$\boldsymbol{T_{Test}(Afterburner)} = 100\left(\frac{\cancel{test}}{yr}\right) \times 5\left(\frac{\cancel{min}}{\cancel{test}}\right) \times \frac{1}{60}\left(\frac{hr}{\cancel{min}}\right) \ = \mathbf{8.33}\ \frac{\boldsymbol{hr}}{\boldsymbol{yr}}$$

Step 2 – Record the CO emission factor for each mode for the F110-GE-100. Table 2-8 gives the CO emission factors, in units of lb/1000lb fuel, as **24.11 for Idle, 5.77 for Approach, 3.47 for Intermediate, 3.38 for Military, and 67.41 for Afterburner**.

Step 3 – Calculate CO emissions. Use the calculated times from Step 1, the fuel flow rates provided above, the emission factors from Step 2, and Equation 2-8:

$$E(Pol)_{Setting} = \frac{(FFR \times T_{Test})}{1000} \times EF(Pol)$$

$$\boldsymbol{E(CO)_{Idle}} = \frac{1147.66\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 75\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 24.11\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{2075.3}\ \frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(CO)_{Approach}} = \frac{4209.52\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 33.33\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 5.77\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{809.6}\ \frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(CO)_{Intermediate}} = \frac{6681.33\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 25\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 3.47\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{579.6}\ \frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(CO)_{Military}} = \frac{10070.45\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 25\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 3.38\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{851.0}\ \frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(CO)_{Afterburner}} = \frac{16532.47\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 8.33\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\cancel{lb\ fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 67.41\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{9283.4}\ \frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 4 – Add the CO emissions from each mode for the total CO emissions:

$$E(CO)_{Total} = (2075.3 + 809.6 + 579.6 + 851.0 + 9283.4)\frac{lb}{yr}$$

$$\boxed{\boldsymbol{E(CO)_{Total} = 13,598.9\ \frac{lb}{yr}}}$$

Step 5 – Record the SO_X Emission factor. Since the state is requesting that the base calculate the SO_X emissions more accurately using the average sulfur content of the fuel from that region, then the SO_X emission factor from Table 2-3 is used in place of the SO_X emission factor from Table 2-8 which assumes a sulfur content national average. The emission factor based on the sulfur content of the JP-8 fuel as given in Table 2-3 is **0.96 lb/10^3 lb_{fuel}**.

Step 6 – Calculate the SO_X emissions for each mode. Use Equation 2-8, the SO_X emission factor recorded in Step 5, the annual test times calculated in Step 1 above, and the fuel flow rate provided in the table above:

$$E(Pol)_{Setting} = \frac{(FFR \times T_{test})}{1000} \times EF(Pol)$$

$$\boldsymbol{E(SO_X)_{Idle}} = \frac{1147.66\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 75\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.96\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{82.6\ \frac{lb}{yr}}$$

$$\boldsymbol{E(SO_X)_{Approach}} = \frac{4209.52\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 33.33\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.96\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{134.7\ \frac{lb}{yr}}$$

$$\boldsymbol{E(SO_X)_{Intermediate}} = \frac{6681.33\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 25\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.96\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{160.4\ \frac{lb}{yr}}$$

$$\boldsymbol{E(SO_X)_{Military}} = \frac{10070.45\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 25\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.96\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{241.7\ \frac{lb}{yr}}$$

$$\boldsymbol{E(SO_X)_{Afterburner}} = \frac{16532.47\left(\frac{\cancel{lb\ fuel}}{\cancel{hr}}\right) \times 8.33\left(\frac{\cancel{hr}}{yr}\right)}{1000\left(\frac{\text{lb fuel}}{\cancel{10^3\ lb\ fuel}}\right)} \times 0.96\left(\frac{lb}{\cancel{10^3 lb\ fuel}}\right) = \mathbf{132.2\ \frac{lb}{yr}}$$

Step 7 – Sum the SO_X emissions from each mode to calculate the total SO_X emissions:

$$E(SO_X)_{Total} = (82.6 + 134.7 + 160.4 + 241.7 + 132.2)\frac{lb}{yr}$$

$$\boxed{\boldsymbol{E(SO_X)_{Total} = 751.6\frac{lb}{yr}}}$$

Table 2-4. Default Time-in-Mode for Various Aircraft Categories

Aircraft Type	Typical Duration by Mode (Minutes)					
	Taxi/Idle-out	Takeoff	Climb out	Approach	Taxi/Idle-in	Total
Military Aircraft						
Combat:						
USAF	18.50	0.40	0.80	3.50	11.30	34.50
USN	6.50	0.40	0.50	1.60	6.50	15.50
Trainer-Turbine[1]:						
USAF T-38	12.80	0.40	0.90	3.80	6.40	24.30
USAF General	6.80	0.50	1.40	4.00	4.40	17.10
USN	6.50	0.40	0.50	1.60	6.50	15.50
Transport-Turbine[1]:						
USAF General	9.20	0.40	1.20	5.10	6.70	22.60
USN	19.00	0.50	2.50	4.50	7.00	33.50
USAF B-52 and KC-135	32.80	0.70	1.60	5.20	14.90	55.20
Military – Piston	6.50	0.60	5.00	4.60	6.50	23.20
Military – Helicopter	8.00	2.27[(2)]	4.53[(2)]	6.80	7.00	28.60
Civilian Aircraft						
Commercial Carrier:						
Jumbo, Long and Medium range jet	19.00	0.70	2.20	4.00	7.00	32.90
General Aviation:						
Business Jet	6.50	0.40	0.50	1.60	6.50	15.50
Turboprop	19.00	0.50	2.50	4.50	7.00	33.50
Piston	12.00	0.30	5.00	6.00	4.00	27.30

SOURCE (unless otherwise noted): Procedures for Emission Inventory Preparation Volume IV: Mobile Sources, EPA420-R-92-009, December 1992

1. Turbines include both turbofan and turboprop engines.
2. SOURCE: Air Emissions Factor Guide to Air Force Mobile Sources, December 2009. This document cites EDMS as the original source.

"USAF" – United States Air Force.

"USN" – United States Navy.

Table 2-5. Military Airframe/Engine/APU Combinations[1]

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
A-3A	Combat: USN	J57-P-6B (2)	---	---	4, 9a
A-3B	Combat: USN	J57-P-10 (2)	---	---	9a
A-4	Combat: USN	J52-P-2 (1)	---	---	4, 9d
		J52-P-8 (1)	---	---	4, 9d
		J65-W-2 (1)	---	---	4, 9d
		J65-W-4 (1)	---	---	4, 9d
A-4C	Combat: USN	J65-W-16A (1)	---	---	4, 9a
		J65-W-20 (1)	---	---	9c
A-4E	Combat: USN	J52-P-6A (1)	---	---	4, 9a
		J52-P-8A, -8B (1)	---	---	4, 9a
A-4F	Combat: USN	J52-P-8A , -8B (1)	---	---	4, 9a
A-4L	Combat: USN	J65-W-20 (1)	---	---	9a
A-4M	Combat: USN	J52-P-408 (1)	---	---	9a
A-6A	Combat: USN	J52-P-6A, -6B (2)	---	---	4, 9a, 9c
		J52-P-8A, -8B (2)	---	---	4, 9a
A-6B	Combat: USN	J52-P-6A (2)	---	---	4, 9a
		J52-P-8A (2)	---	---	4, 9a
A-6C	Combat: USN	J52-P-8A (2)	---	---	4, 9a
A-6E	Combat: USN	J52-P-8A, -8B (2)	---	---	4, 9a
A-6F	Combat: USN	F404-GE-400D (2)	---	---	4, 9a
A-7A	Combat: USN	TF30-P-6B (1)	---	---	9c
A-7B, -7C	Combat: USN	TF30-P-8 (1)	---	---	4, 9a
		TF30-P-408 (1)	---	---	4, 9a
A-7D, -7K	Combat: USAF	TF41-A-1 (1)	---	---	9a, 9e
A-7E	Combat: USN	TF41-A-2 (1)	---	---	9a
A-10	Combat: USAF	TF34-GE-100A (2)	---	---	9b
		TF34-GE-400 (2)	---	---	9c
A-10A	Combat: USAF	TF34-GE-100 (2)	GTCP 36-50 (1)	1.00	3, 4, 9a
A-10C	Combat: USAF	TF34-GE-100 (2)	---	---	9f
A-37	Combat: USAF	J69-T-25 (2)	---	---	9c
AC-130A	Transport - Turbine: USAF general	T56-A-1A (4)	---	---	9a
		T56-A-9 (4)	---	---	9a
AC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	4, 6, 9a, 10a
AC-130U, -130W	Transport - Turbine: USAF general	T56-A-15 (4)	---	---	9a, 9f
AT-38B	Trainer - Turbine: USAF T-38	J85-GE-5, -5A, -5G, -5J (2)	---	---	4, 9a
AU-24	Combat: USAF	PT6A-27 (1)	---	---	9c
B-1A	Combat: USAF	F101-GE-100 (4)	---	---	9e
B-1B	Combat: USAF	F101-GE-102 (4)	GTCP 165-9 (1)	2.00	3, 4, 9a
B-2A	Combat: USAF	F118-GE-100 (4)	131-3A (2)	4.00	3, 4, 9a
B-52D	Transport - Turbine: USAF B-52	J57-P-19W (8)	---	---	9e
		J57-P/F-43WB (8)	---	---	9e
B-52G	Transport - Turbine: USAF B-52	J57-P-22 (8)	---	---	9c

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
B-52H	Transport - Turbine: USAF B-52	TF33-P-3 (8)	---	---	9c
		TF33-P-5 (8)	---	---	9c
		TF33-P-7 (8)	---	---	9c
		TF33-P-103 (8)	---	---	9f
C-1	General Aviation: Piston	R-1820-82 (2)	---	---	9c
C-1A	General Aviation: Piston	R-1820-82, -82A (2)	---	---	4, 9a
C-2	Transport - Turbine: USN	T56-A-7 (2)	---	---	9c
C-2A	Transport - Turbine: USN	T56-A-8, -8A, -8B (2)	---	---	4, 9a
		T56-A-425 (2)	---	---	4, 9g
C-5A	Transport - Turbine: USAF general	TF39-GE-1, -1A, -1C (4)	GTCP 85-98d (1)	8.00	4, 6, 9a, 9c, 9i, 10a
C-5B, -5C	Transport - Turbine: USAF general	TF39-GE-1C (4)	GTCP 85-98d (1)	8.00	6, 9a, 10a
C-5M	Transport - Turbine: USAF general	CF6-80C2L1F (4)	---	---	4, 9a
		F138-GE-100 (4)	---	---	4, 9a, 13b
C-9	Transport - Turbine: USAF general	JT8D-17 (2)	---	---	8, 9c
C-9A	Transport - Turbine: USAF general	JT8D-9A (2)	GTCP 85-98d (1)	6.00	9a, 10a
C-9B	Transport - Turbine: USN	JT8D-9A (2)	---	---	4, 9a
C-9C	Transport - Turbine: USAF general	JT8D-9A (2)	---	---	4, 9a
C-11A	General Aviation: Business Jet	F113-RR-100 (2)	---	---	9a, 12, 13a
		SPEY Mk511-8 (2)	---	---	4, 9a
C-12	General Aviation: Turboprop	PT6A-27 (2)	---	---	9c
C-12A	General Aviation: Turboprop	PT6A-38 (2)	---	---	9a
		PT6A-41 (2)	---	---	9c
C-12C, -12D, -12L	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
C-12F, -12R, -12T, -12U	General Aviation: Turboprop	PT6A-42 (2)	---	---	9a, 9f
C-12J	General Aviation: Turboprop	PT6A-65B (2)	---	---	4, 9f
C-12S	General Aviation: Turboprop	PT6A-60A (2)	---	---	4, 9a
C-17A	Transport - Turbine: USAF general	F117-PW-100 (4)	331 250G (1)	0.50	3, 9a
		PW2040 (4)	331 250G (1)	0.50	3, 9a, 13b
C-18B	Transport - Turbine: USAF general	JT3D-7 (4)	T41M-9A (1)	0.50	3, 4, 9a
C-20A	General Aviation: Business Jet	F113-RR-100 (2)	GTCP 36-100 (1)	0.50	3, 9a, 13a
		SPEY Mk511-8 (2)	GTCP 36-100 (1)	0.50	3, 4, 9a
C-20B, -20C, -20D, -20E, -20J	General Aviation: Business Jet	F113-RR-100 (2)	---	---	9a, 12, 13a
		SPEY Mk511-8 (2)	---	---	4, 9a
C-20F, -20G, -20H	General Aviation: Business Jet	TAY Mk611-8 (2)	---	---	9a
C-21A	General Aviation: Business Jet	TFE731-2-2B (2)	---	---	9a
C-22A	Transport - Turbine: USAF general	JT8D-7A (3)	GTCP 85-98ck (1)	1.00	4, 9a, 10a
C-22B	Transport - Turbine: USAF general	JT8D-7 (3)	GTCP 85-98ck (1)	1.00	4, 9a, 10a
C-23A	General Aviation: Turboprop	PT6A-45R (2)	---	---	4, 9a
C-23B, -23C	General Aviation: Turboprop	PT6A-65AR (2)	---	---	4, 9a
C-26A	General Aviation: Turboprop	TPE331-11U (2)	---	---	4, 9a
C-26B	General Aviation: Turboprop	TPE331-12UA-701G (2)	---	---	4, 9a
C-26C	General Aviation: Turboprop	TPE331-12UA-701 (2)	---	---	4, 9a
C-27J	Transport - Turbine: USAF general	AE2100D2 (2)	---	---	4, 9f

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
C-28A	General Aviation: Piston	GTSIO-520-M (2)	---	---	4, 9a
C-32A	Transport - Turbine: USAF general	F117-PW-100 (2)	331-49-7081 (1)	3.00	3, 9a, 12
		PW2040 (2)	331-49-7081 (1)	3.00	3, 9a
C-37A	General Aviation: Business Jet	BR700-710A1-10 (2)	---	---	9f
C-38	General Aviation: Business Jet	TFE731-40R-200G (2)	---	---	4, 9l
C-40A	Transport - Turbine: USN	CFM56-7B24 (2)	---	---	5, 9a
C-40B	Transport - Turbine: USAF general	CFM56-7B27 (2)	131-9 (1)	0.50	3, 4, 9a
		CFM56-7B3 (2)	131-9 (1)	0.50	3, 4, 9a
C-40C	Transport - Turbine: USAF general	CFM56-7B3 (2)	---	---	4, 5, 9a
		CFM56-7B27 (2)	---	---	5, 9a
C-123K	Transport - Turbine: USAF general	J85-GE-17 (2)	---	---	9a
		R-2800-99W (2)	---	---	4, 9a
C-130A, -130D	Transport - Turbine: USAF general	T56-A-9, -9A, -9B (4)	GTCP 85L (1)	1.00	3, 4, 9a
C-130B	Transport - Turbine: USAF general	T56-A-7, -7A (4)	GTCP71/71A (1)	1.00	3, 4, 9a
C-130E	Transport - Turbine: USAF general	T56-A-7, -7A (4)	GTCP71/71A (1)	1.00	3, 4, 9a
C-130F	Transport - Turbine: USN	T56-A-7, -7A (4)	GTCP71/71A (1)	1.00	3, 4, 9a
C-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	4, 6, 9a, 10a
C-130J	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85L (1)	1.00	3, 9a
		AE2100D3 (4)	---	---	4, 9f
C-130T	Transport - Turbine: USN	T56-A-16 (4)	---	---	9a
C-135A	Transport - Turbine: USAF general	J57-P/F-59W (4)	T41M-9A (1)	1.00 to 2.00	3, 4, 9e
			ASHG70-1 (1)	1.00 to 2.00	3, 4, 9e
C-135B, -135C	Transport - Turbine: USAF general	J57-P/F-59W (4)	T41M-9A (1)	1.00 to 2.00	3, 4, 9e
			ASHG70-1 (1)	1.00 to 2.00	3, 4, 9e
		TF33-P-5 (4)	T41M-9A (1)	1.00 to 2.00	3, 4, 9a
			ASHG70-1 (1)	1.00 to 2.00	3, 4, 9a
C-135E	Transport - Turbine: USAF general	TF33-P-102 (4)	T41M-9A (1)	1.00 to 2.00	3, 4, 9a
			ASHG70-1 (1)	1.00 to 2.00	3, 4, 9a
C-137B, -137C	Transport - Turbine: USAF general	JT3D-3B (4)	---	---	9a
C-140A	General Aviation: Business Jet	J60-P-5A, -5B (4)	---	---	9e
C-140B	General Aviation: Business Jet	J60-P-5 (4)	---	---	4, 9f
C-141	Transport - Turbine: USAF general	TF33-P-3 (4)	GTCP 165-1 (1)	3.00	9c, 10b
		TF33-P-5 (4)	GTCP 165-1 (1)	3.00	9c, 10b
C-141A, -141B, -141C	Transport - Turbine: USAF general	TF33-P-7 (4)	GTCP85-106/106A (1)	3.00	3, 4, 9a, 9c
CT-1B	General Aviation: Business Jet	JT15D-5 (2)	---	---	5, 9a
CT-39A	General Aviation: Business Jet	J60-P-3, -3A (2)	---	---	4, 9a
CT-39E, -39G	General Aviation: Business Jet	JT12A-8 (2)	---	---	4, 9a
CT-43A	Transport - Turbine: USAF general	JT8D-9A (2)	---	---	9a
CT-49A	Transport - Turbine: USAF general	JT3D-7 (4)	---	---	4, 5, 9a
CV-22, -22A	Transport - Turbine: USAF general	AE1107C (2)	---	---	7, 9a
		T406-AD-400 (2)	---	---	7, 9a, 13b
DC-130A	Transport - Turbine: USAF general	T56-A-9, -9A (4)	---	---	4, 9a
E-1B	General Aviation: Piston	R-1820-82A (2)	---	---	4, 9a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
E-2	Transport - Turbine: USN	T56-A-7 (2)	---	---	9c
E-2B	Transport - Turbine: USN	T56-A-8, -8A, -8B (2)	---	---	4, 9a
E-2C	Transport - Turbine: USN	T56-A-422 (2)	---	---	4, 9a
		T56-A-427 (2)	---	---	4, 9m
E-2D	Transport - Turbine: USN	T56-A-427 (2)	---	---	4, 9m
E-3A	Transport - Turbine: USAF general	TF33-P-3 (4)	---	---	5, 9c
		TF33-P-5 (4)	---	---	5, 9c
		TF33-P-7 (4)	---	---	5, 9c
		TF33-P-100A (4)	---	---	4, 5, 9a
E-3B, -3C	Transport - Turbine: USAF general	TF33-P-100A (4)	GTCP 165-1 (1)	2.00	4, 9a, 10a
E-4A	Transport - Turbine: USAF general	F103-GE-100 (4)	---	---	9e
E-4B	Transport - Turbine: USAF general	CF6-50E2 (4)	GTCP 660-4 (1)	2.00	9f, 10a
E-6B	Transport - Turbine: USN	CFM56-2A-2 (4)	---	---	4, 9g
E-8C	Transport - Turbine: USAF general	JT3D-3B (4)	GTCP 85 (1)	2.00	6, 9a, 12
		TF33-PW-102C (4)	GTCP 85 (1)	2.00	4, 6, 9a
EA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
EA-4F	Combat: USN	J52-P-6A, -6B (1)	---	---	4, 9a
		J52-P-8A (1)	---	---	4, 9a
EA-6A	Combat: USN	J52-P-8A, -8B (2)	---	---	4, 9a
EA-6B	Combat: USN	J52-P-8A, -8B (2)	---	---	4, 9a
		J52-P-408 (2)	---	---	4, 9a
EA-7L	Combat: USN	TF41-A-2 (1)	---	---	9a
		TF30-P-408 (1)	---	---	4, 9a
EB-57B	Combat: USAF	J65-W-5, -5B (2)	---	---	4, 9a
EC-18B, -18D	Transport - Turbine: USAF general	JT3D-7 (4)	---	---	4, 9a
EC-24A	Transport - Turbine: USN	JT3D-3B (4)	---	---	9a
EC-130E	Transport - Turbine: USAF general	T56-A-7, -7A (4)	---	---	4, 9a
		T56-A-15 (4)	---	---	9e
EC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	9a, 10a
EC-130J, -130SJ	Transport - Turbine: USAF general	AE2100D3 (4)	---	---	4, 9f
EC-130V	Transport - Turbine: USN	T56-A-15 (4)	---	---	5, 9a
EC-135A, -135G, -135L	Transport - Turbine: USAF general	J57-P/F-59W (4)	---	---	9a, 9e
EC-135B	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
EC-135C, -135J	Transport - Turbine: USAF general	TF33-P-9 (4)	---	---	9a
EC-135E	Transport - Turbine: USAF general	TF33-P-102 (4)	---	---	9a
EC-135H, -135K, -135P	Transport - Turbine: USAF general	J57-P/F-59W (4)	---	---	9a, 12
		TF33-P-102 (4)	---	---	9e
EC-135N	Transport - Turbine: USAF general	J57-P/F-43WB (4)	---	---	9a
EC-135Y	Transport - Turbine: USAF general	J57-P/F-43WB (4)	---	---	9a
		J57-P/F-59W (4)			
EC-137D	Transport - Turbine: USAF general	JT3D-3B (4)	---	---	9a
EF-4J	Combat: USN	J79-GE-8B (2)	---	---	4, 9a
EF-111A	Combat: USAF	TF30-P-109 (2)	---	---	9a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
EKA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
EP-3B, -3J	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
ERA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
ES-2D	General Aviation: Piston	R-1820-82A (2)	---	---	4, 9a
F-4	Combat: USN	J79-GE-10 (2)	---	---	4, 9c
F-4B, -4N	Combat: USN	J79-GE-8B, -8C (2)	---	---	4, 9a
F-4C, -4D	Combat: USAF	J79-GE-15 (2)	---	---	9a
F-4E, -4G	Combat: USAF	J79-GE-17 (2)	---	---	9a
F-4J	Combat: USN	J79-GE-8B (2)	---	---	4, 9a
F-4S	Combat: USN	J79-GE-10B (2)	---	---	4, 9a
F-5A, -5B	Combat: USAF	J85-GE-13 (2)	---	---	5, 9c
F-5E, -5F	Combat: USAF	J85-GE-21 (2)	---	---	5, 9a
F-8	Combat: USN	J57-P-22 (1)	---	---	4, 9c
F-8J	Combat: USN	J57-P-420 (1)	---	---	9a
F-14A	Combat: USN	TF30-P-412 (2)	---	---	4, 9a
		TF30-P-414A (2)	---	---	4, 9g
F-14C	Combat: USN	TF30-P-412 (2)	---	---	4, 9a
F-14B, -14D	Combat: USN	F110-GE-400 (2)	---	---	9a
F-15A, -15B	Combat: USAF	F100-PW-100 (2)	---	---	9a
F-15C, -15D	Combat: USAF	F100-PW-100 (2)	---	---	9a
		F100-PW-220 (2)	---	---	9a
		F100-PW-229 (2)	---	---	9f
F-15E	Combat: USAF	F100-PW-220 (2)	---	---	9a
		F100-PW-229 (2)	---	---	9a
F-16	Combat: USAF	F100-PW-100 (1)	T-62T-40-8 (1)	1.00	3, 4, 9c
F-16A, -16B	Combat: USAF	F100-PW-200 (1)	T-62T-40-8 (1)	1.00	3, 4, 9a
		F100-PW-220 (1)	T-62T-40-8 (1)	1.00	3, 4, 9g
F-16C, -16D	Combat: USAF	F100-PW-200 (1)	T-62T-40-8 (1)	1.00	3, 4, 9a
		F100-PW-220 (1)	T-62T-40-8 (1)	1.00	3, 4, 9f
		F100-PW-229 (1)	T-62T-40-8 (1)	1.00	3, 4, 9a
		F110-GE-100 (1)	T-62T-40-8 (1)	1.00	3, 4, 9a
		F110-GE-129 (1)	T-62T-40-8 (1)	1.00	3, 4, 9a
F-16N	Combat: USN	F110-GE-100 (1)	---	---	9a
F-22A, -22B	Combat: USAF	F119-PW-100 (2)	---	---	9a
F-35A	Combat: USAF	F135-PW-100 (1)	---	---	4, 9a
F-35B	Combat: USN	F135-PW-600 (1)	---	---	4, 5, 9n
F-35C	Combat: USN	F135-PW-100 (1)	---	---	4, 9n
F-100	Combat: USAF	J57-P-22 (1)	---	---	4, 9c
F-106A, -106B	Combat: USAF	J75-P-17 (1)	---	---	9a
F-111, -111F	Combat: USAF	TF30-P-100 (2)	---	---	9a, 9c
F-111A	Combat: USAF	TF30-P-3 (2)	---	---	9a
F-111D, -111E	Combat: USAF	TF30-P-3 (2)	---	---	9a
		TF30-P-9 (2)	---	---	9e

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
F-117A	Combat: USAF	F404-GE-F1D2 (2)	3800100-4 (1)	2.00	3, 4, 9h
F/A-18A, -18B	Combat: USN	F404-GE-400 (2)	---	---	9a, 9g
F/A-18C, -18D	Combat: USN	F404-GE-400 (2)	---	---	9a
		F404-GE-402 (2)	---	---	4, 9g
F/A-18E, -18F	Combat: USN	F404-GE-400 (2)	---	---	4, 9g
		F414-GE-400 (2)	---	---	4, 9g
FA-22A	Combat: USAF	F119-PW-100 (2)	---	---	9a
FB-22A	Combat: USAF	F119-PW-100 (2)	---	---	9a
FB-111A	Combat: USAF	TF30-P-7 (2)	---	---	9a
HC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	6, 9a, 10a
HC-130J	Transport - Turbine: USAF general	AE2100D3 (4)	---	---	4, 9f
HC-130N, -130P	Transport - Turbine: USN	T56-A-15 (4)	---	---	9a
HV-22A, -22B	Transport - Turbine: USN	AE1107C (2)	---	---	7, 9a, 12
		T406-AD-400 (2)	---	---	7, 9a, 13b
JA-6A	Combat: USN	J52-P-6A, -6B (2)	---	---	4, 9a
		J52-P-8A, -8B (2)	---	---	4, 9a
KA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
KA-6D	Combat: USN	J52-P-6A (2)	---	---	4, 9a
		J52-P-8A (2)	---	---	4, 9a
KC-10, -10A	Transport - Turbine: USAF general	CF6-50C2 (3)	TSCP 700-4B (1)	6.00	9a, 10a
		F103-GE-100 (3)	TSCP 700-4B (1)	6.00	9e, 10a
		F103-GE-101 (3)	TSCP 700-4B (1)	6.00	9o, 10a
KC-46A	Transport - Turbine: USAF general	PW4062 (2)	GTCP 331-200 (1)	0.87	6, 9j, 11
			GTCP 331-200ER (1)	0.87	6, 9j, 11
KC-130F, -130R, -130T	Transport - Turbine: USN	T56-A-16 (4)	---	---	9a
KC-135	Transport - Turbine: USAF KC-135	J57-P-22 (4)	---	---	4, 9c
KC-135A	Transport - Turbine: USAF KC-135	J57-P/F-43WB (4)	---	---	9a
		J57-P/F-59W (4)	---	---	9a
KC-135D, -135Q	Transport - Turbine: USAF KC-135	J57-P/F-59W (4)	---	---	9a, 9e
KC-135E	Transport - Turbine: USAF KC-135	TF33-P-102 (4)	GTCP 85-180L (1)	1.00	4, 6, 9a, 10a
KC-135R, -135T	Transport - Turbine: USAF KC-135	CFM56-2B-1 (4)	---	---	9a, 12
		F108-CF-100 (4)	---	---	9a, 13b
KC-767A	Transport - Turbine: USAF general	CF6-80C2B6F (2)	---	---	9k
		CF6-80C2B7F (2)	---	---	9k
		PW4062 (2)	---	---	9k
LC-130F, -130R	Transport - Turbine: USN	T56-A-16 (4)	---	---	9a
LC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	---	---	9a
MC-12W	General Aviation: Turboprop	PT6A-60 (2)	---	---	4, 9f
MC-130E	Transport - Turbine: USAF general	T56-A-7 (4)	---	---	9a
		T56-A-15, -15A (4)	---	---	4, 9a, 9f
MC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	6, 9a, 10a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
MC-130J	Transport - Turbine: USAF general	AE2100D3 (4)	---	---	4, 9f
MC-130P, -130W	Transport - Turbine: USAF general	T56-A-15 (4)	---	---	9a, 9f
MV-22A, -22B	Transport - Turbine: USN	AE1107C (2)	---	---	7, 9a, 12
		T406-AD-400 (2)	---	---	7, 9a, 13b
NA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
NA-4E	Combat: USN	J52-P-6A (1)	---	---	4, 9a
		J52-P-8A, -8B (1)	---	---	4, 9a
NA-4F	Combat: USN	J52-P-8A (1)	---	---	4, 9a
NA-4M	Combat: USN	J52-P-408 (1)	---	---	9a
NA-6A	Combat: USN	J52-P-6A, -6B (2)	---	---	4, 9a
		J52-P-8A, -8B (2)	---	---	4, 9a
NA-6E	Combat: USN	J52-P-8B (2)	---	---	9a
NA-7A	Combat: USN	TF30-P-6 (1)	---	---	4, 9a
NA-7C	Combat: USN	TF30-P-8 (1)	---	---	4, 9a
NA-7E	Combat: USN	TF41-A-2 (1)	---	---	9a
NB-52B	Transport - Turbine: USAF B-52	J57-P-19W (8)	---	---	9a
NC-12B	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
NC-21A	General Aviation: Business Jet	TFE731-2-2B (2)	---	---	9a
NC-130A	Transport - Turbine: USAF general	T56-A-9, -9A, -9B (4)	---	---	4, 9a
NC-130B, -130E	Transport - Turbine: USAF general	T56-A-7, -7A (4)	---	---	4, 9a
NC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	4, 6, 9a, 10a
NC-135A	Transport - Turbine: USAF general	J57-P/F-43WB (4)	---	---	9e
NC-135W	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
NC-141A	Transport - Turbine: USAF general	TF33-P-7 (4)	GTCP 85-106/106A (1)	3.00	3, 4, 9a
NF-4D	Combat: USAF	J79-GE-15 (2)	---	---	9a
		J79-GE-17 (2)	---	---	9a
NF-16A	Combat: USAF	F100-PW-200 (1)	---	---	9a
NF-16D	Combat: USAF	F100-PW-200 (1)	---	---	9a
		F100-PW-229 (1)	---	---	9a
		F110-GE-100 (1)	---	---	9a
		F110-GE-129 (1)	---	---	9a
NF-106B	Combat: USAF	J75-P-17 (1)	---	---	9e
NF/A-18A, -18B, -18C	Combat: USN	F404-GE-400 (2)	---	---	9a
NKC-135A	Transport - Turbine: USAF KC-135	J57-P/F-43WB (4)	---	---	9a
		J57-P/F-59W (4)	---	---	9a
NKC-135E	Transport - Turbine: USAF KC-135	TF33-P-102 (4)	GTCP 85-180L (1)	2.00	4, 9a, 10a
NP-3C, -3D	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
NRA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
NT-33A	Trainer - Turbine: USAF General	J33-A-35 (1)	---	---	9a
NT-39A	General Aviation: Business Jet	J60-P-3, -3A (2)	---	---	4, 9a
NTA-4F, -4J	Combat: USN	J52-P-6A (1)	---	---	4, 9a
NUP-3A	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
O-1	General Aviation: Piston	O-470C (1)	---	---	9c
O-2A, -2B	General Aviation: Piston	IO-360-C (1)	---	---	4, 9a, 9c
		IO-360-D (1)	---	---	9c
OA-4M	Combat: USN	J52-P-6A, -6B (1)	---	---	4, 9a
		J52-P-8A (1)	---	---	4, 9a
OA-10A	Combat: USAF	TF34-GE-100 (2)	---	---	9a
OA-37B	Combat: USAF	J85-GE-17A (2)	---	---	9a
OC-135B	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
OT-47B	General Aviation: Business Jet	JT15D-5D (2)	---	---	4, 9a
OV-10A	General Aviation: Turboprop	T76-G-10A (2)	---	---	4, 8, 9a
		T76-G-12A (2)	---	---	4, 8, 9a
		T76-G-418 (2)	---	---	8, 9a
		T76-G-419 (2)	---	---	8, 9a
P-3B	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
P-3C	Transport - Turbine: USN	T56-A-7 (4)	---	---	9c
		T56-A-14 (4)	---	---	9a
QF-4B	Combat: USN	J79-GE-8B, -8C (2)	---	---	4, 9a
QF-4E	Combat: USAF	J79-GE-10 (2)	---	---	4, 9a
		J79-GE-17 (2)	---	---	9a
QF-4G	Combat: USAF	J79-GE-15 (2)	---	---	9a
		J79-GE-17 (2)	---	---	9a
QF-106A, -106B	Combat: USAF	J75-P-17 (1)	---	---	9a
QRF-4C	Combat: USAF	J79-GE-10 (2)	---	---	4, 9a
		J79-GE-17 (2)	---	---	9a
QT-33A	Trainer - Turbine: USN	J33-A-35 (1)	---	---	9a
RA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
RA-5C	Combat: USN	J79-GE-8B, -8C (2)	---	---	4, 9a
		J79-GE-10 (2)	---	---	4, 9a
RC-12D, -12G, -12H	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
RC-135M, -135X	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a, 9e, 9f
RC-135S, -135W	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
		CFM56-2B-1 (4)	---	---	9f, 12
		F108-CF-201 (4)	---	---	4, 9f, 13b
RC-135T	Transport - Turbine: USAF general	TF33-P-102 (4)	---	---	9e
RC-135U	Transport - Turbine: USAF general	TF33-P-9 (4)	---	---	9a
		CFM56-2B-1 (4)	---	---	9f, 12
		F108-CF-201 (4)	---	---	4, 9f, 13b
RC-135V	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
		TF33-P-9 (4)	---	---	9e
		CFM56-2B-1 (4)	---	---	9f, 12
		F108-CF-201 (4)	---	---	4, 9f, 13b
RF-4B	Combat: USN	J79-GE-8B, -8C (2)	---	---	4, 9a
RF-4C	Combat: USAF	J79-GE-15 (2)	---	---	9a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
RF-8G	Combat: USN	J57-P-22 (1)	---	---	4, 9a
RF/A-18A	Combat: USN	F404-GE-400 (2)	---	---	9a
RP-3D	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
RQ-4	Combat: USAF	AE3007H (1)	---	---	4, 9a
		F137-RR-100 (1)	---	---	4, 9f
RQ-4A	Combat: USAF	AE3007 (1)	---	---	4, 9a
		F137-RR-100 (1)			4, 9f
RQ-4B	Combat: USAF	AE3007H (1)	---	---	4, 9a
RU-21J	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
S-2, -2G	General Aviation: Piston	R-1820-82 (2)	---	---	9a, 9c
S-2D, -2E	General Aviation: Piston	R-1820-82A (2)	---	---	4, 9a
S-3A	Combat: USN	TF34-GE-400 (2)	---	---	9c
SV-22A	Transport - Turbine: USN	AE1107C (2)	---	---	7, 9a, 12
		T406-AD-400 (2)	---	---	7, 9a, 13b
T-1A	Trainer - Turbine: USAF general	JT15D-5B (2)	---	---	9a
T-2	Trainer - Turbine: USN	J85-GE-5F (2)	---	---	9c
T-6A	Trainer - Turbine: USAF general	PT6A-68 (1)	---	---	8, 9a
T-28	General Aviation: Piston	R-1820-82 (1)	---	---	9c
T-33A	Trainer - Turbine: USAF general	J33-A-35 (1)	---	---	9a
T-34	General Aviation: Piston	O-470C (1)	---	---	9c
T-34C	General Aviation: Piston	PT6A-27 (1)	---	---	9c
T-37, -37B	Trainer - Turbine: USAF general	J69-T-25 (2)	---	---	9a, 9c
T-38	Trainer - Turbine: USAF T-38	J85-GE-5F (2)	---	---	9c
T-38A	Trainer - Turbine: USAF T-38	J85-GE-5, -5A, -5G, -5J, -5M (2)	---	---	4, 9a
T-38C	Trainer - Turbine: USAF T-38	J85-GE-5, -5A, -5G, -5J, -5R (2)	---	---	4, 9a
T-38N	Trainer - Turbine: USAF T-38	J85-GE-5H, -5N (2)	---	---	4, 9a
T-39A, -39D	General Aviation: Business Jet	J60-P-3A (2)	---	---	9a, 9e
T-39B	General Aviation: Business Jet	J60-P-3, -3A (2)	---	---	4,9a
T-41	General Aviation: Piston	IO-360-C (1)	---	---	4, 9c
T-41B	General Aviation: Piston	IO-360-D (1)	---	---	9a
T-41C, -41D	General Aviation: Piston	IO-360-D34 (1)	---	---	4, 9a
T-43A	Transport - Turbine: USAF general	JT8D-9 (2)	---	---	4, 9a
T-44	Trainer - Turbine: USN	PT6A-27 (2)	---	---	9c
T-47A	General Aviation: Business Jet	JT15D-5 (2)	---	---	9a
TA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
TA-4B	Combat: USN	J65-W-20 (1)	---	---	9a
TA-4F	Combat: USN	J52-P-6A, -6B (1)	---	---	4, 9a
		J52-P-8A (1)	---	---	4, 9a
TA-7C	Combat: USN	TF30-P-8 (1)	---	---	4, 9a
TC-18E	Transport - Turbine: USAF general	TF33-P-100A (4)	---	---	4, 9a
TC-18F	Transport - Turbine: USAF general	JT3D-3B (4)	---	---	9a
TC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	---	---	9a
TC-135S, -135W	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a

Table 2-5. Military Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
TE-2A, -2C	Transport - Turbine: USN	T56-A-8, -8A, -8B (2)	---	---	4, 9a
TE-8A	Transport - Turbine: USAF general	JT3D-3B (4)	---	---	9a
TF-16N	Combat: USN	F110-GE-100 (1)	---	---	9a
TF-18A	Combat: USN	F404-GE-400 (2)	---	---	9a
TF/A-18A	Combat: USN	F404-GE-400 (2)	---	---	9a
TS-2A	General Aviation: Piston	R-1820-82 (2)	---	---	9a
TU-2S	Combat: USAF	F118-GE-101 (1)	---	---	4, 9f
U-2S	Combat: USAF	F118-GE-101 (1)	---	---	4, 9f
U-21	General Aviation: Turboprop	PT6A-27 (2)	---	---	9c
U-21J	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
U-28A	General Aviation: Turboprop	PT6A-67B (1)	---	---	9f
UA-3B	Combat: USN	J57-P-10 (2)	---	---	9a
UC-12B	General Aviation: Turboprop	PT6A-41 (2)	---	---	9a
UC-35A, -35C	General Aviation: Business Jet	JT15D-5D (2)	---	---	4, 9a
UC-123K	Transport - Turbine: USAF general	J85-GE-17 (2)	---	---	4, 9a
UP-3B	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
US-2A, -2B, -2C	General Aviation: Piston	R-1820-82 (2)	---	---	9a
US-2D	General Aviation: Piston	R-1820-82A (2)	---	---	4, 9a
UV-18B	Transport - Turbine: USAF general	PT6A-27 (2)	---	---	9a
UV-20A	General Aviation: Turboprop	PT6A-27 (2)	---	---	9a
VC-25A	Transport - Turbine: USAF general	CF6-80C2B1 (4)	GTCP 660-4 (1)	8.00	6, 9a
VC-137B, -137C	Transport - Turbine: USAF general	JT3D-3B (4)	---	---	9h
VC-140B	General Aviation: Business Jet	J60-P-5A, -5B (4)	---	---	9e
WC-130E	Transport - Turbine: USAF general	T56-A-7 (4)	---	---	9e
		T56-A-15 (4)	---	---	9e
WC-130H	Transport - Turbine: USAF general	T56-A-15 (4)	GTCP 85-180L (1)	1.00	4, 6, 9a, 10a
WC-130J	Transport - Turbine: USAF general	AE2100D3 (4)	---	---	4, 9f
WC-135B, -135W	Transport - Turbine: USAF general	TF33-P-5 (4)	---	---	9a
WC-135C	Transport - Turbine: USAF general	TF33-P-9 (4)	---	---	9a
X-29A	Combat: USAF	F404-GE-400 (1)	---	---	8, 9a
X-31A	Combat: USN	F404-GE-400 (1)	---	---	9a
X-44A	Combat: USAF	F119-PW-100 (2)	---	---	9a
YA-7D	Combat: USAF	TF41-A-1 (1)	---	---	9a
YC-14A	Transport - Turbine: USAF general	CF6-50A (2)	---	---	9a
YE-2C	Transport - Turbine: USN	T56-A-8, -8A, -8B (2)	---	---	4, 9a
YF-4J	Combat: USN	J79-GE-8B (2)	---	---	4, 9a
YF-15A, -15B	Combat: USAF	F100-PW-100 (2)	---	---	9a
YF-16A, -16B	Combat: USAF	F100-PW-200 (1)	---	---	9a
YOV-10D	General Aviation: Turboprop	T76-G-10, -10A (2)	---	---	4, 9a
		T76-G-12, -12A (2)	---	---	4, 9a
YP-3C	Transport - Turbine: USN	T56-A-14 (4)	---	---	9a
YS-2G	General Aviation: Piston	R-1820-82 (2)	---	---	9a

Notes for Table 2-5 follow Table 2-6

Table 2-6. Military Helicopter/Engine/APU Combinations[1]

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
AH-1G	Military - Helicopter	T53-L-11D (1)	---	---	9c
		T53-L-13, -13A, -13B (1)	---	---	4, 9a
AH-1J	Military - Helicopter	T400-CP-400 (1)	---	---	9a
AH-64A	Military - Helicopter	T700-GE-700 (2)	---	---	9a
CH-3B	Military - Helicopter	T58-GE-8B (2)	---	---	4, 9a
CH-3E	Military - Helicopter	T58-GE-5 (2)	---	---	9f
CH-46	Military - Helicopter	T58-GE-5 (2)	---	---	9c
CH-46A	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
CH-46E	Military - Helicopter	T58-GE-16 (2)	---	---	9a
CH-53A	Military - Helicopter	T64-GE-6B (2)	---	---	9a
CH-53D	Military - Helicopter	T64-GE-413 (2)	---	---	9a
EH-1H	Military - Helicopter	T53-L-13 (1)	---	---	9a
EH-1X	Military - Helicopter	T53-L-13 (1)	---	---	9a
EH-60A	Military - Helicopter	T700-GE-700 (2)	---	---	9a
HH-1H	Military - Helicopter	T53-L-13 (1)	---	---	9a
HH-1K	Military - Helicopter	T53-L-13, -13A, -13B (1)	---	---	4, 9a
HH-1N	Military - Helicopter	T400-CP-400 (1)	---	---	9g
HH-2D	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
HH-3A	Military - Helicopter	T58-GE-8F (2)	---	---	9a
HH-3E	Military - Helicopter	T58-GE-5 (2)	---	---	9f
HH-3F	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
HH-43	Military - Helicopter	T53-L-11D (1)	---	---	9c
HH-46A	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
HH-52	Military - Helicopter	T58-GE-5 (2)	---	---	9c
HH-52A	Military - Helicopter	T58-GE-8B (2)	---	---	4, 9a
HH-53	Military - Helicopter	T64-GE-6B (2)	---	---	9c
HH-60G	Military - Helicopter	T700-GE-700 (2)	---	---	9f
MH-53J	Military - Helicopter	T64-GE-415 (2)	T-62T-27 (1)	4.00	9a, 10a
MH-53M	Military - Helicopter	T64-GE-100 (2)	---	---	9f
MH-60A	Military - Helicopter	T700-GE-700 (2)	---	---	9a
MH-60G	Military - Helicopter	T700-GE-700 (2)	---	---	9a
NCH-46A	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a

Table 2-6. Military Helicopter/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category[2]	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[3]	Notes:
NRH-53D	Military - Helicopter	T64-GE-415 (2)	---	---	9a
NSH-3A	Military - Helicopter	T58-GE-8B (2)	---	---	4, 9a
NUH-1E	Military - Helicopter	T53-L-11D (1)	---	---	9a
NUH-1N	Military - Helicopter	T400-CP-400 (1)	---	---	9a
NVH-3A	Military - Helicopter	T58-GE-8F (2)	---	---	9a
OH-6A	Military - Helicopter	T63-A-5A (1)	---	---	9c
OH-58A	Military - Helicopter	T63-A-5A (1)	---	---	9c
RH-53D	Military - Helicopter	T64-GE-415A (2)	---	---	4, 9a
SH-2D	Military - Helicopter	T58-GE-5 (2)	---	---	9c
		T58-GE-8B (2)	---	---	4, 9a
SH-2F	Military - Helicopter	T58-GE-5 (2)	---	---	9c
		T58-GE-8F (2)	---	---	9a
SH-3A	Military - Helicopter	T58-GE-8B (2)	---	---	4, 9a
SH-3G	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
SH-60	Military - Helicopter	T700-GE-700 (2)	---	---	9g
TH-1L	Military - Helicopter	T53-L-13, -13A, -13B (1)	---	---	4, 9a
TH-53A	Military - Helicopter	T64-GE-100 (2)	T-62T-27 (1)	4.00	3, 9a
UH-1E	Military - Helicopter	T53-L-11D (1)	---	---	9a
UH-1H	Military - Helicopter	T53-L-11D (1)	---	---	9c
		T53-L-13 (1)	---	---	9c
UH-1L	Military - Helicopter	T53-L-13, -13A, -13B (1)	---	---	4, 9a
UH-1N	Military - Helicopter	T400-CP-400 (1)	---	---	9f
UH-1V	Military - Helicopter	T53-L-13 (1)	---	---	9a
UH-2C	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
UH-3A	Military - Helicopter	T58-GE-8B (2)	---	---	4, 9a
UH-46A	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a
UH-60A	Military - Helicopter	T700-GE-700 (2)	T-62T-40-1 (1)	1.00	3, 4, 9a
UH-60C	Military - Helicopter	T700-GE-700 (2)	---	---	9a
UH-60Q	Military - Helicopter	T700-GE-700 (2)	---	---	9a
YSH-2E	Military - Helicopter	T58-GE-8B, -8F (2)	---	---	4, 9a

Notes for Table 2-5 and Table 2-6 on the following page.

Notes for Table 2-5 and Table 2-6:

1. Note that some Aircraft model/engine/APU combinations may be missing due to unverified sources and/or missing emission factors for either engine(s) and/or APU(s).
2. Time-in-Mode category selected for the aircraft based on that aircraft's expected flight pattern and not based on its mission designation. It is recommended that installation-specific TIM data is used when available.
3. SOURCE: *Flightline Emission Factors-Aircraft/Auxiliary Power Units/Aerospace Ground Support Equipment*, IERA-RS-BR-SR-2005-0001, December 2004. This reference cites survey responses as source of data. APU operating time provided as a guideline. If more accurate and verified APU operating times are available for the installation, those times may be used for emissions calculations.
4. This document does not have emission factors for at least one engine/APU listed for this aircraft.
5. Time-in-Mode category for this aircraft was selected as the recommended category for calculating emissions though this aircraft is actually operated by another military branch.
6. APU operating time an estimate based on similar APUs on similar aircraft.
7. Aircraft may also be operated as a military helicopter. If the aircraft is primarily operated in this mode at the installation, then use the appropriate Time-in-Mode category.
8. This aircraft is operated by multiple military branches.
9. The Airframe/Engine combination source was reported in the following documents:
    a. SOURCE: *Model Designation of Military Aerospace Vehicles*, Department of Defense, May 2004
    b. SOURCE: AF Reserve Website (www.afreserve.com)
    c. SOURCE: *Air Pollutant Emission Factors for Military and Civil Aircraft*, EPA-450/3-78-117, October 1978.
    d. SOURCE: Smithsonian National Air and Space Museum website (www.airandspace.si.edu)
    e. SOURCE: *Aircraft Engine Emissions Estimator*, AFESC, November 1985.
    f. SOURCE: US Air Force fact sheets accessed via official Air Force website (www.af.mil)
    g. SOURCE: US Navy fact sheets accessed via official navy website (www.navy.mil)
    h. SOURCE: National Museum of the Air Force accessed via official website (www.nationalmuseum.af.mil)
    i. SOURCE: GE Aviation website (www.geaviation.com)
    j. SOURCE: *National Environmental Policy ACT (NEPA) Facilitation Report*, April 2012
10. The Airframe/APU combination was reported in the following documents:
    a. SOURCE: *Air Emissions Factor Guide to Air Force Mobile Sources*, AFCEE, 2009
    b. SOURCE: EDMS input from Paine Field
11. APU operating time assumes worst case scenario. The actual operating time may range between 0.23-0.26 if there is gate power or 0.87 if there is no gate power. The value provided assumes no gate power.
12. This engine is not explicitly listed in the source document as the engine in this aircraft. It is listed here, however, because it is an alternate designation of an engine listed in the source document.
13. This is the military designation of a civilian engine listed for the aircraft in the source document. The source for the military designation of the civilian engine is:
    a. SOURCE: *Air Force One*, Robert F. Dorr, 2002.
    b. The Federal Business Opportunities website (www.fbo.gov)

"---" – Indicates either no APU for that aircraft or no data available.

Table 2-7. Commercial Airframe/Engine/APU Combinations1

Aircraft Model	Time-In-Mode Category	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[2] [Without Gate Power]	Notes:
A300 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-50A, -50C, -50C1, -50C2 (2) CF6-80C2A1, -80C2A3, -80C2A5 (2) JT9D-7R4H1 (2) PW4158 (2)	GTCP 331-250 (1)	0.23 - 0.26 [1.0 - 1.5]	3, 4b, 4c, 5b
A310 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-80A3, -80C2A2(2) JT9D-7R4D1, -7R4E1 (2) PW4152 (2) PW4156A (2)	GTCP 331-250 (1)	0.23 - 0.26 [1.0 - 1.5]	3, 4b, 4c, 5b
A318 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-5B8, -5B9 (2) PW6122A (2) PW6124A (2)	GTCP 36-300 (1)	0.23 - 0.26 [0.87]	3, 4c, 4d, 5b
A319 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-5A4, -5A5, -5B5, -5B6, -5B7 (2) V2522-A5 (2) V2524-A5 (2) V2527-A5 (2)	GTCP 36-300 (1)	0.23 - 0.26 [0.87]	3, 4c, 4d, 4e, 5b
A320 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-5-A1, -5A3, -5B4, -5B5, -5B6 (2) V2500-A1 (2) V2527-A5 (2)	GTCP 36-300 (1)	0.23 - 0.26 [0.87]	3, 4c, 4d, 4e, 5b
A321 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-5B1, -5B2, 5B3 (2) V2533-A5 (2) V2530-A5 (2)	GTCP 36-300 (1)	0.23 - 0.26 [0.87]	3, 4c, 4d, 4e, 5b
A330 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-80E1, -E1A1, -E1A3, -E1A4 (2) PW4164 (2) PW4168, PW4168A (2) PW4170 (2) Trent 768-60 (2) Trent 772-60 (2)	GTCP 331-250 (1)	0.23 - 0.26 [1.0 - 1.5]	3, 4c, 4d, 4e, 5b
A340 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-5C2, -5C2/4, -5C2/F, -5C2/F4, -5C2/G, -5C2/G4, -5C2/P (4) CFM56-5C3/F, -5C3/F4, 5C3/G, -5C3/G4, -5C3/P (4) CFM56-5C4, -5C4/1, -5C4/P, -5C4/1P (4) Trent 553-61, -553A2-61 (4) Trent 556-61, -556A2-61 (4)	---	---	3, 4d, 4e
A380 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	GP7270 (4) Trent 970B-84 (4) Trent 972B-84 (4)	---	---	3, 4b, 4d
ACJ318	**General Aviation:** Business Jet	CFM56-5B9/3 (2)	---	---	4e
ACJ319	**General Aviation:** Business Jet	CFM56-5B7/3 (2)	---	---	4e
ACJ320	**General Aviation:** Business Jet	CFM56-5B4/3 (2)	---	---	4e
ACJ330	**General Aviation:** Business Jet	Trent 772B-60 (2)	---	---	3, 4e
ACJ340	**General Aviation:** Business Jet	Trent 553-61 (4)	---	---	4e
ACJ380	**General Aviation:** Business Jet	Trent 970-84 (4)	---	---	4e
B707 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	JT3D-3, -3B (4) JT3D-7 (4)	GTCP 85 (1)	0.23 - 0.26 [0.87]	3, 4a, 4b, 4f, 5a
B717 Series	**Commercial Carrier:** Jumbo,	BR700-715A1-30, -715C1-30 (2)	---	---	4b
B727 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	JT8D-7, -7A, -7B (3) JT8D-9, -9A (3) JT8D-11 (3) JT8D-15, -15A (3) JT8D-17, -17A, -17AR, -17R (3)	GTCP 85-98 (1)	0.23 - 0.26 [0.87]	3, 4a, 4b, 4f, 5a

Table 2-7. Commercial Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[2] [Without Gate Power]	Notes:
B737 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-3-B1, -3B-2, -3C-1 (2) CMF56-7B18/3, -7B20, -7B20/2, -7B20/3, -7B20E (2) CFM56-7B22, -7B22/2, -7B22/3, -7B22E (2) CFM56-7B24, -7B24/2, -7B24/3, -7B24/3B1, -7B24E, -7B24E/B1 (2) CFM56-7B26, -7B26E/B1, -7B26E/B2, -7B26E/B2F, -7B26/2, 7B26/3, -7B26/3F, -7B26E, -7B26E/F (2) CFM56--7B27, -7B27/2, -7B27/3, 7B27/3F, -7B27E, -7B27E/F, -7B27/3B1, -7B27/3B1F, -7B27E/B1, -7B27E/B1F, -7B27/3B3, -7B27E/B3 (2) JT8D-7, -7A, -7B (2) JT8D-9A (2) JT8D-15, -15A (2) JT8D-17, -17A (2)	GTCP 85-129 (1)	0.23 - 0.26 [0.87]	3, 4d, 5c
B747 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-50E, -50E1, -50E2 (4) CF6-80C2B1, -80C2B1F, -80C2B5F (4) Genx-2B67, -2B67B (4) JT9D-7, -7A, -7F, -7J, 7Q, -7Q3, -7R4G2 (4) JT9D-70A (4) PW4056 (4) RB211-524D4-19, -524D4-39, -524B2-19, -524C2-19, -524G2-19, -524G3-19, -524H2-19 (4) RB211-524G2-T-19, -524G3-T-19, -524H2-T-19 (4)	GTCP 660-4 (1) PW901A (1)	0.23 - 0.26 [1.0 - 1.5]	3, 4b, 4d, 5c
B757 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	RB211-535C-37, -535E4-B-37, -535E4-37, -535E4-C-37 (2) PW2037 (2) PW2040 (2)	GTCP 331-200ER (1)	0.23 - 0.26 [0.87]	3, 4b, 4d, 5c
B767 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-80A, -80A2, -80C2B2, -80C2B2F, -80C2B4, -80C2B4F, -80C2B6, -80C2B6F, -80C2B7F, -80C2B8F (2) JT9D-7R4D, -7R4E, -7R4E4 (2) PW4056, PW4060, PW4060A, PW4060C, PW4062 (2) RB211-524H36, -524H-T-36 (2)	GTCP 331-200 (1) GTCP 331-200ER (1)	0.23 - 0.26 [0.87]	3, 4b, 4d, 5a, 5c
B777 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	GE90-76B, -77B, -85B,-90B, -94B, -110B1, -110B1L, -115B, -115BL (2) PW4074, -4074D, -4077, -4077D, -4084, -4084D, -4090, -4090, -4090-3, -4098 (2) Trent 875, -877, -884, -884B, -892, -892B, -895 (2)	GTCP 331-500 (1)	0.23 - 0.26 [1.0 - 1.5]	3, 4b, 4d, 4f, 5c
B787 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	Genx-1B64, -1864/P1, -1867, -1867/P1, -1870, -1870/P1, -1870/75/P1 (2) Trent 1000-A, -1000-C, -1000-E (2)	---	---	3, 4b, 4d
BAe 146-100A, -200A	**General Aviation:** Business Jet	ALF 502R-3, -3A, -5 (4)	---	---	3, 4b
BAe 146-300A	**General Aviation:** Business Jet	ALF 502R-3A, -5 (4)	---	---	3, 4b
BAe Avro 146-RJ100A	**General Aviation:** Business Jet	LF507-1F (4)	---	---	4b
BAe Avro 146-RJ70A	**General Aviation:** Business Jet	LF507-1F (4)	---	---	4b
BAe Avro 146-RJ85A	**General Aviation:** Business Jet	LF507-1F (4)	---	---	4b
BD-100-1A10	**General Aviation:** Business Jet	AS907-1-1A (2)	---	---	4b
BD-700-1A10, -1A11	**General Aviation:** Business Jet	BR700-710A2-20 (2)	---	---	4b
Beechcraft 76	**General Aviation:** Turboprop	PT6A-27 (2)	---	---	4a
Beechcraft 99A, -99B, -A99A, -B99	**General Aviation:** Turboprop	PT6A-27 (2)	---	---	4b
BH.125 Series 400A	**General Aviation:** Business Jet	TFE731-3, -3R (2)	---	---	3, 4b
BH.125 Series 600A	**General Aviation:** Business Jet	TFE731-3, -3R (2)	---	---	3, 4b
Cessna 150, -150A, -150B, -150C, -150D, -150E, -150F, -150G, -150H, -150J, -150K, -150L, -150M	**General Aviation:** Piston	O-200-A (1)	---	---	3, 4b
Cessna 172I, -172K, -172L, -172M	**General Aviation:** Piston	O-320-E2D (1)	---	---	3, 4b
Cessna 172N	**General Aviation:** Piston	O-320-H2AD (1)	---	---	3, 4b
Cessna 172P	**General Aviation:** Piston	O-320-D2J (1)	---	---	3, 4b
Cessna 336	**General Aviation:** Piston	IO-360-A (2) TSIO-360-C (2)	---	---	3, 4a, 4b, 4f
Cessna 337, -337A, -337B	**General Aviation:** Piston	IO-360-C, -360-CB, -360-D, -360-DB, -360-G, -360-GB (2)	---	---	3,4b

Table 2-7. Commercial Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[2] [Without Gate Power]	Notes:
Cessna 337C, -337D, -337E, -337F, -337G	**General Aviation:** Piston	IO-360-C, -360-CB, -360-G, -360-GB (2)	---	---	3, 4b
Cessna 337H	**General Aviation:** Piston	IO-360-G, -360-GB (2)	---	---	3, 4b
Cessna Citation I	**General Aviation:** Business Jet	JT15D-1, -1A, -1B (2)	---	---	4a, 4c
Cessna Citation II, -II/S	**General Aviation:** Business Jet	JT15D-4, -4B (2)	---	---	4c
Cessna Citation Ultra	**General Aviation:** Business Jet	JT15D-5D (2)	---	---	3, 4c
Cessna Citation V	**General Aviation:** Business Jet	JT15D-5A (2)	---	---	4c
Cessna M337B	**General Aviation:** Piston	IO-360-D, -360-DB (2)	---	---	3, 4b
Cessna P337H	**General Aviation:** Piston	TSIO-360-C, -360-CB (2)	---	---	3, 4b
Cessna T337B	**General Aviation:** Piston	TSIO-360-A, -360-AB, -360-B, -360-BB (2)	---	---	3, 4b
Cessna T337C, -T337D, -T337E, -T337F	**General Aviation:** Piston	TSIO-360-A, -360-AB (2)	---	---	3, 4b
Cessna T337H	**General Aviation:** Piston	IO-360-G, -360-GB (2) TSIO-360-JB (2)	---	---	3, 4b
Cheyenne III, -IIIA	**General Aviation:** Turboprop	PT6A-41 (2)	---	---	4c
CL-600-1A11	**General Aviation:** Business Jet	ALF 502L, -502L-2 (2)	---	---	3, 4b
CL-600-2A12	**General Aviation:** Business Jet	CF34-3A, -3A2 (2)	---	---	3, 4b
CL-600-2B16	**General Aviation:** Business Jet	CF34-3A, -3A1, -3A2, -3B (2)	---	---	3, 4b
CL-600-2B19	**General Aviation:** Business Jet	CF34-3A1, -3B1 (2)	---	---	3, 4b
CL-600-2C10	**General Aviation:** Business Jet	CF34-8C1, -8C5B1 (2)	---	---	4b
CL-600-2D15	**General Aviation:** Business Jet	CF34-8C5, -8C5A1 (2)	---	---	4b
CL-600-2D24	**General Aviation:** Business Jet	CF34-8C5, -8C5A1 (2)	---	---	4b
CL-600-2E25	**General Aviation:** Business Jet	CF34-8C5, -8C5A1, -8C5A2 (2)	---	---	4b
DC-10 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-6D, -6D1, -6D1A, -6K, -6K2 (3) CF6-50A, -50C, -50C1, -50C2, -50C2B, -50C2R, -50CA (3) JT9D-20, -20J, -59A (3)	TSCP 700-4B (1)	0.23 - 0.26 [1.0- 1.5]	3, 4a, 4b, 5b
DC-8 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	CFM56-2-C1, -2-C3, -2-C5 (4) JT3D-3, -3B, -7 (4)	---	---	3, 4b
DC-9 Series	**Commercial Carrier:** Jumbo, long, and medium range jet	JT8D-7, -7A, -7B, -9, -9A (2) JT8D-11, -15, 15A, -17, -17A (2) JT8D-209, -217, -217, -217A, -217C, -219 (2)	GTCP 85-98D (1)	0.23 - 0.26 [0.87]	3, 4a, 4b, 5a, 5b
DH.125 Series 1A, -3A, -3A/RA, -400A	**General Aviation:** Business Jet	TFE731-3, -3R (2)	---	---	3, 4b
DHC-6-300, -400	**General Aviation:** Turboprop	PT6A-27 (2)	---	---	4b
F.27 Mark 100, -200, -300, -400, -600, -700	**General Aviation:** Turboprop	SPEY Mk511, -Mk511-7E (2)	---	---	3, 4b
F.28 Mark 0070	**General Aviation:** Business Jet	TAY Mk650-15 (2)	---	---	4b
F.28 Mark 0100	**General Aviation:** Business Jet	TAY Mk620-15 (2) TAY Mk650-15 (2)	---	---	4b
F.28 Mark 1000, -2000	**General Aviation:** Business Jet	SPEY MK555-15 (2)	---	---	3, 4b
F.28 Mark 3000, -4000	**General Aviation:** Business Jet	SPEY Mk555-15H (2)	---	---	3, 4b
Falcon 20	**General Aviation:** Business Jet	CF700-2D (2)	---	---	4a
G-1159, -1159A, -1159B	**General Aviation:** Business Jet	SPEY Mk511-8 (2)	GTCP 36-6 (1)	0.23 - 0.26 [0.87]	3, 4b, 5b
G200	**General Aviation:** Business Jet	PW306A (2)	---	---	4c
G-21	**General Aviation:** Turboprop	PT6A-27 (2)	---	---	4a
G280	**General Aviation:** Business Jet	AS907-2-1G (2)	---	---	4b
GIV	**General Aviation:** Business Jet	TAY Mk611-8 (2)	---	---	4b
GIV-X	**General Aviation:** Business Jet	TAY Mk611-8C (2)	---	---	3, 4b

Table 2-7. Commercial Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[2] [Without Gate Power]	Notes:
GV	**General Aviation:** Business Jet	BR700-710A1-10 (2)	---	---	4b
GVI	**General Aviation:** Business Jet	BR725A1-12 (2)	---	---	4b
GV-SP	**General Aviation:** Business Jet	BR700-710C4-11 (2)	---	---	4b
Hawker 4000	**General Aviation:** Business Jet	PW308A (2)	---	---	4c
Hawker 400A, -400XP	**General Aviation:** Business Jet	JT15D-5, -5R (2)	---	---	3, 4c
HS.125 Series 403B, -600A, -700A, -700B, -F3B, -F3B/RA, -F400B, -F600B	**General Aviation:** Business Jet	TFE731-3, -3R (2)	---	---	3, 4b
JetStar 1329-25	**General Aviation:** Business Jet	TFE731-3-1F (4)	---	---	3, 4b
King Air B200	**General Aviation:** Turboprop	PT6A-41 (2)	---	---	4c
L-1011-385-1	**Commercial Carrier:** Jumbo, long, and medium range jet	RB211-22C-02, -22B-02 (3)	---	---	3, 4b
L-1011-385-1-14	**Commercial Carrier:** Jumbo, long, and medium range jet	RB211-22B-02, -524B-02, -524B4-02, -524B3-02 (3)	---	---	3, 4b
L-1011-385-1-15	**Commercial Carrier:** Jumbo, long, and medium range jet	RB211-22B-02, -22B4D-02, -524B-02, -524B4-02, -524B3-02 (3)	---	---	3, 4b
Learjet 31, -31A	**General Aviation:** Business Jet	TFE731-2-3B (2)	---	---	3, 4b
Learjet 35, -36	**General Aviation:** Business Jet	TFE731-2, -2-2B (2)	---	---	4a
Learjet 35A, -36A	**General Aviation:** Business Jet	TFE731-2-2B (2)	---	---	4a
Learjet 55	**General Aviation:** Business Jet	TFE731-3A-2B1, -3A-2B, -3AR-2B1, -3AR-2B (2)	---	---	3, 4b
Learjet 55B	**General Aviation:** Business Jet	TFE731-3AR-2B1, -3AR-2B (2)	---	---	3, 4b
Learjet 55C	**General Aviation:** Business Jet	TFE731-3AR-3B1, -3AR-3B, -3AR-2B1, -3AR-2B (2)	---	---	3, 4b
MD-10-10F	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-6D, -6K (3)	TSCP 700-4B (1)	0.23 - 0.26 [1.0 - 1.5]	4b, 5b
MD-10-30F	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-50C2 (3)	TSCP 700-4B (1)	0.23 - 0.26 [1.0 - 1.5]	4b, 5b
MD-11, -11F	**Commercial Carrier:** Jumbo, long, and medium range jet	CF6-80C2D1F (3) PW4460 (3)	TSCP 700-4 (1)	0.23 - 0.26 [1.0 - 1.5]	4b, 5b
MD-88	**Commercial Carrier:** Jumbo, long, and medium range jet	JT8D-217A, -217C, -219 (2)	---	---	4b
MD-90, -90-30	**Commercial Carrier:** Jumbo, long, and medium range jet	V2525-D5 (2) V2528-D5 (2)	---	---	4b
MU-300, -300-10	**General Aviation:** Business Jet	JT15D-4, -4D (2)	---	---	3, 4b
NA-265-80	**General Aviation:** Business Jet	CF700-2D-2 (2)	---	---	3, 4b
PA-18A	**General Aviation:** Piston	O-320 (1)	---	---	4b
PA-23, -23-160	**General Aviation:** Piston	O-320 (2)	---	---	4b
PA-28-140	**General Aviation:** Piston	O-320-E2A (1)	---	---	3, 4b
PA-28-150	**General Aviation:** Piston	O-320-A2B, -E2A (1)	---	---	3, 4b
PA-28-151	**General Aviation:** Piston	O-320-E3D (1)	---	---	3, 4b
PA-28-160	**General Aviation:** Piston	O-320-B2B, -D2A (1)	---	---	3, 4b
PA-28-161	**General Aviation:** Piston	O-320-D2A, -D3G (1)	---	---	3, 4b
PA-28-201T	**General Aviation:** Piston	TSIO-360-FB (1)	---	---	3, 4b
PA-28R-180	**General Aviation:** Piston	IO-360-B1E (1)	---	---	3, 4b
PA-28R-200	**General Aviation:** Piston	IO-360-C1C, -C1C6 (1)	---	---	3, 4b
PA-28R-201, -28RT-201	**General Aviation:** Piston	IO-360-C1C6 (1)	---	---	3, 4b
PA-28R-201T	**General Aviation:** Piston	TSIO-360-F, -360-FB (1)	---	---	3, 4b
PA-28RT-201T	**General Aviation:** Piston	TSIO-360-FB (1)	---	---	3, 4b
PA-28S-160	**General Aviation:** Piston	O-320-D2A (1)	---	---	3, 4b

Table 2-7. Commercial Airframe/Engine/APU Combinations1 (continued)

Aircraft Model	Time-In-Mode Category	Engine Model(s) (Number of Engines)	APU Model(s) (Number of APUs)	APU Operating Time Per LTO (hrs)[2] [Without Gate Power]	Notes:
PA-31	**General Aviation:** Piston	TIO-540, -540-A1A, -540-A1B, -540-A2A, -540-A2B, -540-A2C (2)	---	---	3, 4a
PA-31-325	**General Aviation:** Piston	TIO-540-F2BD (2)	---	---	3, 4b
PA-31-350	**General Aviation:** Piston	TIO-540-J2BD, -540-J2B (2)	---	---	3, 4b
PA-32-301T	**General Aviation:** Piston	TIO-540-S1AD (1)	---	---	3, 4b
PA-32-301XTC	**General Aviation:** Piston	TIO-540-AH1A (1)	---	---	3, 4b
PA-32R-301T	**General Aviation:** Piston	TIO-540-S1AD, 540-AH1A (1)	---	---	3, 4b
PA-32RT-300T	**General Aviation:** Piston	TIO-540-S1AD (1)	---	---	3, 4b
PA-36-285	**General Aviation:** Turboprop	6-285-B, -285-BA, -285-C, -285-CA (1)	---	---	3, 4b
PA-42	**General Aviation:** Turboprop	PT6A-41 (2)	---	---	4b
PA-46-350P, -46R-350T	**General Aviation:** Turboprop	TIO-540-AE2A (1)	---	---	3, 4b
SA226-AT	**General Aviation:** Turboprop	TPE331-3U-303G, -3U-304G, -3UW-303G (2)	---	---	3, 4b
SA226-T	**General Aviation:** Turboprop	TPE331-3U-303G, -3U-304G (2)	---	---	3, 4b
SA226-TC	**General Aviation:** Turboprop	TPE331-3U-303G, -3U-304G, -3UW-303G, -3UW-304G (2)	---	---	3, 4b
SC-7	**General Aviation:** Turboprop	TPE331-2-201A (2)	---	---	3, 4a
Super King Air A100-1, -200, -200C, -200CT, -200T, -A200, -A200C, -A200CT, -B200, -B200C, -B200CT, -B200T	**General Aviation:** Turboprop	PT6A-41 (2)	---	---	4b
TU-154-B	**Commercial Carrier:** Jumbo, long, and medium range jet	NK-8-2U (3)	---	---	4g
Twin Commander 685	**General Aviation:** Piston	GTSIO-520-F, -520-K (2)	---	---	3, 4b

1. Note that some Aircraft model/engine/APU combinations may be missing due to unverified sources and/or missing emission factors for either engine(s) and/or APU(s).
2. SOURCE: *Airport Air Quality Manual*, International Civil Aviation Organization, 2011. ICAO provides a range for both narrow body and wide body aircraft. The values given out of the brackets assume gate power while the bracketed values are in instances where there is no gate power.
3. This document does not have emission factors for at least one engine/APU listed for this aircraft.
4. The Aircraft/Engine combination source was reported in one of the following documents:
    a. SOURCE: *Air Pollutant Emission Factors for Military and Civil Aircraft*, EPA-450/3-78-117, October 1978.
    b. SOURCE: The FAA Certificate Data Sheet for the airframe model listed.
    c. SOURCE: Pratt & Whitney website (www.pw.utc.com)
    d. SOURCE: The EASA Certificate Data Sheet for the airframe model listed.
    e. Airbus website (www.airbus.com)
    f. Boeing Website (www.boeing.com)
    g. Tupolev website (www.tupolev.ru/english/)
5. Airframe/APU combination source was reported in one of the following:
    a. SOURCE: EDMS Input from Paine Field
    b. SOURCE: FAA Certificate data sheet for the listed airframe
    c. SOURCE: EASA Certificate data sheet for the listed airframe

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
6-285-B	Idle (Taxi)	<40%	72	0.46	1.06	363.70	12.33	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	40%	84	4.72	1.06	1022.63	18.50	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75-100%	166	5.50	1.06	668.07	9.63	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	153	5.88	1.06	998.04	13.38	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (for PM_{10} and $PM_{2.5}$ data at all power settings), 5, 8, 11, 12h											
AE1107C	Idle	---	362	4.15	1.06	8.35	0.12	---	1.58	1.42	3255.41
	Flight Idle	---	663	6.05	1.06	3.47	0.02	---	1.58	1.42	3255.41
	Intermediate	---	948	7.87	1.06	1.82	0.02	---	1.58	1.42	3255.41
	Max Continuous	---	2507	18.03	1.06	0.29	0.01	---	1.58	1.42	3255.41
Notes: 3f (This is the commercial designation of the T406-AD-400 engine), 8, 12d											
AE3007A	Idle (Taxi)	7%	389	3.83	1.06	17.35	2.89	---	0.05	0.05	3255.41
	Approach	30%	929	7.79	1.06	3.28	0.74	---	0.07	0.07	3255.41
	Climb out	85%	2500	17.47	1.06	0.92	0.33	---	0.06	0.05	3255.41
	Takeoff	100%	2992	20.54	1.06	0.75	0.29	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12e											
ALF 502L-2	Idle (Taxi)	7%	379	3.38	1.06	45.63	7.65	---	0.10	0.09	3255.41
	Approach	30%	930	6.47	1.06	3.97	0.21	---	0.11	0.10	3255.41
	Climb out	85%	2568	12.03	1.06	0.30	0.03	---	0.10	0.09	3255.41
	Takeoff	100%	3174	13.43	1.06	0.40	0.02	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
ALF 502R-3	Idle (Taxi)	7%	343	3.30	1.06	44.67	7.49	---	0.09	0.08	3255.41
	Approach	30%	815	6.15	1.06	8.43	0.33	---	0.09	0.08	3255.41
	Climb out	85%	2286	9.94	1.06	0.50	0.06	---	0.10	0.09	3255.41
	Takeoff	100%	2759	11.20	1.06	0.43	0.06	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
ALF 502R-5	Idle (Taxi)	7%	324	3.78	1.06	40.93	6.20	---	0.09	0.08	3255.41
	Approach	30%	821	6.60	1.06	7.10	0.25	---	0.09	0.08	3255.41
	Climb out	85%	2345	10.56	1.06	0.25	0.06	---	0.11	0.10	3255.41
	Takeoff	100%	2842	13.35	1.06	0.30	0.07	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
AS907-1-1A	Idle (Taxi)	7%	381	3.91	1.06	33.24	1.45	---	0.10	0.09	3255.41
	Approach	30%	825	8.81	1.06	6.28	0.14	---	0.06	0.05	3255.41
	Climb out	85%	2286	16.17	1.06	0.63	0.07	---	0.31	0.28	3255.41
	Takeoff	100%	2854	17.90	1.06	0.56	0.06	---	0.36	0.33	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
AS907-2-1G	Idle (Taxi)	7%	389	3.91	1.06	29.28	1.08	---	0.08	0.07	3255.41
	Approach	30%	849	8.74	1.06	6.29	0.13	---	0.06	0.05	3255.41
	Climb out	85%	2444	16.39	1.06	0.61	0.07	---	0.31	0.28	3255.41
	Takeoff	100%	2952	18.29	1.06	0.54	0.07	---	0.36	0.33	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
BR700-710A1-10	Idle (Taxi)	7%	706	4.00	1.06	26.09	2.28	---	0.05	0.05	3255.41
	Approach	30%	1746	8.20	1.06	4.24	0.05	---	0.04	0.04	3255.41
	Climb out	85%	4667	13.93	1.06	0.66	0.03	---	0.25	0.22	3255.41
	Takeoff	100%	5611	17.07	1.06	0.52	0.00	---	0.28	0.26	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
BR700-710A2-20	Idle (Taxi)	7%	706	4.67	1.06	28.00	1.29	---	0.06	0.05	3255.41
	Approach	30%	1698	7.67	1.06	4.81	0.06	---	0.05	0.04	3255.41
	Climb out	85%	4722	15.03	1.06	0.93	0.02	---	0.34	0.31	3255.41
	Takeoff	100%	5667	18.73	1.06	1.04	0.02	---	0.37	0.33	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
BR700-710C4-11	Idle (Taxi)	7%	659	4.50	1.06	31.57	2.63	---	0.06	0.06	3255.41
	Approach	30%	1706	7.71	1.06	4.92	0.06	---	0.05	0.04	3255.41
	Climb out	85%	4897	15.43	1.06	0.92	0.02	---	0.35	0.32	3255.41
	Takeoff	100%	5929	19.52	1.06	1.04	0.02	---	0.37	0.33	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
BR700-715A1-30	Idle (Taxi)	7%	762	5.37	1.06	16.27	0.24	---	0.07	0.06	3255.41
	Approach	30%	1944	11.19	1.06	3.76	0.01	---	0.06	0.06	3255.41
	Climb out	85%	5476	18.65	1.06	0.75	0.02	---	0.09	0.08	3255.41
	Takeoff	100%	6635	23.97	1.06	0.78	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
BR700-715C1-30	Idle (Taxi)	7%	802	5.72	1.06	14.86	0.16	---	0.07	0.06	3255.41
	Approach	30%	2167	11.55	1.06	3.06	0.00	---	0.07	0.06	3255.41
	Climb out	85%	6341	22.41	1.06	0.78	0.00	---	0.10	0.09	3255.41
	Takeoff	100%	7778	31.39	1.06	0.75	0.00	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
BR725A1-12	Idle (Taxi)	7%	675	3.38	1.06	41.88	3.45	---	0.06	0.05	3255.41
	Approach	30%	1754	7.81	1.06	5.93	0.00	---	0.04	0.03	3255.41
	Climb out	85%	5159	13.32	1.06	0.32	0.00	---	0.13	0.12	3255.41
	Takeoff	100%	6262	16.92	1.06	0.40	0.00	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
CF6-6D	Idle (Taxi)	7%	1371	4.50	1.06	54.20	24.15	---	0.20	0.18	3255.41
	Approach	30%	3841	11.40	1.06	6.50	0.81	---	0.10	0.09	3255.41
	Climb out	85%	11357	32.60	1.06	0.50	0.35	---	0.07	0.06	3255.41
	Takeoff	100%	13778	40.00	1.06	0.50	0.35	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-6D1A	Idle (Taxi)	7%	1397	4.60	1.06	52.00	22.89	---	0.19	0.17	3255.41
	Approach	30%	3921	11.80	1.06	5.50	0.69	---	0.09	0.08	3255.41
	Climb out	85%	11921	33.90	1.06	0.50	0.35	---	0.07	0.06	3255.41
	Takeoff	100%	14381	41.60	1.06	0.50	0.35	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CF6-6K	Idle (Taxi)	7%	1371	4.50	1.06	54.20	24.15	---	0.20	0.18	3255.41
	Approach	30%	3841	11.40	1.06	6.50	0.81	---	0.10	0.09	3255.41
	Climb out	85%	11357	32.60	1.06	0.50	0.35	---	0.07	0.06	3255.41
	Takeoff	100%	13778	40.00	1.06	0.50	0.35	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-6K2	Idle (Taxi)	7%	1397	4.60	1.06	52.00	22.89	---	0.19	0.17	3255.41
	Approach	30%	3921	11.80	1.06	5.50	0.69	---	0.09	0.08	3255.41
	Climb out	85%	11921	33.90	1.06	0.50	0.35	---	0.07	0.06	3255.41
	Takeoff	100%	14381	41.60	1.06	0.50	0.35	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50A	Idle (Taxi)	7%	1294	3.40	1.06	24.04	3.13	---	0.06	0.06	3255.41
	Approach	30%	4960	9.72	1.06	4.35	0.36	---	0.06	0.06	3255.41
	Climb out	85%	14183	23.27	1.06	0.49	0.16	---	0.11	0.10	3255.41
	Takeoff	100%	17206	27.17	1.06	0.43	0.17	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50C	Idle (Taxi)	7%	1683	3.50	1.06	62.30	26.45	---	0.22	0.20	3255.41
	Approach	30%	5103	9.40	1.06	5.20	1.15	---	0.11	0.10	3255.41
	Climb out	85%	15199	29.00	1.06	0.50	0.81	---	0.10	0.09	3255.41
	Takeoff	100%	18881	35.00	1.06	0.50	0.69	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50C1, -50C2	Idle (Taxi)	7%	1706	3.60	1.06	61.80	25.07	---	0.21	0.19	3255.41
	Approach	30%	5238	9.50	1.06	4.30	1.15	---	0.11	0.10	3255.41
	Climb out	85%	15675	29.70	1.06	0.50	0.81	---	0.10	0.09	3255.41
	Takeoff	100%	19738	36.30	1.06	0.50	0.69	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50C2B	Idle (Taxi)	7%	1294	3.40	1.06	24.04	3.13	---	0.06	0.06	3255.41
	Approach	30%	5294	10.49	1.06	3.42	0.30	---	0.06	0.05	3255.41
	Climb out	85%	15849	26.34	1.06	0.44	0.17	---	0.11	0.10	3255.41
	Takeoff	100%	19127	29.59	1.06	0.46	0.15	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50C2R	Idle (Taxi)	7%	1683	3.50	1.06	62.30	26.45	---	0.22	0.20	3255.41
	Approach	30%	5103	9.40	1.06	5.20	1.15	---	0.11	0.10	3255.41
	Climb out	85%	15199	29.00	1.06	0.50	0.81	---	0.10	0.09	3255.41
	Takeoff	100%	18881	35.00	1.06	0.50	0.69	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50CA	Idle (Taxi)	7%	1294	3.40	1.06	24.04	3.13	---	0.06	0.06	3255.41
	Approach	30%	5087	10.09	1.06	3.99	0.33	---	0.06	0.06	3255.41
	Climb out	85%	14881	24.30	1.06	0.46	0.16	---	0.11	0.10	3255.41
	Takeoff	100%	18103	28.03	1.06	0.44	0.16	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CF6-50E, -50E1	Idle (Taxi)	7%	1294	3.40	1.06	24.04	3.13	---	0.06	0.06	3255.41
	Approach	30%	5262	10.16	1.06	3.71	0.32	---	0.06	0.06	3255.41
	Climb out	85%	15397	25.50	1.06	0.45	0.17	---	0.11	0.10	3255.41
	Takeoff	100%	18738	28.97	1.06	0.45	0.16	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-50E2	Idle (Taxi)	7%	1294	3.40	1.06	24.04	3.13	---	0.06	0.06	3255.41
	Approach	30%	5262	10.16	1.06	3.71	0.32	---	0.06	0.06	3255.41
	Climb out	85%	15397	25.50	1.06	0.45	0.17	---	0.11	0.10	3255.41
	Takeoff	100%	18738	28.97	1.06	0.45	0.16	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80A	Idle (Taxi)	7%	1190	3.40	1.06	28.20	7.23	---	0.09	0.08	3255.41
	Approach	30%	4881	10.30	1.06	3.10	0.54	---	0.08	0.07	3255.41
	Climb out	85%	14246	25.60	1.06	1.10	0.33	---	0.11	0.10	3255.41
	Takeoff	100%	17024	29.80	1.06	1.00	0.33	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80A2, -80A3	Idle (Taxi)	7%	1190	3.40	1.06	28.20	7.22	---	0.09	0.08	3255.41
	Approach	30%	5087	10.80	1.06	2.80	0.52	---	0.07	0.07	3255.41
	Climb out	85%	14960	26.60	1.06	1.10	0.43	---	0.11	0.10	3255.41
	Takeoff	100%	17889	29.60	1.06	1.00	0.35	---	0.13	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2A1	Idle (Taxi)	7%	1579	3.99	1.06	42.24	10.57	---	0.12	0.11	3255.41
	Approach	30%	5048	9.76	1.06	2.19	0.23	---	0.06	0.06	3255.41
	Climb out	85%	15500	24.85	1.06	0.54	0.10	---	0.06	0.06	3255.41
	Takeoff	100%	19048	32.22	1.06	0.56	0.09	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2A2	Idle (Taxi)	7%	1500	3.95	1.06	46.01	12.05	---	0.13	0.11	3255.41
	Approach	30%	4603	9.44	1.06	2.94	0.26	---	0.06	0.06	3255.41
	Climb out	85%	13849	20.69	1.06	0.55	0.12	---	0.06	0.06	3255.41
	Takeoff	100%	16802	27.93	1.06	0.57	0.09	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2A3	Idle (Taxi)	7%	1603	3.92	1.06	41.51	10.28	---	0.12	0.10	3255.41
	Approach	30%	5151	9.93	1.06	2.07	0.22	---	0.06	0.06	3255.41
	Climb out	85%	15897	25.46	1.06	0.56	0.09	---	0.07	0.06	3255.41
	Takeoff	100%	19500	34.50	1.06	0.58	0.07	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2A5	Idle (Taxi)	7%	1643	3.79	1.06	41.65	10.34	---	0.12	0.10	3255.41
	Approach	30%	5452	9.11	1.06	1.93	0.23	---	0.06	0.06	3255.41
	Climb out	85%	16524	22.86	1.06	0.52	0.09	---	0.07	0.06	3255.41
	Takeoff	100%	20484	34.38	1.06	0.52	0.08	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CF6-80C2A5F	Idle (Taxi)	7%	1746	4.90	1.06	16.96	1.36	---	0.05	0.04	3255.41
	Approach	30%	5484	12.64	1.06	1.92	0.13	---	0.04	0.04	3255.41
	Climb out	85%	16714	21.27	1.06	0.04	0.05	---	0.06	0.06	3255.41
	Takeoff	100%	20873	28.11	1.06	0.05	0.06	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B1	Idle (Taxi)	7%	1556	3.73	1.06	43.22	10.88	---	0.12	0.11	3255.41
	Approach	30%	4889	8.83	1.06	2.37	0.24	---	0.06	0.06	3255.41
	Climb out	85%	14865	21.26	1.06	0.55	0.10	---	0.06	0.06	3255.41
	Takeoff	100%	18135	28.11	1.06	0.58	0.09	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B1F	Idle (Taxi)	7%	1579	4.73	1.06	19.23	1.77	---	0.05	0.04	3255.41
	Approach	30%	5159	12.47	1.06	2.13	0.13	---	0.04	0.04	3255.41
	Climb out	85%	15738	19.72	1.06	0.04	0.06	---	0.06	0.05	3255.41
	Takeoff	100%	19222	24.94	1.06	0.04	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B2	Idle (Taxi)	7%	1508	4.45	1.06	22.41	2.27	---	0.05	0.05	3255.41
	Approach	30%	4643	11.79	1.06	2.61	0.14	---	0.04	0.04	3255.41
	Climb out	85%	13937	18.25	1.06	0.05	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	16857	22.02	1.06	0.04	0.06	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B2F	Idle (Taxi)	7%	1492	4.52	1.06	21.56	2.14	---	0.05	0.04	3255.41
	Approach	30%	4706	11.80	1.06	2.64	0.14	---	0.04	0.04	3255.41
	Climb out	85%	14103	18.09	1.06	0.06	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	17048	21.55	1.06	0.04	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B4	Idle (Taxi)	7%	1595	4.68	1.06	19.76	1.83	---	0.05	0.04	3255.41
	Approach	30%	5087	12.37	1.06	2.12	0.14	---	0.04	0.04	3255.41
	Climb out	85%	15595	20.17	1.06	0.04	0.06	---	0.06	0.05	3255.41
	Takeoff	100%	19119	25.93	1.06	0.05	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B4F	Idle (Taxi)	7%	1579	4.73	1.06	19.23	1.77	---	0.05	0.04	3255.41
	Approach	30%	5159	12.47	1.06	2.13	0.13	---	0.04	0.04	3255.41
	Climb out	85%	15738	19.72	1.06	0.04	0.06	---	0.06	0.05	3255.41
	Takeoff	100%	19302	25.08	1.06	0.04	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B5F	Idle (Taxi)	7%	1635	4.91	1.06	17.45	1.51	---	0.05	0.04	3255.41
	Approach	30%	5532	12.74	1.06	1.83	0.13	---	0.04	0.04	3255.41
	Climb out	85%	17159	21.76	1.06	0.04	0.06	---	0.06	0.06	3255.41
	Takeoff	100%	21310	28.58	1.06	0.05	0.06	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CF6-80C2B6	Idle (Taxi)	7%	1627	4.76	1.06	18.89	1.70	---	0.05	0.04	3255.41
	Approach	30%	5333	12.53	1.06	1.91	0.13	---	0.04	0.04	3255.41
	Climb out	85%	16635	21.69	1.06	0.04	0.06	---	0.06	0.06	3255.41
	Takeoff	100%	20476	28.57	1.06	0.06	0.05	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B6F	Idle (Taxi)	7%	1611	4.81	1.06	18.42	1.64	---	0.05	0.04	3255.41
	Approach	30%	5413	12.63	1.06	1.93	0.13	---	0.04	0.04	3255.41
	Climb out	85%	16699	21.05	1.06	0.04	0.06	---	0.06	0.06	3255.41
	Takeoff	100%	20587	27.38	1.06	0.05	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B7F	Idle (Taxi)	7%	1611	4.81	1.06	18.42	1.64	---	0.05	0.04	3255.41
	Approach	30%	5413	12.63	1.06	1.93	0.13	---	0.04	0.04	3255.41
	Climb out	85%	16699	21.05	1.06	0.04	0.06	---	0.06	0.06	3255.41
	Takeoff	100%	20587	27.38	1.06	0.05	0.06	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2B8F	Idle (Taxi)	7%	1627	4.59	1.06	16.69	1.31	---	0.05	0.04	3255.41
	Approach	30%	5437	12.42	1.06	1.69	0.10	---	0.04	0.04	3255.41
	Climb out	85%	16714	20.84	1.06	0.02	0.05	---	0.06	0.05	3255.41
	Takeoff	100%	20500	26.85	1.06	0.03	0.05	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80C2D1F	Idle (Taxi)	7%	1556	3.80	1.06	41.78	10.38	---	0.12	0.11	3255.41
	Approach	30%	5214	9.16	1.06	1.94	0.23	---	0.06	0.06	3255.41
	Climb out	85%	16389	24.02	1.06	0.52	0.09	---	0.07	0.06	3255.41
	Takeoff	100%	20603	32.65	1.06	0.52	0.08	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80E1A2	Idle (Taxi)	7%	1810	4.53	1.06	42.67	10.78	---	0.10	0.09	3255.41
	Approach	30%	5746	9.91	1.06	1.61	0.16	---	0.05	0.04	3255.41
	Climb out	85%	17818	28.02	1.06	0.34	0.08	---	0.08	0.07	3255.41
	Takeoff	100%	21960	39.29	1.06	0.38	0.06	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80E1A3	Idle (Taxi)	7%	1802	4.69	1.06	37.02	10.96	---	0.10	0.09	3255.41
	Approach	30%	5992	10.29	1.06	1.23	0.21	---	0.05	0.04	3255.41
	Climb out	85%	18945	31.74	1.06	0.31	0.08	---	0.08	0.08	3255.41
	Takeoff	100%	23722	45.63	1.06	0.34	0.08	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF6-80E1A4	Idle (Taxi)	7%	1802	4.62	1.06	38.09	11.90	---	0.10	0.09	3255.41
	Approach	30%	5905	10.13	1.06	1.33	0.21	---	0.05	0.04	3255.41
	Climb out	85%	18548	30.30	1.06	0.30	0.08	---	0.08	0.07	3255.41
	Takeoff	100%	23048	43.15	1.06	0.34	0.07	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CF34-3A, -3A1	Idle (Taxi)	7%	394	3.82	1.06	42.60	4.54	---	0.09	0.08	3255.41
	Approach	30%	944	6.86	1.06	1.90	0.15	---	0.06	0.06	3255.41
	Climb out	85%	2653	10.14	1.06	0.00	0.07	---	0.09	0.08	3255.41
	Takeoff	100%	3230	11.61	1.06	0.00	0.07	---	0.16	0.14	3255.41
Notes: 3b, 5, 6, 8, 10, 12d											
CF34-3B	Idle (Taxi)	7%	388	3.72	1.06	47.59	5.39	---	0.09	0.08	3255.41
	Approach	30%	921	6.63	1.06	1.88	0.15	---	0.06	0.06	3255.41
	Climb out	85%	2610	9.68	1.06	0.00	0.06	---	0.09	0.08	3255.41
	Takeoff	100%	3167	11.28	1.06	0.00	0.07	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF34-8C1	Idle (Taxi)	7%	548	4.31	1.06	24.92	0.09	---	0.04	0.03	3255.41
	Approach	30%	1334	11.10	1.06	2.91	0.07	---	0.04	0.04	3255.41
	Climb out	85%	3921	12.82	1.06	0.50	0.02	---	0.04	0.04	3255.41
	Takeoff	100%	4795	14.67	1.06	0.41	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF34-8C5	Idle (Taxi)	7%	510	4.60	1.06	18.25	0.15	---	0.04	0.04	3255.41
	Approach	30%	1423	10.75	1.06	4.24	0.07	---	0.04	0.04	3255.41
	Climb out	85%	4204	12.60	1.06	0.57	0.02	---	0.05	0.04	3255.41
	Takeoff	100%	5144	14.69	1.06	0.64	0.02	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF34-8C5A1	Idle (Taxi)	7%	516	4.65	1.06	17.85	0.15	---	0.04	0.04	3255.41
	Approach	30%	1452	10.87	1.06	4.17	0.07	---	0.04	0.04	3255.41
	Climb out	85%	4310	12.82	1.06	0.57	0.02	---	0.05	0.04	3255.41
	Takeoff	100%	5278	15.09	1.06	0.66	0.02	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF34-8C5A2	Idle (Taxi)	7%	524	4.70	1.06	17.30	0.15	---	0.04	0.04	3255.41
	Approach	30%	1492	11.06	1.06	4.05	0.07	---	0.04	0.04	3255.41
	Climb out	85%	4468	13.15	1.06	0.57	0.02	---	0.05	0.05	3255.41
	Takeoff	100%	5484	15.81	1.06	0.71	0.02	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF34-8C5B1	Idle (Taxi)	7%	500	4.50	1.06	19.52	0.18	---	0.04	0.04	3255.41
	Approach	30%	1357	10.42	1.06	4.44	0.08	---	0.04	0.04	3255.41
	Climb out	85%	3944	12.03	1.06	0.58	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	4810	13.89	1.06	0.60	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CF700-2D	Idle (Taxi)	<30%	460	0.89	1.06	155.00	20.70	---	0.00**(S)**	0.00**(S)**	3255.41
	Approach	30%	919	1.80	1.06	62.00	1.61	---	0.01**(S)**	0.01**(S)**	3255.41
	Climb out	90 - 100%	2322	4.30	1.06	11.34	0.11	---	0.01**(S)**	0.01**(S)**	3255.41
	Takeoff	>100%	2607	5.60	1.06	9.98	0.11	---	0.02**(S)**	0.02**(S)**	3255.41
Notes: 3a, 4c (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-2A Series	Idle (Taxi)	7%	1032	4.30	1.06	23.50	1.30	---	0.06	0.05	3255.41
	Approach	30%	2524	8.70	1.06	3.40	0.09	---	0.06	0.05	3255.41
	Climb out	70%	7230	17.30	1.06	0.90	0.05	---	0.06	0.05	3255.41
	Takeoff	100%	8841	20.40	1.06	0.90	0.05	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-2B-1	Idle (Taxi)	7%	1016	4.00	1.06	30.70	2.10	---	0.06	0.06	3255.41
	Approach	30%	2468	8.20	1.06	4.20	0.09	---	0.06	0.05	3255.41
	Climb out	70%	6500	16.00	1.06	0.90	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	7818	18.50	1.06	0.90	0.05	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-2-C5	Idle (Taxi)	7%	1016	4.00	1.06	30.70	2.10	---	0.06	0.06	3255.41
	Approach	30%	2468	8.20	1.06	4.20	0.09	---	0.06	0.05	3255.41
	Climb out	85%	6500	16.00	1.06	0.90	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	7818	18.50	1.06	0.90	0.05	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-3-B1	Idle (Taxi)	7%	905	3.90	1.06	34.40	2.62	---	0.07	0.06	3255.41
	Approach	30%	2302	8.30	1.06	3.80	0.09	---	0.06	0.05	3255.41
	Climb out	85%	6286	15.50	1.06	0.95	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	7508	17.70	1.06	0.90	0.05	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-3B-2	Idle (Taxi)	7%	944	4.10	1.06	30.10	2.01	---	0.06	0.06	3255.41
	Approach	30%	2492	8.70	1.06	3.40	0.08	---	0.06	0.05	3255.41
	Climb out	85%	6968	16.70	1.06	0.90	0.05	---	0.05	0.05	3255.41
	Takeoff	100%	8381	19.40	1.06	0.90	0.04	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-3C-1	Idle (Taxi)	7%	984	4.30	1.06	26.80	1.63	---	0.06	0.06	3255.41
	Approach	30%	2667	9.10	1.06	3.10	0.08	---	0.06	0.05	3255.41
	Climb out	85%	7571	17.80	1.06	0.90	0.05	---	0.06	0.05	3255.41
	Takeoff	100%	9159	20.70	1.06	0.90	0.03	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5-A1	Idle (Taxi)	7%	802	4.00	1.06	17.60	1.61	---	0.06	0.06	3255.41
	Approach	30%	2310	8.00	1.06	2.50	0.46	---	0.09	0.08	3255.41
	Climb out	85%	6841	19.60	1.06	0.90	0.26	---	0.13	0.12	3255.41
	Takeoff	100%	8341	24.60	1.06	0.90	0.26	---	0.14	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5A3	Idle (Taxi)	7%	829	4.10	1.06	16.20	1.50	---	0.07	0.06	3255.41
	Approach	30%	2437	8.30	1.06	2.40	0.35	---	0.09	0.08	3255.41
	Climb out	85%	7341	21.10	1.06	0.90	0.23	---	0.13	0.12	3255.41
	Takeoff	100%	8976	26.40	1.06	0.90	0.23	---	0.14	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-5A4	Idle (Taxi)	7%	754	4.04	1.06	20.30	2.01	---	0.07	0.06	3255.41
	Approach	30%	2071	8.51	1.06	3.10	0.58	---	0.09	0.08	3255.41
	Climb out	85%	5873	19.11	1.06	1.10	0.26	---	0.11	0.10	3255.41
	Takeoff	100%	7119	22.64	1.06	1.10	0.26	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5A5	Idle (Taxi)	7%	778	4.29	1.06	18.50	1.76	---	0.06	0.06	3255.41
	Approach	30%	2190	8.94	1.06	2.80	0.52	---	0.09	0.08	3255.41
	Climb out	85%	6341	19.98	1.06	1.10	0.26	---	0.12	0.11	3255.41
	Takeoff	100%	7714	24.79	1.06	1.10	0.26	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B1	Idle (Taxi)	7%	929	4.60	1.06	28.40	3.69	---	0.06	0.05	3255.41
	Approach	30%	2889	10.80	1.06	1.57	0.14	---	0.04	0.04	3255.41
	Climb out	85%	8833	27.20	1.06	0.50	0.12	---	0.10	0.09	3255.41
	Takeoff	100%	10786	35.10	1.06	0.50	0.12	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B2	Idle (Taxi)	7%	944	4.70	1.06	27.40	3.50	---	0.06	0.05	3255.41
	Approach	30%	2984	11.00	1.06	1.40	0.14	---	0.04	0.04	3255.41
	Climb out	85%	9191	28.50	1.06	0.50	0.12	---	0.09	0.09	3255.41
	Takeoff	100%	11318	37.80	1.06	0.50	0.12	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B4	Idle (Taxi)	7%	849	4.30	1.06	31.90	4.45	---	0.06	0.06	3255.41
	Approach	30%	2587	10.00	1.06	2.33	0.15	---	0.05	0.04	3255.41
	Climb out	85%	7627	23.30	1.06	0.50	0.12	---	0.10	0.09	3255.41
	Takeoff	100%	9254	28.70	1.06	0.50	0.12	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B4/3	Idle (Taxi)	7%	810	4.22	1.06	32.07	2.21	---	0.06	0.06	3255.41
	Approach	30%	2508	8.85	1.06	3.24	0.06	---	0.05	0.05	3255.41
	Climb out	85%	7452	17.23	1.06	0.16	0.02	---	0.09	0.08	3255.41
	Takeoff	100%	9064	21.57	1.06	0.25	0.02	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B7/3	Idle (Taxi)	7%	810	4.22	1.06	32.07	2.21	---	0.06	0.06	3255.41
	Approach	30%	2508	8.85	1.06	3.24	0.06	---	0.05	0.05	3255.41
	Climb out	85%	7452	17.23	1.06	0.16	0.02	---	0.09	0.08	3255.41
	Takeoff	100%	9064	21.57	1.06	0.25	0.02	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5B9/3	Idle (Taxi)	7%	754	3.92	1.06	38.80	3.46	---	0.07	0.06	3255.41
	Approach	30%	2206	8.26	1.06	4.42	0.08	---	0.05	0.05	3255.41
	Climb out	85%	6294	14.76	1.06	0.17	0.03	---	0.08	0.07	3255.41
	Takeoff	100%	7587	17.54	1.06	0.16	0.02	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-5C2	Idle (Taxi)	7%	933	4.19	1.06	34.00	6.53	---	0.12	0.11	3255.41
	Approach	30%	2824	10.00	1.06	1.75	0.09	---	0.08	0.07	3255.41
	Climb out	85%	8540	25.80	1.06	0.80	0.01	---	0.34	0.31	3255.41
	Takeoff	100%	10381	32.60	1.06	0.93	0.01	---	0.41	0.37	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5C2/P	Idle (Taxi)	7%	865	3.90	1.06	35.10	6.67	---	0.12	0.11	3255.41
	Approach	30%	2714	9.30	1.06	2.10	0.00	---	0.07	0.07	3255.41
	Climb out	85%	8214	23.80	1.06	0.70	0.00	---	0.34	0.30	3255.41
	Takeoff	100%	9937	29.70	1.06	0.80	0.00	---	0.39	0.35	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5C3/P	Idle (Taxi)	7%	889	4.00	1.06	33.40	6.21	---	0.12	0.11	3255.41
	Approach	30%	2817	9.60	1.06	1.90	0.00	---	0.07	0.07	3255.41
	Climb out	85%	8611	25.10	1.06	0.70	0.00	---	0.36	0.32	3255.41
	Takeoff	100%	10445	31.60	1.06	0.80	0.00	---	0.42	0.38	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5C4	Idle (Taxi)	7%	984	4.28	1.06	30.93	5.75	---	0.12	0.11	3255.41
	Approach	30%	3064	10.67	1.06	1.40	0.07	---	0.08	0.07	3255.41
	Climb out	85%	9484	29.05	1.06	0.85	0.01	---	0.39	0.35	3255.41
	Takeoff	100%	11556	37.67	1.06	1.00	0.01	---	0.46	0.42	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-5C4/P	Idle (Taxi)	7%	913	4.10	1.06	31.60	5.75	---	0.12	0.11	3255.41
	Approach	30%	2937	9.90	1.06	1.60	0.00	---	0.07	0.07	3255.41
	Climb out	85%	9071	26.70	1.06	0.70	0.00	---	0.38	0.34	3255.41
	Takeoff	100%	11072	34.10	1.06	0.80	0.00	---	0.44	0.39	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B18/3	Idle (Taxi)	7%	730	3.65	1.06	46.64	5.19	---	0.08	0.07	3255.41
	Approach	30%	2032	7.78	1.06	5.54	0.09	---	0.05	0.05	3255.41
	Climb out	85%	5571	13.00	1.06	0.28	0.03	---	0.07	0.06	3255.41
	Takeoff	100%	6683	14.81	1.06	0.17	0.03	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B20	Idle (Taxi)	7%	794	4.30	1.06	25.90	3.57	---	0.06	0.05	3255.41
	Approach	30%	2175	9.50	1.06	3.20	0.12	---	0.04	0.04	3255.41
	Climb out	85%	6040	17.40	1.06	0.50	0.12	---	0.08	0.07	3255.41
	Takeoff	100%	7246	20.50	1.06	0.60	0.12	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B20/2	Idle (Taxi)	7%	810	3.75	1.06	49.71	9.33	---	0.09	0.08	3255.41
	Approach	30%	2206	9.39	1.06	11.37	0.41	---	0.07	0.06	3255.41
	Climb out	85%	5984	10.81	1.06	11.38	0.26	---	0.06	0.05	3255.41
	Takeoff	100%	7167	13.25	1.06	4.26	0.08	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-7B20/3	Idle (Taxi)	7%	746	3.77	1.06	43.31	4.42	---	0.08	0.07	3255.41
	Approach	30%	2127	7.98	1.06	5.03	0.09	---	0.05	0.05	3255.41
	Climb out	85%	5921	13.53	1.06	0.23	0.03	---	0.07	0.06	3255.41
	Takeoff	100%	7111	15.61	1.06	0.15	0.03	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B20E	Idle (Taxi)	7%	794	3.80	1.06	43.30	4.37	---	0.08	0.07	3255.41
	Approach	30%	2381	8.00	1.06	5.00	0.12	---	0.06	0.05	3255.41
	Climb out	85%	5556	13.50	1.06	0.20	0.00	---	0.07	0.06	3255.41
	Takeoff	100%	7143	15.60	1.06	0.20	0.00	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B22	Idle (Taxi)	7%	833	4.50	1.06	22.80	2.88	---	0.05	0.05	3255.41
	Approach	30%	2365	10.00	1.06	2.50	0.12	---	0.04	0.04	3255.41
	Climb out	85%	6698	19.00	1.06	0.60	0.12	---	0.10	0.09	3255.41
	Takeoff	100%	8103	23.10	1.06	0.50	0.12	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B22/2	Idle (Taxi)	7%	833	3.94	1.06	45.35	8.35	---	0.09	0.08	3255.41
	Approach	30%	2405	6.37	1.06	30.87	6.97	---	0.38	0.34	3255.41
	Climb out	85%	6643	12.16	1.06	6.58	0.12	---	0.05	0.04	3255.41
	Takeoff	100%	8000	15.08	1.06	2.18	0.07	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B22/3	Idle (Taxi)	7%	786	3.95	1.06	37.90	3.25	---	0.07	0.06	3255.41
	Approach	30%	2310	8.35	1.06	4.18	0.08	---	0.05	0.05	3255.41
	Climb out	85%	6603	14.67	1.06	0.17	0.03	---	0.08	0.07	3255.41
	Takeoff	100%	7968	17.40	1.06	0.16	0.02	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B22E	Idle (Taxi)	7%	794	4.00	1.06	37.90	3.22	---	0.07	0.06	3255.41
	Approach	30%	2381	8.40	1.06	4.20	0.12	---	0.06	0.05	3255.41
	Climb out	85%	6349	14.70	1.06	0.20	0.00	---	0.07	0.07	3255.41
	Takeoff	100%	7937	17.40	1.06	0.20	0.00	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B24	Idle (Taxi)	7%	865	4.40	1.06	22.00	2.76	---	0.05	0.05	3255.41
	Approach	30%	2508	10.10	1.06	2.20	0.12	---	0.04	0.04	3255.41
	Climb out	85%	7222	20.50	1.06	0.60	0.12	---	0.10	0.09	3255.41
	Takeoff	100%	8754	25.30	1.06	0.40	0.12	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B24/2	Idle (Taxi)	7%	865	4.08	1.06	42.72	7.53	---	0.08	0.07	3255.41
	Approach	30%	2484	6.72	1.06	30.32	6.91	---	0.38	0.34	3255.41
	Climb out	85%	7159	13.23	1.06	4.30	0.08	---	0.05	0.04	3255.41
	Takeoff	100%	8643	16.63	1.06	1.38	0.06	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-7B24/3	Idle (Taxi)	7%	817	4.09	1.06	34.71	2.65	---	0.07	0.06	3255.41
	Approach	30%	2444	8.60	1.06	3.68	0.07	---	0.05	0.05	3255.41
	Climb out	85%	7103	15.60	1.06	0.15	0.03	---	0.08	0.07	3255.41
	Takeoff	100%	8619	18.93	1.06	0.18	0.02	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B24E	Idle (Taxi)	7%	794	4.10	1.06	34.70	2.65	---	0.07	0.06	3255.41
	Approach	30%	2381	8.60	1.06	3.70	0.12	---	0.06	0.05	3255.41
	Climb out	85%	7143	15.60	1.06	0.20	0.00	---	0.08	0.07	3255.41
	Takeoff	100%	8730	18.90	1.06	0.20	0.00	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B24E/B1	Idle (Taxi)	7%	794	4.10	1.06	34.70	2.65	---	0.07	0.06	3255.41
	Approach	30%	2381	8.60	1.06	3.70	0.12	---	0.06	0.05	3255.41
	Climb out	85%	7143	15.60	1.06	0.20	0.00	---	0.08	0.07	3255.41
	Takeoff	100%	8730	18.90	1.06	0.20	0.00	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B26	Idle (Taxi)	7%	897	4.70	1.06	18.80	2.19	---	0.05	0.04	3255.41
	Approach	30%	2683	10.80	1.06	1.60	0.12	---	0.04	0.04	3255.41
	Climb out	85%	7929	22.50	1.06	0.60	0.12	---	0.11	0.09	3255.41
	Takeoff	100%	9691	28.80	1.06	0.20	0.12	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B26/2	Idle (Taxi)	7%	897	4.27	1.06	39.93	6.76	---	0.08	0.07	3255.41
	Approach	30%	2651	7.26	1.06	26.07	5.44	---	0.31	0.28	3255.41
	Climb out	85%	7849	14.77	1.06	2.51	0.07	---	0.04	0.04	3255.41
	Takeoff	100%	9548	19.20	1.06	0.77	0.03	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B26/3	Idle (Taxi)	7%	857	4.27	1.06	30.94	2.01	---	0.06	0.06	3255.41
	Approach	30%	2627	8.93	1.06	3.07	0.06	---	0.05	0.05	3255.41
	Climb out	85%	7825	17.08	1.06	0.16	0.02	---	0.09	0.08	3255.41
	Takeoff	100%	9627	21.79	1.06	0.25	0.02	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B26E, -7B26E/B1, -7B26E/B2, -7B26E/B2F, -7B26E/F	Idle (Taxi)	7%	794	4.30	1.06	30.90	2.07	---	0.06	0.06	3255.41
	Approach	30%	2381	8.90	1.06	3.10	0.12	---	0.06	0.05	3255.41
	Climb out	85%	7937	17.10	1.06	0.20	0.00	---	0.09	0.08	3255.41
	Takeoff	100%	9524	21.80	1.06	0.20	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B27	Idle (Taxi)	7%	921	4.80	1.06	17.90	1.96	---	0.05	0.04	3255.41
	Approach	30%	2770	11.00	1.06	1.40	0.12	---	0.04	0.04	3255.41
	Climb out	85%	8278	23.70	1.06	0.50	0.12	---	0.11	0.10	3255.41
	Takeoff	100%	10191	30.90	1.06	0.20	0.12	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
CFM56-7B27/2	Idle (Taxi)	7%	913	4.36	1.06	38.73	6.39	---	0.08	0.07	3255.41
	Approach	30%	2786	7.53	1.06	24.28	4.84	---	0.28	0.25	3255.41
	Climb out	85%	8198	15.59	1.06	1.97	0.07	---	0.04	0.04	3255.41
	Takeoff	100%	10040	20.81	1.06	0.54	0.06	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B27/3	Idle (Taxi)	7%	873	4.36	1.06	29.39	1.77	---	0.06	0.06	3255.41
	Approach	30%	2722	9.09	1.06	2.82	0.06	---	0.05	0.05	3255.41
	Climb out	85%	8183	17.89	1.06	0.17	0.02	---	0.10	0.09	3255.41
	Takeoff	100%	10262	23.94	1.06	0.31	0.03	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CFM56-7B27E, -7B27E/B1, -7B27E/B1F, -7B27E/B3, -7B27E/F	Idle (Taxi)	7%	794	4.40	1.06	29.40	1.73	---	0.06	0.06	3255.41
	Approach	30%	2381	9.10	1.06	2.80	0.12	---	0.06	0.05	3255.41
	Climb out	85%	7937	17.90	1.06	0.20	0.00	---	0.09	0.08	3255.41
	Takeoff	100%	10318	23.90	1.06	0.30	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
CT7-5	Idle (Taxi)	7%	131	2.20	1.06	35.33	3.78	---	0.18	0.16	3255.41
	Approach	30%	364	6.88	1.06	5.29	1.42	---	0.37	0.33	3255.41
	Climb out	70%	756	13.17	1.06	2.59	0.95	---	0.57	0.51	3255.41
	Takeoff	100%	809	13.77	1.06	2.59	0.95	---	0.69	0.62	3255.41
Notes: 3m, 11, 12h											
F100-PW-100	Idle (Taxi)	3%	1127	4.64	1.06	49.58	3.79	1.630	3.13	2.82	3255.41
	Approach	13%	2765	12.52	1.06	3.99	1.06	0.858	1.57	1.41	3255.41
	Intermediate	45%	7685	27.09	1.06	0.72	0.14	0.073	0.72	0.65	3255.41
	Military	100%	10996	35.01	1.06	0.70	0.12	0.074	1.24	1.12	3255.41
	Afterburner-1	134%	54007	6.62	1.06	9.57	0.13	0.031	0.87	0.78	3255.41
Notes: 3n, 8, 10, 12e											
F100-PW-200	Idle (Taxi)	3%	1006	6.21	1.06	24.06	2.05	1.314	2.49	2.24	3255.41
	Approach	13%	3251	17.93	1.06	1.22	0.05	0.020	2.37	2.13	3255.41
	Intermediate	45%	5651	26.55	1.06	0.38	0.07	0.030	1.58	1.42	3255.41
	Military	100%	8888	34.32	1.06	0.56	0.11	0.031	1.58	1.42	3255.41
	Afterburner-5	134%	40123	6.63	1.06	10.42	0.69	0.053	3.04	2.74	3255.41
Notes: 3e, 8, 10, 12e											
F100-PW-220	Idle (Taxi)	---	1084	4.61	1.06	35.30	7.94	---	2.06	1.85	3255.41
	Approach	---	3837	12.53	1.06	1.92	5.12	---	2.63	2.37	3255.41
	Intermediate	---	5770	22.18	1.06	0.86	2.89	---	2.06	1.85	3255.41
	Military	---	9679	29.32	1.06	0.86	1.79	---	1.33	1.20	3255.41
	Afterburner-5	---	41682	8.37	1.06	11.99	1.53	---	1.15	1.04	3255.41
Notes: 3f, 8, 12e											
F100-PW-229	Idle (Taxi)	5%	1087	3.80	1.06	10.17	0.45	---	2.06**(S)**	1.85**(S)**	3255.41
	Approach	21%	3098	15.08	1.06	1.17	0.24	---	2.63**(S)**	2.37**(S)**	3255.41
	Intermediate	49%	5838	17.54	1.06	0.15	0.35	---	2.06**(S)**	1.85**(S)**	3255.41
	Military	86%	11490	29.29	1.06	0.33	0.31	---	1.33**(S)**	1.20**(S)**	3255.41
	Afterburner-1	102%	20793	14.30	1.06	21.51	5.26	---	1.15**(S)**	1.04**(S)**	3255.41
Notes: 3c, 4d ($PM_{2.5}$ and PM_{10} data at all power settings), 5, 8, 10, 12e											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
F101-GE-100	Idle (Taxi)	---	476	7.30	1.06	120.10	28.98	---	0.09	0.08	3255.41
	Approach	---	4533**(S)**	9.16**(S)**	1.06	1.03**(S)**	0.02**(S)**	---	4.21**(S)**	3.74**(S)**	3255.41
	Intermediate	---	6557**(S)**	13.15**(S)**	1.06	0.85**(S)**	0.04**(S)**	---	1.35**(S)**	0.72**(S)**	3255.41
	Military	---	10000	2.30	1.06	7.60	0.46	---	0.03	0.03	3255.41
	Afterburner	---	66747	4.60	1.06	16.70	0.12	---	0.05	0.05	3255.41
Notes: 3g, 4e (all emission factors and fuel flow rates for Approach and Intermediate Power settings), 5, 8, 12h											
F101-GE-102	Idle (Taxi)	5%	1117	4.10	1.06	24.46	0.16	0.256	2.18	0.96	3255.41
	Approach	47%	4533	9.16	1.06	1.03	0.02	0.092	4.21	3.74	3255.41
	Intermediate	66%	6557	13.15	1.06	0.85	0.04	0.082	1.35	0.72	3255.41
	Military	77%	7828	12.83	1.06	0.83	0.12	0.266	1.68	1.20	3255.41
	Afterburner-1	106%	15314	16.92	1.06	43.49	1.46	1.111	2.87	2.40	3255.41
Notes: 3c, 10, 12e											
F103-GE-100, -101	Idle (Taxi)	7%	1706	3.60	1.06	61.79	21.80	---	2.80**(S)**	2.49**(S)**	3255.41
	Approach	30%	5238	9.50	1.06	4.30	1.00	---	1.20**(S)**	0.44**(S)**	3255.41
	Intermediate	70%	15675	29.79	1.06	0.50	0.70	---	0.89**(S)**	0.37**(S)**	3255.41
	Military	100%	19738	36.54	1.06	0.50	0.60	---	1.18**(S)**	0.77**(S)**	3255.41
Notes: 3f, 4f (PM_{10} and $PM_{2.5}$ data at all power settings), 8, 12g											
F108-CF-100	Idle (Taxi)	9%	1136	3.88	1.06	23.65	0.19	0.208	2.07	0.16	3255.41
	Approach	30%	2547	5.73	1.06	8.57	0.06	0.084	1.55	0.76	3255.41
	Intermediate	70%	5650	11.04	1.06	2.32	0.03	0.069	0.65	0.36	3255.41
	Military	78%	6458	12.05	1.06	0.36	0.03	0.018	1.59	1.02	3255.41
Notes: 3c, 10, 12e											
F108-CF-201	Idle (Taxi)	7%	1016	4.00	1.06	30.70	2.10	---	0.06	0.06	3255.41
	Approach	30%	2468	8.20	1.06	4.20	0.09	---	0.06	0.05	3255.41
	Climb out	70%	6500	16.00	1.06	0.90	0.06	---	0.05	0.05	3255.41
	Takeoff	100%	7818	18.50	1.06	0.90	0.05	---	0.07	0.06	3255.41
Notes: 3b (This is the military designation of the CFM56-2B-1 Engine), 5, 6, 8, 10, 12a											
F110-GE-100	Idle (Taxi)	3%	1111	3.77	1.06	24.11	0.22	0.184	2.60	1.12	3255.41
	Approach	44%	5080	9.78	1.06	5.77	0.03	0.029	1.37	0.91	3255.41
	Intermediate	66%	7332	16.92	1.06	3.47	0.05	0.054	0.58	0.41	3255.41
	Military	100%	11358	29.00	1.06	3.38	0.04	0.050	0.14	0.00	3255.41
	Afterburner-1	113%	18088	14.26	1.06	67.41	1.21	0.808	3.35	2.98	3255.41
Notes: 3c, 10, 12e											
F110-GE-129	Idle (Taxi)	4%	961	2.62	1.06	45.04	4.90	---	2.60**(S)**	1.12**(S)**	3255.41
	Approach	45%	4832	13.42	1.06	1.93	0.03**(S)**	---	1.37**(S)**	0.91**(S)**	3255.41
	Intermediate	65%	6939	17.82	1.06	1.53	0.05**(S)**	---	0.58**(S)**	0.41**(S)**	3255.41
	Military	76%	8611	20.34	1.06	1.17	0.93	---	0.14**(S)**	0.00**(S)**	3255.41
	Afterburner-1	99%	15564	7.09	1.06	63.28	53.46	---	3.35**(S)**	2.98**(S)**	3255.41
Notes: 3c, 4g (for VOC data for Approach and Intermediate settings and PM_{10} and $PM_{2.5}$ for all power settings), 5, 10, 12e											
F110-GE-400	Idle (Taxi)	7%	1287	2.76	1.06	16.57	3.48	---	0.02	0.02	3255.41
	Approach	30%	5809	12.41	1.06	0.96	0.44	---	0.02	0.02	3255.41
	Climb out	70%	11868	58.57	1.06	0.84	0.38	---	0.26	0.23	3255.41
	Takeoff	100%	11833	28.47	1.06	0.84	0.38	---	0.31	0.28	3255.41
Notes: 3m, 11, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
F113-RR-100	Idle (Taxi)	7%	1008	3.60	1.06	31.77	4.24	---	0.16	0.15	3255.41
	Approach	30%	2206	7.20	1.06	2.65	0.21	---	0.22	0.20	3255.41
	Climb out	85%	5762	17.30	1.06	0.63	0.14	---	0.24	0.22	3255.41
	Takeoff	100%	7071	22.70	1.06	0.12	0.10	---	0.23	0.21	3255.41
Notes: 3b (This is the military designation of the SPEY Mk511 engine), 5, 6, 8, 10, 12h											
F117-PW-100	Idle (Taxi)	4%	978	3.76	1.06	22.70	0.37	0.311	10.67	8.75	3255.41
	Approach	31%	4645	15.49	1.06	0.51	0.05	0.033	5.53	5.10	3255.41
	Intermediate	68%	10408	32.72	1.06	0.32	0.04	0.026	2.31	1.42	3255.41
	Takeoff	---	13905**(S)**	35.04**(S)**	1.06	0.32**(S)**	0.01**(S)**	0.015**(C)**	0.06**(S)**	0.05**(S)**	3255.41
Notes: 3c, 4a (HAPs at Takeoff setting only), 4h (All remaining Emission Factors at Takeoff setting), 10, 12e											
F118-GE-100	Idle (Taxi)	---	1097	4.30	1.06	20.98	0.29	0.249	1.25	1.03	3255.41
	Approach	---	3773	11.09	1.06	2.02	0.05	0.031	4.70	2.32	3255.41
	Intermediate	---	6350	18.01	1.06	0.85	0.03	0.022	3.05	2.72	3255.41
	Military	---	10887	33.12	1.06	0.65	0.03	0.008	1.64	1.48	3255.41
Notes: 3c, 10, 12e											
F119-PW-100	Idle (Taxi)	10%	1377	3.01	1.06	48.15	1.67	1.493	2.42	1.76	3255.41
	Approach	20%	2740	6.59	1.06	7.92	0.05	0.048	1.96	1.73	3255.41
	Intermediate	70%	10110	12.40	1.06	2.14	0.03	0.030	1.40	1.09	3255.41
	Military	100%	18612	19.81	1.06	0.75	0.01	0.010	1.12	0.97	3255.41
	Afterburner	150%	50170	7.37	1.06	16.10	0.00**(C)**	0.024**(C)**	0.85**(C)**	0.75**(C)**	3255.41
Notes: 3d, 4a (VOC, HAP, PM_{10}, and $PM_{2.5}$ Emission factors for afterburner setting only), 10, 12e											
F135-PW-100	Proprietary Information. Contact Air Quality Subject Matter Expert for More Information regarding this engine's Emission Factors										
F402-RR-406A	Idle (Taxi)	7%	1251	1.80	1.06	106.08	18.75	---	0.49	0.44	3255.41
	Approach	30%	3735	4.99	1.06	21.46	1.05	---	0.30	0.27	3255.41
	Intermediate	70%	7125	9.48	1.06	8.35	0.43	---	0.30	0.27	3255.41
	Military	100%	8094	10.78	1.06	6.93	0.43	---	0.32	0.29	3255.41
Notes: 3m, 11, 12h											
F402-RR-408	Idle (Taxi)	7%	1449	2.20	1.06	39.72	2.41	---	0.16	0.14	3255.41
	Approach	30%	3974	5.02	1.06	16.57	0.46	---	0.19	0.17	3255.41
	Intermediate	70%	7290	7.55	1.06	9.79	0.20	---	0.02	0.02	3255.41
	Military	100%	8494	8.38	1.06	8.58	0.20	---	0.21	0.19	3255.41
Notes: 3m, 11, 12h											
F404-GE-400, -F1D2	Idle (Taxi)	6%	685	1.70	1.06	110.18	3.39	2.925	4.47	3.10	3255.41
	Approach	38%	3111	7.86	1.06	2.02	0.04	0.038	1.46	0.87	3255.41
	Intermediate	79%	6464	17.03	1.06	1.54	0.07	0.042	1.57	0.90	3255.41
	Military	91%	7739	25.83	1.06	1.48	0.02	0.016	1.61	0.89	3255.41
	Afterburner-3	114%	15851	5.43	1.06	50.31	1.85	1.183	3.57	3.21	3255.41
Notes: 3c, 10, 12e, 13											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
GE90-110B1	Idle (Taxi)	7%	2937	5.11	1.06	40.59	5.23	---	0.07	0.06	3255.41
	Approach	30%	8571	15.78	1.06	2.29	0.07	---	0.05	0.04	3255.41
	Climb out	85%	27540	33.85	1.06	0.07	0.03	---	0.05	0.04	3255.41
	Takeoff	100%	34286	44.44	1.06	0.07	0.03	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-115B	Idle (Taxi)	7%	3016	5.19	1.06	39.11	4.88	---	0.07	0.06	3255.41
	Approach	30%	8968	16.50	1.06	1.98	0.07	---	0.05	0.04	3255.41
	Climb out	85%	29127	35.98	1.06	0.07	0.03	---	0.05	0.04	3255.41
	Takeoff	100%	37222	50.34	1.06	0.08	0.05	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-76B	Idle (Taxi)	7%	2048	5.10	1.06	34.12	3.69	---	0.07	0.06	3255.41
	Approach	30%	5857	13.76	1.06	2.77	0.08	---	0.05	0.04	3255.41
	Climb out	85%	18103	32.43	1.06	0.32	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	22191	40.25	1.06	0.31	0.03	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-77B	Idle (Taxi)	7%	2064	5.12	1.06	33.81	3.63	---	0.07	0.06	3255.41
	Approach	30%	5913	13.87	1.06	2.71	0.08	---	0.05	0.04	3255.41
	Climb out	85%	18326	32.78	1.06	0.32	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	22460	40.83	1.06	0.31	0.03	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-85B	Idle (Taxi)	7%	2151	5.33	1.06	31.34	3.22	---	0.06	0.06	3255.41
	Approach	30%	6381	14.77	1.06	2.16	0.07	---	0.05	0.04	3255.41
	Climb out	85%	20262	36.35	1.06	0.31	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	24849	45.54	1.06	0.30	0.05	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-90B	Idle (Taxi)	7%	2222	5.48	1.06	29.89	2.98	---	0.06	0.05	3255.41
	Approach	30%	6762	15.44	1.06	1.88	0.07	---	0.05	0.04	3255.41
	Climb out	85%	21706	39.07	1.06	0.31	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	26826	49.21	1.06	0.30	0.05	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GE90-94B	Idle (Taxi)	7%	2254	5.55	1.06	29.23	2.86	---	0.06	0.05	3255.41
	Approach	30%	6952	15.81	1.06	1.74	0.07	---	0.05	0.04	3255.41
	Climb out	85%	22468	40.63	1.06	0.31	0.03	---	0.04	0.04	3255.41
	Takeoff	100%	27881	51.33	1.06	0.30	0.05	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GEnx-1B64	Idle (Taxi)	7%	1579	4.24	1.06	21.62	0.93	---	0.04	0.04	3255.41
	Approach	30%	4794	9.03	1.06	2.99	0.07	---	0.08	0.07	3255.41
	Climb out	85%	14770	14.61	1.06	0.38	0.02	---	0.04	0.04	3255.41
	Takeoff	100%	17976	24.82	1.06	0.18	0.02	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
GEnx-1B67	Idle (Taxi)	7%	1611	4.30	1.06	20.70	0.83	---	0.04	0.04	3255.41
	Approach	30%	4960	9.29	1.06	2.76	0.07	---	0.08	0.07	3255.41
	Climb out	85%	15397	16.26	1.06	0.30	0.02	---	0.04	0.04	3255.41
	Takeoff	100%	18794	28.56	1.06	0.17	0.02	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GEnx-1B70	Idle (Taxi)	7%	1651	4.37	1.06	19.68	0.72	---	0.04	0.04	3255.41
	Approach	30%	5159	9.63	1.06	2.49	0.07	---	0.08	0.07	3255.41
	Climb out	85%	16167	18.48	1.06	0.24	0.02	---	0.04	0.04	3255.41
	Takeoff	100%	19794	34.06	1.06	0.17	0.02	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GEnx-2B67	Idle (Taxi)	7%	1714	4.43	1.06	18.95	0.66	---	0.04	0.04	3255.41
	Approach	30%	5564	9.58	1.06	2.53	0.07	---	0.08	0.07	3255.41
	Climb out	85%	15968	17.94	1.06	0.28	0.02	---	0.04	0.04	3255.41
	Takeoff	100%	19453	31.20	1.06	0.17	0.02	---	0.04	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GP7270	Idle (Taxi)	7%	1857	5.24	1.06	33.58	4.65	---	0.09	0.08	3255.41
	Approach	30%	5643	12.90	1.06	1.27	0.08	---	0.05	0.05	3255.41
	Climb out	85%	17214	31.37	1.06	0.09	0.03	---	0.06	0.05	3255.41
	Takeoff	100%	20929	41.73	1.06	0.11	0.03	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
GTSIO-520-H	Idle (Taxi)	<40%	22	0.88	1.06	720.50	47.31	---	60.00**(S)**	54.00**(S)**	3255.41
	Pattern	40%	102	7.70	1.06	697.40	7.52	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75%	145	9.76	1.06	728.75	7.04	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	256	1.03	1.06	1045.66	11.66	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3h, 4b (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 9, 12h											
IO-360-B	Idle (Taxi)	5-10%	8	1.16	1.06	897.40	56.58	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	30%	37	10.16	1.06	691.26	11.15	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75%	72	4.59	1.06	983.26	9.38	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	103	1.99	1.06	1199.03	11.50	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
IO-360-D	Idle (Taxi)	---	30	1.10	1.06	848.00	166.75	---	60.00	54.00	3255.41
	Approach	---	50	4.00	1.06	912.45	54.17	---	47.95	43.16	3255.41
	Intermediate	---	70	6.60	1.06	972.00	20.01	---	40.00	36.00	3255.41
	Military	---	90	5.80	1.06	1030.00	25.88	---	20.00	18.00	3255.41
Notes: 3g, 5, 12h											
J33-A-35	Idle (Taxi)	---	1190	1.50	1.06	127.00	22.43	---	0.73	0.66	3255.41
	Approach	---	1984	1.90	1.06	84.60	7.48	---	0.57	0.51	3255.41
	Intermediate	---	4762	2.70	1.06	49.10	1.50	---	0.02	0.02	3255.41
	Military	---	5556	3.60	1.06	31.30	0.58	---	0.02	0.02	3255.41
Notes: 3g, 5, 7, 8, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
J52-P-6B	Idle (Taxi)	<35%	714	2.07	1.06	86.37	27.46	---	19.94	17.95	3255.41
	3000lb Thrust	35% **(C)**	2301	3.91	1.06	16.57	0.94	---	0.18**(S)**	0.16**(S)**	3255.41
	75% Thrust	75%	3977	5.84	1.06	6.00	0.75	---	0.18**(S)**	0.16**(S)**	3255.41
	Military	>75%	6328	9.00	1.06	3.01	0.38	---	7.75	6.98	3255.41
Notes: 3i, 4i (for PM_{10} and $PM_{2.5}$ at 3000lb and 75% thrust power settings only), 5, 7, 8, 11 (percent thrust for 3000lb setting assumes maximum thrust of 8500lb for this engine),											
J52-P-8B	Idle (Taxi)	<32%	680	1.79	1.06	63.78	48.53	---	0.18**(S)**	0.16**(S)**	3255.41
	3000lb Thrust	32% **(C)**	2300	6.34	1.06	10.54	1.98	---	0.18**(S)**	0.16**(S)**	3255.41
	75% Thrust	75%	4320	10.10	1.06	3.00	0.67	---	0.13**(S)**	0.12**(S)**	3255.41
	Military	>75%	7370	13.05	1.06	0.71	1.07	---	0.13**(S)**	0.12**(S)**	3255.41
Notes: 3i, 4i (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 11 (percent thrust for 3000lb setting assumes maximum thrust of 9300lb for this engine), 12h											
J52-P-408	Idle (Taxi)	7%	1466	2.79	1.06	50.10	3.62	---	0.18	0.16	3255.41
	Approach	30%	3325	7.25	1.06	16.07	0.29	---	0.18	0.16	3255.41
	Intermediate	70%	6502	7.53	1.06	7.70	0.03	---	0.13	0.12	3255.41
	Military	100%	6483	7.53	1.06	7.70	0.03	---	0.13	0.12	3255.41
Notes: 3m, 5, 11, 12h											
J57-P-10	Idle (Taxi)	<75%	1100	1.87	1.06	80.52	111.09	---	0.16**(S)**	0.14**(S)**	3255.41
	75% Thrust	75%	5670	7.40	1.06	3.21	0.87	---	0.93**(S)**	0.84**(S)**	3255.41
	Normal Rated	76-99%	7250	9.00	1.06	1.79	1.15	---	1.92**(S)**	1.73**(S)**	3255.41
	Military	100%	8370	10.37	1.06	1.16	0.99	---	1.72**(S)**	1.55**(S)**	3255.41
Notes: 3i, 4j (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 11 (assumes 100% thrust at Military setting), 12h											
J57-P-19W	Idle (Taxi)	---	952	2.20	1.06	79.00	88.55	---	0.16	0.14	3255.41
	Approach	---	3333	5.80	1.06	7.90	1.61	---	0.93	0.84	3255.41
	Intermediate	---	6508	9.50	1.06	2.40	0.23	---	1.92	1.73	3255.41
	Military	---	7460	11.00	1.06	1.90	0.12	---	1.72	1.55	3255.41
Notes: 3g, 5, 7, 8, 12h											
J57-P-420	Idle (Taxi)	<30%	1322	1.53	1.06	80.74	87.93	---	0.16**(S)**	0.14**(S)**	3255.41
	30% Thrust	30%	3413	4.45	1.06	14.83	5.22	---	0.93**(S)**	0.84**(S)**	3255.41
	75% Thrust	75%	5767	6.99	1.06	4.32	1.25	---	1.92**(S)**	1.73**(S)**	3255.41
	Intermediate	75-100%	10570	12.97	1.06	0.34	0.56	---	1.72**(S)**	1.55**(S)**	3255.41
	Afterburner	>100%	39721	5.16	1.06	14.20	2.92	---	3.10**(C)**	2.79**(C)**	3255.41
Notes: 3i, 4a (for PM_{10} and $PM_{2.5}$ at Afterburner setting), 4j (for PM_{10} and $PM_{2.5}$ at all other settings), 5, 11, 12h											
J57-P/F-43WB	Idle (Taxi)	---	952	2.20	1.06	78.00	86.25	---	0.14	0.13	3255.41
	Approach	---	1825	4.45	1.06	16.85	6.33	---	0.41	0.37	3255.41
	Intermediate	---	6667	9.90	1.06	2.30	0.12	---	1.23	1.11	3255.41
	Military	---	7778	11.00	1.06	1.50	0.12	---	1.74	1.57	3255.41
Notes: 3g, 5, 7, 8, 12h											
J57-P/F-59W	Idle (Taxi)	---	1270	2.40	1.06	65.00	60.84	---	0.13	0.12	3255.41
	Approach	---	1825	3.30	1.06	32.50	16.33	---	0.22	0.20	3255.41
	Intermediate	---	3889	6.10	1.06	8.90	1.27	---	0.60	0.54	3255.41
	Military	---	7937	11.30	1.06	2.40	0.23	---	0.84	0.76	3255.41
Notes: 3g, 5, 7, 8, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
J60-P-3A	Idle (Taxi)	---	556	1.50	1.06	70.00	10.58	---	0.02	0.02	3255.41
	Approach	---	556	1.70	1.06	50.50	6.44	---	0.02	0.02	3255.41
	Intermediate	---	1429	4.00	1.06	5.80	0.23	---	0.23	0.21	3255.41
	Military	---	3413	4.60	1.06	4.00	0.12	---	0.17	0.15	3255.41
Notes: 3g, 5, 7, 8, 12h											
J60-P-5A, -5B	Idle (Taxi)	---	476	1.50	1.06	70.00	10.58	---	0.02	0.02	3255.41
	Approach	---	556	1.70	1.06	50.50	6.44	---	0.02	0.02	3255.41
	Intermediate	---	1429	4.00	1.06	5.80	0.23	---	0.23	0.21	3255.41
	Military	---	2460	4.60	1.06	4.00	0.12	---	0.17	0.15	3255.41
Notes: 3g, 5, 7, 8, 12h											
J65-W-5F	Idle (Taxi)	---	1320	2.46	1.06	47.16	11.25	---	0.18**(S)**	0.16**(S)**	3255.41
	7450 rpm	---	4370	7.30	1.06	12.61	1.09	---	0.18**(S)**	0.16**(S)**	3255.41
	8000 rpm	---	5970	5.71	1.06	7.39	0.83	---	0.13**(S)**	0.12**(S)**	3255.41
	8300 rpm	---	7040	5.15	1.06	4.57	0.38	---	0.13**(S)**	0.12**(S)**	3255.41
	Military	---	6946	5.23	1.06	5.31	0.70	---	0.13**(S)**	0.12**(S)**	3255.41
Notes: 3i, 4i (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
J65-W-20	Idle (Taxi)	---	1333	2.78	1.06	50.19	4.31	---	0.18**(S)**	0.16**(S)**	3255.41
	75% rpm	---	2346	4.82	1.06	21.82	1.57	---	0.18**(S)**	0.16**(S)**	3255.41
	85% rpm	---	3260	7.27	1.06	16.13	0.32	---	0.18**(S)**	0.16**(S)**	3255.41
	90% rpm	---	3951	7.97	1.06	14.30	0.15	---	0.18**(S)**	0.16**(S)**	3255.41
	Intermediate (Mil)	---	6421	7.55	1.06	7.72	0.04	---	0.13**(S)**	0.12**(S)**	3255.41
Notes: 3a, 4i (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
J69-T-25	Idle (Taxi)	4%	167	0.80	1.06	160.08	2.33	1.773	3.15	1.47	3255.41
	Approach	30%	473**(C)**	1.41**(C)**	1.06	89.40**(C)**	0.50**(C)**	0.500**(C)**	1.87**(C)**	0.87**(C)**	3255.41
	Intermediate	63%	872	2.92	1.06	38.27	0.06	0.072	0.94	0.39	3255.41
	Military	84%	1085	4.53	1.06	32.86	0.03	0.069	0.67	0.38	3255.41
Notes: 3c, 4a (for all values for approach power setting only), 7, 8, 10, 12e											
J75-P-17	Idle (Taxi)	---	1700	1.29	1.06	76.18	65.41	---	0.47	0.42	3255.41
	Approach	---	11300	11.90	1.06	1.40	0.11	---	0.10	0.09	3255.41
	Intermediate	---	12386**(C)**	9.79**(C)**	1.06	0.94**(C)**	0.20**(C)**	---	0.64**(C)**	0.58**(C)**	3255.41
	Military	---	13200	8.20	1.06	0.60	0.26	---	1.05	0.95	3255.41
	Afterburner	---	53700	4.10	1.06	12.00	0.14	---	1.43**(C)**	1.28**(C)**	3255.41
Notes: 3a, 4a (for PM_{10} and $PM_{2.5}$ at Afterburner setting only), 5, 7, 8, 11 (assumes military setting has maximum percent thrust of 100%), 12h											
J79-GE-8D	Idle (Taxi)	7%	1325	2.36	1.06	55.59	16.14	---	0.44	0.40	3255.41
	75% rpm	30%	1550	2.97	1.06	30.55	4.20	---	0.90	0.81	3255.41
	87% rpm	70%	8310	8.44	1.06	2.56	0.12	---	0.15	0.14	3255.41
	Military	100%	9544	10.42	1.06	2.56	0.12	---	0.18	0.16	3255.41
	Afterburner	110-150%	34647	4.71	1.06	8.14	0.19	---	0.56	0.50	3255.41
Notes: 3m, 5, 11, 12h											
J79-GE-10D	Idle (Taxi)	7%	1375	1.33	1.06	111.18	37.37	---	0.88	0.79	3255.41
	Approach	30%	3490	4.22	1.06	20.00	2.80	---	0.63	0.57	3255.41
	Intermediate	70%	7674	8.24	1.06	4.69	1.34	---	0.72	0.65	3255.41
	Military	100%	10097	10.24	1.06	2.83	1.34	---	0.72	0.65	3255.41
	Afterburner	110-150%	35339	4.50	1.06	8.63	1.01	---	0.37	0.33	3255.41
Notes: 3m, 5, 11, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
J79-GE-15	Idle (Taxi)	---	1111	2.50	1.06	57.00	13.80	---	0.50	0.45	3255.41
	Approach	---	3492	4.80	1.06	9.40	1.27	---	1.80	1.62	3255.41
	Intermediate	---	5397	5.60	1.06	4.60	0.35	---	2.80	2.52	3255.41
	Military	---	8889	8.90	1.06	2.20	0.23	---	2.20	1.98	3255.41
	Afterburner	---	32223	9.10	1.06	4.00	0.01	---	0.15	0.14	3255.41
Notes: 3g, 5, 7, 8, 12h											
J79-GE-17	Idle (Taxi)	---	1032	2.70	1.06	66.00	26.57	---	0.18	0.16	3255.41
	Approach	---	3492	4.50	1.06	15.40	0.58	---	0.51	0.46	3255.41
	Intermediate	---	6984	5.80	1.06	7.80	0.12	---	0.72	0.65	3255.41
	Military	---	9841	10.60	1.06	5.20	0.12	---	0.92	0.83	3255.41
	Afterburner	---	34921	8.10	1.06	4.00	0.01	---	0.15	0.14	3255.41
Notes: 3g, 5, 7, 8, 12h											
J85-GE-5A	Idle (Taxi)	4%	434	1.34	1.06	250.22	2.00	1.535	4.70	4.02	3255.41
	Approach	13%**(C)**	864**(C)**	1.42**(C)**	1.06	154.82**(C)**	1.29**(C)**	1.127**(C)**	2.80**(C)**	1.85**(C)**	3255.41
	Intermediate	15%	950	1.47	1.06	104.02	0.92	0.909	1.79	0.69	3255.41
	Military	88%	2740	2.64	1.06	32.91	0.12	0.125	1.13	0.04	3255.41
	Afterburner-1	116%	8138	1.98	1.06	13.46	0.05	0.045	0.25	0.09	3255.41
Notes: 3c, 10, 12e											
J85-GE-5F	Idle (Taxi)	---	524	1.34	1.06	178.05	34.46	---	4.70**(S)**	4.02**(S)**	3255.41
	75% rpm	---	798	2.13	1.06	78.20	2.59	---	3.01**(C)**	1.84**(C)**	3255.41
	85% rpm	---	1098	2.73	1.06	58.01	1.36	---	2.15**(C)**	1.20**(C)**	3255.41
	Intermediate	---	1297	2.31	1.06	43.02	3.99	---	1.79**(S)**	0.69**(S)**	3255.41
	Afterburner	---	8470	2.60	1.06	29.00	0.92	---	0.25**(S)**	0.09**(S)**	3255.41
Notes: 3a, 4a (for PM_{10} and $PM_{2.5}$ at 75% rpm and 85% rpm power settings), 4l (PM_{10} and $PM_{2.5}$ for remaining power settings), 5, 12h											
J85-GE-5H	Idle (Taxi)	---	434	1.14	1.06	211.97	39.12	---	4.70	4.02	3255.41
	Approach	---	864**(C)**	1.53**(C)**	1.06	154.2**(C)**	17.84**(C)**	---	2.80**(C)**	1.85**(C)**	3255.41
	Intermediate	---	950	1.74	1.06	123.43	6.51	---	1.79	0.69	3255.41
	Military	---	2740	2.92	1.06	36.40	0.67	---	1.13	0.04	3255.41
	Afterburner	---	8138	2.09	1.06	14.19	2.63	---	0.25	0.09	3255.41
Notes: 3j, 7, 10, 12h											
J85-GE-5M	Idle (Taxi)	---	525	0.79	1.06	191.41	4.01	3.112	7.02	4.90	3255.41
	Approach	---	871**(C)**	1.47**(C)**	1.06	96.59**(C)**	1.70**(C)**	1.34**(C)**	10.53**(C)**	8.05**(C)**	3255.41
	Intermediate	---	1045	1.81	1.06	48.90	0.54	0.452	12.30	9.63	3255.41
	Military	---	2550	1.65	1.06	25.35	0.04	0.033	4.25	2.43	3255.41
	Afterburner	---	7695	1.21	1.06	10.19	0.05**(S)**	0.045**(S)**	0.25**(S)**	0.09**(S)**	3255.41
Notes: 3j, 4l (for VOC, HAPs, PM_{10} and $PM_{2.5}$ at Afterburner power setting only), 10, 12f											
J85-GE-5R	Idle (Taxi)	---	520	1.08	1.06	177.45	16.80	---	4.70**(S)**	4.02**(S)**	3255.41
	Approach	---	854**(C)**	0.84**(C)**	1.06	106.29**(C)**	7.84**(C)**	---	2.80**(S)**	1.85**(S)**	3255.41
	Intermediate	---	1030	0.70	1.06	65.07	2.78	---	1.79**(S)**	0.69**(S)**	3255.41
	Military	---	2220	1.92	1.06	30.99	0.75	---	1.13**(S)**	0.04**(S)**	3255.41
	Afterburner	---	7695	6.23	1.06	53.43	6.97	---	0.25**(S)**	0.09**(S)**	3255.41
Notes: 3j, 4l (PM_{10} and $PM_{2.5}$ at all power settings), 5, 10, 12f											
J85-GE-13	Idle (Taxi)	---	556	1.30	1.06	178.00	34.50	---	0.00	0.00	3255.41
	Approach	---	1230	2.05	1.06	58.30	5.69	---	0.01	0.01	3255.41
	Intermediate	---	2222	2.30	1.06	43.00	4.03	---	0.01	0.01	3255.41
	Military	---	2778	2.60	1.06	29.00	0.92	---	0.02	0.02	3255.41
	Afterburner	---	8968	2.00	1.06	26.00	0.08	---	0.01	0.01	3255.41
Notes: 3g, 5, 7, 8, 9, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
J85-GE-17A	Idle (Taxi)	---	556	1.30	1.06	178.00	34.50	---	0.00**(S)**	0.00**(S)**	3255.41
	Approach	---	1230	2.05	1.06	58.30	5.69	---	0.01**(S)**	0.01**(S)**	3255.41
	Intermediate	---	2222	2.30	1.06	43.00	4.03	---	0.01**(S)**	0.01**(S)**	3255.41
	Military	---	3810	2.60	1.06	29.00	0.92	---	0.02**(S)**	0.02**(S)**	3255.41
Notes: 3g, 4c (PM_{10} and $PM_{2.5}$ for all power settings), 5, 7, 8, 10, 12h											
J85-GE-21	Idle (Taxi)	---	400	1.25	1.06	159.00	27.89	---	0.00**(S)**	0.00**(S)**	3255.41
	75% rpm	---	700	2.00	1.06	92.14	14.29	---	0.01**(S)**	0.01**(S)**	3255.41
	85% rpm	---	1200	2.92	1.06	46.17	2.97	---	0.01**(S)**	0.01**(S)**	3255.41
	Intermediate (Military)	---	3200	5.00	1.06	21.56	0.29	---	0.02**(S)**	0.02**(S)**	3255.41
	Afterburner	---	10650	5.60	1.06	36.40	0.12	---	0.01**(S)**	0.01**(S)**	3255.41
Notes: 3a, 4c (PM_{10} and $PM_{2.5}$ at all power settings), 5, 7, 8, 12h											
JT3D-3B	Idle (Taxi)	7%	1071	2.50	1.06	98.00	128.80	---	0.16**(S)**	0.14**(S)**	3255.41
	Approach	30%	2746	4.80	1.06	24.50	4.60	---	0.93**(S)**	0.84**(S)**	3255.41
	Climb out	85%	7397	9.90	1.06	2.80	2.30	---	1.92**(S)**	1.73**(S)**	3255.41
	Takeoff	100%	9318	12.10	1.06	1.50	4.60	---	1.72**(S)**	1.55**(S)**	3255.41
Notes: 3b, 4j (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											
JT3D-7 Series	Idle (Taxi)	7%	1016	2.20	1.06	138.99	141.45	---	0.16**(S)**	0.14**(S)**	3255.41
	Approach	30%	3087	5.30	1.06	19.50	2.42	---	0.93**(S)**	0.84**(S)**	3255.41
	Climb out	85%	8191	9.59	1.06	1.90	0.46	---	1.92**(S)**	1.73**(S)**	3255.41
	Takeoff	100%	9952	12.69	1.06	0.89	0.58	---	1.72**(S)**	1.55**(S)**	3255.41
Notes: 3b, 4j (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											
JT8D-7 Series	Idle (Taxi)	7%	1025	2.70	1.06	35.50	12.19	---	0.23	0.20	3255.41
	Approach	30%	2271	5.50	1.06	10.50	1.84	---	0.22	0.20	3255.41
	Climb out	85%	6439	13.50	1.06	2.00	0.58	---	0.31	0.28	3255.41
	Takeoff	100%	7851	17.10	1.06	1.50	0.46	---	0.32	0.28	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-9 Series	Idle (Taxi)	7%	1050	2.90	1.06	14.14	3.59	---	0.10	0.09	3255.41
	Approach	30%	2363	6.00	1.06	2.14	0.69	---	0.11	0.10	3255.41
	Climb out	85%	6709	14.50	1.06	1.11	0.21	---	0.14	0.12	3255.41
	Takeoff	100%	8254	19.30	1.06	1.04	0.17	---	0.14	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-9A	Idle (Taxi)	7%	1155	2.89	1.06	14.11	2.95	---	0.21	0.19	3255.41
	Approach	30%	2409	5.99	1.06	2.14	0.57	---	0.25	0.23	3255.41
	Intermediate	70%	6794	14.47	1.06	1.07	0.16	---	0.27	0.24	3255.41
	Military	100%	8334	19.26	1.06	1.07	0.16	---	0.27	0.24	3255.41
Notes: 3m, 11, 12h											
JT8D-11	Idle (Taxi)	7%	1155	2.75	1.06	35.00	11.50	---	0.13**(S)**	0.11**(S)**	3255.41
	Approach	30%	2650	5.80	1.06	9.40	1.61	---	0.13**(S)**	0.12**(S)**	3255.41
	Climb out	85%	7251	14.60	1.06	1.90	0.52	---	0.21**(S)**	0.19**(S)**	3255.41
	Takeoff	100%	8897	18.90	1.06	1.20	0.46	---	0.22**(S)**	0.19**(S)**	3255.41
Notes: 3b, 4m (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
JT8D-15	Idle (Taxi)	7%	1172	3.20	1.06	11.00	1.68	---	0.13	0.11	3255.41
	Approach	30%	2700	6.90	1.06	2.77	0.63	---	0.13	0.12	3255.41
	Climb out	85%	7500	15.10	1.06	1.15	0.32	---	0.21	0.19	3255.41
	Takeoff	100%	9349	19.40	1.06	1.03	0.28	---	0.22	0.19	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-15A	Idle (Taxi)	7%	1089	3.10	1.06	12.93	2.14	---	0.13	0.12	3255.41
	Approach	30%	2476	6.60	1.06	2.90	0.75	---	0.14	0.12	3255.41
	Climb out	85%	7107	13.90	1.06	1.20	0.38	---	0.22	0.19	3255.41
	Takeoff	100%	8849	18.10	1.06	1.08	0.29	---	0.22	0.20	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-17	Idle (Taxi)	7%	1170	3.20	1.06	10.46	1.44	---	0.13	0.12	3255.41
	Approach	30%	2810	8.00	1.06	2.67	0.60	---	0.13	0.12	3255.41
	Climb out	85%	7913	15.70	1.06	1.10	0.31	---	0.22	0.20	3255.41
	Takeoff	100%	9881	20.60	1.06	0.95	0.25	---	0.22	0.20	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-17A	Idle (Taxi)	7%	1112	3.20	1.06	12.46	7.59	---	0.17	0.15	3255.41
	Approach	30%	2622	6.70	1.06	2.88	0.74	---	0.14	0.13	3255.41
	Climb out	85%	7416	14.30	1.06	1.16	0.35	---	0.22	0.20	3255.41
	Takeoff	100%	9310	19.10	1.06	1.07	0.29	---	0.23	0.21	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-17AR	Idle (Taxi)	7%	1172	3.20	1.06	10.70	1.53	---	0.15	0.13	3255.41
	Approach	30%	2837	8.00	1.06	2.68	0.63	---	0.15	0.13	3255.41
	Climb out	85%	8310	16.00	1.06	1.08	0.31	---	0.25	0.22	3255.41
	Takeoff	100%	10833	24.50	1.06	0.93	0.24	---	0.25	0.23	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-17R	Idle (Taxi)	7%	1230	3.30	1.06	9.43	1.09	---	0.14	0.13	3255.41
	Approach	30%	2980	8.40	1.06	2.54	0.61	---	0.15	0.13	3255.41
	Climb out	85%	8754	17.60	1.06	1.03	0.31	---	0.25	0.22	3255.41
	Takeoff	100%	11246	25.30	1.06	0.95	0.24	---	0.25	0.23	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-209	Idle (Taxi)	7%	1034	3.50	1.06	14.10	4.63	---	0.13	0.12	3255.41
	Approach	30%	2851	8.80	1.06	4.37	1.94	---	0.19	0.17	3255.41
	Climb out	85%	7800	19.00	1.06	1.40	0.58	---	0.21	0.19	3255.41
	Takeoff	100%	9452	22.80	1.06	1.03	0.40	---	0.21	0.19	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-217	Idle (Taxi)	7%	1089	4.57	1.06	15.31	0.00	---	0.07	0.06	3255.41
	Approach	30%	3042	7.66	1.06	3.54	0.00	---	0.06	0.06	3255.41
	Climb out	85%	8556	13.54	1.06	0.47	0.00	---	0.10	0.09	3255.41
	Takeoff	100%	10476	17.54	1.06	0.42	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
JT8D-217A	Idle (Taxi)	7%	1089	4.57	1.06	15.31	0.00	---	0.07	0.06	3255.41
	Approach	30%	3042	7.66	1.06	3.54	0.00	---	0.06	0.06	3255.41
	Climb out	85%	8556	13.54	1.06	0.47	0.00	---	0.10	0.09	3255.41
	Takeoff	100%	10476	17.54	1.06	0.42	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-217C	Idle (Taxi)	7%	1087	4.05	1.06	17.89	0.00	---	0.04	0.03	3255.41
	Approach	30%	2881	7.65	1.06	3.79	0.00	---	0.06	0.05	3255.41
	Climb out	85%	8294	13.02	1.06	0.49	0.00	---	0.08	0.07	3255.41
	Takeoff	100%	10175	16.49	1.06	0.42	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT8D-219	Idle (Taxi)	7%	1067	3.60	1.06	12.63	4.00	---	0.15	0.14	3255.41
	Approach	30%	3029	9.13	1.06	4.07	1.83	---	0.20	0.18	3255.41
	Climb out	85%	8611	20.80	1.06	1.20	0.48	---	0.25	0.22	3255.41
	Takeoff	100%	10746	27.00	1.06	0.73	0.31	---	0.25	0.22	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7	Idle (Taxi)	7%	1667	3.10	1.06	84.10	41.98	---	0.27	0.24	3255.41
	Approach	30%	4833	7.60	1.06	7.80	1.50	---	0.13	0.11	3255.41
	Climb out	85%	14000	27.70	1.06	0.00	0.12	---	0.09	0.08	3255.41
	Takeoff	100%	16532	37.90	1.06	0.00	0.12	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7A	Idle (Taxi)	7%	1675	3.10	1.06	83.60	41.52	---	0.26	0.24	3255.41
	Approach	30%	4913	7.60	1.06	7.60	1.50	---	0.13	0.11	3255.41
	Climb out	85%	14199	28.50	1.06	0.00	0.12	---	0.09	0.08	3255.41
	Takeoff	100%	16659	38.70	1.06	0.00	0.12	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7F	Idle (Taxi)	7%	1841	3.20	1.06	68.60	29.79	---	0.24	0.21	3255.41
	Approach	30%	4952	9.10	1.06	5.80	0.69	---	0.10	0.09	3255.41
	Climb out	85%	14119	31.50	1.06	0.90	0.00	---	0.11	0.10	3255.41
	Takeoff	100%	17151	41.70	1.06	0.90	0.00	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7J	Idle (Taxi)	7%	1889	3.30	1.06	66.70	28.18	---	0.24**(S)**	0.21**(S)**	3255.41
	Approach	30%	5389	9.40	1.06	5.50	0.58	---	0.10**(S)**	0.09**(S)**	3255.41
	Climb out	85%	15095	34.90	1.06	0.90	0.00	---	0.11**(S)**	0.10**(S)**	3255.41
	Takeoff	100%	18373	44.90	1.06	0.90	0.00	---	0.11**(S)**	0.10**(S)**	3255.41
Notes: 3b, 4n (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											
JT9D-7Q	Idle (Taxi)	7%	1881	3.00	1.06	53.00	13.80	---	0.24**(S)**	0.21**(S)**	3255.41
	Approach	30%	5400	7.80	1.06	1.70	0.35	---	0.10**(S)**	0.09**(S)**	3255.41
	Climb out	85%	15870	25.60	1.06	0.20	0.23	---	0.11**(S)**	0.10**(S)**	3255.41
	Takeoff	100%	19380	31.60	1.06	0.20	0.23	---	0.11**(S)**	0.10**(S)**	3255.41
Notes: 3b, 4n (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
JT9D-7R4D, -7R4D1	Idle (Taxi)	7%	1630	4.10	1.06	8.84	1.44	---	0.05	0.05	3255.41
	Approach	30%	5233	9.80	1.06	1.36	0.15	---	0.05	0.05	3255.41
	Climb out	85%	13318	30.00	1.06	0.48	0.14	---	0.06	0.06	3255.41
	Takeoff	100%	16310	38.50	1.06	0.51	0.17	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7R4E, -7R4E1	Idle (Taxi)	7%	1754	4.10	1.06	8.27	1.28	---	0.05	0.05	3255.41
	Approach	30%	5182	10.40	1.06	1.23	0.15	---	0.05	0.05	3255.41
	Climb out	85%	13683	34.20	1.06	0.53	0.15	---	0.07	0.06	3255.41
	Takeoff	100%	16810	41.60	1.06	0.57	0.18	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7R4E4	Idle (Taxi)	7%	1750	3.50	1.06	16.00	3.85	---	0.07	0.06	3255.41
	Approach	30%	5079	8.50	1.06	1.46	0.25	---	0.06	0.05	3255.41
	Climb out	85%	14516	29.70	1.06	0.67	0.15	---	0.06	0.06	3255.41
	Takeoff	100%	17603	36.90	1.06	0.67	0.17	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7R4G2	Idle (Taxi)	7%	1777	3.80	1.06	11.82	1.78	---	0.06	0.06	3255.41
	Approach	30%	5230	8.80	1.06	1.40	0.21	---	0.06	0.05	3255.41
	Climb out	85%	14921	29.50	1.06	0.63	0.16	---	0.08	0.07	3255.41
	Takeoff	100%	19278	41.30	1.06	0.74	0.17	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-7R4H1	Idle (Taxi)	7%	1948	3.80	1.06	11.63	1.70	---	0.06	0.06	3255.41
	Approach	30%	5736	8.90	1.06	1.39	0.21	---	0.06	0.05	3255.41
	Climb out	85%	15865	30.00	1.06	0.63	0.16	---	0.08	0.07	3255.41
	Takeoff	100%	19937	45.20	1.06	0.74	0.17	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
JT9D-20	Idle (Taxi)	7%	1675	3.10	1.06	83.60	41.52	---	0.26	0.24	3255.41
	Approach	30%	4913	7.60	1.06	7.60	1.50	---	0.13	0.11	3255.41
	Climb out	85%	14199	28.50	1.06	0.00	0.12	---	0.09	0.08	3255.41
	Takeoff	100%	16659	38.70	1.06	0.00	0.12	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
JT9D-20J	Idle (Taxi)	7%	1889	3.30	1.06	66.70	28.18	---	0.26**(S)**	0.24**(S)**	3255.41
	Approach	30%	5389	9.40	1.06	5.50	0.58	---	0.13**(S)**	0.11**(S)**	3255.41
	Climb out	85%	15095	34.90	1.06	0.90	0.00	---	0.09**(S)**	0.08**(S)**	3255.41
	Takeoff	100%	18373	44.90	1.06	0.90	0.00	---	0.10**(S)**	0.09**(S)**	3255.41
Notes: 3b, 4o (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											
JT9D-59A, -70A	Idle (Taxi)	7%	1881	3.00	1.06	53.00	13.80	---	0.26**(S)**	0.24**(S)**	3255.41
	Approach	30%	5400	7.80	1.06	1.70	0.35	---	0.13**(S)**	0.11**(S)**	3255.41
	Climb out	85%	15870	25.60	1.06	0.20	0.23	---	0.09**(S)**	0.08**(S)**	3255.41
	Takeoff	100%	19380	31.60	1.06	0.20	0.23	---	0.10**(S)**	0.09**(S)**	3255.41
Notes: 3b, 4o (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
JT15D-1 Series	Idle (Taxi)	7%	183	1.75	1.06	132.00	58.08	---	0.39	0.35	3255.41
	Approach	30%	405	3.44	1.06	40.50	5.09	---	0.32	0.28	3255.41
	Climb out	85%	984	6.77	1.06	3.50	0.01	---	0.11	0.10	3255.41
	Takeoff	100%	1175	7.60	1.06	2.65	0.01	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12b											
JT15D-5, -5A, -5B	Idle (Taxi)	7%	235	1.66	1.06	119.20	136.97	---	0.82	0.74	3255.41
	Approach	30%	524	4.93	1.06	38.60	13.46	---	0.73	0.66	3255.41
	Climb out	85%	1371	10.08	1.06	1.15	1.50	---	0.23	0.20	3255.41
	Takeoff	100%	1630	11.13	1.06	0.00	0.00	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12b											
LF507-1F	Idle (Taxi)	7%	360	3.28	1.06	37.83	5.43	---	0.13	0.12	3255.41
	Approach	30%	860	6.39	1.06	4.43	0.14	---	0.09	0.08	3255.41
	Climb out	85%	2350	12.02	1.06	0.30	0.01	---	0.09	0.08	3255.41
	Takeoff	100%	2840	14.52	1.06	0.20	0.01	---	0.08	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12b											
NK-8-2U	Idle (Taxi)	7%	1905	2.70	1.06	116.00	119.37	---	2.60**(S)**	1.12**(S)**	3255.41
	Approach	30%	4603	5.40	1.06	21.00	5.75	---	1.37**(S)**	0.91**(S)**	3255.41
	Climb out	85%	9286	12.90	1.06	6.00	0.63	---	0.58**(S)**	0.41**(S)**	3255.41
	Takeoff	100%	13889	13.90	1.06	5.50	0.52	---	0.14**(S)**	0.00**(S)**	3255.41
Notes: 3b, 4g (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12h											
O-200	Idle (Taxi)	<40%	8	1.58	1.06	644.42	33.36	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	40%	26	1.14	1.06	1187.84	38.20	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75-100%	45	4.87	1.06	974.10	23.93	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	45	4.87	1.06	974.10	23.93	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
O-320	Idle (Taxi)	<40%	9	0.52	1.06	1077.00	42.46	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	40%	47	0.95	1.06	1221.51	22.13	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75-100%	67	3.97	1.06	989.51	14.24	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	89	2.19	1.06	1077.44	13.55	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
O-470C	Idle (Taxi)	5-10%	15	1.32	1.06	741.72	220.86	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	30%	86	9.35	1.06	691.59	10.47	---	47.95**(S)**	43.16**(S)**	3255.41
	Intermediate	70%**(C)**	111.71**(C)**	4.44**(C)**	1.06	956.61**(C)**	6.61**(C)**	---	40.00**(S)**	36.00**(S)**	3255.41
	Military	100%	131	0.76	1.06	1155.37	3.50	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
PT6A-27	Idle (Taxi)	<30%	115	2.43	1.06	64.00	57.70	---	0.50**(S)**	0.45**(S)**	3255.41
	Approach	30%	215	8.37	1.06	23.26	2.51	---	0.10**(S)**	0.09**(S)**	3255.41
	Climb out	90%	400	7.00	1.06	1.20	0.00	---	0.25**(S)**	0.23**(S)**	3255.41
	Takeoff	100%	425	7.81	1.06	1.01	0.00	---	0.24**(S)**	0.22**(S)**	3255.41
Notes: 3a, 4p (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
PT6A-38	Idle (Taxi)	7%	103	2.09	1.06	82.44	2.09	---	0.50	0.45	3255.41
	Approach	30%	275	4.79	1.06	7.29	0.00	---	0.10	0.09	3255.41
	Climb out	70%	450	6.69	1.06	2.17	0.00	---	0.25	0.23	3255.41
	Takeoff	90%	489	7.08	1.06	2.05	0.00	---	0.24	0.22	3255.41
Notes: 3m, 11, 12h											
PT6A-41	Idle (Taxi)	<30%	147	1.97	1.06	115.31	116.88	---	0.50**(S)**	0.45**(S)**	3255.41
	Approach	30%	273	4.65	1.06	34.80	26.12	---	0.10**(S)**	0.09**(S)**	3255.41
	Climb out	90%	473	7.57	1.06	6.49	2.33	---	0.25**(S)**	0.23**(S)**	3255.41
	Takeoff	100%	510	7.98	1.06	5.10	2.01	---	0.24**(S)**	0.22**(S)**	3255.41
Notes: 3a, 4p (PM_{10} and $PM_{2.5}$ for all power settings), 5, 11, 12h											
PT6A-42	Idle (Taxi)	7%	103	2.16	1.06	76.55	16.61	---	0.45	0.41	3255.41
	Approach	30%	275	4.89	1.06	6.89	0.00	---	0.10	0.09	3255.41
	Intermediate	70%	466	6.88	1.06	1.95	0.00	---	0.24	0.22	3255.41
	Military	90%	513	7.28	1.06	1.95	0.00	---	0.23	0.21	3255.41
Notes: 3m, 11, 12h											
PT6A-65	Idle (Taxi)	7%	131	1.89	1.06	166.43	53.66	---	1.23	1.11	3255.41
	Approach	30%	340	4.59	1.06	20.86	3.31	---	0.74	0.67	3255.41
	Intermediate	70%	571	6.69	1.06	6.72	0.72	---	0.29	0.26	3255.41
	Military	90%	633	7.08	1.06	5.36	0.53	---	0.26	0.23	3255.41
Notes: 3m, 11, 12h											
PT6A-67B	Idle (Taxi)	7%	143	1.83	1.06	183.80	61.52	---	1.38	1.24	3255.41
	Approach	30%	364	4.59	1.06	20.96	3.24	---	0.72	0.65	3255.41
	Intermediate	70%	619	6.59	1.06	6.12	0.61	---	0.32	0.29	3255.41
	Military	90%	681	6.98	1.06	5.73	0.45	---	0.25	0.23	3255.41
Notes: 3m, 11, 12h											
PT6A-67D	Idle (Taxi)	7%	149	1.83	1.06	177.91	57.94	---	1.31	1.18	3255.41
	Approach	30%	372	4.69	1.06	19.76	2.93	---	0.66	0.59	3255.41
	Intermediate	70%	643	6.69	1.06	5.35	0.50	---	0.28	0.25	3255.41
	Military	90%	713	7.18	1.06	5.09	0.35	---	0.24	0.22	3255.41
Notes: 3m, 11, 12h											
PT6A-68	Ground Idle	2%	156	1.77	1.06	117.85	7.89	6.802	3.95	2.16	3255.41
	Flight Idle	3%	180	1.95	1.06	94.99	1.33	1.327	4.18	1.96	3255.41
	Descend	19%	328	5.03	1.06	33.69	3.29	3.212	4.15	1.23	3255.41
	Approach	46%	449	4.73	1.06	10.91	0.71	0.698	3.34	0.70	3255.41
	Max. Continuous	88%	612	8.18	1.06	3.88	0.20	0.105	4.30	0.61	3255.41
Notes: 3k, 10, 11 (percent hp calculated assuming maximum hp of 1250 per manufacturer's stated specifications), 12f											
PW306A	Idle (Taxi)	7%	335	4.26	1.06	36.35	5.01	---	0.07	0.06	3255.41
	Approach	30%	773	11.87	1.06	7.11	0.00	---	0.04	0.03	3255.41
	Climb out	85%	2096	19.26	1.06	2.51	0.00	---	0.05	0.04	3255.41
	Takeoff	100%	2517	20.08	1.06	2.27	0.00	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
PW308A	Idle (Taxi)	7%	353	3.65	1.06	38.21	7.61	---	0.14	0.12	3255.41
	Approach	30%	980	8.03	1.06	4.08	0.02	---	0.11	0.10	3255.41
	Climb out	85%	2374	14.06	1.06	1.06	0.00	---	0.44	0.39	3255.41
	Takeoff	100%	2860	16.74	1.06	0.83	0.00	---	0.39	0.35	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW2037	Idle (Taxi)	7%	1206	4.10	1.06	22.36	2.21	---	0.06	0.05	3255.41
	Approach	30%	3635	9.77	1.06	1.95	0.13	---	0.06	0.06	3255.41
	Climb out	85%	10373	23.96	1.06	0.34	0.02	---	0.09	0.08	3255.41
	Takeoff	100%	12468	29.41	1.06	0.33	0.02	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW2040	Idle (Taxi)	7%	1262	4.37	1.06	19.95	1.90	---	0.05	0.05	3255.41
	Approach	30%	3937	10.49	1.06	1.42	0.12	---	0.07	0.06	3255.41
	Climb out	85%	11468	26.62	1.06	0.41	0.02	---	0.08	0.08	3255.41
	Takeoff	100%	13905	35.04	1.06	0.32	0.01	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW2041	Idle (Taxi)	7%	1388	4.49	1.06	23.05	2.13	---	0.15	0.14	3255.41
	Approach	30%	4184	10.98	1.06	2.49	0.15	---	0.13	0.12	3255.41
	Climb out	70%	12345	28.94	1.06	0.20	0.03	---	0.12	0.11	3255.41
	Takeoff	100%	15362	36.92	1.06	0.20	0.03	---	0.12	0.11	3255.41
Notes: 3m, 11, 12h											
PW4056	Idle (Taxi)	7%	1651	4.80	1.06	21.86	2.21	---	0.07	0.06	3255.41
	Approach	30%	5222	11.60	1.06	2.00	0.15	---	0.06	0.05	3255.41
	Climb out	85%	15318	22.90	1.06	0.57	0.01	---	0.07	0.06	3255.41
	Takeoff	100%	18587	28.10	1.06	0.44	0.07	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4060	Idle (Taxi)	7%	1690	4.90	1.06	20.32	1.91	---	0.07	0.06	3255.41
	Approach	30%	5579	12.00	1.06	1.78	0.16	---	0.06	0.05	3255.41
	Climb out	85%	16548	24.70	1.06	0.51	0.03	---	0.07	0.07	3255.41
	Takeoff	100%	21008	32.80	1.06	0.37	0.12	---	0.08	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4062	Idle (Taxi)	7%	1667	3.78	1.06	42.61	12.49	---	0.11	0.10	3255.41
	Approach	30%	5698	12.17	1.06	1.93	0.10	---	0.05	0.04	3255.41
	Climb out	85%	16865	25.98	1.06	0.50	0.08	---	0.07	0.06	3255.41
	Takeoff	100%	21627	34.36	1.06	0.61	0.09	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4074	Idle (Taxi)	7%	1810	4.20	1.06	21.00	3.68	---	0.06	0.05	3255.41
	Approach	30%	6310	11.00	1.06	0.40	0.23	---	0.05	0.05	3255.41
	Climb out	85%	18794	31.50	1.06	0.10	0.12	---	0.05	0.05	3255.41
	Takeoff	100%	23008	38.10	1.06	0.10	0.12	---	0.07	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
PW4074D	Idle (Taxi)	7%	2421	3.80	1.06	26.34	3.59	---	0.06	0.05	3255.41
	Approach	30%	6897	11.35	1.06	0.96	0.05	---	0.04	0.04	3255.41
	Climb out	85%	19611	32.71	1.06	0.35	0.02	---	0.05	0.04	3255.41
	Takeoff	100%	24143	42.46	1.06	0.30	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4077	Idle (Taxi)	7%	1841	4.20	1.06	20.20	3.45	---	0.06	0.05	3255.41
	Approach	30%	6476	11.30	1.06	0.40	0.23	---	0.05	0.05	3255.41
	Climb out	85%	19460	32.50	1.06	0.10	0.12	---	0.06	0.05	3255.41
	Takeoff	100%	23960	39.80	1.06	0.10	0.12	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4077D	Idle (Taxi)	7%	2460	3.81	1.06	24.80	3.24	---	0.06	0.05	3255.41
	Approach	30%	7079	11.63	1.06	0.86	0.05	---	0.04	0.04	3255.41
	Climb out	85%	20333	34.05	1.06	0.34	0.02	---	0.05	0.04	3255.41
	Takeoff	100%	25175	44.68	1.06	0.29	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4084	Idle (Taxi)	7%	1921	4.40	1.06	18.73	3.11	---	0.05	0.05	3255.41
	Approach	30%	6944	12.00	1.06	0.40	0.23	---	0.05	0.05	3255.41
	Climb out	85%	21341	35.50	1.06	0.10	0.12	---	0.07	0.06	3255.41
	Takeoff	100%	27072	45.00	1.06	0.10	0.12	---	0.09	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4084D	Idle (Taxi)	7%	2556	3.99	1.06	21.12	2.48	---	0.05	0.05	3255.41
	Approach	30%	7571	12.27	1.06	0.66	0.05	---	0.04	0.04	3255.41
	Climb out	85%	22294	37.78	1.06	0.32	0.02	---	0.05	0.05	3255.41
	Takeoff	100%	28230	51.39	1.06	0.28	0.02	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4090	Idle (Taxi)	7%	2683	4.48	1.06	11.94	0.79	---	0.04	0.04	3255.41
	Approach	30%	7770	12.74	1.06	0.55	0.05	---	0.04	0.04	3255.41
	Climb out	85%	23778	41.17	1.06	0.31	0.02	---	0.06	0.05	3255.41
	Takeoff	100%	31159	57.52	1.06	0.27	0.02	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4098	Idle (Taxi)	7%	2548	7.78	1.06	6.48	0.00	---	0.04	0.03	3255.41
	Approach	30%	8532	14.89	1.06	0.70	0.00	---	0.05	0.05	3255.41
	Climb out	85%	25754	36.45	1.06	0.21	0.00	---	0.07	0.07	3255.41
	Takeoff	100%	32841	51.29	1.06	0.16	0.00	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4152	Idle (Taxi)	7%	1405	4.90	1.06	12.76	0.85	---	0.07	0.07	3255.41
	Approach	30%	4706	11.10	1.06	1.09	0.17	---	0.07	0.06	3255.41
	Climb out	85%	14167	22.70	1.06	0.17	0.18	---	0.11	0.10	3255.41
	Takeoff	100%	17278	26.90	1.06	0.12	0.15	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
PW4156	Idle (Taxi)	7%	1492	5.00	1.06	11.60	0.76	---	0.08	0.07	3255.41
	Approach	30%	5135	11.60	1.06	0.90	0.29	---	0.08	0.07	3255.41
	Climb out	70%	15722	24.60	1.06	0.14	0.20	---	0.12	0.11	3255.41
	Takeoff	100%	19437	32.50	1.06	0.08	0.13	---	0.12	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4158	Idle (Taxi)	7%	1675	4.80	1.06	20.99	2.05	---	0.07	0.06	3255.41
	Approach	30%	5413	11.80	1.06	1.88	0.16	---	0.06	0.05	3255.41
	Climb out	85%	15905	23.70	1.06	0.54	0.02	---	0.07	0.07	3255.41
	Takeoff	100%	19691	30.20	1.06	0.40	0.10	---	0.08	0.07	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4164	Idle (Taxi)	7%	1667	4.03	1.06	26.67	5.13	---	0.07	0.06	3255.41
	Approach	30%	5984	14.10	1.06	1.86	0.18	---	0.05	0.04	3255.41
	Climb out	85%	17294	31.66	1.06	0.79	0.05	---	0.05	0.04	3255.41
	Takeoff	100%	20841	38.57	1.06	0.69	0.03	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4164-1D	Idle (Taxi)	7%	1929	3.79	1.06	17.13	1.66	---	0.05	0.04	3255.41
	Approach	30%	6151	12.10	1.06	1.55	0.07	---	0.04	0.04	3255.41
	Climb out	85%	17770	20.97	1.06	0.17	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	21595	26.31	1.06	0.16	0.00	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4168	Idle (Taxi)	7%	1984	5.20	1.06	15.90	0.23	---	0.04	0.04	3255.41
	Approach	30%	6421	12.10	1.06	2.40	0.00	---	0.04	0.04	3255.41
	Climb out	85%	18754	20.20	1.06	0.20	0.00	---	0.09	0.08	3255.41
	Takeoff	100%	22889	26.90	1.06	0.10	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4168A	Idle (Taxi)	7%	1984	5.20	1.06	15.90	0.23	---	0.04	0.04	3255.41
	Approach	30%	6421	12.10	1.06	2.40	0.00	---	0.04	0.04	3255.41
	Climb out	85%	18754	20.20	1.06	0.20	0.00	---	0.09	0.08	3255.41
	Takeoff	100%	22889	26.90	1.06	0.10	0.00	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4168-1D, -4168A-1D	Idle (Taxi)	7%	2000	4.08	1.06	14.78	1.09	---	0.04	0.04	3255.41
	Approach	30%	6492	12.39	1.06	1.26	0.06	---	0.04	0.04	3255.41
	Climb out	85%	19032	22.31	1.06	0.18	0.00	---	0.06	0.06	3255.41
	Takeoff	100%	23310	30.15	1.06	0.17	0.00	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW4170	Idle (Taxi)	7%	2024	4.18	1.06	14.04	0.95	---	0.04	0.04	3255.41
	Approach	30%	6611	12.49	1.06	1.17	0.06	---	0.04	0.04	3255.41
	Climb out	85%	19445	22.84	1.06	0.18	0.00	---	0.06	0.06	3255.41
	Takeoff	100%	23960	31.40	1.06	0.18	0.00	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
PW4460	Idle (Taxi)	7%	1690	4.90	1.06	20.32	1.91	---	0.07	0.06	3255.41
	Approach	30%	5579	12.00	1.06	1.78	0.16	---	0.06	0.05	3255.41
	Climb out	85%	16548	24.70	1.06	0.51	0.03	---	0.07	0.07	3255.41
	Takeoff	100%	21008	32.80	1.06	0.37	0.12	---	0.08	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW6122A	Idle (Taxi)	7%	865	3.08	1.06	24.68	0.01	---	0.10	0.09	3255.41
	Approach	30%	2413	5.95	1.06	3.99	0.00	---	0.07	0.07	3255.41
	Climb out	85%	6825	13.40	1.06	0.72	0.00	---	0.14	0.12	3255.41
	Takeoff	100%	8310	17.04	1.06	0.74	0.00	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
PW6124A	Idle (Taxi)	7%	905	3.58	1.06	25.19	0.00	---	0.09	0.08	3255.41
	Approach	30%	2579	6.88	1.06	3.69	0.00	---	0.07	0.07	3255.41
	Climb out	85%	7452	15.85	1.06	0.81	0.00	---	0.15	0.13	3255.41
	Takeoff	100%	9278	21.03	1.06	0.68	0.00	---	0.15	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
R-1820-82	Idle (Taxi)	---	89	0.00	1.06	474.16	173.15	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	---	323	6.50	1.06	384.83	6.41	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	---	862	2.09	1.06	435.03	55.77	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	---	1166	1.72	1.06	531.73	108.89	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
RB211-22B	Idle (Taxi)	7%	2198	2.70	1.06	93.17	75.18	---	0.47	0.42	3255.41
	Approach	30%	4389	8.05	1.06	26.38	8.89	---	0.53	0.48	3255.41
	Climb out	85%	12238	25.63	1.06	4.14	0.45	---	0.13	0.12	3255.41
	Takeoff	100%	14810	34.32	1.06	2.48	0.41	---	0.15	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524B Series	Idle (Taxi)	7%	1905	4.20	1.06	12.39	2.24	---	0.05	0.05	3255.41
	Approach	30%	5000	9.80	1.06	1.56	0.81	---	0.09	0.08	3255.41
	Climb out	85%	14206	38.20	1.06	0.33	0.30	---	0.10	0.09	3255.41
	Takeoff	100%	17540	52.30	1.06	0.70	0.45	---	0.14	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524C2	Idle (Taxi)	7%	2381	3.37	1.06	81.00	62.33	---	0.38	0.34	3255.41
	Approach	30%	5873	10.40	1.06	18.90	5.08	---	0.30	0.27	3255.41
	Climb out	85%	16032	32.30	1.06	1.63	0.25	---	0.11	0.10	3255.41
	Takeoff	100%	19683	41.90	1.06	0.66	0.00	---	0.11	0.10	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524D4	Idle (Taxi)	7%	2381	4.11	1.06	73.80	53.43	---	0.33	0.30	3255.41
	Approach	30%	5873	9.65	1.06	16.90	5.52	---	0.32	0.29	3255.41
	Climb out	85%	15952	41.00	1.06	1.18	0.48	---	0.11	0.10	3255.41
	Takeoff	100%	19921	56.90	1.06	0.51	0.00	---	0.09	0.08	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
RB211-524G	Idle (Taxi)	7%	2064	4.63	1.06	13.74	1.02	---	0.05	0.04	3255.41
	Approach	30%	5556	9.56	1.06	1.01	0.43	---	0.11	0.10	3255.41
	Climb out	85%	16508	40.54	1.06	0.43	0.31	---	0.13	0.12	3255.41
	Takeoff	100%	20794	58.71	1.06	0.59	0.45	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524G-T	Idle (Taxi)	7%	2064	4.00	1.06	28.82	4.54	---	0.08	0.07	3255.41
	Approach	30%	5873	9.68	1.06	1.17	0.00	---	0.09	0.08	3255.41
	Climb out	85%	16667	21.80	1.06	0.14	0.03	---	0.15	0.14	3255.41
	Takeoff	100%	20794	28.43	1.06	0.16	0.00	---	0.14	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524H	Idle (Taxi)	7%	2064	4.78	1.06	11.75	0.85	---	0.05	0.04	3255.41
	Approach	30%	5635	10.26	1.06	0.99	0.41	---	0.11	0.10	3255.41
	Climb out	85%	17222	46.31	1.06	0.38	0.38	---	0.13	0.12	3255.41
	Takeoff	100%	21667	65.84	1.06	0.87	0.39	---	0.13	0.11	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-524H-T	Idle (Taxi)	7%	2064	4.16	1.06	26.17	3.81	---	0.07	0.06	3255.41
	Approach	30%	6111	9.91	1.06	1.05	0.00	---	0.09	0.08	3255.41
	Climb out	85%	17619	23.19	1.06	0.14	0.02	---	0.15	0.14	3255.41
	Takeoff	100%	22302	31.19	1.06	0.18	0.00	---	0.14	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-535C	Idle (Taxi)	7%	1587	3.44	1.06	18.79	1.66	---	0.06	0.05	3255.41
	Approach	30%	4286	6.37	1.06	0.48	0.51	---	0.09	0.08	3255.41
	Climb out	85%	11667	24.89	1.06	0.27	0.16	---	0.08	0.07	3255.41
	Takeoff	100%	14286	33.71	1.06	0.70	0.29	---	0.10	0.09	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
RB211-535E4	Idle (Taxi)	7%	1429	3.46	1.06	13.31	0.43	---	0.05	0.05	3255.41
	Approach	30%	4127	6.78	1.06	1.14	0.05	---	0.06	0.06	3255.41
	Climb out	85%	11984	32.06	1.06	0.50	0.01	---	0.07	0.06	3255.41
	Takeoff	100%	14762	44.88	1.06	0.77	0.00	---	0.06	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Spey Mk511	Idle (Taxi)	7%	1008	3.60	1.06	31.77	4.24	---	0.16	0.15	3255.41
	Approach	30%	2206	7.20	1.06	2.65	0.21	---	0.22	0.20	3255.41
	Climb out	85%	5762	17.30	1.06	0.63	0.14	---	0.24	0.22	3255.41
	Takeoff	100%	7071	22.70	1.06	0.12	0.10	---	0.23	0.21	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Spey Mk555	Idle (Taxi)	7%	762	3.70	1.06	29.30	2.14	---	0.18	0.16	3255.41
	Approach	30%	1754	6.80	1.06	3.70	0.33	---	0.35	0.32	3255.41
	Climb out	85%	4698	16.50	1.06	0.70	0.17	---	0.35	0.31	3255.41
	Takeoff	100%	5833	21.90	1.06	0.30	0.33	---	0.32	0.28	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
T53-L-11D	Ground Idle	---	145	1.58	1.06	31.51	66.80	---	1.44**(S)**	1.30**(S)**	3255.41
	Flight Idle	---	222	2.53	1.06	37.79	15.61	---	2.95**(S)**	2.66**(S)**	3255.41
	Normal Rated	---	645	6.43	1.06	6.83	0.66	---	0.31**(S)**	0.28**(S)**	3255.41
	Military	---	685	6.34	1.06	3.34	0.30	---	0.36**(S)**	0.32**(S)**	3255.41
	Takeoff	---	690	7.75	1.06	3.85	0.31	---	0.36**(S)**	0.32**(S)**	3255.41
Notes: 3i, 4q (for PM_{10} and $PM_{2.5}$ for all power settings), 5, 12h											
T53-L-13	Idle (Taxi)	7%	160	1.58	1.06	31.45	64.28	---	1.44	1.30	3255.41
	Approach	30%	227	2.52	1.06	37.71	15.02	---	2.95	2.66	3255.41
	Climb out	70%	694	6.33	1.06	3.59	0.30	---	0.31	0.28	3255.41
	Takeoff	90%	696	7.73	1.06	3.59	0.30	---	0.36	0.32	3255.41
Notes: 3m, 11, 12h											
T56 Series I	Idle (Taxi)	7%	829	7.33	1.06	5.73	0.86	---	0.12	0.11	3255.41
	Approach	30%	1036	7.12	1.06	4.70	0.61	---	0.22	0.20	3255.41
	Intermediate	70%	1824	9.61	1.06	2.84	0.31	---	0.28	0.25	3255.41
	Military	90%	2059	9.87	1.06	2.82	0.31	---	0.28	0.25	3255.41
Notes: 3m, 11, 12h											
T56 Series III	Idle (Taxi)	7%	986	6.05	1.06	6.50	0.90	---	0.12	0.11	3255.41
	Approach	30%	1262	9.10	1.06	2.79	0.44	---	0.19	0.17	3255.41
	Intermediate	70%	2210	12.19	1.06	1.47	0.26	---	0.24	0.22	3255.41
	Military	90%	2476	12.76	1.06	1.47	0.26	---	0.26	0.23	3255.41
Notes: 3m, 11, 12h											
T56-A-7	Idle (Taxi)	5%	724	7.58	1.06	5.06	0.08	0.070	3.64	1.88	3255.41
	Approach	15%	880	7.54	1.06	3.89	0.06	0.052	3.85	2.18	3255.41
	Intermediate	61%	1742	9.15	1.06	1.94	0.02	0.018	1.46	0.56	3255.41
	Military	90%	2262	12.46	1.06	2.30	0.01	0.005	1.22	0.33	3255.41
Notes: 3c, 10, 12e											
T56-A-9	Idle	7%	794	3.90	1.06	32.00	24.15	---	0.83	0.75	3255.41
	Approach	30%	830**(C)**	4.40	1.06	22.20	14.26	---	0.97	0.87	3255.41
	Intermediate	70%	1825	9.20	1.06	2.40	0.58	---	0.51	0.46	3255.41
	Military	100%	1905	9.30	1.06	2.10	0.46	---	0.50	0.45	3255.41
Notes: 3g, 5, 12d											
T56-A-14	Idle (Taxi)	5%	324	3.72	1.06	30.39	15.85	---	0.43	0.39	3255.41
	Approach	15%	839	6.79	1.06	3.49	0.92	---	0.28	0.25	3255.41
	Intermediate	61%	1409	10.30	1.06	1.07	0.04	---	0.17	0.15	3255.41
	Military	90%	1563	12.05	1.06	0.95	0.04	---	0.16	0.14	3255.41
Notes: 3m, 12h											
T56-A-15	Idle (Taxi)	7%	794	3.90	1.06	32.00	24.15	---	0.83	0.75	3255.41
	Approach	30%	1185**(C)**	4.40	1.06	22.20	14.26	---	0.97	0.87	3255.41
	Intermediate	70%	1825	9.20	1.06	2.40	0.58	---	0.51	0.46	3255.41
	Military	90%	2302	9.30	1.06	2.10	0.46	---	0.50	0.45	3255.41
Notes: 3g, 5, 8, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
T56-A-16	Ground Idle	---	756	6.35	1.06	5.65	1.40	---	0.83**(S)**	0.75**(S)**	3255.41
	Flight Idle	---	836	6.52	1.06	4.54	1.09	---	0.97**(S)**	0.87**(S)**	3255.41
	75%	---	1996	9.93	1.06	0.42	0.20	---	0.51**(S)**	0.46**(S)**	3255.41
	100%	---	2136	10.29	1.06	0.68	0.14	---	0.50**(S)**	0.45**(S)**	3255.41
	Military	---	2219	10.45	1.06	0.65	0.16	---	0.50**(S)**	0.45**(S)**	3255.41
Notes: 3i, 4r (for PM_{10} and $PM_{2.5}$ for all power settings), 5, 12h											
T58-GE-5	Idle	---	133	1.50	1.06	169.17	111.54	---	0.75	0.68	3255.41
	Normal Cruise	---	757	6.34	1.06	7.66	1.82	---	0.79	0.71	3255.41
	Intermediate (Military)	---	821	6.70	1.06	6.82	3.78	---	0.97	0.88	3255.41
	Power Takeoff	---	886	7.22	1.06	5.64	0.91	---	0.90	0.81	3255.41
Notes: 3a, 5, 12d											
T58-GE-8F	Idle	---	132	1.43	1.06	178.44	149.98	---	0.75**(S)**	0.68**(S)**	3255.41
	Approach	---	581	4.47	1.06	17.28	1.29	---	0.79**(S)**	0.71**(S)**	3255.41
	Cruise	---	627	4.68	1.06	14.13	0.92	---	0.79**(S)**	0.71**(S)**	3255.41
	Max Continuous	---	685	4.90	1.06	12.96	0.84	---	0.79**(S)**	0.71**(S)**	3255.41
	Takeoff	---	786	5.47	1.06	9.03	0.46	---	0.97**(S)**	0.88**(S)**	3255.41
Notes: 3i, 4o (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
T58-GE-16	Ground Idle	---	150	3.03	1.06	139.73	47.05	---	0.75**(S)**	0.68**(S)**	3255.41
	60% Normal	---	656	7.88	1.06	14.56	0.44	---	0.79**(S)**	0.71**(S)**	3255.41
	75% Normal	---	779	9.47	1.06	10.89	0.72	---	0.79**(S)**	0.71**(S)**	3255.41
	90% Normal	---	890	10.07	1.06	9.10	0.96	---	0.90**(S)**	0.81**(S)**	3255.41
	Military	---	1020	11.60	1.06	7.73	1.52	---	0.90**(S)**	0.81**(S)**	3255.41
Notes: 3i, 4o (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12d											
T63-A-5A	Ground Idle	---	61	1.42	1.06	79.15	23.35	---	0.83**(S)**	0.75**(S)**	3255.41
	Flight Idle	---	70	1.89	1.06	61.83	12.02	---	0.83**(S)**	0.75**(S)**	3255.41
	30%	---	105	2.90	1.06	38.59	3.76	---	0.97**(S)**	0.87**(S)**	3255.41
	60%	---	157	4.11	1.06	20.79	0.78	---	0.51**(S)**	0.46**(S)**	3255.41
	Military	---	215	5.07	1.06	7.54	0.09	---	0.50**(S)**	0.45**(S)**	3255.41
Notes: 3i, 4r (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
T64-GE-6B	Idle	---	337	3.86	1.06	48.66	15.01	---	0.30	0.27	3255.41
	75% hp	---	1039	8.95	1.06	4.72	0.89	---	0.58	0.52	3255.41
	Normal Rated	---	1257	10.42	1.06	2.86	0.82	---	0.72	0.64	3255.41
	Intermediate (Military)	---	1390	11.15	1.06	2.30	0.74	---	0.79	0.71	3255.41
Notes: 3a, 4t (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
T64-GE-100	Ground Idle	2%	298	1.11	1.06	76.46	1.26	0.853	2.36	2.14	3255.41
	75% Normal	34%	941	6.85	1.06	7.85	0.05	0.037	1.97	0.45	3255.41
	Normal	81%	1698	9.46	1.06	2.21	0.01	0.008	1.61	0.88	3255.41
	Military	90%	1848	11.30	1.06	2.17	0.01	0.010	0.92	0.09	3255.41
Notes: 3c, 5, 12e											
T64-GE-413	Idle	---	260	2.62	1.06	51.83	19.87	---	2.36**(S)**	2.14**(S)**	3255.41
	75% hp	---	1287	8.54	1.06	1.94	0.40	---	1.97**(S)**	0.45**(S)**	3255.41
	Normal Rated	---	1511	9.65	1.06	1.20	0.38	---	1.61**(S)**	0.88**(S)**	3255.41
	Intermediate	---	1661	10.92	1.06	0.67	0.39	---	1.61**(S)**	0.88**(S)**	3255.41
	Maximum	---	1721	11.42	1.06	0.49	0.31	---	1.61**(S)**	0.88**(S)**	3255.41
Notes: 3i, 4t (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
T64-GE-415	Idle	---	269	2.12	1.06	74.33	28.00	---	2.36**(S)**	2.14**(S)**	3255.41
	75%	---	1493	8.09	1.06	2.10	0.15	---	1.61**(S)**	0.88**(S)**	3255.41
	Normal Rated	---	1730	9.29	1.06	1.50	0.09	---	1.61**(S)**	0.88**(S)**	3255.41
	Military	---	1916	9.99	1.06	1.29	0.32	---	0.92**(S)**	0.09**(S)**	3255.41
	Max. Rated	---	2005	10.83	1.06	1.47	0.22	---	0.92**(S)**	0.09**(S)**	3255.41
Notes: 3i, 4t (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
T76-G-10	Idle (Taxi)	---	238	7.40	1.06	23.80	8.51	---	0.38	0.34	3255.41
	Approach	---	476	8.50	1.06	17.20	0.92	---	0.50	0.45	3255.41
	Intermediate	---	794	9.90	1.06	5.90	0.12	---	0.63	0.57	3255.41
	Military	---	873	10.30	1.06	2.30	0.12	---	0.71	0.64	3255.41
Notes: 3g, 5, 7, 8, 12h											
T76-G-12	Idle (Taxi)	---	397	7.40	1.06	23.80	8.51	---	0.38	0.34	3255.41
	Approach	---	476	8.50	1.06	17.20	0.92	---	0.50	0.45	3255.41
	Intermediate	---	794	9.90	1.06	5.90	0.12	---	0.63	0.57	3255.41
	Military	---	857**(C)**	10.30	1.06	2.30	0.12	---	0.71	0.64	3255.41
Notes: 3g, 5, 7, 8, 12h											
T76-G-418	Idle (Taxi)	---	238	7.40	1.06	23.80	8.51	---	0.38	0.34	3255.41
	Approach	---	476	8.50	1.06	17.20	0.92	---	0.50	0.45	3255.41
	Intermediate	---	794	9.90	1.06	5.90	0.12	---	0.63	0.57	3255.41
	Military	---	873	10.30	1.06	2.30	0.12	---	0.71	0.64	3255.41
Notes: 3g, 5, 7, 8, 12h											
T76-G-419	Idle (Taxi)	---	397	7.40	1.06	23.80	8.51	---	0.38	0.34	3255.41
	Approach	---	476	8.50	1.06	17.20	0.92	---	0.50	0.45	3255.41
	Intermediate	---	794	9.90	1.06	5.90	0.12	---	0.63	0.57	3255.41
	Military	---	857**(C)**	10.30	1.06	2.30	0.12	---	0.71	0.64	3255.41
Notes: 3g, 5, 7, 8, 12h											
T400-CP-400	Ground Idle	---	136	2.21	1.06	27.94	10.99	---	0.44	0.40	3255.41
	Flight Idle	---	141	2.84	1.06	29.08	8.97	---	0.44**(C)**	0.40**(C)**	3255.41
	Cruise	---	279	4.66	1.06	1.79	0.00	---	0.36	0.32	3255.41
	Intermediate (Military)	---	406	5.91	1.06	0.00	0.00	---	0.25	0.22	3255.41
	Maximum	---	1069	11.51	1.06	0.00	0.22	---	0.28	0.25	3255.41
Notes: 3a, 4a (for PM_{10} and $PM_{2.5}$ at Flight Idle power setting only), 5, 12h											
T406-AD-400	Idle	---	362	4.15	1.06	8.35	0.12	---	1.58	1.42	3255.41
	Flight Idle	---	663	6.05	1.06	3.47	0.02	---	1.58	1.42	3255.41
	Intermediate	---	948	7.87	1.06	1.82	0.02	---	1.58	1.42	3255.41
	Max Continuous	---	2507	18.03	1.06	0.29	0.01	---	1.58	1.42	3255.41
Notes: 3f (this is the military designation of the AE1107C engine), 8, 12d											
T700-GE-401, -401C	Idle	---	432	5.36	1.06	10.46	0.54	---	0.12	0.11	3255.41
	Approach	---	348	5.36	1.06	10.46	0.54	---	0.21	0.19	3255.41
	Climb out	---	443	5.60	1.06	10.11	0.53	---	0.46	0.41	3255.41
	Takeoff	---	442	5.59	1.06	10.15	0.53	---	0.53	0.48	3255.41
Notes: 3m, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
T700-GE-700	Ground Idle	4%	134	3.36	1.06	46.24	0.50	0.471	1.48	0.98	3255.41
	Flight Idle	56%	469	10.95	1.06	5.12	0.02	0.014	1.26	0.07	3255.41
	Flight Max	82%	626	11.87	1.06	3.51	0.01	0.009	2.22	0.93	3255.41
	Overspeed	100%	725	11.43	1.06	2.81	0.01	0.015	2.61	1.21	3255.41
Notes: 3c, 10, 12e											
TAY Mk611-8, -Mk620-15	Idle (Taxi)	7%	873	2.50	1.06	24.10	3.91	---	0.16	0.15	3255.41
	Approach	30%	1825	5.70	1.06	3.90	1.04	---	0.52	0.47	3255.41
	Climb out	85%	5000	16.80	1.06	0.80	0.35	---	0.48	0.43	3255.41
	Takeoff	100%	6032	21.10	1.06	0.70	0.92	---	0.56	0.50	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
TAY Mk650-15	Idle (Taxi)	7%	944	1.70	1.06	33.77	3.78	---	0.06	0.06	3255.41
	Approach	30%	2016	4.55	1.06	6.54	1.01	---	0.14	0.12	3255.41
	Climb out	85%	5675	16.47	1.06	2.01	0.47	---	0.41	0.37	3255.41
	Takeoff	100%	6937	19.81	1.06	1.74	0.43	---	0.42	0.38	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
TF30-P-3	Idle (Taxi)	---	873	2.30	1.06	72.00	71.30	---	0.01	0.01	3255.41
	Approach	---	2064	4.80	1.06	9.20	2.42	---	0.05	0.05	3255.41
	Intermediate	---	4921	9.40	1.06	1.30	0.12	---	0.45	0.41	3255.41
	Military	---	6191	12.00	1.06	0.80	0.03	---	0.40	0.36	3255.41
	Afterburner	---	38413	3.10	1.06	4.06	0.01	---	0.15	0.14	3255.41
Notes: 3g, 5, 7, 8, 12h											
TF30-P-6B	Idle (Taxi)	<75%	689	1.31	1.06	68.21	21.53	---	0.02**(S)**	0.02**(S)**	3255.41
	75% Thrust	75%	3550	6.68	1.06	6.31	3.40	---	0.12**(S)**	0.11**(S)**	3255.41
	Normal Rated	75-99%	4700	8.06	1.06	5.55	1.61	---	0.44**(S)**	0.40**(S)**	3255.41
	Intermediate (Military)	100%	6835	12.04	1.06	3.09	1.16	---	0.35**(S)**	0.32**(S)**	3255.41
Notes: 3a, 4u (for PM_{10} and $PM_{2.5}$ at all power settings), 5, 11 (assumes 100% thrust at Intermediate setting), 12h											
TF30-P-7	Idle (Taxi)	---	952	3.00	1.06	53.00	34.50	---	0.02	0.02	3255.41
	Approach	---	2064	6.10	1.06	11.50	3.68	---	0.12	0.11	3255.41
	Intermediate	---	5714	14.00	1.06	1.20	0.23	---	0.44	0.40	3255.41
	Military	---	7222	20.00	1.06	0.80	0.12	---	0.35	0.32	3255.41
	Afterburner	---	38413	3.10	1.06	4.00	0.01	---	0.15	0.14	3255.41
Notes: 3g, 5, 7, 8, 12h											
TF30-P-9	Idle (Taxi)	---	952	3.00	1.06	53.00	34.50	---	0.02	0.02	3255.41
	Approach	---	2064	6.10	1.06	11.50	3.68	---	0.12	0.11	3255.41
	Intermediate	---	5714	14.00	1.06	1.20	0.23	---	0.44	0.40	3255.41
	Military	---	8730	20.00	1.06	0.80	0.12	---	0.35	0.32	3255.41
	Afterburner	---	545525	3.10	1.06	4.00	0.01	---	0.15	0.14	3255.41
Notes: 3g, 5, 12h											
TF30-P-100	Idle (Taxi)	---	1260	2.86	1.06	47.62	21.72	---	26.27	23.64	3255.41
	Approach	---	2849**(C)**	7.91**(C)**	1.06	33.79**(C)**	15.35**(C)**	---	25.60**(C)**	23.04**(C)**	3255.41
	Intermediate	---	6650	20.00	1.06	0.71	0.12	---	24.00	21.60	3255.41
	Military	---	7120	28.01	1.06	0.70	0.11	---	8.34	7.51	3255.41
	Afterburner	---	42850	4.47	1.06	24.80	2.30	---	5.36	4.82	3255.41
Notes: 3a, 5, 11 (assumes 100% thrust at Takeoff power setting), 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
TF30-P-103	Idle (Taxi)	<30%	827	4.00	1.06	100.00	88.44	---	0.51	0.46	3255.41
	30%	30%	2003	7.00	1.06	36.20	12.54	---	0.82	0.74	3255.41
	75%	75%	4119	15.10	1.06	5.50	0.36	---	0.20	0.18	3255.41
	100%	100%	5541	20.10	1.06	2.10	0.10	---	16.34	14.70	3255.41
	Afterburner-1	>100%	14292	11.20	1.06	77.20	32.20	---	14.63**(C)**	13.17**(C)**	3255.41
Notes: 3o, 4a (PM_{10} and $PM_{2.5}$ at afterburner setting only), 5, 6, 8, 10, 12c											
TF30-P-109	Idle (Taxi)	5%	761	2.93	1.06	48.49	9.77	4.292	1.24	1.11	3255.41
	Approach	23%	1727	6.19	1.06	20.73	1.36	0.756	1.52	1.37	3255.41
	Intermediate	47%	2921	9.58	1.06	5.17	0.27	0.027	1.64	1.47	3255.41
	Military	99%	6263	23.63	1.06	0.71	0.14	0.005	0.92	0.82	3255.41
	Afterburner-5	>99%	38460	4.89	1.06	6.19	0.07	0.001	0.51	0.46	3255.41
Notes: 3l, 8, 12e											
TF30-P-412A	Idle (Taxi)	---	999	2.40	1.06	68.17	44.20	---	26.53	23.87	3255.41
	75% rpm	---	1448	3.66	1.06	38.60	11.12	---	24.03	21.63	3255.41
	90% rpm	---	3597	9.62	1.06	6.34	0.19	---	15.01	13.51	3255.41
	Intermediate (Military)	---	7394	16.66	1.06	2.12	0.11	---	8.34	7.51	3255.41
	Afterburner	---	40000	6.75	1.06	15.00	1.15	---	17.33	15.60	3255.41
Notes: 3a, 5, 12h											
TF33-P-3, -P-5	Idle (Taxi)	<30%	846	1.77	1.06	88.53	105.76	---	5.20	4.68	3255.41
	Approach	30%	3797	7.30	1.06	9.01	4.36	---	13.98	12.59	3255.41
	Climb out	85%	7323	9.00	1.06	1.80	0.46	---	14.00	12.60	3255.41
	Takeoff	100%	9979	11.00	1.06	1.30	0.35	---	8.00	7.20	3255.41
Notes: 3a, 5, 8, 11, 12h											
TF33-P-7	Idle (Taxi)	4%	1093	0.78	1.06	134.96	5.32	4.913	6.13	3.80	3255.41
	Approach	45%	4884	7.12	1.06	9.67	0.24	0.220	3.68	1.46	3255.41
	Intermediate	58%	6356	8.10	1.06	4.16	0.06	0.080	5.28	1.72	3255.41
	Military	73%	8264	10.29	1.06	1.49	0.02	0.044	3.58	1.23	3255.41
Notes: 3c, 5, 12e											
TF33-P-9	Idle (Taxi)	---	1120	1.39	1.06	95.06	90.91	---	4.98	4.48	3255.41
	Approach	---	4140	6.37	1.06	5.24	1.37	---	3.55	3.20	3255.41
	Intermediate	---	8960	7.88	1.06	2.11	1.50	---	3.15	2.84	3255.41
	Military	---	9630	12.08	1.06	0.00	0.55	---	3.67	3.30	3255.41
Notes: 3f, 5, 8, 12d											
TF33-P-100	Idle (Taxi)	---	1108	1.50	1.06	136.96	131.16	---	6.13	5.52	3255.41
	Approach	---	2794	6.22	1.06	14.60	3.62	---	5.46	4.91	3255.41
	Intermediate	---	8069	8.47	1.06	2.96	0.39	---	5.29	4.76	3255.41
	Military	---	10856	11.49	1.06	1.19	0.25	---	2.93	2.64	3255.41
Notes: 3f, 8, 12h											
TF33-P-102	Idle (Taxi)	5%	1114	1.39	1.06	95.02	3.42	3.006	4.96	4.06	3255.41
	Approach	49%	4737	6.37	1.06	5.24	0.11	0.166	3.55	1.66	3255.41
	Intermediate	59%	5782	7.88	1.06	2.11	0.06	0.098	3.15	1.42	3255.41
	Military	75%	7561	12.08	1.06	0.00	0.02	0.099	2.52	1.02	3255.41
Notes: 3c, 5, 12e											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
TF33-P-102A	Idle (Taxi)	7%	1065	1.80	1.06	117.03	106.96	---	4.98	4.48	3255.41
	Approach	30%	3912	5.84	1.06	12.37	1.74	---	3.55	3.20	3255.41
	Intermediate	70%	6985	8.74	1.06	2.01	0.95	---	3.15	2.84	3255.41
	Military	100%	8756	12.39	1.06	0.45	0.53	---	3.67	3.30	3255.41
Notes: 3f, 8, 11, 12h											
TF33-P-103	Idle (Taxi)	---	900	1.39	1.06	95.06	90.91	---	4.98	4.48	3255.41
	Approach	---	3800	6.37	1.06	5.24	1.37	---	3.55	3.20	3255.41
	Intermediate	---	6240	7.88	1.06	2.11	1.50	---	3.15	2.84	3255.41
	Military	---	7440	12.08	1.06	0.00	0.55	---	3.67	3.30	3255.41
Notes: 3f, 5, 8, 12d											
TF34-GE-100	Idle (Taxi)	---	390	2.10	1.06	106.70	39.45	---	8.13**(S)**	3.60**(S)**	3255.41
	Approach	---	920	5.70	1.06	16.30	2.19	---	6.21**(S)**	2.12**(S)**	3255.41
	Intermediate	---	460	2.60	1.06	78.00	23.35	---	8.93**(S)**	6.95**(S)**	3255.41
	Military	---	2710	10.70	1.06	2.20	0.12	---	2.66**(S)**	1.68**(S)**	3255.41
Notes: 3g, 4v (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
TF34-GE-100A	Idle (Taxi)	7%	498	0.32	1.06	65.62	2.24	2.052	8.13	3.60	3255.41
	Approach	28%	933	3.09	1.06	27.92	1.44	1.371	6.21	2.12	3255.41
	Intermediate	46%	1512	5.61	1.06	8.88	0.13	0.095	8.93	6.95	3255.41
	Military	78%	2628	9.11	1.06	3.94	0.07	0.098	2.66	1.68	3255.41
Notes: 3c, 10, 12e											
TF34-GE-400	Idle (Taxi)	10%**(C)**	458	1.69	1.06	90.98	17.24	---	8.13**(S)**	3.60**(S)**	3255.41
	Approach	30%**(C)**	1201**(C)**	2.98**(C)**	1.06	72.08**(C)**	13.51**(C)**	---	6.21**(S)**	2.12**(S)**	3255.41
	Intermediate	70%**(C)**	2686**(C)**	5.57**(C)**	1.06	34.29**(C)**	6.05**(C)**	---	2.66**(S)**	1.68**(S)**	3255.41
	Military	100%**(C)**	3800	7.51	1.06	5.95	0.45	---	2.66**(S)**	1.68**(S)**	3255.41
Notes: 3i, 4v (PM_{10} and $PM_{2.5}$ at all power settings), 5, 12h											
TF39-GE-1C	Idle (Taxi)	7%	1448	3.37	1.06	58.43	3.44	2.615	2.80	2.49	3255.41
	Approach	76%	10477	24.91	1.06	0.77	0.03	0.022	1.20	0.44	3255.41
	Intermediate	87%	12541	28.16	1.06	1.53	0.03	0.015	0.89	0.37	3255.41
	Military	94%	13862	32.66	1.06	1.29	0.03	0.022	1.18	0.77	3255.41
Notes: 3c, 10, 12e											
TF41-A-1	Idle (Taxi)	---	1032	1.50	1.06	119.00	105.80	---	0.15	0.14	3255.41
	Approach	---	3492	6.80	1.06	10.20	2.53	---	0.36	0.32	3255.41
	Intermediate	---	5873	12.00	1.06	3.70	0.46	---	0.52	0.47	3255.41
	Military	---	8413	21.00	1.06	1.80	0.23	---	0.67	0.60	3255.41
Notes: 3g, 5, 12h											
TF41-A-2	Idle (Taxi)	<30%	1047	4.00	1.06	176.00	114.54	---	0.65	0.59	3255.41
	30%	30%	2704	8.90	1.06	45.00	11.62	---	0.73	0.66	3255.41
	75%	75%	5810	23.80	1.06	4.70	0.10	---	16.94	15.25	3255.41
	100%	100%	8086	32.90	1.06	3.20	0.09	---	28.60	25.74	3255.41
Notes: 3o, 5, 6, 8, 10, 12c											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
TFE731-2, -2A	Idle (Taxi)	---	206	3.50	1.06	47.80	8.54	---	0.13**(S)**	0.12**(S)**	3255.41
	Approach	---	571	6.90	1.06	15.56	1.41	---	0.13**(S)**	0.12**(S)**	3255.41
	Intermediate	---	1476	16.08	1.06	1.62	0.07	---	0.09**(S)**	0.08**(S)**	3255.41
	Military	---	1786	19.15	1.06	1.13	0.06	---	0.09**(S)**	0.08**(S)**	3255.41
Notes: 3f, 4w (PM_{10} and $PM_{2.5}$ at all power settings), 12h											
TFE731-2-2B	Idle (Taxi)	7%	190	2.82	1.06	58.60	23.05	---	0.13**(S)**	0.12**(S)**	3255.41
	Approach	30%	532	5.90	1.06	22.38	4.90	---	0.09**(S)**	0.08**(S)**	3255.41
	Climb out	85%	1373	13.08	1.06	2.03	0.15	---	0.09**(S)**	0.08**(S)**	3255.41
	Takeoff	100%	1627	15.25	1.06	1.39	0.13	---	0.08**(S)**	0.08**(S)**	3255.41
Notes: 3b, 4w (PM_{10} and $PM_{2.5}$ for all power settings), 5, 6, 8, 10, 12h											
TFE731-3	Idle (Taxi)	7%	206	3.72	1.06	47.70	10.40	---	0.13**(S)**	0.12**(S)**	3255.41
	Approach	30%	571	6.92	1.06	15.56	1.62	---	0.09**(S)**	0.08**(S)**	3255.41
	Climb out	85%	1476	16.02	1.06	1.62	0.08	---	0.09**(S)**	0.08**(S)**	3255.41
	Takeoff	100%	1786	19.15	1.06	1.13	0.07	---	0.08**(S)**	0.08**(S)**	3255.41
Notes: 3b, 4w (PM_{10} and $PM_{2.5}$ for all power settings), 5, 6, 8, 10, 12h											
TIO-540-J2B2	Idle (Taxi)	<40%	25	0.39	1.06	1293.70	78.29	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	40%	99	1.39	1.06	1261.57	15.39	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	75-100%	205	0.24	1.06	1470.90	19.12	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	260	0.36	1.06	1442.05	14.21	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
TPE331-2	Idle (Taxi)	<30%	105	2.57	1.06	64.10	104.92	---	0.50**(S)**	0.45**(S)**	3255.41
	Approach	30%	220	8.27	1.06	16.59	3.08	---	0.10**(S)**	0.09**(S)**	3255.41
	Climb out	90%	372	9.92	1.06	1.37	0.46	---	0.25**(S)**	0.23**(S)**	3255.41
	Takeoff	100%	405	10.22	1.06	0.94	0.45	---	0.24**(S)**	0.22**(S)**	3255.41
Notes: 3a, 4p (PM_{10} and $PM_{2.5}$ at all power settings), 5, 11, 12h											
TPE331-3	Idle (Taxi)	<30%	112	2.86	1.06	61.52	90.97	---	2.68	2.41	3255.41
	Approach	30%	250	9.92	1.06	6.96	0.74	---	2.40	2.16	3255.41
	Climb out	90%	409	11.86	1.06	0.98	0.17	---	1.47	1.32	3255.41
	Takeoff	100%	458	12.36	1.06	0.76	0.13	---	1.75	1.57	3255.41
Notes: 3a, 5, 11, 12h											
Trent 553-61	Idle (Taxi)	7%	1825	5.96	1.06	10.50	0.16	---	0.04	0.04	3255.41
	Approach	30%	4762	11.37	1.06	0.66	0.05	---	0.05	0.05	3255.41
	Climb out	85%	13730	30.98	1.06	0.44	0.01	---	0.06	0.05	3255.41
	Takeoff	100%	16746	40.55	1.06	0.18	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 556-61	Idle (Taxi)	7%	1825	6.09	1.06	9.96	0.15	---	0.04	0.04	3255.41
	Approach	30%	4921	11.68	1.06	0.54	0.05	---	0.05	0.05	3255.41
	Climb out	85%	14524	33.25	1.06	0.38	0.01	---	0.06	0.05	3255.41
	Takeoff	100%	17778	44.77	1.06	0.17	0.02	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
Trent 768	Idle (Taxi)	7%	2143	4.52	1.06	20.22	2.17	---	0.05	0.05	3255.41
	Approach	30%	6429	10.01	1.06	1.02	0.01	---	0.06	0.05	3255.41
	Climb out	85%	19286	24.66	1.06	0.15	0.01	---	0.08	0.07	3255.41
	Takeoff	100%	26572	31.25	1.06	0.18	0.00	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 772	Idle (Taxi)	7%	2222	4.71	1.06	17.94	1.68	---	0.05	0.05	3255.41
	Approach	30%	6746	10.30	1.06	0.89	0.01	---	0.06	0.05	3255.41
	Climb out	85%	20476	26.44	1.06	0.16	0.00	---	0.08	0.07	3255.41
	Takeoff	100%	25397	34.38	1.06	0.20	0.00	---	0.07	0.06	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 875	Idle (Taxi)	7%	2222	4.64	1.06	19.66	2.05	---	0.05	0.05	3255.41
	Approach	30%	6984	10.43	1.06	0.86	0.00	---	0.05	0.05	3255.41
	Climb out	85%	20397	26.55	1.06	0.16	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	24603	33.32	1.06	0.19	0.00	---	0.06	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 877	Idle (Taxi)	7%	2222	4.75	1.06	18.42	1.78	---	0.05	0.05	3255.41
	Approach	30%	7143	10.59	1.06	0.80	0.00	---	0.05	0.05	3255.41
	Climb out	85%	21111	27.59	1.06	0.16	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	25476	34.76	1.06	0.20	0.00	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 884	Idle (Taxi)	7%	2460	5.04	1.06	15.19	1.15	---	0.05	0.04	3255.41
	Approach	30%	7698	11.07	1.06	0.65	0.00	---	0.05	0.05	3255.41
	Climb out	85%	22937	30.63	1.06	0.18	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	28254	40.05	1.06	0.24	0.00	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 892	Idle (Taxi)	7%	2381	5.33	1.06	13.07	0.81	---	0.05	0.04	3255.41
	Approach	30%	7937	11.58	1.06	0.57	0.00	---	0.05	0.05	3255.41
	Climb out	85%	24603	33.30	1.06	0.20	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	31032	45.70	1.06	0.28	0.01	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 895	Idle (Taxi)	7%	2619	5.11	1.06	14.71	1.02	---	0.05	0.04	3255.41
	Approach	30%	8333	11.39	1.06	0.54	0.00	---	0.05	0.05	3255.41
	Climb out	85%	25318	34.29	1.06	0.19	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	31984	47.79	1.06	0.27	0.02	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 970-84	Idle (Taxi)	7%	2381	5.10	1.06	15.10	0.23	---	0.04	0.04	3255.41
	Approach	30%	5556	11.40	1.06	1.40	0.00	---	0.05	0.05	3255.41
	Climb out	85%	17460	29.10	1.06	0.20	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	20638	37.20	1.06	0.40	0.00	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
Trent 972-84	Idle (Taxi)	7%	2143	5.00	1.06	15.94	0.28	---	0.04	0.04	3255.41
	Approach	30%	5952	11.80	1.06	1.40	0.00	---	0.05	0.05	3255.41
	Climb out	85%	17699	29.60	1.06	0.30	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	21349	38.80	1.06	0.40	0.00	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 1000-A	Idle (Taxi)	7%	1881	5.40	1.06	8.73	0.07	---	0.04	0.04	3255.41
	Approach	30%	4960	13.29	1.06	0.77	0.00	---	0.06	0.05	3255.41
	Climb out	85%	14897	35.87	1.06	0.45	0.00	---	0.05	0.05	3255.41
	Takeoff	100%	18111	46.67	1.06	0.53	0.00	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 1000-C	Idle (Taxi)	7%	1952	5.66	1.06	7.66	0.05	---	0.04	0.04	3255.41
	Approach	30%	5302	13.86	1.06	0.68	0.00	---	0.06	0.05	3255.41
	Climb out	85%	16254	40.33	1.06	0.48	0.00	---	0.05	0.05	3255.41
	Takeoff	100%	19905	53.54	1.06	0.51	0.00	---	0.05	0.04	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
Trent 1000-E	Idle (Taxi)	7%	1762	5.06	1.06	10.63	0.10	---	0.04	0.04	3255.41
	Approach	30%	4524	12.54	1.06	0.92	0.00	---	0.05	0.05	3255.41
	Climb out	85%	13167	30.55	1.06	0.43	0.00	---	0.06	0.05	3255.41
	Takeoff	100%	15929	39.17	1.06	0.47	0.00	---	0.05	0.05	3255.41
Notes: 3b, 5, 6, 8, 10, 12h											
TSIO-360-C	Idle (Taxi)	7%	12	1.91	1.06	592.17	159.00	---	60.00**(S)**	54.00**(S)**	3255.41
	Approach	30%	61	3.77	1.06	995.08	13.01	---	47.95**(S)**	43.16**(S)**	3255.41
	Climb out	85%	100	4.32	1.06	960.80	10.98	---	40.00**(S)**	36.00**(S)**	3255.41
	Takeoff	100%	133	2.71	1.06	1081.95	10.55	---	20.00**(S)**	18.00**(S)**	3255.41
Notes: 3a, 4b (PM_{10} and $PM_{2.5}$ at all power settings), 5, 10, 12h											
V2500-A1	Idle (Taxi)	7%	984	5.91	1.06	7.76	0.25	---	0.13**(S)**	0.12**(S)**	3255.41
	Approach	30%	2651	13.45	1.06	0.77	0.17	---	0.20**(S)**	0.18**(S)**	3255.41
	Climb out	85%	7333	30.82	1.06	0.55	0.13	---	0.20**(S)**	0.18**(S)**	3255.41
	Takeoff	100%	8833	37.13	1.06	0.55	0.12	---	0.14**(S)**	0.13**(S)**	3255.41
Notes: 3b, 4x (PM_{10} and $PM_{2.5}$ at all power settings), 5, 6, 8, 10, 12a											
V2522-A5	Taxi (Idle)	7%	937	4.50	1.06	13.42	0.12	---	0.15	0.13	3255.41
	Approach	30%	2468	8.70	1.06	2.60	0.07	---	0.19	0.17	3255.41
	Climb out	85%	6484	20.80	1.06	0.67	0.05	---	0.24	0.21	3255.41
	Takeoff	100%	7706	24.50	1.06	0.57	0.05	---	0.16	0.14	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
V2524-A5	Idle (Taxi)	7%	976	4.70	1.06	12.64	0.12	---	0.15	0.13	3255.41
	Approach	30%	2603	9.00	1.06	2.37	0.07	---	0.19	0.18	3255.41
	Climb out	85%	6889	22.00	1.06	0.63	0.05	---	0.22	0.20	3255.41
	Takeoff	100%	8270	26.20	1.06	0.54	0.05	---	0.15	0.14	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Table 2-8. Criteria Pollutants, Ozone Precursors, and Total HAPs (cont.)

Aircraft Engine	Power Setting	Percent Thrust/hp	Fuel Flow Rate (lb/hr)	Emission Factors (lb/1000lb fuel)							
				NO_X	SO_X[1]	CO	VOC	HAP's	PM_{10}	$PM_{2.5}$	GHG[2]
V2525-D5	Taxi (Idle)	7%	1016	4.70	1.06	12.43	0.12	---	0.15	0.13	3255.41
	Approach	30%	2532	8.90	1.06	2.44	0.07	---	0.20	0.18	3255.41
	Climb out	85%	6984	22.30	1.06	0.62	0.05	---	0.23	0.20	3255.41
	Takeoff	100%	8357	26.50	1.06	0.53	0.05	---	0.15	0.14	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
V2527-A5	Idle (Taxi)	7%	1018	4.70	1.06	12.43	0.12	---	0.15	0.13	3255.41
	Approach	30%	2538	8.90	1.06	2.44	0.07	---	0.20	0.18	3255.41
	Climb out	85%	7001	22.30	1.06	0.62	0.05	---	0.23	0.20	3255.41
	Takeoff	100%	8378	26.50	1.06	0.53	0.05	---	0.15	0.14	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
V2528-D5	Taxi (Idle)	7%	1063	4.90	1.06	11.53	0.12	---	0.13	0.12	3255.41
	Approach	30%	2802	9.60	1.06	2.03	0.07	---	0.20	0.18	3255.41
	Climb out	85%	7905	25.10	1.06	0.56	0.05	---	0.20	0.18	3255.41
	Takeoff	100%	9595	30.50	1.06	0.47	0.05	---	0.14	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
V2530-A5	Idle (Taxi)	7%	1095	5.00	1.06	10.95	0.12	---	0.13	0.12	3255.41
	Approach	30%	2992	10.10	1.06	1.81	0.06	---	0.20	0.18	3255.41
	Climb out	85%	8548	27.10	1.06	0.52	0.05	---	0.19	0.17	3255.41
	Takeoff	100%	10564	33.80	1.06	0.45	0.05	---	0.14	0.13	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											
V2533-A5	Taxi (Idle)	7%	1082	5.24	1.06	9.32	0.12	---	0.13	0.12	3255.41
	Approach	30%	3096	10.83	1.06	1.65	0.06	---	0.21	0.19	3255.41
	Climb out	85%	9085	28.67	1.06	0.52	0.05	---	0.18	0.17	3255.41
	Takeoff	100%	11318	36.48	1.06	0.46	0.05	---	0.13	0.12	3255.41
Notes: 3b, 5, 6, 8, 10, 12a											

Note for Table 2-8 on the following page.

1. The Emission Factors for Sulfur assume JP-8 used as the fuel. The value is a national average for sulfur in JP-8.
2. The Greenhouse gas (GHG) emission factors are the total of CO_2, CH_4, and N_2O with individual emission factors of 9.75kg/gal, 0.27g/gal, and 0.31 g/gal respectively. CH_4 and N_2O were converted to equivalent CO_2 (CO_2e) using a global warming potential (GWP) value of 25 for CH_4 and 298 for N_2O. These were added to the CO_2 and are presented as the GHG emission factors in units of lb/1000lb fuel. JP-8 with a density of 6.67lb/gal was used for unit conversion.
3. The Emission factors were found in the following sources:
    a. SOURCE: *Air Pollutant Emission Factors for Military and Civil Aircraft*, EPA-450/3-78-117, October 1978.
    b. SOURCE: *Airport Air Quality Manual*, International Civil Aviation Organization, 2011.
    c. SOURCE: *Aircraft Engine and Auxiliary Power Unit Emissions* Volumes I-III, March 1999, IERA-RS-BR-TR-1999-0006.
    d. SOURCE: *Aircraft Engine and Auxiliary Power Unit Emissions Testing Final Report Addendum F119-PW-100* June 2002, IERA-RS-BR-SR-2002-0006.
    e. SOURCE: *Engine and Hush House Emissions from a F100-PW-200 Jet Engine Tested at Kelly AFB*, TX Final Volume I February 1997.
    f. SOURCE: Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations January 2002, IERA-RS-BR-SR-2001-0010.
    g. SOURCE: *Aircraft Engine Emissions Estimator*, AFESC, September 1985.
    h. SOURCE: *Collection and Assessment of Aircraft Emissions*, US EPA, October 1971.
    i. SOURCE: *Summary Tables of Gaseous and Particulate Emissions from Aircraft Engines*, Aircraft Environmental Support Office.
    j. SOURCE: *Clean Air Act Emission Testing of the T-38C Aircraft Engines* September 2002, IERA-RS-BR-SR-2003-001.
    k. SOURCE *PT6A-68 Emissions Measurement Program Summary, September 2002*, IERA-RS-BR-SR-2003-0003.
    l. SOURCE: *Engine and Hush House Emissions from a TF30-P-109 Jet Engine Tested at Canon AFB*, NM Final Volume I June 1996.
    m. SOURCE: *Air Emissions Factor Guide to Air Force Mobile Sources*, December 2009.
    n. SOURCE: *Engine and Hush House Emissions from a F100-PW-100 Jet Tested at Langley Air Force Base, VA*, November 1996.
    o. SOURCE: *Aircraft Emissions Characterization: TF41-A2, TF30-P-103, and TF30-P109 Engines*, December 1987.
4. Surrogate data was used for this engine. The surrogate data was found in the following sources:
    a. Data was calculated using values provided in the source document.
    b. IO-360-D
    c. J85-GE-13
    d. F100-PW-220
    e. F101-GE-102
    f. F103-GE-100
    g. F110-GE-100
    h. PW2040
    i. J52-P-408
    j. J57-P-19W
    k. J85-GE-5A
    l. PT6A-38
    m. T53-L-13
    n. T56-A-15
    o. T58-GE-5
    p. T64-GE-100
    q. TF30-P-7
    r. TF34-GE-100A
    s. LF507-1F
5. Source Document provided emission factors for total hydrocarbons (THC) or non-methane total organic gas (NMTOG). These values converted to volatile organic compounds (VOC's) using the following equations: VOC=1.15*THC or VOC=NMOG*0.99 based on the document Recommended Best Practice for Quantifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines.
6. PM data calculated using smoke numbers and the ICAO method. The PM calculated was assumed to be PM_{10}.

7. PM reported in the source document was assumed to be PM_{10}.
8. $PM_{2.5}$ calculated at 90% of PM_{10}.
9. For at least one setting, the emission factors reported are an average of values provided in the source document.
10. Emission factors calculated and validated 6/1/2012.
11. Percent thrust is an estimate based on tables provided in the source document.
12. Fuel used for emissions testing:
    a. Jet A
    b. Jet A-1
    c. JP-4
    d. JP-5
    e. JP-8
    f. JP-8+100
    g. Unknown, but probably Jet A
    h. No data on fuel used in tests
13. F404-GE-F1D2 is a non-afterburning version of the F404-GE-400 and has the same emissions (without the afterburning setting) as the F400-GE-400 engine.

"(**S**)" – Indicates that this emission factor is from a recommended surrogate engine. See note 4 for details.
"(**C**)" – Indicates this value was calculated using data provided by the source document.
"---" Indicates No Data Available

Table 2-9. VOC and HAP Emission Factors for Select Engines

F100-PW-100

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-5
Fuel Flowrate (lb/hr)[1]			1127	2765	7685	10996	54007
Percent Thrust/hp[1]			3%	13%	45%	100%	134%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	---	---	---	---	---
Acenaphthylene	208-96-8	X	2.85E-03	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	2.35E-01	1.50E-01	1.00E-02	1.00E-02	1.00E-02
Acrolein	107-02-8	X	1.11E-01	6.00E-02	ND	ND	ND
Anthracene	120-12-7	X	---	---	---	---	---
Benzaldehyde	100-52-7		---	---	---	---	---
Benz(a)anthracene	56-55-3	X	---	---	---	---	---
Benzene	71-43-2	X	4.50E-02	2.45E-03	5.25E-04	5.01E-04	2.85E-04
Benzenemethanol	100-51-6		1.42E-02	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	X	---	---	---	---	---
Benzo(k)fluoranthene	207-08-9	X	---	---	---	---	---
Benzo(g,h,i)perylene	191-24-2	X	---	---	---	---	---
Benzo(a)pyrene	50-32-8	X	---	---	---	---	---
Benzoic Acid	65-85-0		8.41E-01	2.07E-03	6.80E-03	2.75E-03	9.60E-03
Bromodichloromethane	75-27-4		---	---	---	---	---
Bromoform	75-25-2	X	ND	ND	ND	ND	6.94E-05
Bromomethane	74-83-9	X	---	---	---	---	---
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	2.93E-02	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3		9.00E-03	2.00E-02	0.00E+00	0.00E+00	0.00E+00
Butyl benzyl phthalate	85-68-7		---	---	---	---	---
Carbon Disulfide	75-15-0	X	---	---	---	---	---
Carbon Tetrachloride	56-23-5	X	ND	4.03E-04	ND	ND	ND
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	---	---	---	---	---
Chlorodibromomethane	124-48-1		---	---	---	---	---
Chloroethane	75-00-3	X	---	---	---	---	---
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	---	---	---	---	---
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	ND	9.58E-04	ND	ND	ND
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		---	---	---	---	---
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	---	---	---	---	---
o-Cresol	95-48-7	X	1.15E-03	ND	ND	ND	4.19E-04
p-Cresol	106-44-5	X	8.64E-03	ND	ND	ND	ND
Crotonaldehyde	4170-30-3		3.40E-02	2.00E-02	ND	ND	ND
Dibenzofuran	132-64-9	X	2.89E-03	ND	ND	5.00E-05	ND
Dibutyl Phthalate	84-74-2	X	6.96E-04	1.59E-04	2.05E-04	1.12E-04	8.81E-05
1,2-Dichlorobenzene	95-50-1		---	---	---	---	---
1,3-Dichlorobenzene	541-73-1		ND	ND	2.99E-04	ND	ND
1,4-Dichlorobenzene	106-46-7	X	---	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	---	---	---	---	---
1,2-Dichloroethane	107-06-2	X	---	---	---	---	---
1,1-Dichloroethene	75-35-4	X	---	---	---	---	---
cis-1,2-Dicholorethene	156-59-2		---	---	---	---	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	1.66E-04
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	---	---	---	---	---
cis-1,3-Dichloropropene	10061-01-5		---	---	---	---	---
trans-1,3-Dichloropropene	10061-02-6		---	---	---	---	---
Diethyl Phthalate	84-66-2		9.12E-03	3.13E-03	4.05E-03	1.80E-03	4.03E-03

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-5
Fuel Flowrate (lb/hr)[1]			1127	2765	7685	10996	54007
Percent Thrust/hp[1]			3%	13%	45%	100%	134%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	5.09E-02	3.38E-03	1.97E-03	6.21E-03	2.89E-03
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	5.93E-03	4.44E-04	ND	3.99E-04	8.38E-05
Fluoranthene	206-44-0	X	4.69E-04	ND	ND	ND	ND
Fluorene	86-73-7	X	1.45E-03	ND	ND	ND	ND
Formaldehyde	50-00-0	X	8.61E-01	6.10E-01	2.00E-02	1.00E-02	1.00E-02
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	---	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		2.50E-02	3.00E-02	3.00E-02	1.00E-02	0.00E+00
2-Hexanone	591-78-6		---	---	---	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	---	---	---	---	---
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		1.90E-02	6.00E-02	1.00E-02	ND	1.00E-02
Methylene Chloride	75-09-2	X	ND	4.47E-04	2.60E-02	2.84E-04	ND
2-Methylnaphthalene	91-57-6		6.03E-02	5.10E-04	3.12E-04	2.20E-04	5.08E-05
4-Methyl-2-pentanone (MIBK)	108-10-1	X	---	---	---	---	---
Naphthalene	91-20-3	X	9.50E-02	7.49E-04	4.91E-04	3.43E-04	5.40E-04
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		5.87E-03	ND	ND	ND	ND
4-Nitrophenol	100-02-7	X	6.96E-03	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		9.00E-03	0.00E+00	1.00E-02	2.00E-02	ND
Phenanthrene	85-01-8	X	1.71E-03	ND	ND	ND	ND
Phenol	108-95-2	X	3.99E-02	ND	ND	ND	3.38E-03
Propanal	123-38-6	X	3.90E-02	2.00E-02	1.00E-02	4.00E-02	0.00E+00
Pyrene	129-00-0	X	6.35E-04	ND	ND	ND	ND
Styrene	100-42-5	X	4.09E-03	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	X	---	---	---	---	---
Tetrachloroethene	127-18-4	X	---	---	---	---	---
m-Tolualdehyde	620-23-5		5.00E-03	0.00E+00	1.00E-02	ND	ND
o-Tolualdehyde	529-20-4		1.00E-03	ND	ND	ND	ND
Toluene	108-88-3	X	2.20E-02	1.73E-03	9.55E-04	9.24E-04	2.98E-04
1,2,4-Trichlorobenzene	120-82-1	X	---	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	8.66E-04	ND	ND
1,1,2-Trichloroethane	79-00-5	X	---	---	---	---	---
Trichloroethene	79-01-6	X	---	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	---	---	---	---	---
Vinyl Chloride	75-01-4	X	---	---	---	---	---
m,p-Xylene	1330-20-7	X	4.09E-02	6.15E-03	1.61E-03	3.59E-03	7.58E-04
o-Xylene	95-47-6	X	1.01E-02	1.20E-03	3.09E-04	9.60E-04	1.84E-04

1. Data obtained from *Engine and Hush House Emissions from F100-PW-100 Jet Engine Tested at Langley Air Force Base, VA Volumes I-III, November 1996*

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F100-PW-200

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-5
Fuel Flowrate (lb/hr)[1]			1006	3251	5651	8888	40123
Percent Thrust/hp[1]			3%	13%	45%	100%	134%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	---	---	---	---	---
Acenaphthylene	208-96-8	X	5.38E-04	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	2.41E-01	ND	7.00E-03	1.30E-02	1.60E-02
Acrolein	107-02-8	X	8.40E-02	ND	ND	ND	ND
Anthracene	120-12-7	X	---	---	---	---	---
Benzaldehyde	100-52-7		ND	ND	ND	ND	ND
Benz(a)anthracene	56-55-3	X	---	---	---	---	---
Benzene	71-43-2	X	4.70E-02	3.87E-04	1.89E-04	4.90E-04	1.82E-04
Benzenemethanol	100-51-6		4.18E-03	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	X	---	---	---	---	---
Benzo(k)fluoranthene	207-08-9	X	---	---	---	---	---
Benzo(g,h,i)perylene	191-24-2	X	---	---	---	---	---
Benzo(a)pyrene	50-32-8	X	---	---	---	---	---
Benzoic Acid	65-85-0		4.97E-02	5.66E-03	3.80E-03	3.52E-03	7.62E-03
Bromodichloromethane	75-27-4		---	---	---	---	---
Bromoform	75-25-2	X	---	---	---	---	---
Bromomethane	74-83-9	X	---	---	---	---	---
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	1.04E-02	ND	ND	ND	ND
2-Butanone (MEK)	78-93-3		4.00E-02	ND	7.00E-03	6.00E-03	8.00E-03
Butyl benzyl phthalate	85-68-7		ND	ND	1.43E-04	1.08E-04	2.48E-04
Carbon Disulfide	75-15-0	X	---	---	---	---	---
Carbon Tetrachloride	56-23-5	X	2.31E-04	3.02E-04	3.09E-04	1.85E-04	2.23E-05
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	ND	ND	2.14E-04	1.03E-04	ND
Chlorodibromomethane	124-48-1		---	---	---	---	---
Chloroethane	75-00-3	X	---	---	---	---	---
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	ND	ND	ND	ND	ND
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		---	---	---	---	---
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	---	---	---	---	---
o-Cresol	95-48-7	X	---	---	---	---	---
p-Cresol	106-44-5	X	---	---	---	---	---
Crotonaldehyde	4170-30-3		3.20E-02	ND	ND	ND	ND
Dibenzofuran	132-64-9	X	6.49E-04	ND	ND	ND	ND
Dibutyl Phthalate	84-74-2	X	2.23E-04	2.14E-04	1.77E-04	1.47E-04	8.33E-04
1,2-Dichlorobenzene	95-50-1		ND	1.94E-04	9.29E-04	3.40E-04	ND
1,3-Dichlorobenzene	541-73-1		ND	ND	7.25E-04	2.52E-04	ND
1,4-Dichlorobenzene	106-46-7	X	ND	4.90E-05	3.90E-04	1.77E-04	3.16E-06
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	---	---	---	---	---
1,2-Dichloroethane	107-06-2	X	---	---	---	---	---
1,1-Dichloroethene	75-35-4	X	---	---	---	---	---
cis-1,2-Dicholorethene	156-59-2		---	---	---	---	---
trans-1,2-Dichloroethene	156-60-5		---	---	---	---	---
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	---	---	---	---	---
cis-1,3-Dichloropropene	10061-01-5		---	---	---	---	---
trans-1,3-Dichloropropene	10061-02-6		---	---	---	---	---
Diethyl Phthalate	84-66-2		9.09E-03	1.10E-02	3.07E-03	3.92E-03	1.79E-02

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-5
Fuel Flowrate (lb/hr)[1]			1006	3251	5651	8888	40123
Percent Thrust/hp[1]			3%	13%	45%	100%	134%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	1.35E-03	2.83E-03	2.04E-03	2.35E-03	3.93E-03
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	2.99E-03	1.93E-04	2.70E-04	3.44E-04	4.01E-05
Fluoranthene	206-44-0	X	---	---	---	---	---
Fluorene	86-73-7	X	3.35E-04	ND	ND	ND	8.76E-05
Formaldehyde	50-00-0	X	7.77E-01	ND	ND	2.00E-03	2.00E-02
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	ND	4.06E-04	1.40E-03	5.74E-04	ND
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		ND	ND	ND	ND	ND
2-Hexanone	591-78-6		---	---	---	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	---	---	---	---	---
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		1.70E-02	ND	ND	3.00E-03	1.00E-03
Methylene Chloride	75-09-2	X	6.94E-04	1.35E-03	3.06E-03	3.16E-03	1.07E-03
2-Methylnaphthalene	91-57-6		2.59E-02	3.30E-04	2.60E-04	3.53E-04	4.51E-04
4-Methyl-2-pentanone (MIBK)	108-10-1	X	---	---	---	---	---
Naphthalene	91-20-3	X	3.42E-02	2.13E-04	3.96E-04	4.01E-04	4.12E-04
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		5.91E-03	ND	ND	ND	ND
4-Nitrophenol	100-02-7	X	5.57E-03	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		ND	ND	ND	ND	ND
Phenanthrene	85-01-8	X	4.48E-04	ND	ND	ND	1.33E-04
Phenol	108-95-2	X	1.35E-02	ND	ND	2.68E-04	1.04E-03
Propanal	123-38-6	X	4.90E-02	ND	8.00E-03	6.00E-03	7.00E-03
Pyrene	129-00-0	X	1.79E-04	ND	ND	ND	ND
Styrene	100-42-5	X	5.02E-04	ND	2.78E-04	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	6.96E-04	2.52E-04	ND
Tetrachloroethene	127-18-4	X	ND	ND	2.40E-03	8.96E-04	ND
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	ND
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	ND
Toluene	108-88-3	X	1.65E-02	7.62E-04	4.34E-04	1.08E-03	8.75E-04
1,2,4-Trichlorobenzene	120-82-1	X	ND	3.43E-04	2.04E-03	7.29E-04	3.22E-05
1,1,1-Trichloroethane	71-55-6	X	1.38E-03	5.02E-04	3.36E-04	5.61E-04	7.21E-05
1,1,2-Trichloroethane	79-00-5	X	---	---	---	---	---
Trichloroethene	79-01-6	X	ND	ND	9.17E-05	ND	ND
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	---	---	---	---	---
Vinyl Chloride	75-01-4	X	---	---	---	---	---
m,p-Xylene	1330-20-7	X	1.47E-02	1.40E-03	1.43E-03	2.11E-03	2.59E-04
o-Xylene	95-47-6	X	3.61E-03	2.81E-04	3.51E-04	4.73E-04	5.80E-05

1. Data obtained from *Engine and Hush House Emissions from F100-PW-200 Jet Engine Tested at Kelly Air Force Base, TX Volumes I-III, February 1997*

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F101-GE-102

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-1
Fuel Flowrate (lb/hr)[1]			1117	4533	6557	7828	15314
Percent Thrust/hp[1]			5%	47%	66%	77%	106%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	ND	ND	ND	ND	1.77E-02
Acrolein	107-02-8	X	ND	ND	ND	ND	8.23E-02
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		ND	ND	ND	1.93E-03	4.98E-02
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	1.18E-02	7.89E-04	1.32E-03	5.48E-03	2.28E-01
Benzenemethanol	100-51-6		ND	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		1.65E-02	6.33E-03	6.76E-03	7.84E-03	ND
Bromodichloromethane	75-27-4		ND	ND	ND	ND	ND
Bromoform	75-25-2	X	ND	ND	ND	ND	ND
Bromomethane	74-83-9	X	7.07E-04	4.66E-04	1.52E-02	6.47E-02	8.84E-02
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	ND
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.18E-03	ND	ND	ND	3.30E-02
Butyl benzyl phthalate	85-68-7		4.72E-04	3.07E-04	3.19E-04	ND	ND
Carbon Disulfide	75-15-0	X	ND	4.38E-04	8.99E-04	1.60E-03	ND
Carbon Tetrachloride	56-23-5	X	ND	ND	3.36E-04	ND	ND
4-Chloroaniline	106-47-8		ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	ND
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	ND
Chloroethane	75-00-3	X	ND	ND	ND	ND	ND
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	ND
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	ND
Chloroform	67-66-3	X	1.99E-03	1.04E-03	1.42E-03	1.21E-03	ND
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	ND
Chloromethane	74-87-3	X	5.05E-04	6.90E-04	4.72E-03	1.57E-02	1.28E-02
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		ND	ND	ND	ND	ND
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	ND
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	ND	ND	ND	ND	ND
p-Cresol	106-44-5	X	ND	ND	ND	ND	ND
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	3.59E-02
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	3.49E-03
Dibutyl Phthalate	84-74-2	X	1.68E-03	AA	4.16E-04	AA	ND
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	ND
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	ND
Diethyl Phthalate	84-66-2		7.81E-04	ND	2.38E-04	ND	ND

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-1
Fuel Flowrate (lb/hr)[1]			1117	4533	6557	7828	15314
Percent Thrust/hp[1]			5%	47%	66%	77%	106%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	ND
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	5.76E-03	1.52E-03	1.43E-03	1.09E-03	ND
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	X	ND	ND	ND	ND	8.60E-02
Fluoranthene	206-44-0	X	ND	ND	ND	ND	ND
Fluorene	86-73-7	X	ND	ND	ND	ND	ND
Formaldehyde	50-00-0	X	1.04E-01	5.12E-03	4.64E-03	4.43E-03	3.89E-02
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	ND
Hexanal	66-25-1		ND	ND	ND	ND	1.80E-02
2-Hexanone	591-78-6		ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	ND	ND	ND	ND	ND
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	ND
Methylene Chloride	75-09-2	X	1.13E-01	7.58E-02	4.44E-02	1.58E-01	2.19E-02
2-Methylnaphthalene	91-57-6		2.63E-04	ND	ND	ND	1.69E-01
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	ND
Naphthalene	91-20-3	X	1.79E-03	AA	ND	ND	1.27E-01
m-Nitroaniline	99-09-2		ND	ND	ND	ND	ND
o-Nitroaniline	88-74-4		ND	ND	ND	ND	ND
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5		ND	ND	ND	ND	ND
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	ND
Pentanal	110-62-3		ND	ND	ND	ND	1.16E-02
Phenanthrene	85-01-8	X	ND	ND	ND	ND	ND
Phenol	108-95-2	X	2.29E-03	1.22E-03	ND	ND	2.71E-02
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	ND
Styrene	100-42-5	X	1.08E-03	ND	3.36E-04	ND	1.21E-02
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	X	ND	4.83E-04	1.02E-03	1.24E-03	ND
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	1.48E-02
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	8.42E-03
Toluene	108-88-3	X	5.55E-03	1.50E-03	1.69E-03	1.29E-03	1.26E-01
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	X	ND	ND	4.05E-04	ND	ND
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	X	7.07E-04	4.66E-04	3.39E-04	ND	ND
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	ND
Vinyl Acetate	108-05-4	X	3.53E-03	2.32E-03	2.47E-03	8.66E-03	1.53E-02
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	ND
m,p-Xylene	1330-20-7	X	9.22E-04	4.34E-04	6.65E-04	2.45E-03	1.55E-01
o-Xylene	95-47-6	X	ND	ND	ND	ND	6.90E-02

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F108-CF-100

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1136	2547	5650	6458	---
Percent Thrust/hp[1]			9%	30%	70%	78%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	AA	ND	ND	ND	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		ND	ND	ND	4.09E-03	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	1.39E-02	3.39E-03	8.30E-04	5.10E-04	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		3.38E-02	8.64E-03	1.14E-02	8.89E-03	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		5.35E-03	ND	ND	ND	---
Butyl benzyl phthalate	85-68-7		7.26E-04	ND	2.71E-04	ND	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	ND	---
Carbon Tetrachloride	56-23-5	X	ND	5.28E-04	4.23E-04	ND	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	2.31E-03	1.85E-03	1.76E-03	1.18E-03	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	9.13E-04	8.63E-04	7.94E-04	3.37E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	AA	AA	AA	AA	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		9.68E-04	7.63E-04	5.09E-04	4.84E-04	---
Diethyl Phthalate	84-66-2		8.78E-04	5.14E-04	ND	ND	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1136	2547	5650	6458	---
Percent Thrust/hp[1]			9%	30%	70%	78%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	5.53E-03	1.54E-03	4.51E-03	1.95E-03	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	6.84E-04	5.53E-04	ND	ND	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	9.51E-02	1.50E-02	5.58E-03	7.01E-03	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	9.66E-03	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	6.75E-02	4.46E-02	5.06E-02	1.96E-03	---
2-Methylnaphthalene	91-57-6		7.68E-04	ND	ND	ND	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	2.90E-03	AA	ND	ND	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	ND	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	1.48E-03	ND	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	1.90E-03	3.22E-03	4.25E-04	1.11E-03	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	4.67E-03	ND	ND	---
Toluene	108-88-3	X	8.97E-03	6.23E-03	1.42E-03	1.11E-03	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	7.69E-04	8.15E-04	ND	3.21E-04	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	4.85E-03	3.81E-03	2.54E-03	2.42E-03	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	1.65E-03	1.61E-03	5.42E-04	3.36E-04	---
o-Xylene	95-47-6	X	ND	ND	ND	ND	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F110-GE-100

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-1
Fuel Flowrate (lb/hr)[1]			1111	5080	7332	11358	18088
Percent Thrust/hp[1]			3%	44%	66%	100%	113%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	6.62E-03	ND	1.65E-04	1.44E-04	1.24E-02
Acrolein	107-02-8	X	ND	ND	ND	ND	3.90E-02
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		3.48E-02	ND	4.26E-03	3.06E-03	7.13E-02
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	2.93E-02	1.77E-03	1.59E-03	1.61E-03	1.88E-01
Benzenemethanol	100-51-6		ND	ND	ND	ND	ND
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		1.66E-02	9.23E-03	9.93E-03	5.70E-03	1.37E-01
Bromodichloromethane	75-27-4		ND	ND	ND	1.69E-04	8.15E-04
Bromoform	75-25-2	X	ND	ND	ND	1.69E-04	8.15E-04
Bromomethane	74-83-9	X	ND	ND	ND	1.69E-04	1.03E-03
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	ND
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.44E-03	ND	ND	4.55E-04	2.02E-02
Butyl benzyl phthalate	85-68-7		AA	ND	ND	ND	ND
Carbon Disulfide	75-15-0	X	ND	ND	2.48E-04	1.69E-04	8.15E-04
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	1.69E-04	8.15E-04
4-Chloroaniline	106-47-8		ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	X	ND	ND	ND	1.69E-04	8.15E-04
Chlorodibromomethane	124-48-1		ND	ND	ND	1.69E-04	8.15E-04
Chloroethane	75-00-3	X	ND	ND	ND	1.69E-04	8.15E-04
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	ND
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	ND
Chloroform	67-66-3	X	1.88E-03	1.95E-03	1.19E-03	1.09E-03	8.15E-04
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	ND
Chloromethane	74-87-3	X	3.89E-04	2.84E-04	ND	2.26E-04	1.84E-03
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		ND	ND	ND	ND	ND
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	ND
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	ND	ND	ND	ND	ND
p-Cresol	106-44-5	X	ND	ND	ND	ND	1.17E-02
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	6.08E-02
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	1.27E-03
Dibutyl Phthalate	84-74-2	X	AA	AA	8.62E-04	AA	ND
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	1.69E-04	8.15E-04
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	1.69E-04	8.15E-04
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	1.69E-04	8.15E-04
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	1.69E-04	8.15E-04
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	1.69E-04	8.15E-04
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	1.69E-04	8.15E-04
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	1.69E-04	8.15E-04
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	1.69E-04	1.52E-03
Diethyl Phthalate	84-66-2		1.36E-03	4.41E-04	4.04E-04	1.07E-04	ND

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-1
Fuel Flowrate (lb/hr)[1]			1111	5080	7332	11358	18088
Percent Thrust/hp[1]			3%	44%	66%	100%	113%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	ND
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	AA	AA	2.52E-03	AA	ND
Di-n-Octyl phthalate	117-84-0		4.21E-04	ND	ND	ND	ND
Ethylbenzene	100-41-4	X	2.00E-03	3.93E-04	3.68E-04	1.69E-04	4.47E-02
Fluoranthene	206-44-0	X	ND	ND	ND	ND	ND
Fluorene	86-73-7	X	ND	ND	ND	ND	ND
Formaldehyde	50-00-0	X	1.01E-01	1.00E-02	1.94E-02	1.53E-02	1.53E-02
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	ND
Hexanal	66-25-1		ND	ND	ND	ND	1.14E-02
2-Hexanone	591-78-6		ND	ND	ND	8.45E-04	3.95E-03
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	ND	ND	ND	ND	ND
Isovaleraldehyde	590-86-3		ND	ND	2.32E-03	1.12E-03	ND
Methylene Chloride	75-09-2	X	1.79E-02	1.16E-02	2.39E-02	2.52E-02	3.79E-02
2-Methylnaphthalene	91-57-6		1.58E-04	AA	3.59E-05	1.19E-04	5.15E-02
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	8.45E-04	3.95E-03
Naphthalene	91-20-3	X	3.31E-03	AA	AA	3.31E-04	9.73E-02
m-Nitroaniline	99-09-2		ND	ND	ND	ND	ND
o-Nitroaniline	88-74-4		ND	ND	ND	ND	ND
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5		ND	ND	ND	ND	2.83E-02
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	3.23E-02
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	ND
Pentanal	110-62-3		ND	ND	ND	ND	ND
Phenanthrene	85-01-8	X	ND	ND	ND	ND	ND
Phenol	108-95-2	X	2.95E-03	ND	ND	ND	6.63E-02
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	ND
Styrene	100-42-5	X	3.69E-03	2.98E-04	4.91E-04	2.65E-04	5.71E-03
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	1.69E-04	8.15E-04
Tetrachloroethene	127-18-4	X	ND	ND	ND	1.69E-04	8.15E-04
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	1.62E-02
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	1.43E-02
Toluene	108-88-3	X	1.10E-02	1.34E-03	1.90E-03	7.41E-04	1.40E-01
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	X	ND	2.71E-04	3.46E-04	1.69E-04	8.15E-04
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	1.69E-04	8.15E-04
Trichloroethene	79-01-6	X	ND	ND	ND	1.69E-04	8.15E-04
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	ND
Vinyl Acetate	108-05-4	X	ND	ND	ND	8.45E-04	7.34E-03
Vinyl Chloride	75-01-4	X	ND	ND	ND	1.69E-04	8.15E-04
m,p-Xylene	1330-20-7	X	2.84E-03	8.26E-04	9.70E-04	3.38E-04	6.05E-02
o-Xylene	95-47-6	X	1.38E-03	2.98E-04	ND	1.69E-04	2.84E-02

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in reference above

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F117-PW-100

Power Setting			Idle	Approach	Intermediate	---	---
Fuel Flowrate (lb/hr)[1]			978	4645	10408	---	---
Percent Thrust/hp[1]			4%	31%	68%	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	---	---
Acenaphthylene	208-96-8	X	ND	ND	ND	---	---
Acetaldehyde	75-07-0	X	1.20E-02	ND	ND	---	---
Acrolein	107-02-8	X	ND	ND	ND	---	---
Anthracene	120-12-7	X	ND	ND	ND	---	---
Benzaldehyde	100-52-7		ND	3.16E-03	3.68E-03	---	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	---	---
Benzene	71-43-2	X	2.25E-02	8.90E-04	6.25E-04	---	---
Benzenemethanol	100-51-6		ND	ND	ND	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	---	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	---	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	---	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	---	---
Benzoic Acid	65-85-0		1.28E-02	ND	7.36E-03	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	---	---
Bromoform	75-25-2	X	ND	ND	ND	---	---
Bromomethane	74-83-9	X	ND	ND	ND	---	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	---	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		ND	ND	ND	---	---
Butyl benzyl phthalate	85-68-7		ND	ND	2.92E-04	---	---
Carbon Disulfide	75-15-0	X	ND	ND	3.76E-04	---	---
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	---	---
4-Chloroaniline	106-47-8		ND	ND	ND	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	---	---
Chlorodibromomethane	124-48-1		ND	ND	ND	---	---
Chloroethane	75-00-3	X	ND	ND	ND	---	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	---	---
Chloroform	67-66-3	X	1.23E-03	1.16E-03	6.14E-04	---	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	---	---
Chloromethane	74-87-3	X	ND	4.23E-04	ND	---	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	---	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	---	---
2-Chlorophenol	95-57-8		ND	ND	ND	---	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	---	---
Chrysene	218-01-9	X	ND	ND	ND	---	---
o-Cresol	95-48-7	X	ND	ND	ND	---	---
p-Cresol	106-44-5	X	ND	ND	ND	---	---
Crotonaldehyde	4170-30-3		1.20E-02	ND	ND	---	---
Dibenzofuran	132-64-9	X	ND	ND	ND	---	---
Dibutyl Phthalate	84-74-2	X	6.81E-04	8.16E-04	2.30E-04	---	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	---	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	---	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	---	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	---	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	---	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	---	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	---	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	---	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	---	---
1,2-Dichloropropane	78-87-5	X	2.23E-03	1.59E-03	6.30E-04	---	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	---	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	---	---
Diethyl Phthalate	84-66-2		8.47E-03	5.36E-03	2.44E-03	---	---

Power Setting			Idle	Approach	Intermediate	---	---
Fuel Flowrate (lb/hr)[1]			978	4645	10408	---	---
Percent Thrust/hp[1]			4%	31%	68%	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	---	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	---	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	---	---
2,4-Dinitrophenol	51-28-5	X	7.36E-03	5.64E-03	3.56E-03	---	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	---	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	3.03E-03	1.87E-03	1.69E-03	---	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	---	---
Ethylbenzene	100-41-4	X	2.82E-03	ND	ND	---	---
Fluoranthene	206-44-0	X	ND	ND	ND	---	---
Fluorene	86-73-7	X	ND	ND	ND	---	---
Formaldehyde	50-00-0	X	2.36E-01	1.65E-02	9.50E-03	---	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	---	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	---	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	---	---
Hexachloroethane	67-72-1	X	ND	ND	ND	---	---
Hexanal	66-25-1		ND	ND	ND	---	---
2-Hexanone	591-78-6		ND	ND	ND	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	---	---
Isophorone	78-59-1	X	ND	ND	ND	---	---
Isovaleraldehyde	590-86-3		ND	1.84E-03	ND	---	---
Methylene Chloride	75-09-2	X	7.74E-04	AA	6.25E-03	---	---
2-Methylnaphthalene	91-57-6		1.56E-03	ND	ND	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	---	---
Naphthalene	91-20-3	X	2.39E-03	ND	ND	---	---
m-Nitroaniline	99-09-2		ND	ND	ND	---	---
o-Nitroaniline	88-74-4		ND	ND	ND	---	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	---	---
Nitrobenzene	98-95-3	X	ND	ND	ND	---	---
2-Nitrophenol	88-75-5		ND	ND	ND	---	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	---	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	---	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	---	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	---	---
Pentanal	110-62-3		ND	ND	ND	---	---
Phenanthrene	85-01-8	X	ND	ND	ND	---	---
Phenol	108-95-2	X	3.79E-03	ND	ND	---	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	---	---
Styrene	100-42-5	X	1.55E-03	ND	ND	---	---
1,1,2,2-Tetrachloroethane	79-34-5	X	3.32E-03	1.87E-03	9.99E-04	---	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	---	---
m-Tolualdehyde	620-23-5		1.75E-02	4.22E-03	2.14E-03	---	---
o-Tolualdehyde	529-20-4		ND	ND	ND	---	---
Toluene	108-88-3	X	6.68E-03	1.41E-03	1.12E-03	---	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	3.72E-04	ND	---	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	---	---
Trichloroethene	79-01-6	X	8.62E-04	AA	AA	---	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	---	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	---	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	---	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	---	---
m,p-Xylene	1330-20-7	X	2.29E-03	6.21E-04	5.47E-04	---	---
o-Xylene	95-47-6	X	9.80E-04	ND	ND	---	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F118-GE-100

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1097	3773	6350	10887	---
Percent Thrust/hp			---	---	---	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	7.86E-03	ND	ND	ND	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		6.59E-03	1.59E-03	1.65E-03	1.94E-03	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	2.70E-02	8.58E-04	3.71E-04	3.38E-04	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		2.49E-02	1.68E-02	7.76E-03	1.22E-02	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		3.01E-03	ND	ND	ND	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	5.53E-04	ND	ND	ND	---
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	ND	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	1.22E-03	5.29E-04	4.29E-04	1.86E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	4.67E-04	ND	ND	ND	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	AA	1.04E-04	4.22E-05	AA	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		2.01E-03	1.73E-03	1.31E-03	1.07E-03	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		AA	AA	AA	AA	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1097	3773	6350	10887	---
Percent Thrust/hp			---	---	---	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000 ls fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	AA	2.47E-03	3.17E-04	AA	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	1.23E-03	3.72E-04	ND	ND	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	1.80E-01	1.22E-02	1.17E-02	6.55E-03	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		2.79E-03	1.96E-03	1.35E-03	9.98E-04	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	1.41E-03	1.34E-03	8.08E-04	---
Methylene Chloride	75-09-2	X	1.22E-02	1.09E-02	8.04E-03	AA	---
2-Methylnaphthalene	91-57-6		AA	ND	ND	ND	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	AA	ND	ND	ND	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	1.20E-03	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	2.25E-03	ND	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	5.58E-04	3.93E-04	2.70E-04	1.99E-04	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	ND	---
m-Tolualdehyde	620-23-5		1.14E-02	4.77E-03	3.95E-03	3.01E-03	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	9.88E-03	1.35E-03	2.98E-04	3.85E-04	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	3.82E-03	1.47E-03	2.87E-04	2.05E-04	---
o-Xylene	95-47-6	X	1.43E-03	4.98E-04	ND	ND	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F119-PW-100

Power Setting			Idle	Approach	Intermediate	Military	Afterburner
Fuel Flowrate (lb/hr)[1]			1377	2740	10110	18612	50170
Percent Thrust/hp			10%	20%	70%	100%	150%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	---	---	---	---	---
Acenaphthylene	208-96-8	X	---	---	---	---	---
Acetaldehyde	75-07-0	X	1.11E-01	6.75E-03	2.61E-03	8.33E-04	---
Acrolein	107-02-8	X	3.60E-02	ND	ND	ND	---
Anthracene	120-12-7	X	---	---	---	---	---
Benzaldehyde	100-52-7		4.15E-02	ND	ND	ND	---
Benz(a)anthracene	56-55-3	X	---	---	---	---	---
Benzene	71-43-2	X	1.06E-01	3.33E-03	6.86E-04	4.88E-04	---
Benzenemethanol	100-51-6		---	---	---	---	---
Benzo(b)fluoranthene	205-99-2	X	---	---	---	---	---
Benzo(k)fluoranthene	207-08-9	X	---	---	---	---	---
Benzo(g,h,i)perylene	191-24-2	X	---	---	---	---	---
Benzo(a)pyrene	50-32-8	X	---	---	---	---	---
Benzoic Acid	65-85-0		---	---	---	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	4.99E-02	ND	4.27E-04	ND	---
2-Butanone (MEK)	78-93-3		3.33E-02	ND	ND	ND	---
Butyl benzyl phthalate	85-68-7		---	---	---	---	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	7.01E-05	---
Carbon Tetrachloride	56-23-5	X	3.22E-04	3.92E-04	2.55E-04	1.62E-04	---
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	ND	ND	1.03E-04	ND	---
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	ND	AA	AA	AA	---
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		---	---	---	---	---
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	---	---	---	---	---
o-Cresol	95-48-7	X	---	---	---	---	---
p-Cresol	106-44-5	X	---	---	---	---	---
Crotonaldehyde	4170-30-3		2.66E-02	ND	ND	ND	---
Dibenzofuran	132-64-9	X	---	---	---	---	---
Dibutyl Phthalate	84-74-2	X	---	---	---	---	---
1,2-Dichlorobenzene	95-50-1		---	---	---	---	---
1,3-Dichlorobenzene	541-73-1		---	---	---	---	---
1,4-Dichlorobenzene	106-46-7	X	---	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		---	---	---	---	---

Power Setting			Idle	Approach	Intermediate	Military	Afterburner
Fuel Flowrate (lb/hr)[1]			1377	2740	10110	18612	50170
Percent Thrust/hp			10%	20%	70%	100%	150%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	---	---	---	---	---
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	1.64E-02	2.55E-04	4.99E-04	1.34E-04	---
Fluoranthene	206-44-0	X	---	---	---	---	---
Fluorene	86-73-7	X	---	---	---	---	---
Formaldehyde	50-00-0	X	9.95E-01	3.56E-02	2.44E-02	7.58E-03	---
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	---	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	---	---	---	---	---
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	5.03E-04	AA	AA	AA	---
2-Methylnaphthalene	91-57-6		---	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	---	---	---	---	---
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		---	---	---	---	---
4-Nitrophenol	100-02-7	X	---	---	---	---	---
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	---	---	---	---	---
Phenol	108-95-2	X	---	---	---	---	---
Propanal	123-38-6	X	1.60E-02	ND	9.78E-04	4.10E-04	---
Pyrene	129-00-0	X	---	---	---	---	---
Styrene	100-42-5	X	3.12E-02	2.55E-04	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	3.02E-04	2.89E-04	ND	ND	---
m-Tolualdehyde	620-23-5		1.91E-02	ND	1.18E-03	1.64E-04	---
o-Tolualdehyde	529-20-4		2.77E-02	ND	ND	4.31E-04	---
Toluene	108-88-3	X	6.37E-02	2.68E-04	AA	AA	---
1,2,4-Trichlorobenzene	120-82-1	X	---	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	3.92E-02	5.60E-04	AA	2.57E-04	---
o-Xylene	95-47-6	X	2.79E-02	3.21E-04	4.89E-04	1.20E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Final Report Addendum F119-PW-100 Engine June 2002*, IERA-RS-BR-SR-2002-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

F404-GE-400, -F1D2

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-3
Fuel Flowrate (lb/hr)[1]			685	3111	6464	7739	15851
Percent Thrust/hp[1]			6%	38%	79%	91%	114%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	1.20E-02	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	5.69E-02	ND	ND	ND	3.38E-02
Acrolein	107-02-8	X	1.71E-01	ND	ND	ND	1.44E-01
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		1.31E-01	ND	1.70E-03	ND	1.32E-01
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	5.12E-01	7.56E-04	6.45E-04	7.38E-04	3.70E-01
Benzenemethanol	100-51-6		3.45E-02	ND	ND	ND	2.84E-02
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		ND	1.59E-02	1.62E-02	7.56E-03	1.41E-01
Bromodichloromethane	75-27-4		2.49E-03	ND	ND	ND	2.00E-03
Bromoform	75-25-2	X	2.49E-03	ND	ND	ND	2.00E-03
Bromomethane	74-83-9	X	2.49E-03	ND	ND	ND	2.13E-03
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	ND
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.31E-02	ND	ND	ND	2.74E-02
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	ND
Carbon Disulfide	75-15-0	X	2.49E-03	ND	ND	ND	2.00E-03
Carbon Tetrachloride	56-23-5	X	2.49E-03	2.37E-04	1.91E-04	ND	2.00E-03
4-Chloroaniline	106-47-8		ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	X	2.49E-03	ND	ND	ND	2.00E-03
Chlorodibromomethane	124-48-1		2.49E-03	ND	ND	ND	2.00E-03
Chloroethane	75-00-3	X	2.49E-03	ND	ND	ND	2.00E-03
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	ND
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	ND
Chloroform	67-66-3	X	2.49E-03	4.67E-04	3.38E-04	3.84E-04	2.00E-03
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	ND
Chloromethane	74-87-3	X	2.65E-03	3.28E-04	4.82E-04	2.89E-04	2.00E-03
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		ND	ND	ND	ND	ND
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	ND
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	ND	ND	ND	ND	ND
p-Cresol	106-44-5	X	2.58E-02	ND	ND	ND	1.94E-02
Crotonaldehyde	4170-30-3		9.14E-02	ND	ND	ND	8.45E-02
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	ND
Dibutyl Phthalate	84-74-2	X	ND	ND	1.89E-03	1.60E-04	ND
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	ND
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	X	2.49E-03	ND	ND	ND	2.00E-03
1,2-Dichloroethane	107-06-2	X	2.49E-03	ND	ND	ND	2.00E-03
1,1-Dichloroethene	75-35-4	X	2.49E-03	ND	ND	ND	2.00E-03
cis-1,2-Dicholorethene	156-59-2		2.49E-03	ND	ND	ND	2.00E-03
trans-1,2-Dichloroethene	156-60-5		2.49E-03	ND	ND	ND	2.00E-03
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	ND
1,2-Dichloropropane	78-87-5	X	2.49E-03	ND	ND	ND	2.00E-03
cis-1,3-Dichloropropene	10061-01-5		2.49E-03	ND	ND	ND	2.00E-03
trans-1,3-Dichloropropene	10061-02-6		2.49E-03	ND	ND	ND	2.00E-03
Diethyl Phthalate	84-66-2		ND	AA	1.14E-04	AA	ND

Power Setting			Idle	Approach	Intermediate	Military	Afterburner-3
Fuel Flowrate (lb/hr)[1]			685	3111	6464	7739	15851
Percent Thrust/hp[1]			6%	38%	79%	91%	114%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	ND
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	2.54E-03	5.11E-04	2.20E-03	8.68E-04	ND
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	ND
Ethylbenzene	100-41-4	X	7.48E-02	4.84E-04	3.53E-04	ND	4.86E-02
Fluoranthene	206-44-0	X	ND	ND	ND	ND	ND
Fluorene	86-73-7	X	2.57E-03	ND	ND	ND	ND
Formaldehyde	50-00-0	X	1.14E+00	1.67E-02	2.17E-02	9.02E-03	3.74E-02
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	ND
Hexanal	66-25-1		ND	ND	ND	ND	1.26E-02
2-Hexanone	591-78-6		1.24E-02	ND	ND	ND	1.01E-02
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	ND	ND	ND	ND	ND
Isovaleraldehyde	590-86-3		ND	1.14E-03	1.84E-02	ND	1.32E-02
Methylene Chloride	75-09-2	X	1.19E-02	1.47E-02	1.14E-02	3.09E-03	8.39E-03
2-Methylnaphthalene	91-57-6		1.10E-01	1.77E-04	1.78E-05	1.05E-05	6.69E-02
4-Methyl-2-pentanone (MIBK)	108-10-1	X	1.24E-02	ND	ND	ND	1.01E-02
Naphthalene	91-20-3	X	1.31E-01	3.10E-04	7.04E-05	1.03E-04	7.32E-02
m-Nitroaniline	99-09-2		ND	ND	ND	ND	ND
o-Nitroaniline	88-74-4		ND	ND	ND	ND	ND
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5		ND	ND	ND	ND	2.45E-02
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	ND
Pentanal	110-62-3		ND	ND	ND	ND	ND
Phenanthrene	85-01-8	X	2.57E-03	ND	ND	ND	ND
Phenol	108-95-2	X	1.15E-01	ND	ND	ND	6.69E-02
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	ND
Styrene	100-42-5	X	8.66E-02	ND	ND	ND	4.90E-03
1,1,2,2-Tetrachloroethane	79-34-5	X	2.49E-03	ND	ND	ND	2.00E-03
Tetrachloroethene	127-18-4	X	2.49E-03	ND	ND	ND	2.00E-03
m-Tolualdehyde	620-23-5		6.80E-02	ND	ND	ND	9.65E-02
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	5.61E-03
Toluene	108-88-3	X	2.60E-01	8.73E-04	1.07E-03	6.61E-04	1.78E-01
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	X	2.49E-03	ND	ND	ND	2.00E-03
1,1,2-Trichloroethane	79-00-5	X	2.49E-03	ND	ND	ND	2.00E-03
Trichloroethene	79-01-6	X	2.49E-03	ND	ND	ND	2.00E-03
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	ND
Vinyl Acetate	108-05-4	X	1.24E-02	ND	ND	ND	1.01E-02
Vinyl Chloride	75-01-4	X	2.49E-03	ND	ND	ND	2.00E-03
m,p-Xylene	1330-20-7	X	1.68E-01	1.76E-03	1.38E-03	7.45E-04	9.29E-02
o-Xylene	95-47-6	X	8.07E-02	8.75E-04	5.90E-04	2.65E-04	4.86E-02

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

GTCP85-180

		Power Setting	Constant	---	---	---	---			Power Setting	Constant	---	---	---	---	---
		Fuel Flowrate (lb/hr)[1]	270	---	---	---	---			Fuel Flowrate (lb/hr)[1]	270	---	---	---	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]					Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]					
Acenaphthene	83-32-9	X	ND	---	---	---	---	2,4-Dimethylphenol	105-67-9		ND	---	---	---	---	
Acenaphthylene	208-96-8	X	ND	---	---	---	---	Dimethyl phthalate	131-11-3	X	ND	---	---	---	---	
Acetaldehyde	75-07-0	X	2.09E-03	---	---	---	---	4,6-Dinitro-o-cresol	534-52-1	X	ND	---	---	---	---	
Acrolein	107-02-8	X	3.04E-04	---	---	---	---	2,4-Dinitrophenol	51-28-5	X	ND	---	---	---	---	
Anthracene	120-12-7	X	ND	---	---	---	---	2,4-Dinitrotoluene	121-14-2	X	ND	---	---	---	---	
Benzaldehyde	100-52-7		ND	---	---	---	---	2,6-Dinitrotoluene	606-20-2		ND	---	---	---	---	
Benz(a)anthracene	56-55-3	X	ND	---	---	---	---	Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	4.59E-04	---	---	---	---	
Benzene	71-43-2	X	1.50E-02	---	---	---	---	Di-n-Octyl phthalate	117-84-0		ND	---	---	---	---	
Benzenemethanol	100-51-6		ND	---	---	---	---	Ethylbenzene	100-41-4	X	1.20E-04	---	---	---	---	
Benzo(b)fluoranthene	205-99-2	X	ND	---	---	---	---	Fluoranthene	206-44-0	X	4.44E-05	---	---	---	---	
Benzo(k)fluoranthene	207-08-9	X	ND	---	---	---	---	Fluorene	86-73-7	X	ND	---	---	---	---	
Benzo(g,h,i)perylene	191-24-2	X	ND	---	---	---	---	Formaldehyde	50-00-0	X	2.03E-02	---	---	---	---	
Benzo(a)pyrene	50-32-8	X	ND	---	---	---	---	Hexachlorobenzene	118-74-1	X	ND	---	---	---	---	
Benzoic Acid	65-85-0		4.14E-03	---	---	---	---	Hexachlorobutadiene	87-68-3	X	ND	---	---	---	---	
Bromodichloromethane	75-27-4		ND	---	---	---	---	Hexachlorocyclopentadiene	77-47-4	X	ND	---	---	---	---	
Bromoform	75-25-2	X	ND	---	---	---	---	Hexachloroethane	67-72-1	X	ND	---	---	---	---	
Bromomethane	74-83-9	X	8.76E-05	---	---	---	---	Hexanal	66-25-1		ND	---	---	---	---	
4-Bromophenyl-phenyl Ether	101-55-3		ND	---	---	---	---	2-Hexanone	591-78-6		ND	---	---	---	---	
1,3-Butadiene	106-99-0	X	---	---	---	---	---	Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	---	---	---	---	
2-Butanone (MEK)	78-93-3		9.96E-04	---	---	---	---	Isophorone	78-59-1	X	ND	---	---	---	---	
Butyl benzyl phthalate	85-68-7		7.77E-05	---	---	---	---	Isovaleraldehyde	590-86-3		ND	---	---	---	---	
Carbon Disulfide	75-15-0	X	7.79E-05	---	---	---	---	Methylene Chloride	75-09-2	X	2.60E-03	---	---	---	---	
Carbon Tetrachloride	56-23-5	X	ND	---	---	---	---	2-Methylnaphthalene	91-57-6		AA	---	---	---	---	
4-Chloroaniline	106-47-8		ND	---	---	---	---	4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	---	---	---	---	
Chlorobenzene	108-90-7	X	4.59E-04	---	---	---	---	Naphthalene	91-20-3	X	AA	---	---	---	---	
Chlorodibromomethane	124-48-1		ND	---	---	---	---	m-Nitroaniline	99-09-2		ND	---	---	---	---	
Chloroethane	75-00-3	X	ND	---	---	---	---	o-Nitroaniline	88-74-4		ND	---	---	---	---	
bis(2-Chloroethoxy) Methane	111-91-1		ND	---	---	---	---	4-Nitrobenzenamine	100-01-6		ND	---	---	---	---	
bis(2-Chloroethyl) Ether	111-44-4	X	ND	---	---	---	---	Nitrobenzene	98-95-3	X	ND	---	---	---	---	
Chloroform	67-66-3	X	2.07E-04	---	---	---	---	2-Nitrophenol	88-75-5		ND	---	---	---	---	
bis(2-Choroisopropyl) Ether	39638-32-9		ND	---	---	---	---	4-Nitrophenol	100-02-7	X	ND	---	---	---	---	
Chloromethane	74-87-3	X	ND	---	---	---	---	N-Nitrosodiphenylamine	86-30-6		ND	---	---	---	---	
4-Chloro-3-methylphenol	59-50-7		ND	---	---	---	---	N-Nitrosodi-n-propylamine	621-64-7		ND	---	---	---	---	
2-Chloronaphthalene	91-58-7		ND	---	---	---	---	Pentachlorophenol	87-86-5	X	1.55E-03	---	---	---	---	
2-Chlorophenol	95-57-8		ND	---	---	---	---	Pentanal	110-62-3		ND	---	---	---	---	
1-chloro-4-phenoxybenzene	7005-72-3		ND	---	---	---	---	Phenanthrene	85-01-8	X	2.31E-05	---	---	---	---	
Chrysene	218-01-9	X	ND	---	---	---	---	Phenol	108-95-2	X	1.44E-04	---	---	---	---	
o-Cresol	95-48-7	X	ND	---	---	---	---	Propanal	123-38-6	X	---	---	---	---	---	
p-Cresol	106-44-5	X	ND	---	---	---	---	Pyrene	129-00-0	X	ND	---	---	---	---	
Crotonaldehyde	4170-30-3		5.25E-04	---	---	---	---	Styrene	100-42-5	X	1.91E-04	---	---	---	---	
Dibenzofuran	132-64-9	X	ND	---	---	---	---	1,1,2,2-Tetrachloroethane	79-34-5	X	ND	---	---	---	---	
Dibutyl Phthalate	84-74-2	X	2.68E-04	---	---	---	---	Tetrachloroethene	127-18-4	X	ND	---	---	---	---	
1,2-Dichlorobenzene	95-50-1		ND	---	---	---	---	m-Tolualdehyde	620-23-5		ND	---	---	---	---	
1,3-Dichlorobenzene	541-73-1		ND	---	---	---	---	o-Tolualdehyde	529-20-4		ND	---	---	---	---	
1,4-Dichlorobenzene	106-46-7	X	ND	---	---	---	---	Toluene	108-88-3	X	2.94E-03	---	---	---	---	
3,3'-Dichlorobenzidine	91-94-1	X	ND	---	---	---	---	1,2,4-Trichlorobenzene	120-82-1	X	ND	---	---	---	---	
1,1-Dichloroethane	75-34-3	X	ND	---	---	---	---	1,1,1-Trichloroethane	71-55-6	X	ND	---	---	---	---	
1,2-Dichloroethane	107-06-2	X	ND	---	---	---	---	1,1,2-Trichloroethane	79-00-5	X	ND	---	---	---	---	
1,1-Dichloroethene	75-35-4	X	ND	---	---	---	---	Trichloroethene	79-01-6	X	ND	---	---	---	---	
cis-1,2-Dicholorethene	156-59-2		ND	---	---	---	---	2,4,5-Trichlorophenol	95-95-4	X	ND	---	---	---	---	
trans-1,2-Dichloroethene	156-60-5		ND	---	---	---	---	2,4,6-Trichlorophenol	88-06-2	X	ND	---	---	---	---	
2,4-Dichlorophenol	120-83-2		ND	---	---	---	---	Vinyl Acetate	108-05-4	X	ND	---	---	---	---	
1,2-Dichloropropane	78-87-5	X	ND	---	---	---	---	Vinyl Chloride	75-01-4	X	ND	---	---	---	---	
cis-1,3-Dichloropropene	10061-01-5		ND	---	---	---	---	m,p-Xylene	1330-20-7	X	2.32E-03	---	---	---	---	
trans-1,3-Dichloropropene	10061-02-6		ND	---	---	---	---	o-Xylene	95-47-6	X	3.27E-04	---	---	---	---	
Diethyl Phthalate	84-66-2		5.29E-04	---	---	---	---									

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

GTCP165-1

	Power Setting		Constant	---	---	---	---
	Fuel Flowrate (lb/hr)[1]		273	---	---	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	---	---	---	---
Acenaphthylene	208-96-8	X	ND	---	---	---	---
Acetaldehyde	75-07-0	X	5.61E-03	---	---	---	---
Acrolein	107-02-8	X	1.21E-02	---	---	---	---
Anthracene	120-12-7	X	ND	---	---	---	---
Benzaldehyde	100-52-7		1.26E-02	---	---	---	---
Benz(a)anthracene	56-55-3	X	ND	---	---	---	---
Benzene	71-43-2	X	3.79E-02	---	---	---	---
Benzenemethanol	100-51-6		1.94E-03	---	---	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	---	---	---	---
Benzo(k)fluoranthene	207-08-9	X	ND	---	---	---	---
Benzo(g,h,i)perylene	191-24-2	X	ND	---	---	---	---
Benzo(a)pyrene	50-32-8	X	ND	---	---	---	---
Benzoic Acid	65-85-0		1.65E+00	---	---	---	---
Bromodichloromethane	75-27-4		ND	---	---	---	---
Bromoform	75-25-2	X	ND	---	---	---	---
Bromomethane	74-83-9	X	3.45E-04	---	---	---	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	---	---	---	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.77E-03	---	---	---	---
Butyl benzyl phthalate	85-68-7		ND	---	---	---	---
Carbon Disulfide	75-15-0	X	2.28E-04	---	---	---	---
Carbon Tetrachloride	56-23-5	X	ND	---	---	---	---
4-Chloroaniline	106-47-8		ND	---	---	---	---
Chlorobenzene	108-90-7	X	4.16E-04	---	---	---	---
Chlorodibromomethane	124-48-1		ND	---	---	---	---
Chloroethane	75-00-3	X	ND	---	---	---	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	---	---	---	---
Chloroform	67-66-3	X	4.71E-04	---	---	---	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	---	---	---	---
Chloromethane	74-87-3	X	3.90E-04	---	---	---	---
4-Chloro-3-methylphenol	59-50-7		ND	---	---	---	---
2-Chloronaphthalene	91-58-7		ND	---	---	---	---
2-Chlorophenol	95-57-8		ND	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	---	---	---	---
Chrysene	218-01-9	X	ND	---	---	---	---
o-Cresol	95-48-7	X	ND	---	---	---	---
p-Cresol	106-44-5	X	ND	---	---	---	---
Crotonaldehyde	4170-30-3		5.83E-03	---	---	---	---
Dibenzofuran	132-64-9	X	2.57E-04	---	---	---	---
Dibutyl Phthalate	84-74-2	X	ND	---	---	---	---
1,2-Dichlorobenzene	95-50-1		ND	---	---	---	---
1,3-Dichlorobenzene	541-73-1		ND	---	---	---	---
1,4-Dichlorobenzene	106-46-7	X	ND	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	---	---	---	---
1,1-Dichloroethane	75-34-3	X	ND	---	---	---	---
1,2-Dichloroethane	107-06-2	X	ND	---	---	---	---
1,1-Dichloroethene	75-35-4	X	ND	---	---	---	---
cis-1,2-Dicholorethene	156-59-2		ND	---	---	---	---
trans-1,2-Dichloroethene	156-60-5		ND	---	---	---	---
2,4-Dichlorophenol	120-83-2		ND	---	---	---	---
1,2-Dichloropropane	78-87-5	X	ND	---	---	---	---
cis-1,3-Dichloropropene	10061-01-5		ND	---	---	---	---
trans-1,3-Dichloropropene	10061-02-6		ND	---	---	---	---
Diethyl Phthalate	84-66-2		4.55E-04	---	---	---	---

	Power Setting		Constant	---	---	---	---
	Fuel Flowrate (lb/hr)[1]		273	---	---	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb] fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	---	---	---	---
Dimethyl phthalate	131-11-3	X	ND	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	ND	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	ND	---	---	---	---
2,6-Dinitrotoluene	606-20-2		ND	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	2.35E-04	---	---	---	---
Di-n-Octyl phthalate	117-84-0		ND	---	---	---	---
Ethylbenzene	100-41-4	X	8.63E-04	---	---	---	---
Fluoranthene	206-44-0	X	ND	---	---	---	---
Fluorene	86-73-7	X	ND	---	---	---	---
Formaldehyde	50-00-0	X	1.88E-02	---	---	---	---
Hexachlorobenzene	118-74-1	X	ND	---	---	---	---
Hexachlorobutadiene	87-68-3	X	ND	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	ND	---	---	---	---
Hexachloroethane	67-72-1	X	ND	---	---	---	---
Hexanal	66-25-1		ND	---	---	---	---
2-Hexanone	591-78-6		ND	---	---	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	---	---	---	---
Isophorone	78-59-1	X	ND	---	---	---	---
Isovaleraldehyde	590-86-3		ND	---	---	---	---
Methylene Chloride	75-09-2	X	6.24E-03	---	---	---	---
2-Methylnaphthalene	91-57-6		2.35E-03	---	---	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	---	---	---	---
Naphthalene	91-20-3	X	5.54E-03	---	---	---	---
m-Nitroaniline	99-09-2		ND	---	---	---	---
o-Nitroaniline	88-74-4		ND	---	---	---	---
4-Nitrobenzenamine	100-01-6		ND	---	---	---	---
Nitrobenzene	98-95-3	X	ND	---	---	---	---
2-Nitrophenol	88-75-5		1.24E-03	---	---	---	---
4-Nitrophenol	100-02-7	X	1.24E-03	---	---	---	---
N-Nitrosodiphenylamine	86-30-6		ND	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		ND	---	---	---	---
Pentachlorophenol	87-86-5	X	ND	---	---	---	---
Pentanal	110-62-3		5.39E-03	---	---	---	---
Phenanthrene	85-01-8	X	ND	---	---	---	---
Phenol	108-95-2	X	4.48E-03	---	---	---	---
Propanal	123-38-6	X	--	---	---	---	---
Pyrene	129-00-0	X	ND	---	---	---	---
Styrene	100-42-5	X	2.24E-03	---	---	---	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	---	---	---	---
Tetrachloroethene	127-18-4	X	ND	---	---	---	---
m-Tolualdehyde	620-23-5		5.61E-03	---	---	---	---
o-Tolualdehyde	529-20-4		3.89E-03	---	---	---	---
Toluene	108-88-3	X	1.87E-02	---	---	---	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	---	---	---	---
1,1,2-Trichloroethane	79-00-5	X	ND	---	---	---	---
Trichloroethene	79-01-6	X	ND	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	X	ND	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	ND	---	---	---	---
Vinyl Acetate	108-05-4	X	ND	---	---	---	---
Vinyl Chloride	75-01-4	X	ND	---	---	---	---
m,p-Xylene	1330-20-7	X	4.84E-03	---	---	---	---
o-Xylene	95-47-6	X	1.17E-03	---	---	---	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

J69-T-25

Power Setting			Idle	Intermediate	Military	---	---
Fuel Flowrate (lb/hr)[1]			167	872	1085	---	---
Percent Thrust/hp[1]			4%	63%	84%	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	---	---
Acenaphthylene	208-96-8	X	7.25E-04	ND	ND	---	---
Acetaldehyde	75-07-0	X	9.76E-02	2.12E-03	ND	---	---
Acrolein	107-02-8	X	1.96E-01	ND	ND	---	---
Anthracene	120-12-7	X	ND	ND	ND	---	---
Benzaldehyde	100-52-7		1.04E-01	ND	ND	---	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	---	---
Benzene	71-43-2	X	1.89E-01	3.47E-03	1.86E-03	---	---
Benzenemethanol	100-51-6		4.74E-03	ND	ND	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	---	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	---	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	---	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	---	---
Benzoic Acid	65-85-0		3.52E-02	1.23E-02	1.03E-02	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	---	---
Bromoform	75-25-2	X	ND	ND	ND	---	---
Bromomethane	74-83-9	X	4.99E-04	ND	ND	---	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	---	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.41E-02	8.70E-04	8.79E-04	---	---
Butyl benzyl phthalate	85-68-7		ND	1.90E-04	ND	---	---
Carbon Disulfide	75-15-0	X	1.04E-03	6.64E-04	1.09E-03	---	---
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	---	---
4-Chloroaniline	106-47-8		ND	ND	ND	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	---	---
Chlorodibromomethane	124-48-1		ND	ND	ND	---	---
Chloroethane	75-00-3	X	ND	ND	ND	---	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	---	---
Chloroform	67-66-3	X	ND	6.10E-04	7.26E-04	---	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	---	---
Chloromethane	74-87-3	X	5.68E-04	6.40E-04	ND	---	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	---	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	---	---
2-Chlorophenol	95-57-8		ND	ND	ND	---	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	---	---
Chrysene	218-01-9	X	ND	ND	ND	---	---
o-Cresol	95-48-7	X	5.56E-03	ND	ND	---	---
p-Cresol	106-44-5	X	6.47E-03	ND	ND	---	---
Crotonaldehyde	4170-30-3		1.22E-01	ND	ND	---	---
Dibenzofuran	132-64-9	X	2.44E-03	ND	ND	---	---
Dibutyl Phthalate	84-74-2	X	AA	3.81E-04	4.44E-04	---	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	---	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	---	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	---	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	---	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	---	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	---	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	---	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	---	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	---	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	---	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	---	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	---	---
Diethyl Phthalate	84-66-2		ND	2.02E-04	ND	---	---

Power Setting			Idle	Intermediate	Military	---	---
Fuel Flowrate (lb/hr)[1]			167	872	1085	---	---
Percent Thrust/hp[1]			4%	63%	84%	---	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	---	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	---	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	---	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	---	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	---	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	6.89E-04	2.08E-03	5.47E-04	---	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	---	---
Ethylbenzene	100-41-4	X	2.03E-02	ND	ND	---	---
Fluoranthene	206-44-0	X	ND	ND	ND	---	---
Fluorene	86-73-7	X	9.52E-04	ND	ND	---	---
Formaldehyde	50-00-0	X	9.16E-01	2.72E-02	1.16E-02	---	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	---	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	---	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	---	---
Hexachloroethane	67-72-1	X	ND	ND	ND	---	---
Hexanal	66-25-1		ND	ND	ND	---	---
2-Hexanone	591-78-6		2.08E-03	1.62E-03	1.69E-03	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	---	---
Isophorone	78-59-1	X	ND	ND	ND	---	---
Isovaleraldehyde	590-86-3		2.00E-02	ND	ND	---	---
Methylene Chloride	75-09-2	X	3.86E-02	2.56E-02	4.80E-02	---	---
2-Methylnaphthalene	91-57-6		4.21E-02	1.34E-04	8.41E-05	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	2.08E-03	1.62E-03	1.69E-03	---	---
Naphthalene	91-20-3	X	3.54E-02	3.41E-04	2.22E-04	---	---
m-Nitroaniline	99-09-2		ND	ND	ND	---	---
o-Nitroaniline	88-74-4		ND	ND	ND	---	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	---	---
Nitrobenzene	98-95-3	X	ND	ND	ND	---	---
2-Nitrophenol	88-75-5		ND	ND	ND	---	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	---	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	---	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	---	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	---	---
Pentanal	110-62-3		3.70E-02	ND	ND	---	---
Phenanthrene	85-01-8	X	ND	ND	ND	---	---
Phenol	108-95-2	X	2.85E-02	9.86E-04	ND	---	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	---	---
Styrene	100-42-5	X	2.72E-02	ND	ND	---	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	---	---
Tetrachloroethene	127-18-4	X	2.08E-03	1.62E-03	1.69E-03	---	---
m-Tolualdehyde	620-23-5		1.19E-01	ND	ND	---	---
o-Tolualdehyde	529-20-4		6.11E-02	ND	ND	---	---
Toluene	108-88-3	X	1.12E-01	1.56E-03	8.29E-04	---	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	---	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	---	---
Trichloroethene	79-01-6	X	ND	ND	ND	---	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	---	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	---	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	---	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	---	---
m,p-Xylene	1330-20-7	X	6.45E-02	2.13E-03	4.94E-04	---	---
o-Xylene	95-47-6	X	2.51E-02	6.62E-04	ND	---	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

J85-GE-5A

Power Setting			Idle	Intermediate	Military	Afterburner-1	---
Fuel Flowrate (lb/hr)[1]			434	950	2740	8138	---
Percent Thrust/hp[1]			4%	15%	88%	116%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	2.70E-03	4.11E-04	ND	ND	---
Acetaldehyde	75-07-0	X	1.18E-01	ND	ND	ND	---
Acrolein	107-02-8	X	2.70E-01	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		1.10E-01	ND	ND	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	1.48E-01	1.34E-01	1.14E-02	6.84E-03	---
Benzenemethanol	100-51-6		3.64E-02	7.56E-03	6.09E-04	1.36E-04	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		ND	2.84E-02	1.82E-02	8.90E-03	---
Bromodichloromethane	75-27-4		6.61E-03	ND	ND	ND	---
Bromoform	75-25-2	X	6.61E-03	ND	ND	ND	---
Bromomethane	74-83-9	X	6.41E-03	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.88E-02	9.09E-03	ND	3.27E-04	---
Butyl benzyl phthalate	85-68-7		ND	ND	1.12E-04	3.06E-05	---
Carbon Disulfide	75-15-0	X	6.77E-03	5.40E-03	6.40E-04	1.24E-04	---
Carbon Tetrachloride	56-23-5	X	6.27E-03	5.36E-03	ND	ND	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	6.61E-03	ND	ND	ND	---
Chlorodibromomethane	124-48-1		6.61E-03	ND	ND	ND	---
Chloroethane	75-00-3	X	6.61E-03	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	6.61E-03	5.80E-03	7.03E-04	2.29E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	1.19E-02	1.10E-02	2.42E-04	1.67E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	8.04E-03	1.31E-03	ND	ND	---
p-Cresol	106-44-5	X	2.70E-02	4.42E-03	ND	1.71E-04	---
Crotonaldehyde	4170-30-3		1.34E-01	ND	ND	ND	---
Dibenzofuran	132-64-9	X	1.10E-02	1.07E-03	ND	7.14E-05	---
Dibutyl Phthalate	84-74-2	X	1.48E-03	3.47E-04	2.23E-04	6.93E-05	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	6.61E-03	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	6.61E-03	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	6.61E-03	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		6.61E-03	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		6.61E-03	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	6.61E-03	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		6.61E-03	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		6.61E-03	ND	ND	ND	---
Diethyl Phthalate	84-66-2		ND	9.53E-04	1.61E-03	1.01E-03	---

Power Setting			Idle	Intermediate	Military	Afterburner-1	---
Fuel Flowrate (lb/hr)[1]			434	950	2740	8138	---
Percent Thrust/hp[1]			4%	15%	88%	116%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	1.63E-03	7.54E-04	3.87E-04	1.33E-04	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	3.06E-02	8.80E-03	3.75E-04	5.24E-04	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	5.37E-03	3.62E-04	ND	ND	---
Formaldehyde	50-00-0	X	2.26E-01	5.45E-01	7.37E-02	2.40E-02	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		6.61E-03	5.73E-03	ND	1.94E-04	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	3.28E-02	5.53E-02	2.85E-02	6.44E-03	---
2-Methylnaphthalene	91-57-6		1.24E-01	1.35E-02	1.07E-03	1.21E-03	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	6.61E-03	ND	ND	ND	---
Naphthalene	91-20-3	X	9.65E-02	1.28E-02	1.27E-03	8.16E-04	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	2.21E-03	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	1.48E-03	6.03E-04	ND	ND	---
Phenol	108-95-2	X	7.17E-02	1.24E-02	1.52E-03	9.39E-04	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	1.89E-04	ND	ND	---
Styrene	100-42-5	X	4.17E-02	1.29E-02	5.02E-04	2.85E-04	---
1,1,2,2-Tetrachloroethane	79-34-5	X	6.61E-03	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	6.61E-03	5.73E-03	ND	ND	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	1.67E-01	4.91E-02	3.23E-03	1.74E-03	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	6.61E-03	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	6.61E-03	ND	ND	ND	---
Trichloroethene	79-01-6	X	6.61E-03	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	6.61E-03	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	6.61E-03	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	9.89E-02	2.55E-02	1.29E-03	1.88E-03	---
o-Xylene	95-47-6	X	3.85E-02	1.07E-02	4.90E-04	9.04E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

J85-GE-5M

Power Setting			Idle	Intermediate	Military	Afterburner	---
Fuel Flowrate (lb/hr)[1]			525	1045	2550	7695	---
Percent Thrust/hp[1]			50%	86%	99%	100%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	---	---
Acenaphthylene	208-96-8	X	ND	ND	ND	---	---
Acetaldehyde	75-07-0	X	2.44E-01	1.91E-02	1.57E-03	---	---
Acrolein	107-02-8	X	3.14E-01	1.24E-02	1.18E-03	---	---
Anthracene	120-12-7	X	ND	ND	ND	---	---
Benzaldehyde	100-52-7		7.81E-02	1.24E-02	1.18E-03	---	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	---	---
Benzene	71-43-2	X	3.05E-02	2.34E-02	2.56E-03	---	---
Benzenemethanol	100-51-6		---	---	---	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	---	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	---	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	---	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	---	---
Benzoic Acid	65-85-0		---	---	---	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	---	---
Bromoform	75-25-2	X	ND	ND	ND	---	---
Bromomethane	74-83-9	X	ND	6.62E-05	ND	---	---
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	1.20E-02	6.02E-03	ND	---	---
2-Butanone (MEK)	78-93-3		3.94E-02	6.77E-03	9.29E-04	---	---
Butyl benzyl phthalate	85-68-7		---	---	---	---	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	---	---
Carbon Tetrachloride	56-23-5	X	1.09E-04	3.18E-04	1.47E-04	---	---
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	---	---
Chlorodibromomethane	124-48-1		ND	ND	ND	---	---
Chloroethane	75-00-3	X	ND	9.44E-05	ND	---	---
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	ND	ND	ND	---	---
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	2.69E-04	3.12E-04	7.77E-05	---	---
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	---	---
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	ND	ND	ND	---	---
o-Cresol	95-48-7	X	---	---	---	---	---
p-Cresol	106-44-5	X	---	---	---	---	---
Crotonaldehyde	4170-30-3		1.18E-01	1.24E-02	1.18E-03	---	---
Dibenzofuran	132-64-9	X	---	---	---	---	---
Dibutyl Phthalate	84-74-2	X	---	---	---	---	---
1,2-Dichlorobenzene	95-50-1		---	---	---	---	---
1,3-Dichlorobenzene	541-73-1		---	---	---	---	---
1,4-Dichlorobenzene	106-46-7	X	---	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	---	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	---	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	---	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	---	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	---	---
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	---	---	---	---	---
cis-1,3-Dichloropropene	10061-01-5		ND	7.91E-05	ND	---	---
trans-1,3-Dichloropropene	10061-02-6		ND	9.44E-05	ND	---	---
Diethyl Phthalate	84-66-2		---	---	---	---	---

Power Setting			Idle	Intermediate	Military	Afterburner	---
Fuel Flowrate (lb/hr)[1]			525	1045	2550	7695	---
Percent Thrust/hp[1]			50%	86%	99%	100%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	---	---	---	---	---
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	7.36E-03	2.38E-03	8.21E-05	---	---
Fluoranthene	206-44-0	X	ND	ND	ND	---	---
Fluorene	86-73-7	X	ND	ND	ND	---	---
Formaldehyde	50-00-0	X	2.27E+00	3.48E-01	2.39E-02	---	---
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	---	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		7.81E-02	1.24E-02	1.18E-03	---	---
2-Hexanone	591-78-6		ND	ND	ND	---	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	---	---
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		7.81E-02	1.24E-02	1.18E-03	---	---
Methylene Chloride	75-09-2	X	1.32E-04	5.53E-04	2.53E-04	---	---
2-Methylnaphthalene	91-57-6		1.29E-01	ND	ND	---	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	---	---
Naphthalene	91-20-3	X	8.29E-02	ND	ND	---	---
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		---	---	---	---	---
4-Nitrophenol	100-02-7	X	---	---	---	---	---
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		2.44E-01	1.24E-02	1.18E-03	---	---
Phenanthrene	85-01-8	X	ND	ND	ND	---	---
Phenol	108-95-2	X	---	---	---	---	---
Propanal	123-38-6	X	7.81E-02	1.24E-02	1.18E-03	---	---
Pyrene	129-00-0	X	ND	ND	ND	---	---
Styrene	100-42-5	X	7.88E-03	2.44E-03	1.08E-04	---	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	---	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	---	---
m-Tolualdehyde	620-23-5		---	---	---	---	---
o-Tolualdehyde	529-20-4		9.33E-02	1.24E-02	1.18E-03	---	---
Toluene	108-88-3	X	2.76E-02	1.14E-02	9.14E-04	---	---
1,2,4-Trichlorobenzene	120-82-1	X	---	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	---	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	---	---
Trichloroethene	79-01-6	X	---	---	---	---	---
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	---	---
Vinyl Chloride	75-01-4	X	---	---	---	---	---
m,p-Xylene	1330-20-7	X	2.44E-02	7.63E-03	4.33E-04	---	---
o-Xylene	95-47-6	X	1.59E-02	4.83E-03	2.33E-04	---	---

1. Data obtained from *Clean Air Act Emissions Testing of the T-38C Aircraft Engines September 2002*, IERA-RS-BR-TR-2003-0001
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

PT6A-68

Power Setting			Ground Idle	Flight Idle	Descend	Approach	Max. Continuous
Fuel Flowrate (lb/hr)[1]			156	180	328	449	612
Percent Thrust/hp[1]			2%	3%	19%	46%	88%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	2.99E-01	3.47E-01	8.78E-02	1.04E-02	2.17E-03
Acrolein	107-02-8	X	7.16E-01	6.00E-01	5.06E-02	ND	ND
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		2.34E-02	1.73E-01	4.45E-02	8.01E-03	ND
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	1.67E-01	5.22E-01	8.49E-02	1.04E-02	8.63E-04
Benzenemethanol	100-51-6		---	---	---	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		---	---	---	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	ND
Bromoform	75-25-2	X	ND	ND	ND	ND	ND
Bromomethane	74-83-9	X	ND	ND	ND	ND	1.53E-04
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	1.49E-01	2.67E-01	1.10E-02	ND	ND
2-Butanone (MEK)	78-93-3		1.32E-02	ND	2.65E-03	ND	ND
Butyl benzyl phthalate	85-68-7		---	---	---	---	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	ND	ND
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	ND	ND
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	ND
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	ND
Chloroethane	75-00-3	X	ND	ND	ND	ND	ND
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	ND	ND	ND	ND	ND
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	1.55E-03	ND	1.47E-03	1.21E-04	5.72E-04
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	---	---	---	---	---
p-Cresol	106-44-5	X	---	---	---	---	---
Crotonaldehyde	4170-30-3		2.08E-01	1.73E-01	ND	ND	ND
Dibenzofuran	132-64-9	X	---	---	---	---	---
Dibutyl Phthalate	84-74-2	X	---	---	---	---	---
1,2-Dichlorobenzene	95-50-1		---	---	---	---	---
1,3-Dichlorobenzene	541-73-1		---	---	---	---	---
1,4-Dichlorobenzene	106-46-7	X	---	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	ND
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	ND
Diethyl Phthalate	84-66-2		---	---	---	---	---

Power Setting			Ground Idle	Flight Idle	Descend	Approach	Max. Continuous
Fuel Flowrate (lb/hr)[1]			156	180	328	449	612
Percent Thrust/hp[1]			2%	3%	19%	46%	88%
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	---	---	---	---	---
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	4.76E-02	4.94E-02	2.52E-03	2.09E-04	1.07E-04
Fluoranthene	206-44-0	X	ND	ND	ND	ND	ND
Fluorene	86-73-7	X	ND	ND	ND	ND	ND
Formaldehyde	50-00-0	X	4.81E+00	5.27E+00	2.93E+00	6.73E-01	2.21E-02
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	---	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		1.56E-01	ND	ND	ND	ND
2-Hexanone	591-78-6		1.52E-02	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	ND
Methylene Chloride	75-09-2	X	ND	ND	1.93E-03	3.42E-04	1.72E-04
2-Methylnaphthalene	91-57-6		ND	ND	ND	ND	9.04E-02
4-Methyl-2-pentanone (MIBK)	108-10-1	X	1.52E-02	ND	ND	ND	ND
Naphthalene	91-20-3	X	ND	1.16E-02	ND	ND	7.68E-02
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		---	---	---	---	---
4-Nitrophenol	100-02-7	X	---	---	---	---	---
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		9.61E-02	6.83E-02	3.32E-02	ND	ND
Phenanthrene	85-01-8	X	ND	ND	ND	ND	ND
Phenol	108-95-2	X	---	---	---	---	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	ND
Styrene	100-42-5	X	4.68E-02	3.80E-02	8.05E-03	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	X	ND	ND	ND	ND	ND
m-Tolualdehyde	620-23-5		1.56E-01	8.83E-02	ND	7.20E-03	ND
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	ND
Toluene	108-88-3	X	1.65E-01	2.42E-01	2.46E-02	2.37E-03	5.18E-04
1,2,4-Trichlorobenzene	120-82-1	X	---	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	X	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	1.52E-02	ND	ND	ND	ND
Vinyl Chloride	75-01-4	X	---	---	---	---	---
m,p-Xylene	1330-20-7	X	1.13E-01	1.31E-01	6.03E-03	6.01E-04	1.29E-03
o-Xylene	95-47-6	X	5.98E-02	6.60E-02	2.92E-03	2.59E-04	1.54E-04

1. Data obtained from *PT6A-68 Emissions Measurement Program Summary September 2002, IERA-RS-BR-SR-2003-0003*
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

T56-A-7

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			724	880	1742	2262	---
Percent Thrust/hp[1]			5%	15%	61%	90%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	1.04E-02	AA	5.43E-04	1.64E-04	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		1.13E-03	8.76E-04	4.67E-04	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	4.77E-03	4.45E-03	1.34E-03	7.84E-04	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		6.44E-03	8.87E-03	3.83E-03	2.03E-03	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		4.63E-04	3.62E-04	ND	1.75E-04	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	7.20E-04	1.63E-03	1.04E-03	2.87E-04	---
Carbon Tetrachloride	56-23-5	X	ND	5.24E-04	1.43E-04	2.35E-04	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	2.23E-03	5.40E-04	9.66E-04	5.15E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	ND	4.54E-04	3.14E-04	3.62E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	5.03E-04	3.32E-04	1.11E-04	1.05E-04	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		9.66E-04	2.58E-04	ND	4.25E-04	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			724	880	1742	2262	---
Percent Thrust/hp[1]			5%	15%	61%	90%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	2.42E-03	3.32E-03	1.19E-03	AA	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	ND	4.06E-04	2.07E-04	1.80E-04	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	4.10E-02	3.34E-02	9.30E-03	3.81E-04	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	7.14E-04	9.81E-04	7.83E-04	4.23E-04	---
2-Methylnaphthalene	91-57-6		7.27E-04	6.81E-04	1.03E-04	3.45E-05	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	1.16E-03	1.03E-03	1.77E-04	1.34E-04	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	ND	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	7.09E-04	3.67E-04	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	2.15E-04	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	2.71E-03	2.29E-03	9.61E-04	2.53E-05	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	1.58E-03	1.30E-03	6.30E-04	4.78E-04	---
Trichloroethene	79-01-6	X	ND	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	6.70E-04	7.31E-04	4.14E-04	6.26E-04	---
o-Xylene	95-47-6	X	6.56E-04	3.23E-04	1.68E-04	2.48E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

T64-GE-100

Power Setting			Ground Idle	75% Normal	Normal	Military	---
Fuel Flowrate (lb/hr)[1]			298	941	1698	1848	---
Percent Thrust/hp[1]			2%	34%	81%	90%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	7.92E-04	ND	ND	ND	---
Acenaphthylene	208-96-8	X	3.59E-03	ND	ND	2.13E-04	---
Acetaldehyde	75-07-0	X	5.07E-02	1.20E-03	ND	ND	---
Acrolein	107-02-8	X	1.14E-01	1.37E-03	ND	ND	---
Anthracene	120-12-7	X	4.97E-04	ND	ND	ND	---
Benzaldehyde	100-52-7		5.91E-02	1.86E-03	ND	ND	---
Benz(a)anthracene	56-55-3	X	4.97E-04	ND	ND	ND	---
Benzene	71-43-2	X	2.16E-01	1.26E-02	4.00E-03	3.88E-03	---
Benzenemethanol	100-51-6		2.48E-03	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	4.97E-04	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	4.97E-04	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	4.97E-04	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	4.97E-04	ND	ND	ND	---
Benzoic Acid	65-85-0		4.93E-02	7.14E-03	3.22E-03	ND	---
Bromodichloromethane	75-27-4		1.13E-03	ND	ND	ND	---
Bromoform	75-25-2	X	1.13E-03	ND	ND	ND	---
Bromomethane	74-83-9	X	1.13E-03	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		4.97E-04	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.96E-02	2.33E-04	ND	ND	---
Butyl benzyl phthalate	85-68-7		4.97E-04	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	1.13E-03	ND	ND	ND	---
Carbon Tetrachloride	56-23-5	X	1.13E-03	ND	ND	ND	---
4-Chloroaniline	106-47-8		4.97E-03	ND	ND	ND	---
Chlorobenzene	108-90-7	X	1.13E-03	ND	ND	ND	---
Chlorodibromomethane	124-48-1		1.13E-03	ND	ND	ND	---
Chloroethane	75-00-3	X	1.13E-03	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		4.97E-04	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	4.97E-04	ND	ND	ND	---
Chloroform	67-66-3	X	1.13E-03	7.45E-05	4.00E-05	3.70E-05	---
bis(2-Choroisopropyl) Ether	39638-32-9		4.97E-04	ND	ND	ND	---
Chloromethane	74-87-3	X	1.21E-03	ND	ND	ND	---
4-Chloro-3-methylphenol	59-50-7		2.48E-03	ND	ND	NO	---
2-Chloronaphthalene	91-58-7		4.97E-04	ND	ND	ND	---
2-Chlorophenol	95-57-8		2.48E-03	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		4.97E-04	ND	ND	ND	---
Chrysene	218-01-9	X	4.97E-04	ND	ND	ND	---
o-Cresol	95-48-7	X	2.35E-03	ND	ND	ND	---
p-Cresol	106-44-5	X	2.66E-03	ND	ND	NO	---
Crotonaldehyde	4170-30-3		5.07E-02	1.01E-03	ND	ND	---
Dibenzofuran	132-64-9	X	1.86E-03	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	4.97E-04	ND	2.81E-05	2.13E-04	---
1,2-Dichlorobenzene	95-50-1		4.97E-04	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		4.97E-04	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	4.97E-04	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	4.97E-04	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	1.13E-03	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	1.13E-03	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	1.13E-03	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		1.13E-03	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		1.13E-03	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		2.48E-03	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	1.13E-03	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		1.13E-03	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		1.13E-03	ND	ND	ND	---
Diethyl Phthalate	84-66-2		4.97E-04	ND	ND	2.32E-04	---

Power Setting			Ground Idle	75% Normal	Normal	Military	---
Fuel Flowrate (lb/hr)[1]			298	941	1698	1848	---
Percent Thrust/hp[1]			2%	34%	81%	90%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		2.48E-03	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	4.97E-04	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	9.90E-03	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	9.90E-03	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	4.97E-03	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		4.97E-04	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	4.97E-04	7.14E-04	1.06E-04	2.13E-04	---
Di-n-Octyl phthalate	117-84-0		4.97E-04	ND	ND	ND	---
Ethylbenzene	100-41-4	X	2.24E-02	3.07E-04	ND	ND	---
Fluoranthene	206-44-0	X	8.19E-04	ND	ND	ND	---
Fluorene	86-73-7	X	2.44E-03	ND	ND	2.90E-04	---
Formaldehyde	50-00-0	X	7.15E-02	1.17E-02	3.18E-04	1.83E-04	---
Hexachlorobenzene	118-74-1	X	4.97E-04	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	4.97E-04	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	4.97E-03	ND	ND	ND	---
Hexachloroethane	67-72-1	X	4.97E-04	ND	ND	ND	---
Hexanal	66-25-1		1.81E-02	3.83E-05	ND	ND	---
2-Hexanone	591-78-6		5.63E-03	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	4.97E-04	ND	ND	ND	---
Isophorone	78-59-1	X	4.97E-04	ND	ND	ND	---
Isovaleraldehyde	590-86-3		7.15E-03	3.83E-05	ND	ND	---
Methylene Chloride	75-09-2	X	2.65E-03	2.91E-03	3.13E-03	1.92E-03	---
2-Methylnaphthalene	91-57-6		6.41E-02	3.60E-04	ND	6.82E-04	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	5.63E-03	ND	ND	ND	---
Naphthalene	91-20-3	X	5.44E-02	1.52E-03	4.96E-06	2.50E-03	---
m-Nitroaniline	99-09-2		4.97E-04	ND	ND	ND	---
o-Nitroaniline	88-74-4		4.97E-04	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		4.97E-04	ND	ND	ND	---
Nitrobenzene	98-95-3	X	4.97E-04	ND	ND	ND	---
2-Nitrophenol	88-75-5		2.48E-03	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	5.94E-03	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		4.97E-04	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		4.97E-04	1.49E-04	2.16E-05	1.93E-04	---
Pentachlorophenol	87-86-5	X	4.97E-03	ND	ND	ND	---
Pentanal	110-62-3		2.10E-02	3.83E-05	ND	ND	---
Phenanthrene	85-01-8	X	2.82E-03	ND	ND	4.45E-04	---
Phenol	108-95-2	X	8.26E-03	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	1.01E-03	ND	ND	ND	---
Styrene	100-42-5	X	4.11E-02	5.12E-04	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	1.13E-03	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	1.13E-03	ND	ND	ND	---
m-Tolualdehyde	620-23-5		2.44E-02	3.83E-05	ND	ND	---
o-Tolualdehyde	529-20-4		1.59E-02	1.75E-04	ND	ND	---
Toluene	108-88-3	X	1.02E-01	2.88E-03	1.33E-04	1.27E-04	---
1,2,4-Trichlorobenzene	120-82-1	X	4.97E-04	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	1.13E-03	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	1.13E-03	ND	ND	ND	---
Trichloroethene	79-01-6	X	1.13E-03	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	2.48E-03	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	2.48E-03	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	5.63E-03	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	1.13E-03	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	4.38E-02	6.83E-04	ND	ND	---
o-Xylene	95-47-6	X	2.07E-02	2.85E-04	ND	ND	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

T700-GE-700

	Power Setting		Ground Idle	Flight Idle	Flight Max	Overspeed	---
	Fuel Flowrate (lb/hr)[1]		134	469	626	725	---
	Percent Thrust/hp[1]		4%	56%	82%	100%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	1.81E-02	3.03E-04	2.00E-04	ND	---
Acrolein	107-02-8	X	7.23E-03	9.68E-05	1.10E-05	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		ND	9.00E-04	4.15E-04	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	4.87E-02	2.97E-04	3.12E-04	3.00E-04	---
Benzenemethanol	100-51-6		2.87E-03	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		2.08E-02	5.52E-03	3.05E-03	9.09E-04	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.00E-03	3.26E-04	ND	ND	---
Butyl benzyl phthalate	85-68-7		1.31E-04	1.86E-04	8.13E-05	ND	---
Carbon Disulfide	75-15-0	X	3.72E-04	3.00E-04	2.27E-04	4.69E-04	---
Carbon Tetrachloride	56-23-5	X	3.64E-04	ND	ND	ND	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	1.04E-03	3.44E-04	3.39E-04	3.06E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	ND	ND	ND	ND	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	7.84E-04	ND	ND	ND	---
p-Cresol	106-44-5	X	1.21E-01	ND	ND	ND	---
Crotonaldehyde	4170-30-3		9.93E-03	ND	ND	ND	---
Dibenzofuran	132-64-9	X	2.08E-04	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	3.74E-05	AA	AA	6.54E-05	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		2.37E-04	1.14E-04	3.02E-04	6.32E-05	---

	Power Setting		Ground Idle	Flight Idle	Flight Max	Overspeed	---
	Fuel Flowrate (lb/hr)[1]		134	469	626	725	---
	Percent Thrust/hp[1]		4%	56%	82%	100%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	1.00E-03	1.46E-03	6.26E-04	2.28E-04	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	2.25E-03	2.57E-04	ND	1.99E-04	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	2.19E-01	4.09E-03	2.09E-03	4.81E-03	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		9.53E-04	6.35E-04	4.42E-04	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	1.06E-02	2.99E-03	3.30E-03	6.91E-03	---
2-Methylnaphthalene	91-57-6		4.89E-03	1.36E-04	3.90E-05	1.86E-05	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	9.38E-04	6.35E-04	4.42E-04	4.03E-04	---
Naphthalene	91-20-3	X	7.33E-03	1.56E-04	6.73E-05	2.91E-05	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		7.99E-04	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	9.00E-04	4.15E-04	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	6.24E-03	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	5.16E-03	ND	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	6.35E-04	4.42E-04	ND	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	ND	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	1.28E-02	1.24E-03	AA	2.92E-04	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	7.07E-04	2.26E-04	2.17E-04	1.92E-04	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	5.10E-04	4.65E-04	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	4.35E-03	3.17E-04	3.23E-04	8.36E-04	---
o-Xylene	95-47-6	X	2.80E-03	2.52E-04	1.85E-04	4.05E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

TF33-P-7/7A

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1093	4884	6356	8264	---
Percent Thrust/hp[1]			4%	45%	58%	73%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	2.92E-02	ND	ND	ND	---
Acetaldehyde	75-07-0	X	ND	8.72E-03	ND	ND	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		ND	ND	ND	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	5.23E-01	2.84E-02	6.49E-03	1.47E-03	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		ND	1.71E-02	9.24E-03	4.44E-03	---
Bromodichloromethane	75-27-4		1.94E-03	ND	ND	ND	---
Bromoform	75-25-2	X	1.94E-03	ND	ND	ND	---
Bromomethane	74-83-9	X	3.45E-03	4.61E-04	4.15E-04	3.16E-04	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		1.89E-02	7.11E-03	ND	ND	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	1.97E-03	ND	4.93E-04	2.10E-04	---
Carbon Tetrachloride	56-23-5	X	1.94E-03	5.26E-04	4.57E-04	4.09E-04	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	1.94E-03	ND	ND	ND	---
Chlorodibromomethane	124-48-1		1.94E-03	ND	ND	ND	---
Chloroethane	75-00-3	X	1.94E-03	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	1.94E-03	2.08E-03	1.38E-03	1.17E-03	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	2.13E-03	4.10E-04	6.96E-04	5.01E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	4.17E-02	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	1.10E-02	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	ND	AA	1.45E-03	AA	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	1.94E-03	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	1.94E-03	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	1.94E-03	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		1.94E-03	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		1.94E-03	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	1.94E-03	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		1.94E-03	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		1.94E-03	ND	ND	ND	---
Diethyl Phthalate	84-66-2		ND	3.54E-04	1.07E-03	ND	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1093	4884	6356	8264	---
Percent Thrust/hp[1]			4%	45%	58%	73%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	ND	2.68E-03	1.79E-03	1.59E-03	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	2.00E-01	2.04E-03	5.11E-04	3.88E-04	---
Fluoranthene	206-44-0	X	4.92E-03	ND	ND	ND	---
Fluorene	86-73-7	X	9.09E-03	ND	ND	ND	---
Formaldehyde	50-00-0	X	2.31E+00	1.26E-01	2.80E-02	5.28E-03	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		9.73E-03	2.31E-03	2.07E-03	1.58E-03	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	9.76E-02	2.11E-02	3.01E-02	2.72E-02	---
2-Methylnaphthalene	91-57-6		4.55E-01	2.48E-03	1.65E-04	ND	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	9.73E-03	2.31E-03	2.05E-03	1.58E-03	---
Naphthalene	91-20-3	X	3.71E-01	3.13E-03	3.54E-04	AA	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	1.25E-02	3.87E-04	ND	ND	---
Phenol	108-95-2	X	1.67E-01	3.54E-03	1.28E-03	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	7.20E-03	ND	ND	ND	---
Styrene	100-42-5	X	2.42E-01	3.43E-03	7.46E-04	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	1.94E-03	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	1.94E-03	ND	ND	ND	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	3.73E-01	1.01E-02	2.54E-03	2.27E-03	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	1.94E-03	3.11E-04	2.79E-04	4.21E-04	---
1,1,2-Trichloroethane	79-00-5	X	1.94E-03	ND	ND	ND	---
Trichloroethene	79-01-6	X	1.94E-03	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	9.73E-03	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	1.94E-03	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	3.35E-01	3.40E-03	1.04E-03	1.21E-03	---
o-Xylene	95-47-6	X	1.27E-01	1.42E-03	3.05E-04	4.31E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

TF33-P-102

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1114	4737	5782	7561	---
Percent Thrust/hp[1]			5%	49%	59%	75%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	1.18E-02	ND	ND	ND	---
Acetaldehyde	75-07-0	X	ND	ND	ND	ND	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		ND	ND	ND	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	7.09E-01	1.14E-02	4.05E-03	9.53E-04	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		ND	9.27E-03	9.24E-03	6.32E-03	---
Bromodichloromethane	75-27-4		1.31E-02	ND	2.74E-04	ND	---
Bromoform	75-25-2	X	1.31E-02	ND	2.74E-04	ND	---
Bromomethane	74-83-9	X	1.57E-02	4.76E-04	4.11E-04	3.77E-04	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		3.64E-02	1.59E-03	7.45E-04	ND	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	1.38E-02	ND	1.18E-03	ND	---
Carbon Tetrachloride	56-23-5	X	1.31E-02	3.13E-04	2.74E-04	2.74E-04	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	1.31E-02	ND	2.74E-04	ND	---
Chlorodibromomethane	124-48-1		1.31E-02	ND	2.74E-04	ND	---
Chloroethane	75-00-3	X	1.31E-02	ND	2.74E-04	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	1.31E-02	1.12E-03	7.21E-04	8.95E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	1.31E-02	5.68E-04	3.44E-04	3.20E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	6.54E-03	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	ND	5.66E-04	AA	AA	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	1.31E-02	ND	2.74E-04	ND	---
1,2-Dichloroethane	107-06-2	X	1.31E-02	ND	2.74E-04	ND	---
1,1-Dichloroethene	75-35-4	X	1.31E-02	ND	2.74E-04	ND	---
cis-1,2-Dicholorethene	156-59-2		1.31E-02	ND	2.74E-04	ND	---
trans-1,2-Dichloroethene	156-60-5		1.31E-02	ND	2.74E-04	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	1.31E-02	ND	2.74E-04	ND	---
cis-1,3-Dichloropropene	10061-01-5		1.31E-02	ND	2.74E-04	ND	---
trans-1,3-Dichloropropene	10061-02-6		1.31E-02	ND	2.74E-04	ND	---
Diethyl Phthalate	84-66-2		ND	4.52E-04	ND	2.76E-04	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1114	4737	5782	7561	---
Percent Thrust/hp[1]			5%	49%	59%	75%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	ND	2.24E-03	3.82E-03	1.71E-03	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	8.63E-02	8.23E-04	4.79E-04	ND	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	3.92E-03	ND	ND	ND	---
Formaldehyde	50-00-0	X	9.43E-01	6.65E-02	2.27E-02	ND	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		6.53E-02	ND	1.36E-03	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	AA	7.28E-02	5.25E-02	8.96E-02	---
2-Methylnaphthalene	91-57-6		2.31E-01	1.03E-03	1.23E-03	5.77E-04	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	6.53E-02	ND	1.36E-03	ND	---
Naphthalene	91-20-3	X	2.15E-01	1.10E-03	7.35E-04	1.30E-04	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	6.17E-03	ND	ND	ND	---
Phenol	108-95-2	X	8.41E-02	1.76E-03	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	1.09E-01	1.18E-03	4.38E-04	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	1.31E-02	ND	2.74E-04	ND	---
Tetrachloroethene	127-18-4	X	1.31E-02	4.54E-04	8.34E-04	3.77E-04	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	2.65E-01	2.28E-03	2.65E-03	9.50E-04	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	1.31E-02	ND	2.87E-04	ND	---
1,1,2-Trichloroethane	79-00-5	X	1.31E-02	ND	2.74E-04	ND	---
Trichloroethene	79-01-6	X	1.31E-02	ND	2.74E-04	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	6.53E-02	ND	1.71E-03	1.89E-03	---
Vinyl Chloride	75-01-4	X	1.31E-02	ND	2.74E-04	ND	---
m,p-Xylene	1330-20-7	X	1.37E-01	2.40E-03	1.04E-03	8.35E-04	---
o-Xylene	95-47-6	X	6.09E-02	AA	ND	2.46E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

TF34-GE-100A

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			498	933	1512	2628	---
Percent Thrust/hp[1]			7%	28%	46%	78%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	4.26E-03	ND	ND	ND	---
Acetaldehyde	75-07-0	X	1.27E-01	3.08E-02	ND	ND	---
Acrolein	107-02-8	X	6.10E-02	1.36E-02	5.42E-03	2.96E-03	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		5.10E-02	2.03E-02	7.80E-03	5.94E-03	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	2.81E-01	6.37E-02	9.57E-03	4.27E-03	---
Benzenemethanol	100-51-6		7.85E-03	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		3.63E-02	3.02E-02	1.83E-02	1.48E-02	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	4.26E-03	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		1.50E-02	5.94E-03	ND	ND	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	ND	---
Carbon Tetrachloride	56-23-5	X	1.48E-03	1.14E-03	1.08E-03	7.07E-04	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	2.26E-03	1.17E-03	1.43E-03	7.33E-04	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	ND	7.05E-03	1.38E-03	1.67E-03	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	5.26E-03	3.42E-03	ND	ND	---
Crotonaldehyde	4170-30-3		5.10E-02	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	2.47E-03	5.27E-04	ND	ND	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	7.18E-04	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		2.13E-05	AA	AA	AA	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			498	933	1512	2628	---
Percent Thrust/hp[1]			7%	28%	46%	78%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	2.25E-03	3.20E-03	1.44E-03	1.73E-03	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	2.62E-02	3.50E-03	ND	6.82E-04	---
Fluoranthene	206-44-0	X	6.55E-04	ND	ND	ND	---
Fluorene	86-73-7	X	1.49E-03	ND	ND	ND	---
Formaldehyde	50-00-0	X	1.22E+00	5.31E-01	6.61E-02	2.82E-02	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	1.47E-02	ND	ND	---
Methylene Chloride	75-09-2	X	AA	AA	AA	5.26E-02	---
2-Methylnaphthalene	91-57-6		2.79E-02	3.58E-03	ND	ND	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	4.48E-02	8.51E-03	1.59E-03	3.20E-05	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	4.00E-03	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	2.43E-03	ND	ND	ND	---
Phenol	108-95-2	X	2.73E-02	6.61E-01	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	5.56E-04	ND	ND	ND	---
Styrene	100-42-5	X	4.41E-02	6.72E-03	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	ND	9.25E-04	ND	5.72E-04	---
m-Tolualdehyde	620-23-5		ND	ND	1.20E-02	7.80E-03	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	1.12E-01	1.40E-02	3.21E-03	1.34E-04	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	1.33E-03	1.10E-03	7.35E-04	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	5.50E-02	7.95E-03	1.52E-03	2.41E-03	---
o-Xylene	95-47-6	X	2.67E-02	3.65E-03	ND	7.35E-04	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-9. VOC and HAP Emission Factors for Select Engines (cont.)

TF39-GE-1C

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1448	10477	12541	13862	---
Percent Thrust/hp[1]			7%	76%	87%	94%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	2.12E-01	3.16E-03	2.61E-04	6.17E-04	---
Acrolein	107-02-8	X	2.06E-01	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		1.42E-01	1.15E-03	1.88E-03	1.70E-03	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	3.58E-01	1.56E-03	1.41E-03	2.16E-03	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		ND	6.50E-03	7.02E-03	6.85E-03	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		2.59E-02	ND	1.16E-03	2.46E-04	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	1.95E-04	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	ND	---
Carbon Tetrachloride	56-23-5	X	ND	1.01E-03	3.15E-04	3.05E-04	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	3.68E-03	1.77E-03	1.52E-03	1.32E-03	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	1.05E-02	1.10E-03	6.14E-04	6.00E-04	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		8.77E-02	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	ND	6.50E-04	3.41E-04	3.90E-04	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	4.81E-03	1.80E-04	1.79E-04	1.62E-04	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		ND	2.89E-04	4.49E-04	5.86E-04	---

Power Setting			Idle	Approach	Intermediate	Military	---
Fuel Flowrate (lb/hr)[1]			1448	10477	12541	13862	---
Percent Thrust/hp[1]			7%	76%	87%	94%	---
Compound Name	CAS Number	HAP	Emission Factors (lb/1000lb fuel burned)[2]				
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	ND	3.25E-03	1.49E-03	4.71E-03	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	2.01E-02	ND	4.99E-04	AA	---
Fluoranthene	206-44-0	X	ND	ND	1.98E-04	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	1.42E+00	8.15E-03	4.90E-03	1.05E-02	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	ND	AA	AA	AA	---
2-Methylnaphthalene	91-57-6		8.35E-02	AA	AA	AA	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	9.74E-02	AA	AA	AA	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		4.62E-01	ND	ND	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	4.38E-02	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	4.49E-02	ND	ND	6.94E-04	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	5.39E-03	ND	ND	6.09E-04	---
m-Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	1.28E-01	AA	AA	AA	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	3.15E-04	ND	---
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	---
Trichloroethene	79-01-6	X	ND	ND	6.62E-04	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	3.81E-02	AA	1.90E-03	AA	---
o-Xylene	95-47-6	X	2.00E-02	9.26E-04	6.83E-04	AA	---

1. Data obtained from *Aircraft Engine and APU Emissions Testing Volumes I-III March 1999*, IERA-RS-BR-TR-1999-0006
2. Emission Factors derived using the test results provided in the reference above.

"X" Indicates that compound is a HAP

"---" Indicates No Data Available

ND – Compound not detected at the detection limit. Compound may be present at a value less than the detection limit

AA – Compound detected was less than the ambient air concentration resulting in a negative emission factor when the ambient air concentration was removed

Table 2-10. Criteria Pollutant and Ozone Precursor Emission Factors for APUs[1]

APU Model	Manufacturer	Fuel Flow Rate (lb/hr)	Emission Factors in lb/hr of Operation						
			NO_X	CO	VOC	SO_X[2]	PM_{10}	$PM_{2.5}$	GHG[3]
GTC 85-72 (200 hp)[4]	Honeywell Inc.	210.00	0.81	3.11	0.03	0.22	---	---	674.49
GTCP 30-300	Honeywell Inc.	282.20	2.85	---	0.06	0.30	---	---	---
GTCP 36-6	Honeywell Inc.	150.00	0.87	1.41	0.06	---	---	---	---
GTCP 36-300 (80 hp)	Honeywell Inc.	282.20	2.85	0.58[(6)]	0.06	0.30	---	---	---
GTCP 85 (200 hp)	Honeywell Inc.	235.28	1.12	---	0.24	0.25	---	---	---
GTCP 85-98ck (200 hp)	Honeywell Inc.	235.28	1.12	4.23[(6)]	0.24	0.25	---	---	---
GTCP 85-98d	Honeywell Inc.	297.00	1.78	1.64	0.04	---	---	---	---
GTCP 85-129 (200 hp)	Honeywell Inc.	235.28	1.12	4.23[(6)]	0.24	0.25	---	---	---
GTCP 85-129ck (200 hp)	Honeywell Inc.	235.28	1.12	4.23[(6)]	0.24	0.25	---	---	---
GTCP 85-180[7]	Honeywell Inc.	270.30	1.28	2.05	0.01	0.29	0.05	0.01	906.25
GTCP 95-2 (300 hp)[4]	Honeywell Inc.	293.00	1.65	0.94	0.11	0.31	---	---	948.89
GTCP 100-544 (400 hp)[4]	Honeywell Inc.	413.00	2.46	2.43	0.07	0.44	---	---	1337.86
GTCP 165-1[7]	Honeywell Inc.	272.60	1.22	3.76	0.49	0.29	0.13	0.04	910.75
GTCP 331-200/250 (143 hp)	Honeywell Inc.	267.92	2.55	---	0.12	0.28	---	---	---
GTCP 331-200ER (143 hp)	Honeywell Inc.	267.92	2.55	1.11[(6)]	0.12	0.28	---	---	---
GTCP 331-500 (143 hp)	Honeywell Inc.	536.00	7.86	0.05[(6)]	0.07	0.57	---	---	---
GTCP 660-4 (300 hp)	Honeywell Inc.	862.92	4.60	7.46[(6)]	0.24	0.91	---	---	---
PW901A	Pratt & Whitney	862.92	2.72	14.48[(6)]	1.29	0.91	---	---	---
ST-6[8]	United Technologies Corporation	440.00	3.92	0.02	0.01	0.47	---	---	---
T-62T-27 (100 hp)[4]	United Technologies Corporation	102.00	0.40	4.36	0.79	0.11	---	---	344.76
T-62T-47C1[6]	United Technologies Corporation	235.28	1.01	9.46	0.04	0.25	---	---	---
TSCP 700 (142 hp)	Honeywell Inc.	323.68	2.77	---	0.08	0.34	---	---	---
TSCP 700-4B (142 hp)	Honeywell Inc.	323.68	2.77	0.48[(6)]	0.08	0.34	---	---	---
WR27-1[4]	Williams International	140.00	0.65	0.79	0.03	0.15	---	---	444.77

1. SOURCE (unless otherwise stated): Technical Data to Support FAA's Advisory Circular on Reducing Emissions from Commercial Aviation memorandum. This document states the original source as Proposed Federal Implementation Plan for California, Docket No. A-94-09 memorandum
2. SO_X Emission factors assume that JP-8, with an average wt. % of 0.053 Sulfur, is used to power the APU.
3. Greenhouse Gas (GHG) emission factors are presented in equivalent CO_2 (CO_2e). Original source document provided emission factors for CO_2 and CH_4. CH_4 emissions were then multiplied by the global warming potential (GWP) which is stated as 25 per Table A-1 to subpart A of 40 CFR 98.
4. SOURCE: Summary Tables of Gaseous and Particulate Emissions from Aircraft Engines, June 1990.
5. SOURCE: Air Pollutant Emission Factors for Military and Civil Aircraft.
6. SOURCE: Technical Data to Support FAA's Advisory Circular on Reducing Emissions from Commercial Aviation memorandum. This document states the original source as United Air Lines' APU Emissions Database (note: data for LAX 1991)
7. SOURCE: Aircraft Engine and Auxiliary Power Unit Emissions Testing Volume I -III, March 1999
8. SOURCE: Technical Data to Support FAA's Advisory Circular on Reducing Emissions from Commercial Aviation memorandum. This document states the original source as AIA Exhaust Emissions Data Sheet letter

"---" Indicates No Data Available

Table 2-11. VOC Weight Fractions for Turbofan Engines

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	Afterburner-1
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	0.25%	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	3.85%	5.65%	1.85%	2.28%	1.84%
Acrolein	107-02-8	X	2.55%	2.09%	0.50%	0.27%	5.45%
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		1.68%	0.80%	2.10%	1.89%	6.50%
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	10.24%	3.39%	2.62%	1.76%	16.12%
Benzenemethanol	100-51-6		0.25%	ND	ND	ND	0.58%
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		4.26%	3.92%	11.41%	8.18%	6.06%
Bromodichloromethane	75-27-4		0.08%	ND	0.03%	0.02%	0.10%
Bromoform	75-25-2	X	0.07%	ND	0.03%	0.02%	0.07%
Bromomethane	74-83-9	X	0.10%	0.19%	1.75%	7.29%	3.13%
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	ND
1,3-Butadiene	106-99-0	X	1.48%	ND	0.17%	ND	ND
2-Butanone (MEK)	78-93-3		0.82%	0.98%	0.82%	0.62%	1.82%
Butyl benzyl phthalate	85-68-7		0.01%	0.01%	0.11%	0.03%	0.01%
Carbon Disulfide	75-15-0	X	0.08%	0.01%	0.35%	0.23%	0.10%
Carbon Tetrachloride	56-23-5	X	0.07%	0.14%	0.34%	0.20%	0.06%
4-Chloroaniline	106-47-8		ND	ND	ND	ND	ND
Chlorobenzene	108-90-7	X	0.07%	ND	0.05%	0.03%	0.07%
Chlorodibromomethane	124-48-1		0.08%	ND	0.03%	0.02%	0.10%
Chloroethane	75-00-3	X	0.08%	ND	0.03%	0.02%	0.10%
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	ND
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	ND
Chloroform	67-66-3	X	0.13%	0.40%	1.09%	0.82%	0.07%
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	ND
Chloromethane	74-87-3	X	0.12%	0.36%	0.84%	1.82%	0.34%
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	ND
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		ND	ND	ND	ND	ND
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	ND
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	0.00%	ND	ND	ND	0.01%
p-Cresol	106-44-5	X	0.37%	0.11%	ND	ND	0.80%
Crotonaldehyde	4170-30-3		1.28%	0.57%	ND	ND	3.72%
Dibenzofuran	132-64-9	X	0.09%	ND	ND	0.00%	0.10%
Dibutyl Phthalate	84-74-2	X	0.02%	0.09%	0.56%	0.08%	0.02%
1,2-Dichlorobenzene	95-50-1		ND	0.01%	0.10%	0.04%	ND
1,3-Dichlorobenzene	541-73-1		ND	ND	0.10%	0.02%	ND
1,4-Dichlorobenzene	106-46-7	X	0.02%	0.01%	0.06%	0.04%	0.00%
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	ND
1,1-Dichloroethane	75-34-3	X	0.08%	ND	0.03%	0.02%	0.10%
1,2-Dichloroethane	107-06-2	X	0.08%	ND	0.03%	0.02%	0.10%
1,1-Dichloroethene	75-35-4	X	0.08%	ND	0.11%	0.02%	0.10%
cis-1,2-Dicholorethene	156-59-2		0.08%	ND	0.03%	0.02%	0.10%
trans-1,2-Dichloroethene	156-60-5		0.07%	ND	0.03%	0.02%	0.08%
2,4-Dichlorophenol	120-83-2		0.01%	0.06%	0.16%	0.13%	ND
1,2-Dichloropropane	78-87-5	X	0.09%	0.05%	0.10%	0.02%	0.10%
cis-1,3-Dichloropropene	10061-01-5		0.08%	ND	0.03%	0.02%	0.10%
trans-1,3-Dichloropropene	10061-02-6		0.08%	0.03%	0.09%	0.07%	0.12%
Diethyl Phthalate	84-66-2		0.12%	0.66%	1.19%	0.68%	0.45%

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	Afterburner-1
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	ND
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	ND
2,4-Dinitrophenol	51-28-5	X	0.04%	0.21%	0.43%	ND	ND
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	ND
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	0.29%	0.78%	2.53%	2.24%	0.14%
Di-n-Octyl phthalate	117-84-0		0.00%	ND	ND	ND	ND
Ethylbenzene	100-41-4	X	1.68%	0.26%	0.28%	0.20%	3.68%
Fluoranthene	206-44-0	X	0.03%	ND	0.02%	ND	ND
Fluorene	86-73-7	X	0.08%	ND	ND	ND	0.00%
Formaldehyde	50-00-0	X	39.58%	41.13%	22.08%	9.82%	2.49%
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	ND
Hexachlorobutadiene	87-68-3	X	ND	0.01%	0.15%	0.06%	ND
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	ND
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	ND
Hexanal	66-25-1		0.10%	1.12%	2.78%	0.93%	0.86%
2-Hexanone	591-78-6		0.41%	0.14%	0.52%	0.38%	0.48%
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	ND	ND	ND	ND	ND
Isovaleraldehyde	590-86-3		0.14%	2.24%	2.97%	0.46%	0.50%
Methylene Chloride	75-09-2	X	1.23%	7.17%	23.71%	33.47%	1.42%
2-Methylnaphthalene	91-57-6		4.11%	0.25%	0.20%	0.13%	5.91%
4-Methyl-2-pentanone (MIBK)	108-10-1	X	0.39%	0.08%	0.37%	0.27%	0.48%
Naphthalene	91-20-3	X	4.12%	0.43%	0.36%	0.13%	6.12%
m-Nitroaniline	99-09-2		ND	ND	ND	ND	ND
o-Nitroaniline	88-74-4		ND	ND	ND	ND	ND
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	ND
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	ND
2-Nitrophenol	88-75-5		0.05%	ND	ND	ND	1.08%
4-Nitrophenol	100-02-7	X	0.05%	0.12%	ND	ND	0.66%
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	ND
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	ND
Pentanal	110-62-3		1.79%	0.00%	0.93%	1.85%	0.24%
Phenanthrene	85-01-8	X	0.11%	0.01%	ND	ND	0.00%
Phenol	108-95-2	X	2.07%	20.49%	0.13%	0.03%	3.38%
Propanal	123-38-6	X	1.72%	2.46%	7.61%	17.20%	0.36%
Pyrene	129-00-0	X	0.04%	ND	ND	ND	ND
Styrene	100-42-5	X	2.18%	0.34%	0.21%	0.09%	0.47%
1,1,2,2-Tetrachloroethane	79-34-5	X	0.09%	0.07%	0.22%	0.06%	0.07%
Tetrachloroethene	127-18-4	X	0.10%	0.17%	0.47%	0.50%	0.07%
m -Tolualdehyde	620-23-5		0.46%	0.25%	2.71%	1.02%	2.62%
o-Tolualdehyde	529-20-4		0.11%	0.13%	ND	0.04%	0.58%
Toluene	108-88-3	X	4.89%	1.19%	1.60%	0.88%	9.16%
1,2,4-Trichlorobenzene	120-82-1	X	ND	0.01%	0.22%	0.08%	0.00%
1,1,1-Trichloroethane	71-55-6	X	0.07%	0.06%	0.26%	0.14%	0.06%
1,1,2-Trichloroethane	79-00-5	X	0.08%	ND	0.03%	0.02%	0.10%
Trichloroethene	79-01-6	X	0.08%	0.06%	0.25%	0.09%	0.07%
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	ND
Vinyl Acetate	108-05-4	X	0.43%	0.21%	0.74%	1.54%	1.12%
Vinyl Chloride	75-01-4	X	0.08%	ND	0.03%	0.02%	0.10%
m,p-Xylene	1330-20-7	X	3.20%	0.81%	1.20%	1.34%	6.36%
o-Xylene	95-47-6	X	1.38%	0.27%	0.25%	0.31%	3.00%

ND indicates compound not detected at detection limit. Compound may be present at a value less than the detection limit.

0.00% - Value is less than 0.00005.

"X" indicates that compound is a HAP.

Table 2-12. VOC Weight Fractions for Turboprop for Large Aircraft

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	---
Acenaphthene	83-32-9	X	ND	ND	ND	ND	---
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	---
Acetaldehyde	75-07-0	X	13.02%	AA	2.39%	2.10%	---
Acrolein	107-02-8	X	ND	ND	ND	ND	---
Anthracene	120-12-7	X	ND	ND	ND	ND	---
Benzaldehyde	100-52-7		1.41%	1.39%	2.06%	ND	---
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	---
Benzene	71-43-2	X	5.96%	7.04%	5.92%	10.02%	---
Benzenemethanol	100-51-6		ND	ND	ND	ND	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	---
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	---
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	---
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	---
Benzoic Acid	65-85-0		8.05%	14.05%	16.87%	25.93%	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	---
Bromoform	75-25-2	X	ND	ND	ND	ND	---
Bromomethane	74-83-9	X	ND	ND	ND	ND	---
4-Bromophenyl-phenyl Ether	101-55-3		ND	ND	ND	ND	---
1,3-Butadiene	106-99-0	X	---	---	---	---	---
2-Butanone (MEK)	78-93-3		0.58%	0.57%	ND	2.24%	---
Butyl benzyl phthalate	85-68-7		ND	ND	ND	ND	---
Carbon Disulfide	75-15-0	X	0.90%	2.59%	4.58%	3.67%	---
Carbon Tetrachloride	56-23-5	X	ND	0.83%	0.63%	3.00%	---
4-Chloroaniline	106-47-8		ND	ND	ND	ND	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	---
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	---
Chloroethane	75-00-3	X	ND	ND	ND	ND	---
bis(2-Chloroethoxy) Methane	111-91-1		ND	ND	ND	ND	---
bis(2-Chloroethyl) Ether	111-44-4	X	ND	ND	ND	ND	---
Chloroform	67-66-3	X	2.79%	0.86%	4.26%	6.59%	---
bis(2-Choroisopropyl) Ether	39638-32-9		ND	ND	ND	ND	---
Chloromethane	74-87-3	X	ND	0.72%	1.38%	4.63%	---
4-Chloro-3-methylphenol	59-50-7		ND	ND	ND	ND	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	---
2-Chlorophenol	95-57-8		ND	ND	ND	ND	---
1-chloro-4-phenoxybenzene	7005-72-3		ND	ND	ND	ND	---
Chrysene	218-01-9	X	ND	ND	ND	ND	---
o-Cresol	95-48-7	X	ND	ND	ND	ND	---
p-Cresol	106-44-5	X	ND	ND	ND	ND	---
Crotonaldehyde	4170-30-3		ND	ND	ND	ND	---
Dibenzofuran	132-64-9	X	ND	ND	ND	ND	---
Dibutyl Phthalate	84-74-2	X	0.63%	0.53%	0.49%	1.34%	---
1,2-Dichlorobenzene	95-50-1		ND	ND	ND	ND	---
1,3-Dichlorobenzene	541-73-1		ND	ND	ND	ND	---
1,4-Dichlorobenzene	106-46-7	X	ND	ND	ND	ND	---
3,3'-Dichlorobenzidine	91-94-1	X	ND	ND	ND	ND	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	---
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	---
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	---
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	---
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	---
2,4-Dichlorophenol	120-83-2		ND	ND	ND	ND	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	---
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	---
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	---
Diethyl Phthalate	84-66-2		1.21%	0.41%	ND	5.43%	---

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	---
2,4-Dimethylphenol	105-67-9		ND	ND	ND	ND	---
Dimethyl phthalate	131-11-3	X	ND	ND	ND	ND	---
4,6-Dinitro-o-cresol	534-52-1	X	ND	ND	ND	ND	---
2,4-Dinitrophenol	51-28-5	X	ND	ND	ND	ND	---
2,4-Dinitrotoluene	121-14-2	X	ND	ND	ND	ND	---
2,6-Dinitrotoluene	606-20-2		ND	ND	ND	ND	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	3.02%	5.25%	5.26%	AA	---
Di-n-Octyl phthalate	117-84-0		ND	ND	ND	ND	---
Ethylbenzene	100-41-4	X	ND	0.64%	0.91%	2.29%	---
Fluoranthene	206-44-0	X	ND	ND	ND	ND	---
Fluorene	86-73-7	X	ND	ND	ND	ND	---
Formaldehyde	50-00-0	X	51.28%	52.91%	40.98%	4.87%	---
Hexachlorobenzene	118-74-1	X	ND	ND	ND	ND	---
Hexachlorobutadiene	87-68-3	X	ND	ND	ND	ND	---
Hexachlorocyclopentadiene	77-47-4	X	ND	ND	ND	ND	---
Hexachloroethane	67-72-1	X	ND	ND	ND	ND	---
Hexanal	66-25-1		ND	ND	ND	ND	---
2-Hexanone	591-78-6		ND	ND	ND	ND	---
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	---
Isophorone	78-59-1	X	ND	ND	ND	ND	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	---
Methylene Chloride	75-09-2	X	0.89%	1.55%	3.45%	5.40%	---
2-Methylnaphthalene	91-57-6		0.91%	1.08%	0.46%	0.44%	---
4-Methyl-2-pentanone (MIBK)	108-10-1	X	ND	ND	ND	ND	---
Naphthalene	91-20-3	X	1.45%	1.64%	0.78%	1.71%	---
m-Nitroaniline	99-09-2		ND	ND	ND	ND	---
o-Nitroaniline	88-74-4		ND	ND	ND	ND	---
4-Nitrobenzenamine	100-01-6		ND	ND	ND	ND	---
Nitrobenzene	98-95-3	X	ND	ND	ND	ND	---
2-Nitrophenol	88-75-5		ND	ND	ND	ND	---
4-Nitrophenol	100-02-7	X	ND	ND	ND	ND	---
N-Nitrosodiphenylamine	86-30-6		ND	ND	ND	ND	---
N-Nitrosodi-n-propylamine	621-64-7		ND	ND	ND	ND	---
Pentachlorophenol	87-86-5	X	ND	ND	ND	ND	---
Pentanal	110-62-3		ND	ND	ND	ND	---
Phenanthrene	85-01-8	X	ND	ND	ND	ND	---
Phenol	108-95-2	X	ND	ND	ND	ND	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	---
Styrene	100-42-5	X	0.88%	0.58%	ND	ND	---
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	---
Tetrachloroethene	127-18-4	X	ND	ND	ND	2.75%	---
m -Tolualdehyde	620-23-5		ND	ND	ND	ND	---
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	---
Toluene	108-88-3	X	3.38%	3.63%	4.23%	0.32%	---
1,2,4-Trichlorobenzene	120-82-1	X	ND	ND	ND	ND	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	---
1,1,2-Trichloroethane	79-00-5	X	1.98%	2.06%	2.78%	6.10%	---
Trichloroethene	79-01-6	X	ND	ND	ND	ND	---
2,4,5-Trichlorophenol	95-95-4	X	ND	ND	ND	ND	---
2,4,6-Trichlorophenol	88-06-2	X	ND	ND	ND	ND	---
Vinyl Acetate	108-05-4	X	ND	ND	ND	ND	---
Vinyl Chloride	75-01-4	X	ND	ND	ND	ND	---
m,p-Xylene	1330-20-7	X	0.84%	1.16%	1.83%	8.00%	---
o-Xylene	95-47-6	X	0.82%	0.51%	0.74%	3.17%	---

ND indicates compound not detected at detection limit. Compound may be present at a value less than the detection limit

0.00% - Value is less than 0.00005

"---" Indicates No Data Available

AA – Detected value was below the ambient air value

"X" indicates that compound is a HAP

All emission factors based off the T56-A-7 engine

This class of engine is found on large aircraft such as the C-2 and C-130

Table 2-13. VOC Weight Fractions for Turboprop for Small Aircraft

Compound Name	CAS Number	HAP	Power Setting				
			Ground Idle	Flight Idle	Descend	Approach	Max. Continuous
Acenaphthene	83-32-9	X	ND	ND	ND	ND	ND
Acenaphthylene	208-96-8	X	ND	ND	ND	ND	ND
Acetaldehyde	75-07-0	X	4.12%	4.31%	2.67%	1.46%	1.11%
Acrolein	107-02-8	X	9.85%	7.45%	1.54%	ND	ND
Anthracene	120-12-7	X	ND	ND	ND	ND	ND
Benzaldehyde	100-52-7		0.32%	2.15%	1.35%	1.12%	ND
Benz(a)anthracene	56-55-3	X	ND	ND	ND	ND	ND
Benzene	71-43-2	X	2.30%	6.48%	2.58%	1.45%	0.44%
Benzenemethanol	100-51-6		---	---	---	---	---
Benzo(b)fluoranthene	205-99-2	X	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	ND	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	ND	ND	ND	ND
Benzoic Acid	65-85-0		---	---	---	---	---
Bromodichloromethane	75-27-4		ND	ND	ND	ND	ND
Bromoform	75-25-2	X	ND	ND	ND	ND	ND
Bromomethane	74-83-9	X	ND	ND	ND	ND	0.08%
4-Bromophenyl-phenyl Ether	101-55-3		---	---	---	---	---
1,3-Butadiene	106-99-0	X	2.05%	3.32%	0.33%	ND	ND
2-Butanone (MEK)	78-93-3		0.18%	ND	0.08%	ND	ND
Butyl benzyl phthalate	85-68-7		---	---	---	---	---
Carbon Disulfide	75-15-0	X	ND	ND	ND	ND	ND
Carbon Tetrachloride	56-23-5	X	ND	ND	ND	ND	ND
4-Chloroaniline	106-47-8		---	---	---	---	---
Chlorobenzene	108-90-7	X	ND	ND	ND	ND	ND
Chlorodibromomethane	124-48-1		ND	ND	ND	ND	ND
Chloroethane	75-00-3	X	ND	ND	ND	ND	ND
bis(2-Chloroethoxy) Methane	111-91-1		---	---	---	---	---
bis(2-Chloroethyl) Ether	111-44-4	X	---	---	---	---	---
Chloroform	67-66-3	X	ND	ND	ND	ND	ND
bis(2-Choroisopropyl) Ether	39638-32-9		---	---	---	---	---
Chloromethane	74-87-3	X	0.02%	ND	0.04%	0.02%	0.29%
4-Chloro-3-methylphenol	59-50-7		---	---	---	---	---
2-Chloronaphthalene	91-58-7		ND	ND	ND	ND	ND
2-Chlorophenol	95-57-8		---	---	---	---	---
1-chloro-4-phenoxybenzene	7005-72-3		---	---	---	---	---
Chrysene	218-01-9	X	ND	ND	ND	ND	ND
o-Cresol	95-48-7	X	---	---	---	---	---
p-Cresol	106-44-5	X	---	---	---	---	---
Crotonaldehyde	4170-30-3		2.87%	2.15%	ND	ND	ND
Dibenzofuran	132-64-9	X	---	---	---	---	---
Dibutyl Phthalate	84-74-2	X	---	---	---	---	---
1,2-Dichlorobenzene	95-50-1		---	---	---	---	---
1,3-Dichlorobenzene	541-73-1		---	---	---	---	---
1,4-Dichlorobenzene	106-46-7	X	---	---	---	---	---
3,3'-Dichlorobenzidine	91-94-1	X	---	---	---	---	---
1,1-Dichloroethane	75-34-3	X	ND	ND	ND	ND	ND
1,2-Dichloroethane	107-06-2	X	ND	ND	ND	ND	ND
1,1-Dichloroethene	75-35-4	X	ND	ND	ND	ND	ND
cis-1,2-Dicholorethene	156-59-2		ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5		ND	ND	ND	ND	ND
2,4-Dichlorophenol	120-83-2		---	---	---	---	---
1,2-Dichloropropane	78-87-5	X	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5		ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	10061-02-6		ND	ND	ND	ND	ND
Diethyl Phthalate	84-66-2		---	---	---	---	---

Compound Name	CAS Number	HAP	Power Setting				
			Ground Idle	Flight Idle	Descend	Approach	Max. Continuous
2,4-Dimethylphenol	105-67-9		---	---	---	---	---
Dimethyl phthalate	131-11-3	X	---	---	---	---	---
4,6-Dinitro-o-cresol	534-52-1	X	---	---	---	---	---
2,4-Dinitrophenol	51-28-5	X	---	---	---	---	---
2,4-Dinitrotoluene	121-14-2	X	---	---	---	---	---
2,6-Dinitrotoluene	606-20-2		---	---	---	---	---
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	---	---	---	---	---
Di-n-Octyl phthalate	117-84-0		---	---	---	---	---
Ethylbenzene	100-41-4	X	0.65%	0.62%	0.08%	0.03%	0.05%
Fluoranthene	206-44-0	X	ND	ND	ND	ND	ND
Fluorene	86-73-7	X	ND	ND	ND	ND	ND
Formaldehyde	50-00-0	X	66.10%	65.50%	89.00%	94.41%	11.30%
Hexachlorobenzene	118-74-1	X	---	---	---	---	---
Hexachlorobutadiene	87-68-3	X	---	---	---	---	---
Hexachlorocyclopentadiene	77-47-4	X	---	---	---	---	---
Hexachloroethane	67-72-1	X	---	---	---	---	---
Hexanal	66-25-1		2.15%	ND	ND	ND	ND
2-Hexanone	591-78-6		0.21%	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	ND	ND	ND	ND
Isophorone	78-59-1	X	---	---	---	---	---
Isovaleraldehyde	590-86-3		ND	ND	ND	ND	ND
Methylene Chloride	75-09-2	X	ND	ND	0.06%	0.05%	0.09%
2-Methylnaphthalene	91-57-6		ND	ND	ND	ND	46.31%
4-Methyl-2-pentanone (MIBK)	108-10-1	X	0.21%	ND	ND	ND	ND
Naphthalene	91-20-3	X	ND	0.14%	ND	ND	39.32%
m-Nitroaniline	99-09-2		---	---	---	---	---
o-Nitroaniline	88-74-4		---	---	---	---	---
4-Nitrobenzenamine	100-01-6		---	---	---	---	---
Nitrobenzene	98-95-3	X	---	---	---	---	---
2-Nitrophenol	88-75-5		---	---	---	---	---
4-Nitrophenol	100-02-7	X	---	---	---	---	---
N-Nitrosodiphenylamine	86-30-6		---	---	---	---	---
N-Nitrosodi-n-propylamine	621-64-7		---	---	---	---	---
Pentachlorophenol	87-86-5	X	---	---	---	---	---
Pentanal	110-62-3		1.32%	0.85%	1.01%	ND	ND
Phenanthrene	85-01-8	X	ND	ND	ND	ND	ND
Phenol	108-95-2	X	---	---	---	---	---
Propanal	123-38-6	X	---	---	---	---	---
Pyrene	129-00-0	X	ND	ND	ND	ND	ND
Styrene	100-42-5	X	0.64%	0.47%	0.24%	ND	ND
1,1,2,2-Tetrachloroethane	79-34-5	X	ND	ND	ND	ND	ND
Tetrachloroethene	127-18-4	X	ND	ND	ND	ND	ND
m -Tolualdehyde	620-23-5		2.15%	1.10%	ND	1.01%	ND
o-Tolualdehyde	529-20-4		ND	ND	ND	ND	ND
Toluene	108-88-3	X	2.27%	3.01%	0.75%	0.33%	0.27%
1,2,4-Trichlorobenzene	120-82-1	X	---	---	---	---	---
1,1,1-Trichloroethane	71-55-6	X	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	X	ND	ND	ND	ND	ND
Trichloroethene	79-01-6	X	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	X	---	---	---	---	---
2,4,6-Trichlorophenol	88-06-2	X	---	---	---	---	---
Vinyl Acetate	108-05-4	X	0.21%	ND	ND	ND	ND
Vinyl Chloride	75-01-4	X	---	---	---	---	---
m,p-Xylene	1330-20-7	X	1.56%	1.63%	0.18%	0.08%	0.66%
o-Xylene	95-47-6	X	0.82%	0.82%	0.09%	0.04%	0.08%

ND indicates compound not detected at detection limit. Compound may be present at a value less than the detection limit

0.00% - Value is less than 0.00005

"---" Indicates No Data Available

"X" indicates that compound is a HAP

All emission factors based off the PT6A-68 engine

This class of engine is found on small aircraft such as the T6-A

Table 2-14. VOC Weight Fraction for Turbojet Engines

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	Afterburner-1
Acenaphthene	83-32-9	X	ND	---	ND	ND	ND
Acenaphthylene	208-96-8	X	0.04%	---	0.03%	ND	ND
Acetaldehyde	75-07-0	X	5.28%	---	1.27%	0.54%	ND
Acrolein	107-02-8	X	8.96%	---	0.74%	0.41%	ND
Anthracene	120-12-7	X	ND	---	ND	ND	ND
Benzaldehyde	100-52-7		3.36%	---	0.74%	0.41%	ND
Benz(a)anthracene	56-55-3	X	ND	---	ND	ND	ND
Benzene	71-43-2	X	4.23%	---	9.61%	5.49%	11.97%
Benzenemethanol	100-51-6		0.71%	---	0.68%	0.32%	0.24%
Benzo(b)fluoranthene	205-99-2	X	ND	---	ND	ND	ND
Benzo(k)fluoranthene	207-08-9	X	ND	---	ND	ND	ND
Benzo(g,h,i)perylene	191-24-2	X	ND	---	ND	ND	ND
Benzo(a)pyrene	50-32-8	X	ND	---	ND	ND	ND
Benzoic Acid	65-85-0		0.61%	---	3.65%	14.86%	15.58%
Bromodichloromethane	75-27-4		0.07%	---	ND	ND	ND
Bromoform	75-25-2	X	0.08%	---	ND	ND	ND
Bromomethane	74-83-9	X	0.08%	---	0.00%	ND	ND
4-Bromophenyl-phenyl Ether	101-55-3		ND	---	ND	ND	ND
1,3-Butadiene	106-99-0	X	0.41%	---	1.08%	ND	---
2-Butanone (MEK)	78-93-3		1.06%	---	1.00%	0.63%	0.57%
Butyl benzyl phthalate	85-68-7		ND	---	0.02%	0.06%	0.05%
Carbon Disulfide	75-15-0	X	0.09%	---	0.36%	0.60%	0.22%
Carbon Tetrachloride	56-23-5	X	0.07%	---	0.34%	0.05%	ND
4-Chloroaniline	106-47-8		ND	---	ND	ND	ND
Chlorobenzene	108-90-7	X	0.08%	---	ND	ND	ND
Chlorodibromomethane	124-48-1		0.07%	---	ND	ND	ND
Chloroethane	75-00-3	X	0.08%	---	0.01%	ND	ND
bis(2-Chloroethoxy) Methane	111-91-1		ND	---	ND	ND	ND
bis(2-Chloroethyl) Ether	111-44-4	X	ND	---	ND	ND	ND
Chloroform	67-66-3	X	0.08%	---	0.38%	0.50%	0.40%
bis(2-Choroisopropyl) Ether	39638-32-9		ND	---	ND	ND	ND
Chloromethane	74-87-3	X	0.15%	---	0.72%	0.11%	0.29%
4-Chloro-3-methylphenol	59-50-7		ND	---	ND	ND	ND
2-Chloronaphthalene	91-58-7		ND	---	ND	ND	ND
2-Chlorophenol	95-57-8		ND	---	ND	ND	ND
1-chloro-4-phenoxybenzene	7005-72-3		ND	---	ND	ND	ND
Chrysene	218-01-9	X	ND	---	ND	ND	ND
o-Cresol	95-48-7	X	0.23%	---	0.12%	ND	ND
p-Cresol	106-44-5	X	0.58%	---	0.40%	ND	0.30%
Crotonaldehyde	4170-30-3		4.30%	---	0.74%	0.41%	ND
Dibenzofuran	132-64-9	X	0.23%	---	0.10%	ND	0.13%
Dibutyl Phthalate	84-74-2	X	0.02%	---	0.07%	0.35%	0.12%
1,2-Dichlorobenzene	95-50-1		ND	---	ND	ND	ND
1,3-Dichlorobenzene	541-73-1		ND	---	ND	ND	ND
1,4-Dichlorobenzene	106-46-7	X	ND	---	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	X	ND	---	ND	ND	ND
1,1-Dichloroethane	75-34-3	X	0.08%	---	ND	ND	ND
1,2-Dichloroethane	107-06-2	X	0.08%	---	ND	ND	ND
1,1-Dichloroethene	75-35-4	X	0.08%	---	ND	ND	ND
cis-1,2-Dicholorethene	156-59-2		0.07%	---	ND	ND	ND
trans-1,2-Dichloroethene	156-60-5		0.08%	---	ND	ND	ND
2,4-Dichlorophenol	120-83-2		ND	---	ND	ND	ND
1,2-Dichloropropane	78-87-5	X	0.11%	---	ND	ND	ND
cis-1,3-Dichloropropene	10061-01-5		0.08%	---	0.01%	ND	ND
trans-1,3-Dichloropropene	10061-02-6		0.08%	---	0.01%	ND	ND
Diethyl Phthalate	84-66-2		ND	---	0.10%	0.84%	1.77%

Compound Name	CAS Number	HAP	Power Setting				
			Idle	Approach	Intermediate	Military	Afterburner-1
2,4-Dimethylphenol	105-67-9		ND	---	ND	ND	ND
Dimethyl phthalate	131-11-3	X	ND	---	ND	ND	ND
4,6-Dinitro-o-cresol	534-52-1	X	ND	---	ND	ND	ND
2,4-Dinitrophenol	51-28-5	X	ND	---	ND	ND	ND
2,4-Dinitrotoluene	121-14-2	X	ND	---	ND	ND	ND
2,6-Dinitrotoluene	606-20-2		ND	---	ND	ND	ND
Di(2-Ethylhexyl) Phthalate (DEHP)	117-81-7	X	0.04%	---	0.25%	0.49%	0.23%
Di-n-Octyl phthalate	117-84-0		ND	---	ND	ND	ND
Ethylbenzene	100-41-4	X	0.67%	---	0.67%	0.16%	0.92%
Fluoranthene	206-44-0	X	ND	---	ND	ND	ND
Fluorene	86-73-7	X	0.07%	---	0.02%	ND	ND
Formaldehyde	50-00-0	X	39.18%	---	55.08%	37.89%	41.97%
Hexachlorobenzene	118-74-1	X	ND	---	ND	ND	ND
Hexachlorobutadiene	87-68-3	X	ND	---	ND	ND	ND
Hexachlorocyclopentadiene	77-47-4	X	ND	---	ND	ND	ND
Hexachloroethane	67-72-1	X	ND	---	ND	ND	ND
Hexanal	66-25-1		0.90%	---	0.74%	0.41%	ND
2-Hexanone	591-78-6		0.10%	---	0.44%	0.58%	0.34%
Indeno(1,2,3-cd)pyrene	193-39-5	X	ND	---	ND	ND	ND
Isophorone	78-59-1	X	ND	---	ND	ND	ND
Isovaleraldehyde	590-86-3		1.13%	---	0.74%	0.41%	ND
Methylene Chloride	75-09-2	X	0.82%	---	4.87%	26.62%	11.29%
2-Methylnaphthalene	91-57-6		3.39%	---	0.81%	0.40%	2.13%
4-Methyl-2-pentanone (MIBK)	108-10-1	X	0.10%	---	0.10%	0.58%	ND
Naphthalene	91-20-3	X	2.47%	---	0.79%	0.52%	1.43%
m-Nitroaniline	99-09-2		ND	---	ND	ND	ND
o-Nitroaniline	88-74-4		ND	---	ND	ND	ND
4-Nitrobenzenamine	100-01-6		ND	---	ND	ND	ND
Nitrobenzene	98-95-3	X	ND	---	ND	ND	ND
2-Nitrophenol	88-75-5		ND	---	0.20%	ND	ND
4-Nitrophenol	100-02-7	X	ND	---	ND	ND	ND
N-Nitrosodiphenylamine	86-30-6		ND	---	ND	ND	ND
N-Nitrosodi-n-propylamine	621-64-7		ND	---	ND	ND	ND
Pentachlorophenol	87-86-5	X	ND	---	ND	ND	ND
Pentanal	110-62-3		3.23%	---	0.74%	0.41%	ND
Phenanthrene	85-01-8	X	0.02%	---	0.04%	ND	ND
Phenol	108-95-2	X	1.73%	---	1.20%	0.79%	1.64%
Propanal	123-38-6	X	2.69%	---	2.23%	1.22%	---
Pyrene	129-00-0	X	ND	---	0.01%	ND	ND
Styrene	100-42-5	X	0.88%	---	0.92%	0.21%	0.50%
1,1,2,2-Tetrachloroethane	79-34-5	X	0.08%	---	ND	ND	ND
Tetrachloroethene	127-18-4	X	0.10%	---	0.44%	0.58%	ND
m -Tolualdehyde	620-23-5		2.05%	---	ND	ND	ND
o-Tolualdehyde	529-20-4		1.77%	---	0.74%	0.41%	ND
Toluene	108-88-3	X	3.52%	---	3.71%	1.72%	3.04%
1,2,4-Trichlorobenzene	120-82-1	X	ND	---	ND	ND	ND
1,1,1-Trichloroethane	71-55-6	X	0.08%	---	ND	ND	ND
1,1,2-Trichloroethane	79-00-5	X	0.08%	---	ND	ND	ND
Trichloroethene	79-01-6	X	0.11%	---	ND	ND	ND
2,4,5-Trichlorophenol	95-95-4	X	ND	---	ND	ND	ND
2,4,6-Trichlorophenol	88-06-2	X	ND	---	ND	ND	ND
Vinyl Acetate	108-05-4	X	0.08%	---	ND	ND	ND
Vinyl Chloride	75-01-4	X	0.11%	---	ND	ND	ND
m,p-Xylene	1330-20-7	X	2.16%	---	2.11%	0.77%	3.29%
o-Xylene	95-47-6	X	0.91%	---	0.97%	0.25%	1.58%

ND indicates compound not detected at detection limit. Compound may be present at a value less than the detection limit

0.00% - Value is less than 0.00005

"---" Indicates No Data Available

"X" indicates that compound is a HAP

The average percentage for idle, intermediate, and military are based on the J69-T-25, J85-GE-5A, and J85-GE-5M

No test data was available for the Approach setting for any engine

Afterburner setting based on J85-GE-5A engine only

Figure 2-1. Example Data Collection Form for On-Wing Engine Testing

Installation Name: **Inventory Year (CY):**
Responsible Organization (Name & Office Symbol):
POC (Name & Phone #):

Building Number or Location	Type of Test Facility *	Type of Aircraft & Engine Tested	Number of Engines Tested During the Year (test/yr)	Average Run Time per Test at Each Power Setting (min/test)	Total Run Time per Test at Each Power Setting [if known] (min/yr)	Average Fuel Flow Rate at Each Power Setting (lb/hr)	Total Fuel Burned During the year [if known] (lb/yr)	Total Synthetic Fuel Used (gal)
		Aircraft: Engine:		Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:		
		Aircraft: Engine:		Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:		
		Aircraft: Engine:		Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:		
		Aircraft: Engine:		Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:	Idle: Approach: Intermediate: Military: Afterburner:		

*eg Hush House, Trim Pad, etc.

Figure 2-2. Example Data Collection Form for Aircraft Movements

Installation Name: **Inventory Year (CY):**

Responsible Organization (Name & Office Symbol):

POC (Name & Phone #):

Aircraft Type	Aircraft Number	Date	Number of Landing and Takeoff Cycles (LTO)	Number of Touch and Go Cycles (TGO)	Number of Low Fly By Cycles (LFB)	Number of Low Altitude Flight Patterns (within base air space)	Number of Low Altitude Flight Patterns (outside base Air Space)*

*Information on Low Altitude Fly Patterns outside Base air space is only required if specifically requested.

2.8 References

AESO 1990, "Summary Tables of Gaseous and Particulate Emissions from Aircraft Engines," Aircraft Environmental Support Office (AESO), June 1990

AFCCC, "Atmospheric Mixing Heights," Air Force Combat Climatology Center (AFCCC)

DLA 2006, "Petroleum Quality Information System Fuels Data." Defense Logistics Agency, Defense Energy Support Center, April 2006

Dorr 2002, Dorr, Robert F, "Air Force One," MBI Publishing Company

FAA 1995, "Technical Data to Support FAA's Advisory Circular on Reducing Emissions from Commercial Aviation," Federal Aviation Administration, September 1995

FAA 2000, "Consideration of Air Quality Impacts of Airplane Operations at or Above 3000 Feet AGL (FAA-AEE-00-01)," U.S. Department of Transportation, Federal Aviation Administration, September 2000

FAA 2007, "Emissions Dispersion and Modeling System, Version 5.0.2," U.S. Department of Transportation, Federal Aviation Administration, June 2007

FAA 2009, "Recommended Best Practice for Qualifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines," Federal Aviation Administration Office of Environment and Energy and the U.S. Environmental Protection Agency Office of Transportation & Air Quality, May 2009

ICAO 2011, Document 9889, "Airport Air Quality Manual," International Civil Aviation Organization (ICAO)

USAF 1985, "Aircraft Engine Emissions Estimator," United States Air Force, November 1985

USAF 1996a, "Engine and Hush House Emissions from a TF30-P-109 Jet Engine Tested at Canon AFB, NM," United States Air Force, June 1996

USAF 1996b, "Engine and Hush House Emissions from a F100-PW-100 Jet Engine Tested at Langley Air Force Base, VA," United States Air Force, November 1996

USAF 1997, "Engine and Hush House Emissions from a F100-PW-200 Jet Engine Tested at Kelly Air Force Base, TX," United States Air Force, February 1997

USAF 1998, "Aircraft Emissions Characterization," March 1998

USAF 2002a, "Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations, IERA/RSEQ, IERA-RS-BR-SR-2001-0010," January 2002 (Revised December 2003)

USAF 2002b, "Aircraft Engine and Auxiliary Power Unit Emissions Testing Final Report Addendum - F119-PW-100 Engine Emissions Testing Report, IERA-RS-BR-TR-2002-0006," United States Air Force, June 2002

USAF 2002c, "Aircraft Engine and Auxiliary Power Unit Emissions Characterization Study, IERA-RS-BR-TR-1999-0006," United States Air Force

USAF 2002d, Clean Air Act Emission Testing of the T-38C Aircraft Engines, IERA-RS-BR-SR-2003-001, United States Air Force. September 2002

USAF 2002e, "Emissions Measurement Program Summary, IERA-RS-BR-SR-2003-0003," United States Air Force. September 2002

USAF 2002f, "Flightline Emission Factors - Aircraft/Auxiliary Power Units/Aerospace Ground Support Equipment, IERA-RS-BR-SR-2005-0001," United States Air Force, October 2002 (updated December 2004)

USAF 2002g, "PT6A-68 Emissions Measurement Program Study, IERA-RS-BR-SR-2003-0003," United States Air Force. September 2002

USAF 2007, "Air Force Alternative Fuels Program, AFRL/WS/06-0078, 22nd Annual UC Symposium on Aviation Noise and Air Quality," United States Air Force, March 2007

USAF 2009, "Air Emissions Factor Guide to Air Force Mobile Sources," United States Air Force, December 2009

USDoD 2004, "Model Designation of Military Aerospace Vehicles," U.S. Department of Defense (USDoD), May 2004

USEPA 1971, "Collection and Assessment of Aircraft Emissions," U.S. Environmental Protection Agency, October 1971

USEPA 1978, Air Pollutant Emission Factors for Military and Civil Aircraft, EPA-450/3-78-117, U.S. Environmental Protection Agency, October 1978

USEPA 1980, Compilation of Air Pollutant Emission Factors - Volume II: Mobile Sources (AP-42, Volume II), U.S. Environmental Protection Agency, February 1980.

USEPA 1992, Procedures for Emission Inventory Preparation - Volume IV: Mobile Sources, Chapter 5, EPA420-R-92-009, U.S. Environmental Protection Agency, December 1992

This page intentionally left blank

3 FLIGHTLINE GROUND SUPPORT EQUIPMENT (AGE)

3.1 Introduction

While the majority of emissions result from Aircraft operations, most Air Force bases operate a variety of Ground Support Equipment (GSE) or Aerospace Ground Equipment (AGE) to support flightline operations and service aircraft. Emissions from AGE or GSE vary by device type, time of operation, and fuel flow rate. For simplicity, both GSE and AGE are generically referred to as GSE in this section. Common examples of military GSE include generators, air conditioners, start carts, heaters, hydraulic test stands, portable light units, air compressors, cargo and bomb lifts, jacking units, aircraft deicers, tractors, tugs, and other service equipment. GSE are designed to be mobile so that they can be used at any number of locations on the flightline, and can be easily transported to support readiness and deployment activities around the world. Depending on whether or not the GSE is designed to be self-propelled, it can be categorized as either vehicular or non-vehicular in nature. Although essentially non-road engines, this section addresses emissions from flightline GSE only while other non-road engines and equipment are addressed separately in this document. Emissions of concern from the operation of GSE include the criteria pollutants and several HAPs that are commonly associated with fuel combustion processes (benzene, 1, 3-butadiene, acetaldehyde, naphthalene, etc.).

Most of the GSE operated on an Air Force installation are powered by internal combustion engines fueled by JP-8. Some equipment, however, may be powered by diesel fuel, motor gasoline (MOGAS), Compressed Natural Gas (CNG), or Liquefied Petroleum Gas (LPG). The manner in which fuel ignition occurs in the engine determines whether AGE is categorized as Compression Ignition (CI) or Spark Ignition (SI) in nature. CI AGE include turbine engines fueled with JP-8, and non-turbine engines fueled with diesel. SI AGE may be fueled with MOGAS, CNG, or LPG. The section titled "NON-ROAD ENGINES AND EQUIPMENT" provides additional detail on the operating principles of CI and SI engines.

Individual pollutant emissions from each type of GSE are usually calculated using operating time and/or fuel consumption information applied across an operational parameter such as an LTO cycle or over an inventory period (typically one year). Military aircraft and GSE combinations and emission factor data are provided in Table 3-3. This information was obtained from a survey developed and distributed by AFIOH/RSEQ to various flight squadrons and AGE shops throughout the Air Force (Wade 2004). These aircraft-GSE combinations are provided as a guideline and should be used only in the absence of available base-specific data. In instances where military GSE information was unavailable, data was obtained from the Federal Aviation Administration's (FAA) Emissions and Dispersion Modeling System (EDMS). Common, non-model specific GSE data from EDMS are provided in Table 3-6.

While most Air Force GSE is intended to be mobile by design, there may be instances where the regular use of the equipment results in it not being moved at least once in a 12-month period. In such instances, the GSE is generally considered stationary in nature by regulators, a determination that has implications from an air permitting perspective. If an air program manager is uncertain whether a piece of GSE should be considered mobile or stationary for regulatory purposes, he/she should coordinate with their MAJCOM for assistance, and also consider consulting with the Air Force Regional Environmental Offices (REOs) to obtain their insight on state-specific requirements as they may apply to GSE.

3.2 Emission Factors

Emission factors for flightline ground support equipment have been developed through testing and measurement and are provided in a variety of sources. Emission factors may be model specific and provided in units of lb/hr (Table 3-4), based on the GSE and fuel type (Table 3-7), or a general emission factor for reciprocating internal combustion engines based on model year and provided in units of lb/10^3 gal or lb/10^3 hp-hr (Table 3-9). Emission factors are selected based on the calculation method as described in the next section.

3.3 Emissions Calculation

Information commonly collected and used to calculate emissions from GSE operation include the type and model of the equipment, the operating time, type and volume of fuel consumed, and engine operating load and rated power. A sample data collection form for GSE is provided in Figure 3-1 at the end of the chapter.

3.3.1 Sortie/LTO Method (Preferred Method)

The Sortie/LTO Method is the Air Force's default method and should be used for all GSE that are included in Table 3-3 and Table 3-4. This method involves applying an emission factor to the operating time of each GSE during a set period of time (e.g., an aircraft sortie or LTO cycle, annually, or other inventory period). Emissions using this method are calculated as follows:

$$\mathbf{E}(\boldsymbol{Pol}) = \boldsymbol{OT} \times \boldsymbol{EF}(\boldsymbol{Pol}) \times \boldsymbol{N}$$

Equation 3-1

Where,

E(Pol) = Emissions of each individual pollutant for each piece of GSE (lb/yr)
EF(Pol) = Emission factor of each pollutant (lb/hr)
OT = Operating time of GSE per sortie (hr/sortie)
N = Number of sorties per year (sortie/yr)

The emission factors and operating times for calculating emissions for GSE using the sortie/LTO method may be found in the following tables:

- Operating times per LTO for each GSE and associated aircraft are in Table 3-3.
- Emission factors for each GSE are found in Table 3-4.

3.3.2 Horsepower/Load Factor Method

The horsepower/load factor is an alternative method for emissions calculations based on the horsepower (hp) of the engine. This method requires that the GSE engine horsepower, the engine load factor, and operating time for each GSE are known. Emissions from common, non-model specific GSE may be calculated using the data provided in Table 3-6 and Table 3-7. The following general equation is used:

$$\mathbf{E}(\boldsymbol{Pol}) = \boldsymbol{OT} \times \frac{\boldsymbol{LF}}{\mathbf{100}} \times \boldsymbol{hp} \times \frac{\mathbf{1}}{\mathbf{1000}} \times \boldsymbol{EF}(\boldsymbol{Pol}) \times \boldsymbol{N}$$

Equation 3-2

Where,

E(Pol) = Emissions of each individual pollutant (lb/yr)
OT = Operating time (hr/unit)
LF = Load factor (%)
100 = Factor for converting percent to a fraction (%)
hp = Average rated horsepower of engine (hp)
1000 = Factor converting from hp to 10^3 hp (hp/10^3 hp)
EF(Pol) = Emission factor of each pollutant (lb/10^3 hp-hr)
N = Number of ground support equipment used each year (units/yr)

If the average rated horsepower of the engine is unknown, it can be estimated by multiplying the maximum rated horsepower of the engine by a load factor. The following equation is used:

$$\boldsymbol{hp} = \boldsymbol{hp_{max}} \times \frac{\boldsymbol{LF}}{\mathbf{100}}$$

Equation 3-3

Where,

hp = Average rated horsepower of engine (hp)
hp_{max} = Maximum rated horsepower of the engine (hp)
LF = Typical load factor (%)
100 = Factor for converting percent to a fraction (%)

The emission factors and operating times for common GSE needed to calculate emissions using the horsepower/load factor method may be found in the following tables:

- The typical commercial GSE assignments are given in Table 3-5.
- Table 3-6 provides the average rated horsepower for each GSE.
- Emission factors for common GSE are provided in a lb/10^3 hp-hr basis in Table 3-7.
- Table 3-9 provides the EPA emission factors for criteria pollutants for uncontrolled diesel reciprocating internal combustion engines.
- Table 3-10 provides emission factors for several speciated HAPs for uncontrolled diesel reciprocating internal combustion engines.

3.3.3 Fuel Consumption Method

Another method that can be used to calculate GSE emissions involves multiplying the volume of fuel consumed by an emission factor that is provided in terms of a mass of pollutant emitted per volume of fuel consumed such as lb/hr or g/hr. As with the horsepower/load factor method, the fuel consumption method also requires that the user know the operating time for each GSE. The following equation can be used as an alternative method of calculating GSE HAP emissions based exclusively on fuel consumption data:

$$\mathbf{E}(\boldsymbol{Pol}) = \boldsymbol{FC} \times \frac{\mathbf{1}}{\mathbf{1000}} \times \boldsymbol{EF}(\boldsymbol{Pol}) \times \boldsymbol{N}$$

Equation 3-4

Where,

E(Pol) = Emissions of each individual pollutant (lb/yr)
FC = Fuel consumption (gal/unit)
1000 = Factor converting gal into 10^3 gal (gal/10^3gal)
EF(Pol) = Emission factor for each pollutant (lb/10^3gal)
N = Number of ground support equipment used each year (units/yr)

In cases where fuel consumption data is unknown, fuel consumption may be estimated using the operating time and fuel flow rate as shown:

$$\boldsymbol{FC} = \boldsymbol{OT} \times \boldsymbol{FFR}$$

Equation 3-5

Where,

FC = Fuel Consumption (gal/unit)
OT = Operating time (hr/unit)
FFR = Fuel flow rate. This may be available from the manufacturer (gal/hr)

Alternatively, fuel consumption may also be estimated using engine and operating parameters which include horsepower (if known), hours of operation, brake-specific fuel consumption factor, and the heating value of the fuel. The following equation is used:

$$FC = \frac{(hp \times OT \times BSFC)}{HV}$$

Equation 3-6

Where,

FC = Fuel consumption (gal/unit)
hp = Engine horsepower (hp)
OT = Operating time (hr/unit)
BSFC = Brake specific fuel consumption (Btu/hp-hr). **Given in Table 3-1**
HV = Heating value of the fuel (Btu/gal). **Given in Table 3-1**

Table 3-1 provides heating values and brake specific fuel consumption values for several types of fuel that may power GSE operated at Air Force installations.

Table 3-1. Typical Heating Values and BSFC for GSE Fuels

Fuel Type	Heating Value (Btu/unit fuel)[1]	BSFC (Btu/hp-hr)[2]
Diesel	138,000 Btu/gal	8,089
MOGAS	125,000 Btu/gal	7,000
JP-8	124,000 Btu/gal[3]	---
LPG	92,000 Btu/gal	10,577[4]
CNG	1,026 Btu/ft^3	7,858

1. SOURCE (Unless otherwise noted): Table C-1 to subpart C of 40 CFR 98.
2. SOURCE (Unless otherwise noted): *Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Natural Gas Industry*, American Petroleum Institute, 2009.
3. SOURCE: Defense Logistics Agency, Defense Energy Support Center, *Petroleum Quality Information System Fuels Data (2005)*, April 2006.
4. SOURCE: *Exhaust Emission Factors for Nonroad Engine Modeling: Spark Ignition*, EPA420-R-05-019, 2005.

"---" – Indicates no data available

For calculating GSE emissions using the fuel consumption method, the following tables may be used:

- Table 3-6 provides typical horsepower for common GSE
- Table 3-8 provides the uncontrolled HAP emission factors for select military GSE.
- Table 3-9 provides the EPA's emission factors for criteria pollutants from uncontrolled diesel reciprocating internal combustion engines.
- Table 3-10 provides the EPA's emission factors for HAPs from uncontrolled diesel reciprocating internal combustion engines.

3.3.4 Calculating SO_2 Emissions

An alternative method for estimating SO_2 emissions involves applying fuel consumption data to derive an SO_2 emission factor based on pounds of pollutant emitted per hour of operation (lb/hr), and the conservative assumption that all the sulfur in the fuel is converted to SO_2 during the combustion process. Under this assumption, and with the density and sulfur content values known, an SO_2 emission factor is calculated using the following equation:

$$\mathbf{EF}(\boldsymbol{SO_2}) = \boldsymbol{FFR} \times \boldsymbol{Density} \times \frac{\boldsymbol{S}}{\mathbf{100}} \times \mathbf{2}$$

Equation 3-7

Where,

$EF(SO_2)$ = SO_2 emission factor (lb/hr)
FFR = Fuel Flow rate (gal/hr)
Density = Density of fuel (lb/gal)
S = Weight percent sulfur content of fuel (%)
100 = Factor for converting a percent to a fraction (%)
2 = Conversion factor which is the ratio of the molecular weight of SO_2 to the molecular weight of S

The value for S typically varies from supplier to supplier and the geographic location where the fuel is produced. For enhanced accuracy of the emissions inventory, the sulfur content and density of the fuel should be obtained from the fuel supplier whenever possible. In the absence of such information, the average density and sulfur content is listed in Table 3-2. The sulfur content of JP-8 varies by region, so if the region specific sulfur content is required, then refer to Table 2-3.

Table 3-2. Average Fuel Density and Weight Percent Sulfur in Non-Road Fuels

Fuel Type	Density (lb/gal)	Sulfur Content (wt. %)
Diesel	7.14	0.025
MOGAS	6.15	0.020
JP-8	6.67(1)	0.053(1)
LPG	4.41	Negligible
CNG	0.046	0.001

SOURCE (Unless otherwise noted): Department of Energy, Energy Information Administration report DOE/EIA-0464/(2005), *Household Vehicles Energy Use: Latest Data & Trends,* Appendix C, Table C4

1. SOURCE: Defense logistics Agency, Defense Energy Support Center, *Petroleum Quality Information System Fuels Data (2005),* April 2006.

3.3.5 Calculating Emissions from Synthetic Aviation Fuel

On-going DOD and Air Force initiatives to reduce dependency on foreign petroleum sources are expected to result in the increased use of non-petroleum fuels in a 50-50 blend with JP-8. Testing and certification of such fuels in aircraft engines indicate the blend reduces PM emissions by an average of 35%, sulfur emissions by 50%, and CO_2 emissions by approximately 2% (USAF Research Laboratory 2007). Accordingly, when collecting information on GSE operations verify whether synthetic fuel was used and the blend percentage. If a 50-50 blend was used, then follow the appropriate emission calculation procedures outlined in previous subsections and apply emission reduction factors of 35%, 50%, and 2%, respectively, for PM, SO_2, and CO_2.

3.4 Information Resources

The base AGE shop is responsible for the operation and repair of most pieces of GSE. Therefore, they should be able to provide most, if not all, of the information needed to calculate the emissions from the GSE used on the installation. In the absence of base-specific data, default EPA information can be used. In some cases, it may be necessary to contact the GSE manufacturer to obtain necessary information. An example of a data collection form which can be used to collect data on GSE is provided in Figure 3-1.

3.5 Example Calculations

The following section provides examples of how to calculate emissions from GSE operations using the alternative methodologies identified above and their associated equations.

3.5.1 Problem 1 - Sortie/LTO Method

Anytown AFB needs to calculate annual NO_X and xylene emissions from GSE operations associated with their B-1B aircraft. The following information was obtained from the base:

B-1B Aircraft	
GSE Types	A/M32A-86D Generator, A/M 32A-95 Start Cart, B-1B AC unit, MJ-40 Bomb lift, NF-2 Light Cart
Sorties/year	200

Step 1 – Record the operating times and NO_X emission factors for each GSE. Since the table above does not provide specific operating times for these GSE, then the typical operating times for these GSE may be used. Table 3-3 lists the operating times for the generator as **2.20hr**, the start cart as **0.50hr**, the AC unit as **2.40hr**, the bomb lift as **2.50hr**, and the light cart as **0.50hr**. Table 3-4 has the NO_X emission factors as **6.102lb/hr** for the generator, **1.470lb/hr** for the start cart, **7.659lb/hr** for the AC unit, **0.340lb/hr** for the bomb lift, and **0.110lb/hr** for the light cart.

Step 2 – Calculate annual NO_X emissions for each GSE. Using the information in the table above, the data collected in Step 1, and Equation 3-1, the NO_X emissions for each GSE are calculated as follows:

$$E(Pol) = OT \times EF(Pol) \times N$$

$$\boldsymbol{E(NO_x)_{A/M32A-86D}} = 2.20\,\frac{\cancel{hr}}{\cancel{sortie}} \times 6.102\,\frac{lb}{\cancel{hr}} \times 200\,\frac{\cancel{sortie}}{yr} = \mathbf{2684.88}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(NO_x)_{A/M32A-95}} = 0.50\,\frac{\cancel{hr}}{\cancel{sortie}} \times 1.470\,\frac{lb}{\cancel{hr}} \times 200\,\frac{\cancel{sortie}}{yr} = \mathbf{147.00}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(NO_x)_{B-1B\ AC\ Unit}} = 2.40\,\frac{\cancel{hr}}{\cancel{sortie}} \times 7.659\,\frac{lb}{\cancel{hr}} \times 200\,\frac{\cancel{sortie}}{yr} = \mathbf{3676.32}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(NO_x)_{MJ-40}} = 2.50\,\frac{\cancel{hr}}{\cancel{sortie}} \times 0.340\,\frac{lb}{\cancel{hr}} \times 200\,\frac{\cancel{sortie}}{yr} = \mathbf{170.00}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

$$\boldsymbol{E(NO_x)_{NF-2}} = 0.50\,\frac{\cancel{hr}}{\cancel{sortie}} \times 0.110\,\frac{lb}{\cancel{hr}} \times 200\,\frac{\cancel{sortie}}{yr} = \mathbf{11.00}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 3 – Calculate total NO_X emissions. Sum the emissions from each GSE to get the total NO_X emissions for GSE the B-1B:

$$E(NO_X)_{Total} = (2684.88 + 147 + 3676.32 + 170 + 11)\,\frac{lb}{yr}$$

$$\boxed{E(NO_X)_{Total} = 6689.2\,\frac{lb}{yr}}$$

Next, calculate xylene emissions.

Step 4 – Record the fuel flow rate for each GSE. Table 3-4 shows that the fuel flow rate is **6.47gal/hr** for the generator and **17.14gal/hr** for the AC unit. Since the fuel flow rate of the start cart, bomb lift, and light cart are not provided in the table, surrogates must be selected. Ideally, the best surrogates will be similar GSE types with similar hp. For this example, the A/M32A-86D was selected as a surrogate for the A/M32A-95, the elevator loader was selected for the MJ-40, and the generator light cart was selected for the NF-2 light cart. The fuel flow rates for the surrogate equipment are listed as **6.47gal/hr** for the A/M32A-86D, **6.29gal/hr** for the elevator loader, and **0.62gal/hr** for the generator light cart.

Step 5 – Calculate the fuel consumption for each GSE. Use the operating times and fuel flow rates recorded in Step 1 and Step 4 above respectively and Equation 3-5**:**

$$FC = OT \times FFR$$

$$FC_{A/M32A-86D} = 2.20\,\frac{\cancel{hr}}{unit} \times 6.47\,\frac{\text{gal}}{\cancel{hr}} = 14.23\,\frac{gal}{unit}$$

$$FC_{A/M32A-95} = 0.50\,\frac{\cancel{hr}}{unit} \times 6.47\,\frac{\text{gal}}{\cancel{hr}} = 3.24\,\frac{gal}{unit}$$

$$FC_{B-1B\ AC\ Unit} = 2.40\,\frac{\cancel{hr}}{unit} \times 17.14\,\frac{\text{gal}}{\cancel{hr}} = 41.14\,\frac{gal}{unit}$$

$$FC_{MJ-40} = 2.50\,\frac{\cancel{hr}}{unit} \times 6.29\,\frac{\text{gal}}{\cancel{hr}} = 15.73\,\frac{gal}{unit}$$

$$FC_{NF-2} = 0.50\,\frac{\cancel{hr}}{unit} \times 0.62\,\frac{\text{gal}}{\cancel{hr}} = 0.31\,\frac{gal}{unit}$$

Step 6 – Calculate the total fuel flow for GSE. Sum the values calculated in Step 5 as follows:

$$FC_{GSE(Total)} = (14.23 + 3.24 + 41.14 + 15.73 + 0.31)\,\frac{gal}{unit} = 74.65\,\frac{gal}{unit}$$

Step 7 – Record the xylene emission factor. Table 3-10 lists the total xylenes emission factor as **3.95E-02lb/10^3 gal**.

Step 8 – Calculate xylene emissions. With the estimated fuel consumption calculated in Step 6 and the emission factor data from Step 7, use Equation 3-4 to calculate xylene emissions:

$$\text{E}(Pol) = FC \times \frac{1}{1000} \times EF(Pol) \times N$$

$$\mathrm{E}(Xylenes) = 74.64\,\frac{\cancel{gal}}{\cancel{unit}} \times \frac{1}{1000}\left(\frac{\cancel{10^3 gal}}{\cancel{gal}}\right) \times 0.039\,\frac{lb}{\cancel{10^3 gal}} \times 200\,\frac{\cancel{unit}}{yr}$$

$$\boxed{\mathbf{E}(\boldsymbol{Xylenes}) = \mathbf{0.582}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

3.5.2 Problem 2 - Horsepower/Load Factor Method

Anytown AFB periodically operates two diesel-powered baggage tractors used to transport the luggage of visiting dignitaries. The following information was obtained from the base. Calculate CO and 1,3-butadiene emissions

GSE Type – Baggage tractor	
# of GSE	2
Operating Time	15 hr/unit

Step 1 – Record the average rated power and average operating load. This information is provided in Table 3-6. The average rate power is given as **83hp** and the operating load is shown as **55%.**

Step 2 – Record the emission factors for this GSE for CO and 1,3-Butadiene. Table 3-7 gives the emission factor for CO for diesel baggage tractors as **11.00lb/10^3 hp-hr**. Table 3-10 lists the emission factor for 1,3-butadiene as **3.16E-04lb/10^3 hp-hr**.

Step 3 – Calculate CO and 1,3-Butadiene emissions. Use the data collected in Step 1 and Step 2 with Equation 3-2 to calculate the CO and 1,3-Butadiene emissions**:**

$$\mathrm{E}(Pol) = OT \times \frac{LF}{100} \times hp \times \frac{1}{1000} \times EF(Pol) \times N$$

For CO:

$$E(CO)_{Baggage} = 15\,\frac{\cancel{hr}}{\cancel{unit}} \times \frac{55\%}{100\%} \times 83\cancel{hp} \times \frac{1}{1000}\left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 11.00\,\frac{lb}{\cancel{10^3 hp - hr}} \times 2\,\frac{\cancel{unit}}{yr}$$

$$\boxed{\boldsymbol{E(CO)_{Baggage}} = \mathbf{15.06}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

For 1,3-Butadiene:

$$E(1{,}3-\text{Butadiene})_{Baggage} = 15\,\frac{\cancel{hr}}{\cancel{unit}} \times \frac{55\%}{100\%} \times 83\cancel{hp} \times \frac{1}{1000}\left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 0.000316\,\frac{\cancel{lb}}{\cancel{10^3 hp - hr}} \times 2\,\frac{\cancel{unit}}{yr}$$

$$\boxed{\boldsymbol{E(1,3-\text{Butadiene})_{Baggage} = 4.33E-04\,\frac{lb}{yr}}}$$

3.5.3 Problem 3 - Fuel Consumption Method

Anytown AFB wants to estimate total Toluene emissions for the previous year resulting from the operation of air start units using JP-8. The following information was obtained from the base.

GSE Type – Air Start Units	
GSE Model	A/M32A-95
# of GSE	35
Fuel Consumption	5,000 gal/unit

Step 1 – Record the toluene emission factor. Table 3-8 provides HAP speciation for some HAPs from a few GSE. This table lists the toluene emission factor from the A/M32A-95 GSE as **4.36E-03 lb/10^{3}gal**.

Step 2 – Calculate the toluene emissions. Use the emission factor in Step 1, the data from the table above, and Equation 3-4:

$$\text{E}(Pol) = FC \times \frac{1}{1000} \times EF(Pol) \times N$$

$$E(\text{Toluene})_{A/M32A-95} = 5000\,\frac{\cancel{\text{gal}}}{\cancel{unit}} \times \frac{1}{1000}\left(\frac{\cancel{10^3 \text{gal}}}{\cancel{\text{gal}}}\right) \times 0.00436\,\frac{lb}{\cancel{10^3 gal}} \times 35\,\frac{\cancel{unit}}{yr}$$

$$\boxed{\boldsymbol{E(\text{Toluene})_{A/M32A-95} = 0.763\,\frac{lb}{yr}}}$$

3.5.4 Problem 4 - Estimating SO_2 Emissions

Anytown AFB has been asked to estimate SO_2 emissions from the operation of its GSE. The following information was obtained from the base:

Equipment Data – GSE	
# of GSE	120
Fuel	JP-8
Fuel Flow Rate	1,000 gal/hr
Operating time	2 hours

Calculate SO_2 emissions for Anytown AFB which is located in the East Central United States.

Step 1 – Record the density and sulfur content of JP-8. Table 3-2 lists the density of JP-8 as **6.67lb/gal**. Though Table 3-2 also provides the sulfur content, since it is known that the AFB is located in the East Central portion of the United States, a more accurate value given in chapter 2 of this document states the sulfur content of JP-8 is **0.08%.**

Step 2 - Calculate the SO_2 emission factor. This is accomplished using Equation 3-7:

$$\mathrm{EF}(SO_2) = FFR \times Density \times \frac{S}{100} \times 2$$

$$\mathbf{EF}(\boldsymbol{SO_2}) = 1{,}000\,\frac{\cancel{gal}}{hr} \times 6.67\,\frac{lb}{\cancel{gal}} \times \frac{0.08\cancel{\%}}{100\cancel{\%}} \times 2 = \mathbf{10.67}\,\frac{\boldsymbol{lb}}{\boldsymbol{hr}}$$

Step 3 – Calculate SO_2 emissions. Use the emission factor calculated in Step 2 and Equation 3-1:

$$\mathrm{E}(Pol) = OT \times EF(Pol) \times N$$

$$\mathrm{E}(SO_2) = 2\,\frac{\cancel{hr}}{\cancel{unit}} \times 10.67\,\frac{lb}{\cancel{hr}} \times 120\,\frac{\cancel{units}}{yr}$$

$$\boxed{\mathbf{E}(\boldsymbol{SO_2}) = \mathbf{2560.8}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Table 3-3. Military Aircraft and GSE Assignments

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
A-3A, -3B	**See Generic 2**		
A-4, -4C, -4E, -4F, -4L, -4M	**See Generic 2**		
A-6A, -6B, -6C, -6E, -6F	**See Generic 2**		
A-7A, -7B, -7C, -7D, -7E, -7K	**See Generic 2**		
A-10, -10A, -10C	Generator Set	A/M32A-86D	1.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	1.00
	Heater	H1	2.00
	Hydraulic Test Stand	MJ-2A	2.00
	Light Cart	FL-1D **(S)**	2.00
		NF-2	2.00
	Air Compressor	MC-1A	2.00
		MC-2A **(S)**	2.00
	Bomb Lift	MJ-1B[(1)]	1.00 - 8.00
A-37	**See Generic 2**		
AC-130A, -130H, -130U, -130W	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
AH-1G, -1J	**See Generic 4**		
AH-64A	**See Generic 4**		
AT-38B	Generator Set	A/M32A-86D	0.25
	Hydraulic Test Stand	MK1 **(S)**	0.75
		MK3A **(S)**	0.75
AU-24	**See Generic 2**		
B-1A, -1B	Generator Set	A/M32A-86D	2.20
	Start Cart	A/M32A-95	0.50
	Heater/Air Conditioner	B-1B Heater/Air Conditioner	2.40
	Heater	H1	4.00
	Light Cart	FL-1D **(S)**	0.50
		NF-2	0.50
	Bomb Lift	MJ-40	2.50
B-2A	Generator Set	A/M32A-86D	3.00
	Start Cart	A/M32A-60A	2.00
		A/M32A-95	2.00
	Air Conditioner	Ace 401	12.00
		PD501	12.00
	Heater	H1	2.00
	Hydraulic Test Stand	MJ-2/TTU-228	1.00
		MJ-2/TTU-229	1.50
		A/M27T-13	4.00
	Light Cart	NF-2	4.00
		FL-1D **(S)**	4.00
	Air Compressor	MC-1A	1.50
		MC-6 **(S)**	5.00
		MC-7	1.50
	Bomb Lift	MJ-40	2.00

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
B-52D, -52G, -52H	Generator Set	A/M32A-86D	4.00
	Start Cart	A/M32A-95	1.00
	Air Conditioner	MA-3D	1.00
	Light Cart	NF-2	1.00
	Air Compressor	MC-1A	1.00
	Bomb Lift	MJ-1B	2.00
C-1, -1A	**See Generic 1**		
C-2, -2A	**See Generic 1**		
C-5A, -5B, -5C, -5M	Generator Set	A/M32A-86D	13.00
	Start Cart	A/M32A-95	2.00
	Air Conditioner	MA-3D	3.00 - 12.00
	Heater	H1	9.00
		BT400-46	10.00
	Hydraulic Test Stand	MJ-1-1[(1)]	1.00
		M32T1 **(S)**	1.00
		MJ-2A	1.00
	Light Cart	NF-2	16.00
	Air Compressor	MC-2A **(S)**	16.00
		MC-1A	7.00
		MC-7	2.00
	Pumping Unit	AF/M27M-1[(1)]	3.00
C-9, -9A, -9B, -9C	Generator Set	A/M32A-86D	6.00
	Start Cart	A/M32A-95	0.50
	Air Conditioner	MA-3D	6.00
	Heater	H1	6.00
	Light Cart	NF-2	12.00
	Air Compressor	MC-2A **(S)**	2.00
		MC-1A	0.50
		MC-7	2.00
C-11A	**See Generic 1**		
C-12, -12A, -12C, -12D, -12F, -12J, -12L, -12R, -12S, -12T, -12U	Generator Set	A/M32A-86D	0.75
C-17A	Generator Set	A/M32A-86D	2.00
	Start Cart	A/M32A-95	2.00
	Air Conditioner	MA-3D	1.50
	Heater	BT400-46	1.50
		H1	1.50
	Light Cart	NF-2	1.50
	Air Compressor	MC-1A	0.66
		MC-2A **(S)**	0.66
		MC-7	0.66
	Pumping Unit	AF/M27M-1	0.50
	Bomb Lift	MJ-1B	1.50
C-18B	**See Generic 1**		
C-20A, -20B, -20C, -20D, -20E, -20F, -20G, -20H, -20J	Generator Set	A/M32A-86D	5.50
	Air Conditioner	Ace 802-329S[(1)]	1.00
		MA-3D	1.00
	Heater	1H1	3.00
	Light Cart	FL-1D **(S)**	6.00
	Air Compressor	MC-2A **(S)**	0.50
		MC-5	0.50
		MC-7	2.00
		MC-8	3.00
C-21A	**See Generic 1**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
C-22A, -22B	Generator Set	A/M32A-86D	1.50
	Start Cart	A/M32A-60A(1)	0.25
	Heater	H1	0.25
	Light Cart	NF-2	0.25
	Air Compressor	MC-1A	0.25
		MC-7	0.25
	Pumping Unit	AF/M27M-1	0.25
C-23A, -23B, -23C	**See Generic 1**		
C-26A, -26B, -26C	**See Generic 1**		
C-27J	**See Generic 1**		
C-28A	**See Generic 1**		
C-32A	Generator Set	A/M32A-86D	6.00
C-37A	**See Generic 1**		
C-38	**See Generic 1**		
C-40A, -40B, -40C	**See Generic 1**		
C-123K	**See Generic 1**		
C-130A, -130B, -130D, -130E, -130F, -130H, -130J, -130T	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A(1)	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
C-135A, -135B, -135C, -135E	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
C-137B, -137C	**See Generic 1**		
C-140A, -140B	**See Generic 1**		
C-141, -141A, -141B, -141C	Generator Set	A/M32A-86D	0.50
	Start Cart	MD-3 **(S)**	0.10
		A/M32A-60A	0.50
	Heater	H1	0.40
	Hydraulic Test Stand	TTU-228E **(S)**	0.10
		M32T1 **(S)**	0.10
	Light Cart	NF-2	0.50
	Air Compressor	MC-1A	0.10
		MC-2A **(S)**	0.10
CH-3B, -3E	**See Generic 4**		
CH-46, -46A, -46E	**See Generic 4**		
CH-53A, -53D	**See Generic 4**		
CT-1B	**See Generic 1**		
CT-39A, -39E, -39G	**See Generic 1**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
CT-43A	Generator Set	A/M32A-86D	2.00
		Essex B8098 **(S)**	2.00
	Air Conditioner	MA-3D	12.00
	Hydraulic Test Stand	HPE-45 **(S)**	2.00
	Light Cart	FL-1D **(S)**	2.00
	Air Compressor	MC-1A	1.00
CT-49A	**See Generic 1**		
CV-22, -22A	**See Generic 1**		
DC-130A	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
E-1B	**See Generic 1**		
E-2, -2B, -2C, -2D	**See Generic 1**		
E-3A, -3B, -3C	**See Generic 1**		
E-4A, -4B	**See Generic 1**		
E-6B	**See Generic 1**		
E-8C	**See Generic 1**		
EA-3B	**See Generic 1**		
EA-4F	**See Generic 1**		
EA-6A, -6B	**See Generic 1**		
EA-7L	**See Generic 1**		
EB-57B	**See Generic 1**		
EC-18B, -18D	**See Generic 1**		
EC-24A	**See Generic 1**		
EC-130E, -130H, -130J, -130SJ, -130V	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
EC-135A, -135B, -135C, -135E, -135G, -135H, -135J, -135K, -135L, -135N, -135P, -135Y	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
EC-137D	**See Generic 1**		
EF-4J	**See Generic 2**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
EF-111A	**See Generic 2**		
EH-1H, -1X	**See Generic 4**		
EH-60A	**See Generic 4**		
EKA-3B	**See Generic 1**		
EP-3B, -3J	**See Generic 1**		
ERA-3B	**See Generic 2**		
ES-2D	**See Generic 1**		
F-4, -4B, -4C, -4D, -4E, -4G, -4J, -4N, -4S	**See Generic 2**		
F-5A, -5B, -5E, -5F	**See Generic 2**		
F-8, -8J	**See Generic 2**		
F-14A, -14B, -14C, -14D	**See Generic 2**		
F-15A, -15B, -15C, -15D, -15E	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
F-16, -16A, -16B, -16C, -16D, -16N	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
F-22A, -22B	**See Generic 2**		
F-35A, -35B, -35C	**See Generic 2**		
F-100	**See Generic 2**		
F-106A, -106B	**See Generic 2**		
F-111, -111A, -111D, -111E, -111F	**See Generic 2**		
F-117A	Generator Set	A/M32A-86D	2.00
	Start Cart	A/M32A-60A	2.00
		A/M32A-95	0.50
	Air Conditioner	Ace 802-329S[(1)]	2.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-1-1	1.00
	Light Cart	NF-2	1.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.33
	Bomb Lift	MJ-1B	1.00[(2)]
F/A-18A, -18B, -18C, -18D, -18E, -18F	**See Generic 2**		
FA-22A	**See Generic 2**		
FB-22A	**See Generic 2**		
FB-111A	**See Generic 2**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
HC-130H, -130J, -130N, -130P	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[1]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
HH-1H, -1K, -1N	Generator Set	A/M32A-86D	1.00 - 16.00
	Start Cart	M24A-9 **(S)**	0.25
	Heater	H1	8.00
	Hydraulic Test Stand	MJ-2/TTU-229	1.00
	Light Cart	NF-2D **(S)**	2.00
		TF-1	2.00
	Air Compressor	MC-1A	1.00
		MC-2A **(S)**	1.00
HH-2D	**See Generic 4**		
HH-3A, -3E, -3F	**See Generic 4**		
HH-43	**See Generic 4**		
HH-46A	**See Generic 4**		
HH-52, -52A	**See Generic 4**		
HH-53	**See Generic 4**		
HH-60G	**See Generic 4**		
HV-22A, -22B	**See Generic 1**		
JA-6A	**See Generic 2**		
KA-3B	**See Generic 2**		
KA-6D	**See Generic 2**		
KC-10, -10A	Generator Set	A/M32A-86D	12.00
		90CU24P5 **(S)**	12.00
	Hydraulic Test Stand	9780-0023D **(S)**	2.00
		05-7056-3600 **(S)**	2.00
	Generator Light Cart	Generator Light Cart	6.00
	Air Compressor	MODP160WJDACJF **(S)**	6.00
KC-46A	**See Generic 1**		
KC-130F, -130R, -130T	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[1]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
KC-135, -135A, -135D, -135E, -135Q, -135R, -135T	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
KC-767A	**See Generic 1**		
LC-130F, -130H, -130R	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
MC-12W	Generator Set	A/M32A-86D	0.75
MC-130E, -130H, -130J, -130P, -130W	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
MH-53J, -53M	Generator Set	A/M32A-86D	3.00
	Heater	H1	8.00
	Hydraulic Test Stand	MJ-2/TTU-228	2.00
	Light Cart	NF-2D **(S)**	2.00
		FL-1D **(S)**	2.00
	Air Compressor	MC-2A **(S)**	4.00
MH-60A, -60G	**See Generic 4**		
MV-22A, -22B	**See Generic 1**		
NA-3B	**See Generic 2**		
NA-4E, -4F, -4M	**See Generic 2**		
NA-6A, -6E	**See Generic 2**		
NA-7A, -7C, -7E	**See Generic 2**		
NB-52B	Generator Set	A/M32A-86D	4.00
	Start Cart	A/M32A-95	1.00
	Air Conditioner	MA-3D	1.00
	Light Cart	NF-2	1.00
	Air Compressor	MC-1A	1.00
	Bomb Lift	MJ-1B	2.00
NC-12B	Generator Set	A/M32A-86D	0.75
NC-21A	**See Generic 1**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
NC-130A, -130B, -130E, -130H	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
NC-135A, -135W	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
NC-141A	Generator Set	A/M32A-86D	0.50
	Start Cart	MD-3 **(S)**	0.10
		A/M32A-60A	0.50
	Heater	H1	0.40
	Hydraulic Test Stand	TTU-228E **(S)**	0.10
		M32T1 **(S)**	0.10
	Light Cart	NF-2	0.50
	Air Compressor	MC-1A	0.10
		MC-2A **(S)**	0.10
NCH-46A	**See Generic 4**		
NF-4D	**See Generic 2**		
NF-16A, -16D	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
NF-106B	**See Generic 2**		
NF/A-18A, -18B, -18C	**See Generic 2**		
NKC-135A, -135E	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
NPC-3C, -3D	**See Generic 1**		
NRA-3B	**See Generic 2**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
NRH-53D	**See Generic 4**		
NSH-3A	**See Generic 4**		
NT-33A	**See Generic 1**		
NT-39A	**See Generic 1**		
NTA-4F, -4J	**See Generic 1**		
NUH-1E, -1N	**See Generic 4**		
NUP-3A	**See Generic 1**		
NVH-3A	**See Generic 4**		
O-1	**See Generic 1**		
O-2A, -2B	**See Generic 1**		
OA-4M	**See Generic 2**		
OA-10A	Generator Set	A/M32A-86D	1.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	1.00
	Heater	H1	2.00
	Hydraulic Test Stand	MJ-2A	2.00
	Light Cart	FL-1D (S)	2.00
		NF-2	2.00
	Air Compressor	MC-1A	2.00
		MC-2A **(S)**	2.00
	Bomb Lift	MJ-1B[(1)]	1.00 - 8.00
OA-37B	**See Generic 2**		
OC-135B	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
OH-6A	**See Generic 4**		
OH-58A	**See Generic 4**		
OT-47B	**See Generic 1**		
OV-10A	**See Generic 1**		
P-3B, -3C	**See Generic 1**		
QF-4B, -4E, -4G	**See Generic 2**		
QF-106A, -106B	**See Generic 2**		
QRF-4C	**See Generic 2**		
QT-33A	**See Generic 1**		
RA-3B	**See Generic 2**		
RA-5C	**See Generic 2**		
RC-12D, -12G, -12H	Generator Set	A/M32A-86D	0.75
RC-135M, -135S, -135T, -135U, -135V, -135W, -135X	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
RF-4B, -4C	**See Generic 2**		
RF-8G	**See Generic 2**		
RF/A-18A	**See Generic 2**		
RH-53D	**See Generic 4**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
RP-3D	**See Generic 1**		
RQ-4, -4A, -4B	Generator Set	805 **(S)**	24.00
		806 **(S)**	24.00
	Air Conditioner	MA-3D	2.00
	Heater	H1	4.00
	Light Cart	FL-1D **(S)**	6.00
RU-21J	**See Generic 1**		
S-2, -2D, -2E, -2G	**See Generic 1**		
S-3A	**See Generic 2**		
SH-2D, -2F	**See Generic 4**		
SH-3A, -3G	**See Generic 4**		
SH-60	**See Generic 4**		
SV-22A	**See Generic 1**		
T-1A	Generator Set	Jetex **(S)**	0.33
	Hydraulic Test Stand	Airton **(S)**	0.10
T-2	**See Generic 3**		
T-6A	Generator Set	Jettex-40 **(S)**	0.50
	Start Cart	Jet Series 703D **(S)**	0.50
		MA-1A **(S)**	0.50
	Air Conditioner	MA-3D	0.75
	Hydraulic Test Stand	6X620-RDF **(S)**	1.00
	Light Cart	FL-2D **(S)**	1.00
	Tug	(See "Tug" in Table 3-4 and select appropriate size)	0.33
T-28	**See Generic 3**		
T-33A	**See Generic 3**		
T-34, -34C	**See Generic 3**		
T-37, -37B	Generator Set	A/M32A-86D	0.17
	Heater	H1	0.17
	Hydraulic Test Stand	MJ-1-1	0.50
	Light Cart	TL-1D **(S)**	1.00
	Air Compressor	MC-1A	0.50
		MC-2A **(S)**	0.50
	Tug	(See "Tug" in Table 3-4 and select appropriate size)	0.33
T-38, -38A, -38C, -38N	Generator Set	A/M32A-86D	0.25
	Hydraulic Test Stand	MK1 **(S)**	0.75
		MK3A **(S)**	0.75
T-39A, -39B, -39D	**See Generic 3**		
T-41, -41B, -41C, -41D	**See Generic 3**		
T-43A	Generator Set	A/M32A-86D	2.00
		Essex B8098 **(S)**	2.00
	Air Conditioner	MA-3D	12.00
	Hydraulic Test Stand	HPE-45 **(S)**	2.00
	Light Cart	FL-1D **(S)**	2.00
	Air Compressor	MC-1A	1.00
T-44	**See Generic 3**		
T-47A	**See Generic 3**		
TA-3B	**See Generic 2**		
TA-4B, -4F	**See Generic 2**		
TA-7C	**See Generic 2**		
TC-18E, -18F	**See Generic 1**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
TC-130H	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
TC-135S, -135W	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
TE-2A, -2C	**See Generic 1**		
TE-8A	**See Generic 1**		
TF-16N	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
TF-18A	**See Generic 2**		
TF/A-18A	**See Generic 2**		
TH-1L	**See Generic 4**		
TH-53A	**See Generic 4**		
TS-2A	**See Generic 2**		
TU-2S	**See Generic 2**		
U-2S	**See Generic 2**		
U-21, -21J	**See Generic 1**		
U-28A	**See Generic 1**		
UA-3B	**See Generic 2**		
UC-12B	Generator Set	A/M32A-86D	0.75
UC-35A, -35C	**See Generic 1**		
UC-123K	**See Generic 1**		
UH-1E, -1H, -1L, -1N, -1V	**See Generic 4**		
UH-2C	**See Generic 4**		
UH-3A	**See Generic 4**		
UH-46A	**See Generic 4**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
UH-60A, -60C, -60Q	Generator Set	A/M32A-86D	1.00 - 5.00
	Start Cart	A/M32A-95	0.50
	Air Conditioner	MA-3D	2.00
	Heater	H1	2.00
	Hydraulic Test Stand	MJ-1-1	2.50
		MJ-2/TTU-228	1.00
	Light Cart	FL-1D **(S)**	0.50 - 4.00
	Air Compressor	MC-1A	1.00
		MC-2A **(S)**	2.50
UP-3B	**See Generic 1**		
US-2A, -2B, -2C, -2D	**See Generic 1**		
UV-18B	**See Generic 1**		
UV-20A	**See Generic 1**		
VC-25A	Generator Set	A/M32A-86D	13.00
	Start Cart	A/M32A-95	2.00
	Air Conditioner	MA-3D	3.00 - 12.00
	Heater	H1	9.00
		BT400-46	10.00
	Hydraulic Test Stand	MJ-1-1[(1)]	1.00
		M32T1 **(S)**	1.00
		MJ-2A	1.00
	Light Cart	NF-2	16.00
	Air Compressor	MC-2A **(S)**	16.00
		MC-1A	7.00
		MC-7	2.00
	Pumping Unit	AF/M27M-1[(1)]	3.00
VC-137B, -137C	**See Generic 1**		
VC-140B	**See Generic 1**		
WC-130E, -130H, -130J	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 1.00
		MC-2A **(S)**	0.50 - 1.00
WC-135B, -135C, -135W	Generator Set	A/M32A-86D	10.00
	Start Cart	A/M32A-60A	1.00
		A/M32A-95	0.10
	Air Conditioner	Ace 802-993 **(S)**	10.00
		MA-3C **(S)**	2.00
	Heater	H1	5.00
		1H1	4.00
	Light Cart	NF-2	2.00
	Air Compressor	MC-1A	0.33
X-29A	**See Generic 2**		
X-31A	**See Generic 2**		
X-44A	**See Generic 2**		
YA-7D	**See Generic 2**		
YC-14A	**See Generic 1**		
YE-2C	**See Generic 1**		
YF-4J	**See Generic 2**		

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
YF-15A, -15B	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
YF-16A, -16B	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
YOV-10D	**See Generic 2**		
YP-3C	**See Generic 1**		
YS-2G	**See Generic 2**		
YSH-2E	**See Generic 4**		
Generic 1 Cargo/Bomber (C-130)	Generator Set	A/M32A-86D	4.00 - 11.00
		Trielectron D200T 400	3.00
	Start Cart	MA-1A **(S)**	0.25
		A/M32A-60A	0.25
		A/M32A-95	0.25
	Air Conditioner	Ace 802-993 **(S)**	1.00
		MA-3D	1.00
	Heater	H1	1.00
	Hydraulic Test Stand	MJ-2A[(1)]	3.00
	Light Cart	NF-2	2.00 - 10.00
	Air Compressor	MC-1A	0.50 - 10.00
		MC-2A **(S)**	0.50 - 10.00
Generic 2 Fighter/Fighter Bomber (F-15)	Generator Set	A/M32A-86D	0.33
	Start Cart	A/M32A-60A	0.33
		A/M32A-95	0.33
	Heater	H1	0.50
	Hydraulic Test Stand	MJ-1-1	0.50
		MJ-2/TTU-228	0.50
	Light Cart	NF-2	1.00 - 8.00
	Air Compressor	MC-1A	0.33
		MC-2A **(S)**	0.25
		MC-11	2.00
	Bomb Lift	MJ-1B	1.00
Generic 3 Small Trainers (T-37, -37B)	Generator Set	A/M32A-86D	0.17
	Heater	H1	0.17
	Hydraulic Test Stand	MJ-1-1	0.50
	Light Cart	TL-1D **(S)**	1.00
	Air Compressor	MC-1A	0.50
		MC-2A **(S)**	0.50
	Tug	(See "Tug" in Table 3-4 and select appropriate size)	0.33

Table 3-3. Military Aircraft and GSE Assignments (continued)

Aircraft	GSE Type	GSE Model	Operating Time Per Sortie/LTO (hr)
Generic 4 Helicopter (UH-60A)	Generator Set	A/M32A-86D	1.00 - 5.00
	Start Cart	A/M32A-95	0.50
	Air Conditioner	MA-3D	2.00
	Heater	H1	2.00
	Hydraulic Test Stand	MJ-1-1	2.50
		MJ-2/TTU-228	1.00
	Light Cart	FL-1D **(S)**	0.50 - 4.00
	Air Compressor	MC-1A	1.00
		MC-2A **(S)**	2.50
Generic (Not otherwise specified)	Aircraft Tug	(See "Tug" in Table 3-4 and select appropriate size)	0.10
	Package Tug	(See "Tug" in Table 3-4 and select appropriate size)	1.30
	Cargo Loader	Cargo Loader	1.50
	Fuel Truck	Fuel Truck	0.60
	Deicer Truck[3]	Deicer Truck	0.15

SOURCE (unless otherwise noted): data obtained from USAF, IERA-RS-BR-SR-2005-0001, *Flightline Emission Factors – Aircraft/Auxiliary Power Units/Aerospace Ground Support Equipment December 2004*. Data provided by USAF flight squadrons and associated AGE shops. When calculating GSE emissions, use the data available at the installation. These aircraft/GSE combinations should be used only in the absence of current, more accurate, data.

1. Operating time estimated based on operating time of GSE on similar aircraft.
2. GSE model changed from what was stated in the source document because of suspected error in source.
3. Cold weather months only.

"**(S)**" – Indicates that emission factors for this GSE are not found in this document. In the absence of available data, it is recommended that a similar GSE and its associated emission factors are used as a surrogate.

Table 3-4. Military Aircraft GSE Emission Factors

GSE Type	Source of Data[1]	Engine Manufacturer	Model Number	Rated Hp	Fuel	Operational Mode	Fuel Flow Rate (gal/hr)	Emission Factors (lb/hr)						
								NO_X	SO_X[2]	CO	VOC[3]	PM_{10}	$PM_{2.5}$[4]	GHG[5]
Heater	e	---	---	6.5	Diesel/JP-8	All Loads	0.39	0.160	0.011**(C)**	0.180	0.100	0.006	0.006	8.86
Hydraulic Test Stand	e	---	---	30	Diesel/JP-8	All Loads	---	0.180	0.051**(C)**	12.250	0.280	0.109[4]	0.105	36.84
Start Cart	e	Garrett	---	180	Diesel/JP-8	All Loads	---	1.820	0.306**(C)**	5.480	0.270	0.211	0.205	221.06
Generator Set	b	Detroit Diesel	4-71N	148	Diesel/JP-8	All Loads	6.47	6.102	0.046	0.457	0.294	0.091	0.089	146.95
Start Cart	e	Garrett	---	155	Diesel/JP-8	All Loads	---	1.470	0.264**(C)**	5.860	0.070	0.110	0.107	190.36
Air Compressor	a	Detroit Diesel	6V71T	290	Diesel/JP-8	100% Load	16.57	7.973	0.117	1.522	0.205	0.211	0.205	376.34
Air Conditioner	e	Detroit Diesel	---	---	Diesel/JP-8	All Loads	---	7.970	0.408**(C)**	1.520	0.200	0.211	0.205	313.19**(C)**
Air Conditioner	c	Detroit Diesel	6V71N	272	Diesel/JP-8	All Loads	6.8	2.938	0.048	0.150	0.204	0.198	0.192	154.44
Pumping Unit	a	Wisconsin	VH4D	30	Gasoline	100% Load	1.78	0.177	0.004	12.262	0.276	0.109[4]	0.100	34.76
Heater/Air Conditioner	a	Detroit Diesel	6V-92TA	300	Diesel/JP-8	100% Load	17.14	7.659	0.121	1.409	0.258	0.152	0.148	389.28
Arresting Barrier	a	Wisconsin	MV-465D	64	Gasoline	100% Load	3.9	0.377	0.009	29.207	0.319	0.109[4]	0.100	76.16
Heater	a	Lister-Petter	AC1-389548	6.5	Diesel/JP-8	All Loads	0.39	0.158	0.003	0.181	0.100	0.109[4]	0.105	8.86
Cargo Loader	f	---	---	133	Diesel/JP-8	All Loads	7.28	2.554	0.253	1.862	0.399	0.279	0.271	165.34
Deicer Truck	f	---	---	270	Gasoline	All Loads	14.78	5.940	0.108	73.170	2.700	0.027	0.243	288.63
Elevator Loader	a	Detroit Diesel	3-53 Series	110	Diesel/JP-8	100% Load	6.29	3.128	0.044	1.048	0.129	0.063	0.061	142.86
Generator Set	a	Detroit Diesel	3-71	100	Diesel/JP-8	100% Load	5.71	3.505	0.040	4.905	0.095	0.115	0.111	129.69
Generator Set	a	Detroit Diesel	12V-71N	300	Diesel/JP-8	100% Load	17.14	8.863	0.121	11.078	0.337	0.185	0.180	389.28
Generator Set	a	Lister	ST-3	30	Diesel/JP-8	All Loads	1.78	0.743	0.013	0.351	0.266	0.109[4]	0.105	40.43
Fuel Truck	f	---	---	300	Diesel/JP-8	All Loads	16.42	3.300	0.480	0.900	0.300	0.210	0.204	372.93
Generator Light Cart	d	Onan	P218G-I/10876C	10.5	Diesel/JP-8	All Loads	0.62	0.181	0.004	0.139	0.174	0.109[4]	0.105	14.08
Generator Set	a	Caterpillar	D3333T	214	Diesel/JP-8	100% Load	17.5	3.170	0.124	0.689	0.547	0.071	0.069	397.46
						62% Load	10.46	1.901	0.074	0.383	0.462	0.050	0.048	262.82
Ground Mobile Terminal Generator Set	a	Detroit Diesel	4-71-T	150	Diesel/JP-8	100% Load	8.57	6.855	0.061	1.114	0.155	0.109	0.106	194.64
Heater	e	---	---	6.5	Diesel/JP-8	All Loads	0.39	0.160	0.011**(C)**	0.180	0.100	0.006	0.006	8.86
Air Conditioner	a	Onan	L643T*I/1C178-C	65	Diesel/JP-8	All Loads	3.79	0.497	0.027	0.133	0.011	0.109[4]	0.105	86.08
Air Conditioner	a	John Deere	4045T	120	Diesel/JP-8	All Loads	7.12	4.167	0.050	0.317	0.053	0.109[4]	0.105	161.71
Air Conditioner	c	John Deere	4039T	110	Diesel/JP-8	All Loads	4.57	0.640	0.032	0.058	0.284	0.063	0.061	103.79

Table 3-4. Military Aircraft GSE Emission Factors (continued)

GSE Type	Source of Data[1]	Engine Manufacturer	Model Number	Rated Hp	Fuel	Operational Mode	Fuel Flow Rate (gal/hr)	Emission Factors (lb/hr)						
								NO_X	SO_X[2]	CO	VOC[3]	PM_{10}	$PM_{2.5}$[4]	GHG[5]
Air Compressor	a	Hatz	Z790-193	18.4	Diesel/JP-8	All Loads	1.09	0.419	0.008	0.267	0.267	0.071	0.068	24.76
Air Compressor	a	Lister Engineering Co.	ST2A/MC1A	20	Diesel/JP-8	All Loads	1.19	0.496	0.008	0.234	0.177	0.109[4]	0.105	27.03
Air Compressor	c	Deutz	F4L912 4CYL	100	Diesel/JP-8	All Loads	2.38	0.547	0.017	0.333	0.110	0.109[4]	0.105	54.05
Air Compressor	a	GMC	Series 4-53	130	Diesel/JP-8	100% Load	7.43	3.396	0.053	0.794	0.195	0.089	0.086	168.75
Air Compressor	a	John Deere	4039	110	Diesel/JP-8	All Loads	6.52	2.425	0.046	0.485	0.073	0.109[4]	0.105	148.08
Air Compressor	a	John Deere	3164D	52	Diesel/JP-8	100% Load	3.3	1.285	0.023	0.642	0.057	0.109[4]	0.105	74.95
Air Compressor	c	John Deere	3179 SPEC FD16694J	48	Diesel/JP-8	All Loads	1.8	0.414	0.013	0.018	0.053	0.109[4]	0.105	40.88
Air Compressor	a	Deutz	F6L912	110	Diesel/JP-8	All Loads	6.52	2.983	0.046	0.752	0.121	0.109[4]	0.105	148.08
Air Compressor	a	Wisconsin	MVH4D	30	Gasoline	100% Load	1.78	0.177	0.004	12.262	0.276	0.109[4]	0.100	34.76
Miller Concrete Cutter	a	Deutz	BF4D-1011T	75	Diesel/JP-8	All Loads	4.45	1.042	0.031	0.198	0.083	0.109[4]	0.105	101.07
Hydraulic Test Stand	a	Detroit Diesel	3-53 N	97	Diesel/JP-8	All Loads	2.52	0.757	0.018	0.043	0.026	0.109[4]	0.105	57.23
Bomb Lift	e	Detroit Diesel	---	---	Diesel/JP-8	All Loads	---	4.780	0.219**(C)**	3.040	3.040	0.800	0.776	141.24
Hydraulic Test Stand	c	Detroit Diesel	6V-53N	125	Diesel/JP-8	All Loads	4.92	0.937	0.035	0.083	0.292	0.083	0.080	111.74
Hydraulic Test Stand	a	Detroit Diesel	4-53	130	Diesel/JP-8	100% Load	7.43	3.396	0.053	0.794	0.195	0.089	0.086	168.75
Hydraulic Test Stand	a	Detroit Diesel	6V-53N	125	Diesel/JP-8	100% Load	10.86	3.858	0.077	2.466	0.193	0.083	0.080	246.65
Hydraulic Test Stand	e	Detroit Diesel	---	---	Diesel/JP-8	All Loads	---	3.850	0.238**(C)**	2.460	0.190	0.083	0.076	171.95**(C)**
Bomb Lift	e	Detroit Diesel	---	---	Diesel/JP-8	All Loads	---	0.340	0.219**(C)**	0.210	0.210	0.060	0.055	141.24**(C)**
Light Cart	e	---	---	18	Diesel/JP-8	All Loads	---	0.110	0.043**(C)**	0.080	0.010	0.010	0.010	22.11
Air Conditioner	e	---	---	---	Diesel/JP-8	All Loads	---	7.650	0.408**(C)**	1.410	0.260	0.109[4]	0.105	313.19**(C)**
Pumping Unit	a	Petter Diesel Engine	AC-1	6.5	Diesel/JP-8	All Loads	0.39	0.158	0.003	0.181	0.100	0.109[4]	0.105	8.86
Pumping Unit	a	Detroit Diesel	3-53 Series	110	Diesel/JP-8	100% Load	6.29	3.128	0.044	1.048	0.129	0.063	0.061	142.86
Light Cart	e	---	---	---	Diesel/JP-8	All Loads	---	0.170	0.043**(C)**	0.130	0.025**(C)**	0.160	0.155	30.71**(C)**
Generator Set	c	Detroit Diesel	8V-71T	236	Diesel/JP-8	All Loads	10.9	8.621	0.077	0.219	0.271	0.208	0.202	247.56
Tug	f	---	---	617	Diesel/JP-8	All Loads	33.4	0.617	1.049	4.936	0.617	0.864	0.839	758.58
Tug	f	---	---	475	Diesel/JP-8	All Loads	25.7	0.475	0.808	3.800	0.475	0.665	0.686	583.70
Tug	f	---	---	190	Diesel/JP-8	All Loads	10.3	3.230	0.323	1.520	0.190	0.266	0.258	233.93

Notes for Table 3-4 are provided on the following page.

1. Sources of data include the following:
    a. Emission factors were obtained from the manufacturer. Fuel usage rates were based on 7,500 Btu/hp-hr.
    b. Emission factors were obtained from the Southwest Research Institute report titled *Exhaust Emissions from a USAF A/M32-86D Generator*.
    c. Emission factors were obtained from the Pacific Environmental Services report titled *Aerospace Ground Support Equipment Emissions Characterization for Edwards AFB, California.*
    d. Emission factors are EPA tier I Non-road engine factors.
    e. Emission factors were obtained from *Air Emissions Factor Guide to Air Force Mobile Sources December 2009.*
    f. Emission factors calculated using the emission factors in Table 3-7 using the hp stated in the table above. If no hp was given, then the average hp for that equipment type was used (Table 3-6). Fuel usage rates were based on 7,500 Btu/hp-hr.
2. SO_X as SO_2; assumes all sulfur in the fuel reacts to form SO_2 and the national average sulfur content for JP-8 is 0.053 wt.% (density is 6.67 lb/gal) and for gasoline is 0.018 wt.% (density is 6.15 lb/gal). See Section 3.5.5 of this document for reference. Emission factor calculated using Equation 3-7.
3. Emission factors are based on values for total hydrocarbons.
4. $PM_{2.5}$ conservatively estimated at 97% of PM_{10} for JP-8 or diesel and 92% of PM_{10} for gasoline (per *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition*, EPA420-P-04-009, April 2004). For PM_{10} emission factors that were not available, an average value for all other GSE of 0.109 lb/hr was used.
5. Greenhouse gas emission factors in the form of equivalent CO_2 (CO_2e). This is accomplished by taking the sum of the CO_2, CH_4, and N_2O and their respective global warming potentials (GWP). The GWP for CO_2, CH_4, and N_2O are 1, 25, 298 respectively as given by table A-1 of 40 CFR 98.

"(**C**)" – Indicates that this value was not provided from test data, but was calculated using the stated hp (or hp from Table 3-6) and the appropriate emission factor from Table 3-7.

"---" Indicates No Data Available.

Table 3-5. Typical Commercial Aircraft GSE Assignments

Long Haul Turbine Powered Aircraft	Short Haul/Regional Turbine Powered Aircraft	Turbo-prop Powered Aircraft	Piston Powered Aircraft
Air Conditioner (Diesel/Electric)	Aircraft Tractor (Diesel)	Aircraft Tractor (Diesel)	Fuel Truck (Diesel)
Air Start (Diesel)	Baggage Tractor (Gasoline)	Baggage Tractor (Gasoline)	
Aircraft Tractor/Tug (Diesel)	Belt Loader (Gasoline)	Belt Loader (Gasoline)	
Baggage Tractor (Gasoline)	Catering Truck (Diesel)	Catering Truck (Diesel)	
Belt Loader (Gasoline)	Fuel Truck (Diesel)	Cabin Service Truck (Diesel)	
Cabin Service Truck (Diesel)	Lavatory Truck (Diesel)	Fuel Truck (Diesel)	
Catering Truck (Diesel)	Service Truck (Diesel)	Service Truck (Diesel)	
Hydrant Truck (Diesel)		Cabin Service Truck (Diesel)	
Lavatory Truck (Diesel)			
Service Truck (Diesel)			
Water Service Truck (Diesel)			

SOURCE: FAA Emissions and Dispersion Modeling System, Version 5.02

Table 3-6. Common GSE Operating Parameters

GSE Type	Fuel Type	Average Rated Power (hp)	Average Operating Load (% Max Power)	Operating Time Per LTO (hr)
Air Conditioner	Diesel	255	75	0.50
Air Start	Diesel	613	90	0.12
	Gasoline	---	---	0.12
Aircraft Tractor/Tug	Diesel	617	80	0.13
	Diesel	475	80	0.13
	Diesel	190	80	0.13
	Diesel	88	80	0.13
	Gasoline	110	80	0.13
	CNG/LPG	124	80	0.13
Baggage Tractor	Diesel	83	55	1.20
	Gasoline	107	55	1.20
	CNG	83	55	1.20
	LPG	107	55	1.20
Belt Loader	Diesel	71	50	0.80
	Gasoline	107	50	0.80
	CNG	83	50	0.80
	LPG	107	50	0.80
Bobtail	Diesel	225	55	---
	Gasoline	124	55	---
	CNG	110	55	---
	LPG	124	55	---
Cabin Service Truck	Diesel	210	53	0.33
	Diesel	71	53	0.33
	Gasoline	260	53	0.33
	Gasoline	107	53	0.33
	CNG	360	53	0.33
	CNG	83	53	0.33
	LPG	260	53	0.33
	LPG	107	53	0.33
Cargo Loader	Diesel	133	50	1.33
	Diesel	80	50	1.33
	Gasoline	107	50	1.33
	CNG	83	50	1.33
	LPG	107	50	1.33
Cargo Tractor	Diesel	88	54	---
	Gasoline	107	54	---
	CNG	83	54	---
	LPG	88	54	---

Table 3-6. Common GSE Operating Parameters (continued)

GSE Type	Fuel Type	Average Rated Power (hp)	Average Operating Load (% Max Power)	Operating Time Per LTO (hr)
Cart (Light Cart)	Diesel	25	50	0.17
	Gasoline	25	50	0.17
	CNG/LPG	25	50	0.17
Catering Truck	Diesel	210	53	25.00
	Diesel	71	53	0.25
	Gasoline	260	53	0.25
	Gasoline	107	53	0.25
	CNG	360	53	25.00
	CNG	83	53	0.25
	LPG	260	53	0.25
	LPG	107	53	0.25
Deicer	Diesel	263	95	---
	Diesel	165	95	---
	Gasoline	270	95	---
	Gasoline	107	95	---
	CNG	83	95	---
	CNG	54	95	---
	LPG	270	95	---
	LPG	107	95	---
Forklift	Diesel	55	30	---
	Gasoline	54	30	---
	CNG/LPG	54	30	---
Fuel Truck	Diesel	300	25	0.75
	Diesel	235	25	0.54
	Diesel	175	25	0.33
	Gasoline	420	25	0.75
	Gasoline	260	25	0.54
	CNG	420	25	0.75
	CNG	360	25	0.54
	LPG	420	25	0.75
	LPG	260	25	0.54
Generator Sets	Diesel	158	82	2.00
	Gasoline	107	82	2.00
	CNG/LPG	107	82	2.00
Ground Power Unit	Diesel	194	75	0.67
	Diesel	71	75	0.67
	Gasoline	107	75	0.67
	CNG	83	75	0.67
	LPG	107	75	0.67

Table 3-6. Common GSE Operating Parameters (continued)

GSE Type	Fuel Type	Average Rated Power (hp)	Average Operating Load (% Max Power)	Operating Time Per LTO (hr)
Hydrant Truck	Diesel	235	70	0.20
	Gasoline	260	70	0.20
	CNG	360	70	0.20
	LPG	260	70	0.20
Lavatory Truck	Diesel	235	25	25.00
	Diesel	56	25	0.25
	Gasoline	260	25	0.25
	Gasoline	97	25	0.25
	CNG	360	25	25.00
	CNG	82	25	0.25
	LPG	260	25	0.25
	LPG	89	25	0.25
Lift	Diesel	115	50	0.17
	Gasoline	105	50	0.17
	CNG/LPG	132	50	0.17
Passenger Stand	Diesel	65	57	---
	Gasoline	107	57	---
	CNG	107	57	---
	LPG	83	57	---
Service Truck	Diesel	235	20	25.00
	Gasoline	260	20	0.25
	CNG	360	20	0.25
	LPG	260	20	0.25
Sweeper	Diesel	53	51	---
	Gasoline	53	51	---
	CNG/LPG	45	51	---
Water Service	Diesel	235	20	0.20
	Gasoline	260	20	0.20
	CNG	360	20	0.20
	LPG	260	20	0.20
Other	Diesel	140	50	---
	Gasoline	126	50	---
	CNG/LPG	173	50	---

SOURCE: FAA Emissions and Dispersion Modeling System, Version 5.02

"---" Indicates No Data Available

Table 3-7. Common GSE Emission Factors

GSE Type	Fuel Type	Emission Factors (lb/1000hp-hr)						
		CO	VOC[1]	NO_X	SO_X	PM_{10}[(2)]	$PM_{2.5}$[(3)]	GHG[4]
Air Conditioner	Diesel	5.00	1.00	16.40	1.60	1.00	0.97	1330.83
Air Start	Diesel	6.00	1.00	19.30	1.60	1.20	1.16	1330.83
	Gasoline	271.00	10.00	22.00	0.40	0.10	0.09	1093.30
Aircraft Tractor/Tug	Diesel	8.00	1.00	17.00	1.70	1.40	1.36	1330.83
	Gasoline	393.00	13.00	23.20	0.40	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Baggage Tractor	Diesel	11.00	2.00	13.70	1.80	2.10	2.04	1330.83
	Gasoline	395.00	13.00	22.30	0.40	0.20	0.18	1093.30
	CNG/LPG	107.00	6.00	26.90	0.00	0.10	0.10	1458.76
Belt Loader	Diesel	8.00	2.00	14.80	1.80	1.70	1.65	1330.83
	Gasoline	275.00	10.00	22.30	0.40	0.20	0.18	1093.30
	CNG	275.00	10.00	22.30	0.00	0.10	0.10	2229.82
	LPG	74.00	4.00	26.90	0.00	0.00	0.00	1453.67
Bobtail	Diesel	8.00	1.00	16.70	1.70	1.30	1.26	1330.83
	Gasoline	398.00	13.00	22.30	0.40	0.20	0.18	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Cabin Service Truck	Diesel	2.00	1.00	10.30	1.60	0.30	0.29	1330.83
	Gasoline	24.00	4.00	10.70	0.30	0.10	0.09	1093.30
	CNG/LPG	107.00	6.00	26.90	0.00	0.10	0.10	1062.84
Cargo Loader	Diesel	14.00	3.00	19.20	1.90	2.10	2.04	1330.83
	Gasoline	400.00	13.00	22.30	0.40	0.20	0.18	1093.30
	CNG/LPG	106.00	5.00	26.80	0.00	0.10	0.10	1062.84
Cargo Tractor	Diesel	12.00	2.00	17.00	1.80	2.40	2.33	1330.83
	Gasoline	404.00	13.00	22.40	0.40	0.20	0.18	1093.30
	CNG/LPG	107.00	6.00	26.90	0.00	0.10	0.10	1062.84
Cart (Light Cart)	Diesel	---	---	---	---	---	---	1330.83
	Gasoline	392.00	13.00	22.30	0.40	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Catering Truck	Diesel	2.00	1.00	10.30	1.60	0.30	0.29	1330.83
	Gasoline	24.00	4.00	10.70	0.30	0.10	0.09	1093.30
	CNG/LPG	107.00	6.00	27.00	0.00	0.10	0.10	1062.84
Deicer	Diesel	---	---	---	---	---	---	1330.83
	Gasoline	271.00	10.00	22.00	0.40	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Forklift	Diesel	15.00	4.00	22.00	1.90	2.70	2.62	1330.83
	Gasoline	392.00	13.00	22.00	0.40	0.10	0.09	1093.30
	CNG/LPG	108.00	6.00	27.00	0.00	0.10	0.10	1062.84

Table 3-7. Common GSE Emission Factors (continued)

GSE Type	Fuel Type	Emission Factors (lb/1000hp-hr)						
		CO	VOC[1]	NO_X	SO_X	PM_{10}[2]	$PM_{2.5}$[3]	GHG[4]
Fuel Truck	Diesel	3.00	1.00	11.00	1.60	0.70	0.68	1330.83
	Gasoline	37.00	5.00	11.00	0.30	0.10	0.09	1093.30
	CNG/LPG	106.00	5.00	27.00	0.00	0.10	0.10	1062.84
Generator	Diesel	6.00	2.00	20.00	1.60	1.40	1.36	1330.83
	Gasoline	271.00	10.00	22.00	0.40	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Ground Power Unit	Diesel	5.00	1.00	17.00	1.60	1.00	0.97	1330.83
	Gasoline	271.00	10.00	22.00	0.40	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	---
Hydrant Truck	Diesel	4.00	1.00	12.00	1.60	1.60	1.55	1330.83
	Gasoline	26.00	4.00	11.00	0.30	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Lavatory Truck	Diesel	4.00	1.00	12.00	1.60	1.30	1.26	1330.83
	Gasoline	18.00	4.00	11.00	0.30	0.10	0.09	1093.30
	CNG/LPG	106.00	5.00	27.00	0.00	0.10	0.10	1062.84
Lift	Diesel	15.00	4.00	22.00	1.90	2.70	2.62	1330.83
	Gasoline	397.00	13.00	22.00	0.40	0.20	0.18	1093.30
	CNG/LPG	106.00	5.00	27.00	0.00	0.10	0.10	1062.84
Passenger Stand	Diesel	4.00	1.00	12.00	1.60	1.60	1.55	1330.83
	Gasoline	46.00	5.00	11.00	0.30	0.10	0.09	1093.30
	CNG/LPG	106.00	5.00	27.00	0.00	0.10	0.10	1062.84
Service Truck	Diesel	3.00	1.00	11.00	1.60	0.90	0.87	1330.83
	Gasoline	46.00	5.00	11.00	0.30	0.10	0.09	1093.30
Sweeper	Diesel	12.00	2.00	17.00	1.80	2.40	2.33	1330.83
	Gasoline	393.00	13.00	22.00	0.40	0.10	0.09	1093.30
	CNG/LPG	108.00	6.00	27.00	0.00	0.10	0.10	1062.84
Water Service	Diesel	---	---	---	---	---	---	1330.83
	Gasoline	46.00	5.00	11.00	0.30	0.10	0.09	1093.30
	CNG/LPG	---	---	---	---	---	---	1458.76
Other	Diesel	8.00	1.00	17.00	1.70	1.30	1.26	1330.83
	Gasoline	396.00	13.00	22.00	0.40	0.20	0.18	1093.30
	CNG/LPG	106.00	5.00	27.00	0.00	0.10	0.10	1062.84

SOURCE: FAA Emission and Dispersion Modeling System, Version 5.02 for model year 2000 GSE and converted from g/hp-hr to lb/10^3 hp-hr.

1. Reported as HC and conservatively estimated to be equal to VOC.
2. Reported as PM in EDMS. All PM assumed to be PM_{10}.
3. Using assumptions and factors applied by EPA in its NONROAD model, $PM_{2.5}$ emissions can be conservatively estimated as 97% of JP-8 or diesel PM_{10} emissions, 92% of gasoline PM_{10} emissions, and 100% of CNG or LPG PM_{10} emissions.
4. GHG is the sum of emission factors for CO_2, CH_4, and N_2O. The emission factors are presented in equivalent CO_2 (CO_2e) using global warming potentials of 25 and 298 for CH_4 and N_2O respectively. The emission factors were provided by the EPA's Emission Factors for Greenhouse Gas Inventories. When "CNG/LPG" is provided as the fuel used, then the greenhouse gas emission factor provided was calculated using the more conservative estimate from LPG. The emission factors for N_2O and CH_4 for CNG and LPG were assumed to be equal to those for gasoline. Calculations were made using the heating values provided in Table 3-1 and assuming fuel usage rates of 7,000, 8,089, 7,858, and 10,577 Btu/hp-hr for gasoline, diesel CNG, and LPG respectively.

"---" Indicates No Data Available.

Table 3-8. Uncontrolled HAP Emission Factors for Select Military GSE

Hazardous Air Pollutant	Emission Factors (lb/1000gal)			
	MA-1A/2 MB-2/3	A/M32A-60	A/M32A-60A	A/M32A-95
Acetaldehyde	---	2.09E-03	2.09E-03	2.09E-03
Acrolein	---	3.00E-04	3.00E-04	3.00E-04
Benzene	1.30E-05	1.50E-02	1.50E-02	1.50E-02
Ethylbenzene	1.10E-06	8,78E-4	8.78E-04	8.78E-04
Formaldehyde	---	2.03E-02	2.03E-02	2.03E-02
Toluene	6.60E-06	4.36E-03	4.36E-03	4.36E-03
Xylenes	4.80E-06	2.69E-03	2.69E-03	2.69E-03

SOURCE: Flightline Emission Factors – Aircraft/Auxiliary Power Units/Aerospace Ground Support Equipment December 2004, IERA-RS-BR-SR-2005-0001.

"---" Indicates No Data Available.

Table 3-9. EPA Emission Factors for Uncontrolled Diesel Reciprocating IC Engines

Model Year	Emission Factors[1,2]													
	NO_X		CO[2]		SO_X[2]		VOC[3]		PM_{10}[(4)]		$PM_{2.5}$[(4)]		CO_2e[(5)]	
	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)	(lb/10^3gal)	(lb/10^3 hp-hr)
Pre-2005[(2)]	611.67	35.67	131.77	7.68	40.22	2.35	47.77	2.79	43.00	2.51	43.00	2.51	22824.38	1331.12
2005 - Present[6]	197.04[(7)]	11.49[(7)]	131.77	7.68	40.22	2.35	16.54	0.96	22.55	1.32	22.55	1.32	22824.38	1331.12

1. Emission Factors apply to reciprocating internal combustion engines rated at 600hp or less.
2. SOURCE: *Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources fifth edition*, January 1995. Section 3.3. Emission factors from the source document provided in lb/MMBtu and units were converted using an average diesel BSFC of 8.089 MMBtu/10^3hp-hr and a diesel average heating value of 138.7MMBtu/10^3gal.
3. Source documents provided emissions in terms of either non-methane hydrocarbons (NMHC), total hydrocarbons (HC), or total organic compounds (TOC). Assuming that TOC is equal to total organic gas (TOG), the VOC emission factors were estimated using the following ratios: HC=TOG/1.07, NMHC=0.984*HC, and VOC=1.053*HC. These ratios provided in *Conversion Factors for Hydrocarbon Emission Components*, EPA-420-R-10-015, July 2010
4. Emission factors for PM only provided by source documents. PM is conservatively assumed to be equal to PM_{10} which is assumed to be equal to $PM_{2.5}$.
5. Greenhouse gas emission factors are the sum of CO_2, CH_4, and N_2O and the product of their respective global warming potentials (GWP). The GWP are 1, 25, and 298 for CO_2, CH_4, and N_2O respectively. Source document provided CO_2 emission factor only. The *Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Natural Gas Industry* provided emission factors of 6.64E-03 and 1.32E-03 lb/MMBtu for CH_4, and N_2O respectively.
6. SOURCE: These emission factors from 40 CFR 89 and 40 CFR 1039 and represent the worst case emission limit for that year as provided in 40 CFR 89 and 40 CFR 1039.
7. NO_X value estimated from the NO_X+NMHC limit provided in the CFR by using the ratio of NO_X to NMHC as given in AP-42.

Table 3-10. Speciated HAP Emission Factors for Uncontrolled Diesel Reciprocating Internal Combustion Engines

Compound	Emission Factors	
	lb/10^3 gal	lb/10^3hp-hr
1,3-Butadiene	5.42E-03	3.16E-04
Acenaphthene	1.97E-04	1.15E-05
Acenaphthylene	7.02E-04	4.09E-05
Acetaldehyde	1.06E-01	6.20E-03
Acrolein	1.28E-02	7.48E-04
Anthracene	2.59E-04	1.51E-05
Benz(a)anthracene	2.33E-04	1.36E-05
Benzene	1.29E-01	7.55E-03
Benzo(a)pyrene	2.61E-05	1.52E-06
Benzo(b)fluoranthene	1.37E-05	8.02E-07
Benzo(g,h,i)perylene	6.78E-05	3.96E-06
Benzo(k)fluoranthene	2.15E-05	1.25E-06
Chrysene	4.90E-05	2.86E-06
Dibenz(a,h)anthracene	8.09E-05	4.72E-06
Fluoranthene	1.06E-03	6.16E-05
Fluorene	4.05E-03	2.36E-04
Formaldehyde	1.64E-01	9.55E-03
Indeno(1,2,3-c,d)pyrene	5.20E-05	3.03E-06
Naphthalene	1.18E-02	6.86E-04
Phenanthrene	4.08E-03	2.38E-04
Pyrene	6.63E-04	3.87E-05
Toluene	5.67E-02	3.31E-03
Xylenes	3.95E-02	2.31E-03

SOURCE: *Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources fifth edition*, January 1995. Section 3.3. Where necessary, an average BSFC or 8.089 MMBtu/10^3 hp-hr and an average heating value for diesel of 138.7 MMBtu/10^3 gal was used for unit conversion.

Figure 3-1. Example Data Collection Form for Aerospace Ground Support Equipment

Installation Name: **Inventory Year (CY):**
Responsible Organization (Name & Office Symbol):
POC (Name, Phone # and e-mail address):

Equipment Type	Equipment Use	Equipment Manufacturer	Equipment Model Number	Fuel Type	Power Rating (hp)	Typical Operating Load[1]	Estimated Operating Time (hr/yr)	Estimated Fuel Usage (gal/yr)[2]

1. This is the typical load which the equipment was operated at during the inventory year. This may be listed as a horsepower value, percentage (i.e. percent of maximum power), or description. Be sure to specify.
2. While the quantity of fuel used is generally needed only if power rating and operating hours are unknown, fuel consumption data may also be needed to estimate CO_2.

3.6 References

AEE 1997, “Air Quality Procedures for Civilian Airports and Air Force Bases," U.S. Department of Transportation, FAA Office of Environment and Energy (AEE), April 1997

AFCEE 2009, "Air Emissions Factor Guide to Air Force Stationary Sources," Air Force Center for Engineering and the Environment, December 2009

CCAR 2007, "California Climate Action Registry General Reporting Protocol Version 2.2," California Climate Action Registry (CCAR), 2007

DLA 2006, “Petroleum Quality Information System Fuels Data (2005),” Defense Logistics Agency (DLA), Defense Energy Support Center, Technology and Standardization Division, 2006

EIA 2005, "Household Vehicles Energy Use: Latest Data & Trends," Energy Information Administration (EIA), Office of Energy Markets and End Use, U.S. Department of Energy, November 2005

FAA 2007, "Emissions Dispersion and Modeling System, Version 5.0.2," Department of Transportation, Federal Aviation Administration (FAA), June 2007

O'Brien 2003, O'Brien, Robert J. and Mark D. Wade, "Air Emissions Inventory Guidance Document for Stationary Sources at Air Force Installations," Air Force Institute for Environment, Safety and Occupational Health Risk Analysis,

Pacific Environmental Services, Inc. 1997, "Aerospace Ground Support Equipment Emissions Characterization for Edwards AFB, California," 1997

SWRI 1998. "Exhaust Emissions from a USAF A/M32A-86D Generator," Southwest Research Institute (SWRI), 1998

USAF Research Laboratory 2007, "Air Force Alternative Fuels Program," United States Research Laboratory; UC Davis Aviation Noise and Air Quality Symposium-Propulsion Directorate, 2007

USEPA 1996, "Gasoline and Diesel Industrial Engines; Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources (Section 3.3)," United States Environmental Protection Agency, October 1996

USEPA 1998, "Exhaust Emission Factors for Nonroad Engine Modeling - Compression Ignition," United States Environmental Protection Agency, Assessment and Modeling Division, 1998

USEPA 1999, "Tier 2 Vehicle and Gasoline Sulfur Program," United States Environmental Protection Agency, 1999

USEPA 2000, "Factor Information Retrieval System (FIRE) - Version 6.23," United States Environmental Protection Agency, 2000

USEPA 2004, "Clean Air Nonroad Diesel Rule." United States Environmental Protection Agency, Office of Transportation and Air Quality, 2004

USEPA 2004b, "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (EPA 420-P-005, NR-005c), United States Environmental Protection Agency, 4 April 2004

USEPA 2005, "Nonroad 2005 Model," United States Environmental Protection Agency, December 2005

Wade 2004, Wade, Mark. "Flightline Emission Factors - Aircraft/Auxiliary Power Units/Aerospace Ground Support Equipment," December 2004

4 NON-ROAD ENGINES AND EQUIPMENT (NRDE)

4.1 Introduction

Emissions on Air Force installations result not only from military operations, but also from day to day activities involving non-road engines. Examples of non-road engines and equipment that are commonly operated on Air Force installations include: industrial equipment (e.g., forklifts, aerial lifts, sweepers, etc.); lawn and garden equipment (lawn mowers, trimmers, leaf blowers, snow blowers, etc.); agricultural equipment (sprayers, agricultural tractors, agricultural mowers, etc.); commercial equipment (e.g., portable generators, pumps, air compressors, etc.); recreational vehicles (e.g., off-road motorcycles, all-terrain vehicles, including utility vehicles, snowmobiles, golf carts, etc.); and logging equipment (e.g., shredders). Aerospace ground equipment (AGE) and ground support equipment (GSE) are also non-road engines that are widely used on Air Force installations, but are addressed separately in the "Flightline Ground Support Equipment" section of this document. Emissions of concern from the operation of non-road vehicles and equipment include criteria pollutants and HAPs associated with fuel combustion processes.

Non-road vehicles and equipment are typically powered by either a reciprocating internal combustion engine or a small gas turbine. For reciprocating engines, a piston moves inside a cylinder to compress an air/fuel mixture. The air/fuel mixture combusts and expands, pushing the piston through the cylinder. The piston returns, pushing out the exhaust gases, and the cycle is repeated. For gas turbines, ambient air is pressurized with a compressor. Fuel is introduced to this compressed air and is ignited. The high temperature, high pressure air flows through a turbine where it expands, producing shaft energy that is used to drive both the compressor and the electric generator.

Reciprocating engines may differ in design by the diameter of the cylinders in the engine, known as the bore, and the length of the linear movement of the piston in each cylinder, known as the stroke. The size of the engine is related to its displacement per cylinder, which is a measure of the volume of the cylinder multiplied by the length of the stroke. A reciprocating engine may be classified as either 4-stroke or 2-stroke. For a 4-stroke engine, the combustion cycle involves two revolutions of the crankshaft, to which the pistons are connected, and the cycle consists of four stages. The induction stroke occurs when the piston moves down within the cylinder, creating a vacuum and drawing in air or an air/fuel mixture. During the compression stroke, the piston moves up to pressurize the air or air/fuel mixture which then ignites. The heated air expands generating a force on the piston such that it is forced downward again in what is called the power stroke. Finally, the piston moves upward again to force the exhaust gas out of the cylinder during the exhaust stroke and returns to the starting position of the induction stroke so the cycle may be repeated. 2-stroke engines are able to operate with just one revolution of the

crankshaft because induction of the air or air/fuel mixture occurs concurrently with the release of the exhaust gas.

Detonation of the air/fuel mixture during the compression stroke may occur through either compression or spark ignition. In a compression ignition (CI) engine, air is first compressed by the piston in the cylinder, which causes the temperature of the air to rise. Fuel is added to the heated air and combusts due to the fact that the temperature of the air is above the auto-ignition temperature of the fuel. Reciprocating CI engines are powered either by diesel fuel or JP-8. Spark ignition (SI) engines, which use gasoline, natural gas, or Liquefied Petroleum Gas (LPG) differ from CI engines in that the fuel/air mixture does not ignite spontaneously, but rather by a spark. Emissions from non-road engines will vary due to operating conditions such as temperature, humidity, torque, ignition timing, or even air/fuel mixture. Even slight variations in the air/fuel mixture will dramatically affect pollutant emissions.

While most non-road engines and equipment are powered by either diesel or gasoline fuel, engines fueled with JP-8 are becoming increasingly more common. Presently, there are few EPA-approved non-road vehicle and equipment emission factors developed specifically for JP-8. However, since the combustion characteristics between JP-8 and diesel fuel are similar, emissions from JP-8 fueled non-road vehicles and equipment are typically calculated using diesel emission factors.

Gas turbines are composed of three major components: a compressor, a combustor, and a power turbine. In a gas turbine, ambient air is drawn in at the front of the engine with a fan, and the pressure is raised up to 30 times the ambient pressure via a compressor. The compressed air is directed into the combustor section where it is sprayed with fuel and ignited with an electric spark. The burning gases expand, and the high-pressure, high-velocity gas stream passes through a turbine area, driving the movement of an output shaft that converts the energy to useful power. Typically, more than half of the shaft energy produced is needed to drive the internal compressor, with the balance available to drive an external load such as an electric generator or water pump. Gas turbines may be more advantageous than reciprocating engines because of their lower operational cost, lower levels of CO and VOC emissions, and potential for use in cogeneration systems. However, the large initial cost of a gas turbine engine means that they are not likely to be part of non-road equipment.

4.2 Emission Factors

Emission factors for non-road engines are provided at the end of this section. They have been developed for specific equipment and are in units of $lb/10^3$ hp-hr. The appropriate emission factor should be selected based on the fuel the engine uses and whether or not the equipment is a 2-stroke or 4-stroke engine, if applicable. The tables also provide typical load factors and

calculated Brake Specific Fuel Consumption (BSFC) values which may be needed for emissions calculations as described later in this chapter.

4.2.1 Alternative Fuels and Emissions Reduction

Increasingly stringent regulatory requirements resulting from the Energy Policy Act (EPAct), Presidential Executive Orders, and DoD /Air Force pollution prevention and energy conservation initiatives means that some Air Force installations may be encouraged to operate non-road engines and equipment on alternative fuels such as ethanol-based E85 (a blend of 85% ethanol and 15% gasoline) or B20 (a blend of 20% biodiesel and 80% petroleum diesel). While there are currently no non-road engines and equipment which use these alternative fuels, there are on-highway flexible fuel vehicles (FFVs) that are capable of operating on E85, and these FFVs are required to meet EPA's Tier II vehicle emission standards regardless of the fuel type. Some research suggests evidence of potential emission reduction benefits from the use of E85, although testing has been limited and emissions impacts have not been fully characterized. While some reduction in evaporative emissions is expected due to the displacement of gasoline, emissions are believed to be generally similar to gasoline emissions. Note, however, that data does indicate that some HAP emissions are reduced while others are increased. Accordingly, at this time EPA does not support the use of emission reduction factors for engines using E85 fuels.

A somewhat similar situation exists with regard to information on the emissions impact of B20 fuels. In October 2002, the EPA issued its technical report on biodiesel emissions (USEPA 2002). This report was developed using various statistical analysis tools to compile and assess the results of 39 studies regarding the impact of B20 use on vehicle emissions. Relative to conventional on-highway diesel fuel (i.e., conventional low sulfur diesel with sulfur content < 500 ppm), B20 showed a +2% impact on NO_X emissions, a -10% impact on PM emissions, a -21% impact on HC emissions, and a -11% impact on CO emissions. Since the time of the study, however, ultra-low sulfur diesel (ULSD) regulations limiting the sulfur content of on-highway diesel fuel to 15 ppm have been enacted. Since June 2007, the sulfur content of non-road diesel fuel has been limited to 500 ppm which was then further reduced to 15 ppm effective June 2010. Another study conducted under the auspices of the DoD Environmental Security Technology Certification Program (ESTCP) sought to measure the impact of B20 on CO, NO_X, PM, HC, and HAP emissions from engines used in on-road and portable power generation applications (Environmental Security Technology Certification Program 2006). Using primarily a B20 biodiesel/ULSD blend, the study showed no significant differences in emissions between the B20 biodiesel blended with ULSD and the ULSD by itself. No consistent trend was observed with regards to HAP emissions.

These examples indicate that efforts to apply emission reduction factors to estimate emissions from alternatively-fueled non-road vehicles and equipment should be attempted only after

careful review of the most current, validated information available from either the EPA, the Department of Energy, the DoD, and Service engineering and research organizations. Application of the B20 emission factors developed by the EPA should only be considered if an installation is confident that the nonroad diesel fuel it is replacing has a sulfur concentration of 500 ppm or less. It is important to note that should the sulfur content exceed 500 ppm, potential emissions benefits of B20 may be underreported because, to date, emission impacts studies have generally not focused on non-road engines and fuels.

4.3 Emissions Calculation

This section describes several methodologies available for calculating emissions from non-road engines and equipment using either the EPA's NONROAD emissions estimating software model, or the underlying emission factors in the NONROAD model and manual calculation procedures. Regardless of which approach is chosen, the methodology is applied to each individual piece of nonroad equipment for each pollutant for which emissions are being calculated. The methodologies are briefly described in the following paragraphs.

4.3.1 Emissions Estimation Using the EPA NONROAD Model

The EPA recommends use of its NONROAD modeling software for estimating emissions from the operation of non-road vehicles and equipment. Developed to provide a consistent means of generating emissions data required by the Clean Air Act, the current NONROAD model predicts emissions of six exhaust pollutants (HC, NO_X, CO, CO_2, SO_X, and PM) for more than 80 basic and 260 specific types of non-road equipment across a variety of model years which use gasoline, diesel, CNG or LPG. The model allows particulate matter to be reported as PM_{10} or $PM_{2.5}$.

One advantage of the NONROAD model is that it recognizes that an engine's performance degrades over time due to normal operation and use. Engine deterioration not only increases exhaust emissions, but usually leads to a loss of combustion efficiency, and may increase non-exhaust emissions. EPA believes there is insufficient information to justify use of adjustment factors for small SI engines, so the NONROAD model uses emission factors based on unadjusted steady-state test results and applies an adjustment factor only to SI engines with a power rating greater than 25 hp. In terms of CI engines, the NONROAD model addresses the effects of deterioration by multiplying a zero hour emission factor for each category of engine by a deterioration factor to reflect degraded performance as the engine ages.

While the core model for NONROAD is written in FORTRAN and can be operated as a stand-alone application in a DOS environment, the graphical user interface will generate scenarios for one specified set of conditions. If the user wishes to run multiple scenarios in a single model

run, the scenarios must be generated in a DOS environment. The NONROAD reporting utility is written in Microsoft Access and operated similar to the graphical users interface. The reporting utility is a stand-alone application and knowledge of Access is not required to generate reports.

Emission factors for nonroad engines and equipment manufactured prior to Model Year 1998 have been derived from the NONROAD model and its underlying data sets by the EPA Office of Transportation Air Quality. They are provided in Table 4-1 and serve as the basis for estimating emissions manually using the methodologies discussed in the following subsections.

4.3.2 Horsepower/Load Factor Method

The most common approach for calculating emissions from non-road engines and equipment is essentially the same as the method incorporated into the NONROAD model and the horsepower/load factor method in the "Flightline Ground Support Equipment" section. Emissions are estimated based on the engine's rated power output, a load factor, and annual operating time. The following equation is used:

$$\mathbf{E}(\boldsymbol{Pol}) = \boldsymbol{OT} \times \frac{\boldsymbol{LF}}{\mathbf{100}} \times \boldsymbol{hp} \times \frac{\mathbf{1}}{\mathbf{1000}} \times \mathbf{EF}(\boldsymbol{Pol}) \times \boldsymbol{N}$$

Equation 4-1

Where,

E(Pol) = Annual emissions of each individual pollutant (lb/yr)
OT = Operating time (hr/unit)
LF = Load factor (%)
100 = Factor for converting percent to a fraction (%)
hp = Average rated horsepower of engine (hp)
1000 = Factor converting from hp to 10^3 hp (hp/10^3 hp)
EF(Pol) = Emission factor of each pollutant (lb/10^3 hp-hr)
N = Number of nonroad engines and equipment used each year (units/yr)

The data required for calculating emissions using the horsepower/load factor method may be found in Table 4-1.

4.3.3 Fuel Consumption Method

Estimating emissions based on fuel consumption can be accomplished in instances when the fuel consumption is known but the operating time of the non-road engine or equipment is not. The annual fuel consumption, fuel density, BSFC values for the particular piece of equipment, and

emission factor must be known to calculate emissions using this method. The following equation is used:

$$\mathbf{E}(\boldsymbol{Pol}) = \frac{(\boldsymbol{FC} \times \boldsymbol{D})}{\boldsymbol{BSFC}} \times \mathbf{EF}(\boldsymbol{Pol}) \times \boldsymbol{N}$$

Equation 4-2

Where,

E(Pol) = Annual emissions of each individual pollutant (lb/yr)
FC = Annual fuel consumption (gal/unit)
D = Fuel density (lb/gal)
BSFC = Brake-specific fuel consumption for the engine (lb/10^3 hp-hr)
EF(Pol) = Emission factor for each pollutant (lb/10^3 hp-hr)
N = Number of equipment used each year (units/yr)

When performing emissions calculations using the fuel consumption method, enhanced accuracy may be achieved by using the density of the fuel as provided by the fuel supplier as well as the BSFC for the engine directly from the engine manufacturer. If this data is unavailable, then suggested values for these variables may be found in the following tables:

- Table 3-2 provides the average density for non-road fuels.
- Table 4-1 provides the emission factors and BSFC for specific equipment types in a lb/10^3 hp-hr basis.

4.3.4 VOC and HAP Speciation

There is very little data available for the speciation of VOCs for non-road engines. Whenever the quantity of speciated compounds is required to be calculated, the average percentage of each species within the total VOC may be used as a gross estimate of the emissions of that compound. This section should only be used if no acceptable speciated emission factors are available for the engine in question. The percentages for VOC emissions are based on the fuel used by the engine including diesel, gasoline, natural gas (which is further subdivided into 2 and 4 stroke lean burn and 4 stroke rich burn), and liquefied petroleum gas.

The following equations were used to calculate the weighted percentage of each pollutant based on the total or the average VOCs from available speciation data. VOC emission factor data came from several sources including *Compilation of Air Pollutant Emission Factors* (AP-42), the Mojave Desert Air Quality Management District, and the EPA's *SPECIATE* database. Since there is limited data available regarding mobile non-road engine emission factors, those factors presented in these sources were assumed to be representative of all non-road engines. Using

these speciated emission factors, the average weight percent of the individual pollutant was calculated using the total VOCs as shown:

$$\mathbf{P(Pol)} = \frac{\mathbf{EF}(\boldsymbol{Pol})}{\boldsymbol{EF(VOC)_{Total}}}$$

Equation 4-3

Where,

$\mathbf{P_{Pol}}$ = Weight percent of a given pollutant (%)
EF(Pol) = Individual pollutant emission factor (lb/10^3 hp-hr)
$\mathbf{EF(VOC)_{Total}}$ = Total VOC emission factor (lb/10^3 hp-hr)

Speciated VOCs are calculated by taking the product of the total VOCs and the weighted percentage of the individual VOC as follows:

$$\mathbf{E}(\boldsymbol{Pol}) = \mathbf{E}(\boldsymbol{VOC}) \times \frac{\mathbf{P}(\boldsymbol{Pol})}{\mathbf{100}}$$

Equation 4-4

Where,

E(Pol) = Emissions of speciated VOC (lb/yr)
100 = Factor for converting percent to a fraction (%)
E(VOC) = Emissions of total VOC (lb/yr)

In addition to the emission factors and speciation values provided in Table 4-3, most vehicle and equipment manufacturers have data on emissions specific to their product, and many are willing to provide it upon request. HAPs emissions may be calculated using the following tables:

- Table 3-10 has the EPA's emission factors for uncontrolled diesel reciprocating internal combustion engines in a lb/1000hp-hr format and may be used to calculate HAPs directly using Equation 4-1.
- Table 4-3 gives the weight percent VOC/HAP speciation of VOC emissions for estimating specific VOCs/HAPs using Equation 4-4 above.

4.4 Information Resources

The primary source of information for most non-road vehicles and equipment is the Transportation Squadron. The Transportation Vehicle Operations Flight and/or the Transportation Vehicle Maintenance Flight typically maintain records on most Air Force owned non-road vehicles and equipment, such as identity of the shops/organizations operating the vehicles/equipment, horsepower rating of the vehicles/equipment, hours of operation, etc. In

some cases, it may be necessary to contact the actual organizations/shops using the vehicles/equipment to obtain information that Transportation does not have. For example, for construction equipment and lawn/garden equipment, it will probably be necessary to contact the Civil Engineering (CE) Operations Flight, the CE Engineering Flight, and the CE Housing Flight, or a similar organization if base housing has been privatized.

It is important to note that many of the construction and lawn care activities at Air Force installations are performed via contractors, and therefore, it might be necessary to contact the contractors directly to obtain the necessary information on their equipment. The Contracts section of the CE Engineering Flight should be able to provide information on what equipment was used to perform construction and lawn care activities on base during the year.

In addition, some non-road engines and equipment (such as leaf blowers, trimmers/edgers, snow blowers, etc.) operated on Air Force installations may be owned by personnel who live on base. Since this equipment is privately owned, obtaining this information is usually more difficult than for Air Force owned equipment. One approach to obtaining the necessary information is to work with the CE Housing Flight to identify the types of non-road equipment used in base housing, estimate the number of each different equipment type, estimate the average horsepower of each equipment type, and estimate the average operating time (hours per year) for each equipment type. If adequate resources and time are available, a more comprehensive approach would be to survey a representative number of housing units to determine the type/size of equipment used and the estimated usage. For non-road engines and equipment in which emissions are calculated using emission factors based on fuel usage (i.e., using "g/gal" emission factors), Fuels Supply may be a source of information regarding fuel consumption. An example of a data collection form which can be used to collect data necessary to estimate emissions from non-road vehicles and equipment is provided in Figure 4-1.

4.5 Example Calculations

The following section provides examples of how the equations and methodologies discussed earlier are applied to calculate emissions from non-road vehicle and equipment operations. The procedures are applied to each individual non-road engine and equipment, and for each pollutant for which emissions must be calculated. Emissions for all non-road vehicles and equipment and pollutants are then summed to obtain pollutant-specific, base-wide totals. Load factors, BSFCs and emission factors necessary for calculating emissions are obtained from Table 4-1, Table 4-2, and Table 4-3.

4.5.1 Problem 1 - Estimating Emissions Using the Horsepower/Load Factor Method

As part of its requirement to conduct an annual mobile source emissions inventory, Anytown AFB has collected information on the non-road vehicles and engines operating on the base. Calculate the CO emissions associated with the operation of diesel-powered forklifts on base. The following information was obtained from the base:

Equipment Type – Diesel powered forklift (SCC-2270003020)	
# of pieces	6
Power Rating	85 hp
Operating Time	200 hr/unit

Step 1 – Record the CO emission factor and load factor. The emission factor and typical load factor are given in Table 4-1 as **6.50lb/10^3 hp-hr** and **59 %** respectively.

Step 2 – Calculate the annual emissions for the six forklifts. Using the information in the table above and the values recorded in Step 1, the annual CO emissions for the six forklifts are calculated using Equation 4-1:

$$\mathrm{E}(Pol) = OT \times \frac{LF}{100} \times hp \times \frac{1}{1000} \times \mathrm{EF}(Pol) \times N$$

$$\mathrm{E}(CO) = 200 \frac{\cancel{hr}}{\cancel{unit}} \times \frac{59\%}{100\%} \times 85(\cancel{hp}) \times \frac{1}{1000} \left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 6.50 \frac{lb}{\cancel{10^3 hp-hr}} \times 6 \frac{\cancel{units}}{yr}$$

$$\boldsymbol{E(CO) = 391.17 \frac{lb}{yr}}$$

4.5.2 Problem 2 - Estimating Emissions Using Fuel Consumption

Anytown AFB operates gasoline fueled commercial lawn mowers to maintain the appearance of public areas on base. Calculate the VOC and formaldehyde emissions associated with operation of the lawnmowers on base. The following information was obtained from the base:

Equipment Type – 4-stroke gasoline lawnmower (SCC 2265004011)	
# of pieces	25
Power rating	5 hp
Fuel Consumption	40 gal each; 1000 gal total

Step 1 – Record the fuel density, VOC emission factor, and appropriate BSFC. The fuel density is provided in Table 3-2 and the VOC emission factor and BSFC value for gas powered commercial lawn mowers are provided in Table 4-1. The fuel density is given as **6.15 lb/gal** while the VOC emission factor and BSFC are given as **103.48** and **880 lb/10^3 hp-hr** respectively.

Step 2 - Calculate annual VOC emissions. Using the data from Step 1 and Equation 4-2:

$$\mathrm{E}(Pol) = \frac{(FC \times D)}{BSFC} \times \mathrm{EF}(Pol) \times N$$

$$\mathrm{E}(VOC) = \frac{\left(40\frac{\cancel{gal}}{unit} \times 6.15\frac{\cancel{lb}}{\cancel{gal}}\right)}{880\frac{\cancel{lb}}{10^3\ hp-hr}} \times 103.48\frac{lb}{10^3\ hp-hr} \times 25\frac{units}{yr}$$

$$\mathrm{E}(VOC) = 0.2795\frac{\cancel{10^3 hp-hr}}{\cancel{unit}} \times 103.48\frac{lb}{\cancel{10^3\ hp-hr}} \times 25\frac{\cancel{units}}{yr}$$

$$\boxed{\mathbf{E}(\boldsymbol{VOC}) = \mathbf{723.07}\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Next, calculate formaldehyde emissions.

Step 3 – Record Formaldehyde weight percent VOC emissions for 4-stroke gasoline engines. Table 4-3 states this value is **1.17**.

Step 4 - Calculate annual formaldehyde emissions. Using the formaldehyde weight percent recorded in Step 3 and Equation 4-4:

$$\mathrm{E}(HAP) = \mathrm{E}(VOC) \times \frac{\mathrm{WP}(HAP)}{100}$$

$$\mathrm{E}(Formaldehyde) = 723.07\frac{lb}{yr} \times \frac{1.17\cancel{\%}}{100\cancel{\%}}$$

$$\mathrm{E}(Formaldehyde) = 723.07\frac{lb}{yr} \times 0.0117$$

$$\boxed{\mathbf{E}(\boldsymbol{Formaldehyde}) = \mathbf{8.46}\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

4.5.3 Problem 3 - Estimating SO_x Emissions

Anytown AFB needs to estimate SO_x emissions from the operation of rough terrain forklifts. The following information was obtained from the base:

Equipment Data – Rough terrain forklifts (SCC 2270002057)	
# of pieces	5
Fuel	Diesel
Power rating	80 hp
Model year	1997
Fuel Consumption	200 gal (each); 1000 gal (total)
Hours of operation	250 hr/unit (each)

Since the model year of the forklifts are pre-1998, then the emission factors applicable to these engines are found in Table 4-2 and not Table 4-1.

Step 1 – Record the load factor and SO_X emission factor. According to Table 4-1**,** for diesel-powered rough terrain forklifts the typical load factor is **59%** and Table 4-2 states the SO_X emission factor is **2.05 lb/10^3 hp-hr**.

Step 2 –Calculate the total SO_X emissions. Using these values and the data in the table above, the SO_X emissions are calculated using Equation 4-1:

$$E(Pol) = OT \times \frac{LF}{100} \times hp \times \frac{1}{1000} \times EF(Pol) \times N$$

$$E(SO_X) = 250 \frac{\cancel{hr}}{\cancel{unit}} \times \frac{59\%}{100\%} \times 80 \cancel{hp} \times \frac{1}{1000} \left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 2.05 \frac{lb}{\cancel{10^3 hp - hr}} \times 5 \frac{\cancel{units}}{yr}$$

$$\boxed{\mathbf{E(SO_X) = 120.95 \frac{lb}{yr}}}$$

4.5.4 Problem 4 - Estimating Emissions from the Use of B20

Anytown AFB has been blending B20 biodiesel into the non-road diesel fuel used to power its off- highway trucks. The normal sulfur content of the non-road diesel is 500 ppm. The following information was obtained from the base:

Equipment Data – Off-Highway Trucks (SCC 2270002051)	
# of pieces	10
Fuel	B20/nonroad diesel (500 ppm blend)
Power rating	250 hp
Model year	2001
Hours of operation	200 hours (each); 2000 hours (total)

Estimate the NO_X and PM_{10} emissions from the operation of the vehicles.

Step 1 – Record the NO_X emission factor and load factor. Table 4-1 gives the emission factor and load factor as **11.27 lb/10^3 hp-hr** and **59%** respectively.

Step 2 - Calculate annual NO_X emissions. Use the emission factor and load factor recorded in Step 1, the data provided in the table, and Equation 4-1 as follows:

$$\mathrm{E}(Pol) = OT \times \frac{LF}{100} \times hp \times \frac{1}{1000} \times EF(Pol) \times N$$

$$\mathbf{E}(\boldsymbol{NO_X}) = 200\,\frac{\cancel{hr}}{\cancel{unit}} \times \frac{59\%}{100\%} \times 250\cancel{hp} \times \frac{1}{1000}\left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 11.27\,\frac{lb}{\cancel{10^3\,hp-hr}} \times 10\,\frac{\cancel{units}}{yr} = \mathbf{3324.65}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 3 - Adjust the estimated emissions to reflect the expected 2% increase in NO_X attributable to the use of B20.

$$\mathrm{E}(NO_X) = 3324.65\,\frac{lb}{yr} \times \left(1 + \frac{2\%}{100\%}\right)$$

$$\mathrm{E}(NO_X) = 3324.65\,\frac{lb}{yr} \times (1.02)$$

$$\boxed{\mathbf{E}(\boldsymbol{NO_X}) = \mathbf{3391.14}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Next, calculate PM_{10} emissions.

Step 4 – Record the PM_{10} emission factor. Table 4-1 lists this value as **0.57 lb/10^3 hp-hr**.

Step 5 - Calculate annual PM_{10} emissions. Use Equation 4-1, the emission factor recorded in Step 4 and the data provided in the table above as follows**:**

$$\mathrm{E}(Pol) = OT \times \frac{LF}{100} \times hp \times \frac{1}{1000} \times EF(Pol) \times N$$

$$\mathrm{E}(PM_{10}) = 200\,\frac{\cancel{hr}}{\cancel{unit}} \times \frac{59\%}{100\%} \times 250\cancel{hp} \times \frac{1}{1000}\left(\frac{\cancel{10^3 hp}}{\cancel{hp}}\right) \times 0.57\,\frac{lb}{\cancel{10^3\,hp-hr}} \times 10\,\frac{\cancel{units}}{yr} = \mathbf{168.15}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 6 - Adjust the estimated emissions to reflect the expected 10% decrease in PM emissions attributable to the use of B20:

$$\mathrm{E}(PM_{10}) = 168.15\,\frac{lb}{yr} \times \left(1 - \frac{10\%}{100\%}\right)$$

$$\boxed{\mathbf{E}(\boldsymbol{PM_{10}}) = \mathbf{151.34}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2260001010	2 Stroke Motorcycles: Off- Road[3]	100	260	127.07	132.83	0.35	0.09	4.74	4.36	459.30
2260001020	2 Stroke Snowmobiles	34	1640	669.88	281.73	2.45	0.90	6.31	5.80	4488.97
2260001030	2 Stroke ATVs[3]	100	210	126.66	126.74	0.35	0.07	4.45	4.10	299.14
2260001060	2 Stroke Specialty Vehicles/Carts	58	1000	1534.50	56.73	6.77	0.64	0.31	0.28	3154.67
2260002006	2 Stroke Tampers/Rammers	55	680	784.87	197.63	2.54	0.33	20.46	18.83	1606.63
2260002009	2 Stroke Plate Compactors	55	830	645.23	128.11	3.11	0.49	16.87	15.52	2342.89
2260002021	2 Stroke Paving Equipment	59	830	649.75	124.74	3.13	0.49	17.00	15.64	2345.09
2260002027	2 Stroke Signal Boards/Light Plants	72	830	672.94	139.53	3.13	0.46	17.60	16.19	2320.84
2260002039	2 Stroke Concrete/Industrial Saws	78	630	762.36	141.58	2.09	0.33	21.21	19.52	1594.20
2260002054	2 Stroke Crushing/Proc. Equipment	85	830	672.94	125.02	3.13	0.46	17.60	16.19	2320.84
2260003030	2 Stroke Sweepers/Scrubbers	71	820	670.85	131.79	3.11	0.46	17.53	16.13	2311.74
2260003040	2 Stroke Other General Industrial Equipment	54	830	674.27	127.29	3.13	0.46	17.62	16.21	2325.25
2260004015	2 Stroke Rotary Tillers < 6 HP (Residential)	40	940	743.35	322.28	2.51	0.46	17.55	16.15	2332.73
2260004016	2 Stroke Rotary Tillers < 6 HP (Commercial)	40	900	695.06	203.43	2.76	0.49	17.22	15.84	2342.64
2260004020	2 Stroke Chain Saws < 6 HP (Residential)	70	900	700.37	281.71	2.76	0.49	17.07	15.70	2342.64
2260004021	2 Stroke Chain Saws < 6 HP (Commercial)	70	650	764.61	176.42	2.25	0.33	20.97	19.29	1643.27
2260004025	2 Stroke Trimmers/Edgers/Brush Cutter (Residential)	91	890	671.00	291.74	2.80	0.46	17.55	16.15	2331.33
2260004026	2 Stroke Trimmers/Edgers/Brush Cutter (Commercial)	91	810	663.79	152.78	3.00	0.46	17.27	15.88	2243.10
2260004030	2 Stroke Leaf blowers/Vacuums (Residential)	94	890	691.91	319.39	2.76	0.46	17.20	15.82	2340.15
2260004031	2 Stroke Leaf blowers/Vacuums (Commercial)	94	760	710.10	157.99	2.82	0.40	18.48	17.00	1996.95
2260004035	2 Stroke Snow blowers (Residential)	35	870	1211.32	750.65	0.64	0.22	19.23	17.69	1144.48
2260004036	2 Stroke Snow blowers (Commercial)	35	870	1211.25	570.21	0.64	0.22	19.23	17.69	1146.69

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2260004071	2 Stroke Commercial Turf Equipment	60	840	643.37	119.05	3.09	0.49	16.69	15.36	2351.99
2260005035	2 Stroke Sprayers	65	840	586.99	156.69	3.06	0.49	17.53	16.13	2347.58
2260006005	2 Stroke Generator Sets	68	830	639.32	130.69	3.11	0.49	16.89	15.54	2351.71
2260006010	2 Stroke Pumps	69	830	617.31	131.46	3.15	0.46	18.35	16.88	2316.43
2260006015	2 Stroke Air Compressors	56	830	672.64	123.63	3.13	0.46	17.60	16.19	2318.63
2260006035	2 Stroke Hydro Power Units	56	830	672.55	122.60	3.13	0.46	17.57	16.17	2318.63
2260007005	2 Stroke Chain Saws > 6 HP	70	620	779.31	165.53	2.12	0.31	21.52	19.80	1541.00
2265001010	4 Stroke Motorcycles: Off- Road	100	160	113.12	12.00	0.88	0.11	0.15	0.14	491.78
2265001030	4 Stroke ATVs	100	170	116.58	13.16	0.86	0.11	0.15	0.14	520.73
2265001050	4 Stroke Golf Carts	46	740	1795.27	26.68	6.13	0.49	0.29	0.26	2322.73
2265001060	4 Stroke Specialty Vehicles/Carts	58	820	1340.31	66.22	7.70	0.53	0.29	0.26	2558.70
2265002003	4 Stroke Pavers	66	700	1315.79	22.84	7.85	0.44	0.24	0.22	2191.51
2265002006	4 Stroke Tampers/Rammers	55	760	1554.83	29.64	6.57	0.49	0.26	0.24	2371.80
2265002009	4 Stroke Plate Compactors	55	830	1537.63	66.66	6.95	0.51	0.46	0.43	2481.80
2265002015	4 Stroke Rollers	62	690	1376.85	20.40	7.12	0.44	0.24	0.22	2173.59
2265002021	4 Stroke Paving Equipment	59	780	1519.71	45.78	6.95	0.49	0.33	0.30	2409.84
2265002024	4 Stroke Surfacing Equipment	49	750	1619.75	35.10	6.42	0.49	0.31	0.28	2340.65
2265002027	4 Stroke Signal Boards/Light Plants	72	780	1655.56	49.48	6.28	0.49	0.40	0.37	2394.41
2265002030	4 Stroke Trenchers	66	710	1315.26	30.16	7.96	0.44	0.29	0.26	2211.64
2265002033	4 Stroke Bore/Drill Rigs	79	790	1204.13	70.58	9.66	0.49	0.44	0.41	2355.00
2265002039	4 Stroke Concrete/Industrial Saws	78	710	1595.89	21.30	6.35	0.46	0.26	0.24	2242.51
2265002042	4 Stroke Cement & Mortar Mixers	59	820	1479.42	60.77	7.34	0.51	0.35	0.32	2507.98

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2265002045	4 Stroke Cranes	47	590	483.31	16.56	14.22	0.37	0.15	0.14	1873.12
2265002054	4 Stroke Crushing/Proc. Equipment	85	740	1511.81	32.13	7.23	0.46	0.29	0.26	2294.06
2265002057	4 Stroke Rough Terrain Forklifts	63	570	335.20	13.69	13.76	0.37	0.15	0.14	1790.98
2265002060	4 Stroke Rubber Tire Loaders	71	550	292.32	11.86	12.39	0.35	0.15	0.14	1748.52
2265002066	4 Stroke Tractors/Loaders/ Backhoes	48	730	1589.56	22.60	6.46	0.46	0.26	0.24	2287.17
2265002072	4 Stroke Skid Steer Loaders	58	640	809.50	20.35	11.47	0.42	0.20	0.18	2017.84
2265002078	4 Stroke Dumpers/Tenders	41	800	1448.35	55.06	7.47	0.51	0.31	0.28	2485.37
2265002081	4 Stroke Other Construction Equipment	48	580	354.41	15.59	15.44	0.37	0.15	0.14	1826.53
2265003010	4 Stroke Aerial Lifts	46	630	685.16	20.77	14.60	0.40	0.18	0.16	1986.69
2265003020	4 Stroke Forklifts	30	560	330.18	13.05	14.00	0.37	0.15	0.14	1784.08
2265003030	4 Stroke Sweepers/Scrubbers	71	610	742.23	17.04	9.35	0.40	0.20	0.18	1917.78
2265003040	4 Stroke Other General Industrial Equipment	54	760	1481.10	46.70	7.12	0.46	0.37	0.34	2312.26
2265003050	4 Stroke Other Material Handling Equipment	53	640	766.81	20.99	13.69	0.42	0.20	0.18	2013.43
2265003060	4 Stroke AC/Refrigeration	46	740	1637.19	28.27	6.22	0.49	0.26	0.24	2335.96
2265003070	4 Stroke Terminal Tractors	78	520	224.05	8.27	9.02	0.33	0.15	0.14	1663.89
2265004010	4 Stroke Lawn mowers (Residential)	33	900	1430.49	160.17	7.59	0.53	0.60	0.55	2624.88
2265004011	4 Stroke Lawn mowers (Commercial)	33	880	1531.13	103.48	7.19	0.53	0.62	0.57	2562.58
2265004015	4 Stroke Rotary Tillers < 6 HP (Residential)	40	910	1435.23	164.58	7.65	0.53	0.62	0.57	2649.41
2265004016	4 Stroke Rotary Tillers < 6 HP (Commercial)	40	890	1451.02	100.50	7.50	0.53	0.60	0.55	2598.14
2265004025	4 Stroke Trimmers/Edgers/Brush Cutter HP (Residential)	91	900	1456.87	172.41	7.54	0.53	0.62	0.57	2618.26
2265004026	4 Stroke Trimmers/Edgers/Brush Cutter (Commercial)	91	820	1576.80	76.12	6.77	0.51	0.46	0.43	2466.09
2265004030	4 Stroke Leaf blowers/Vacuums (Residential)	94	900	1459.51	168.68	7.56	0.53	0.64	0.59	2629.29

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2265004031	4 Stroke Leaf blowers/Vacuums (Commercial)	94	700	1308.73	26.17	8.05	0.44	0.24	0.22	2198.13
2265004035	4 Stroke Snow blowers (Residential)	35	940	1556.29	183.87	7.08	0.60	0.24	0.22	2947.93
2265004036	4 Stroke Snow blowers (Commercial)	35	940	1556.11	47.72	7.08	0.60	0.24	0.22	2947.93
2265004040	4 Stroke Rear Engine Riding Mowers (Residential)	38	760	1520.17	74.62	6.79	0.49	0.26	0.24	2391.64
2265004041	4 Stroke Rear Engine Riding Mowers (Commercial)	38	740	1612.03	25.84	6.22	0.49	0.26	0.24	2338.16
2265004046	4 Stroke Front Mowers	65	790	1467.91	47.39	7.23	0.51	0.29	0.26	2478.48
2265004051	4 Stroke Shredders < 6 HP	80	890	1439.64	107.93	7.50	0.53	0.60	0.55	2600.34
2265004055	4 Stroke Lawn & Garden Tractors (Residential)	44	760	1515.52	60.57	6.86	0.49	0.26	0.24	2400.46
2265004056	4 Stroke Lawn & Garden Tractors (Commercial)	44	740	1611.02	24.26	6.24	0.49	0.26	0.24	2338.16
2265004066	4 Stroke Chippers/Stump Grinders	78	640	960.78	16.78	8.82	0.42	0.20	0.18	2013.43
2265004071	4 Stroke Commercial Turf Equipment	60	730	1438.01	28.97	6.28	0.46	0.29	0.26	2271.73
2265004075	4 Stroke Other Lawn & Garden Equipment	58	850	1440.00	85.05	7.45	0.53	0.44	0.41	2572.77
2265004076	4 Stroke Other Lawn & Garden Equipment	58	850	1433.38	85.86	7.50	0.53	0.44	0.41	2568.36
2265005010	4 Stroke 2-Wheel Tractors	62	740	1653.35	25.42	6.15	0.49	0.26	0.24	2329.34
2265005015	4 Stroke Agricultural Tractors	62	580	490.61	13.12	11.42	0.37	0.18	0.16	1833.15
2265005020	4 Stroke Combines	74	580	356.81	21.15	16.16	0.37	0.15	0.14	1841.97
2265005025	4 Stroke Balers	62	580	356.90	24.56	16.18	0.37	0.15	0.14	1841.97
2265005030	4 Stroke Agricultural Mowers	48	770	1514.77	34.02	6.88	0.49	0.26	0.24	2416.18
2265005035	4 Stroke Sprayers	65	740	1076.59	50.74	10.36	0.46	0.31	0.28	2298.47
2265005040	4 Stroke Tillers > 6 HP	71	870	1443.48	56.40	6.20	0.55	0.24	0.22	2705.62
2265005045	4 Stroke Swathers	52	580	356.90	21.17	16.18	0.37	0.15	0.14	1841.97
2265005055	4 Stroke Other Agricultural Equipment	55	620	587.81	22.49	14.31	0.40	0.18	0.16	1966.57

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[4]	$PM_{2.5}$[5,6]	GHG[7]
2265005060	4 Stroke Irrigation Sets	60	550	300.87	11.84	10.96	0.35	0.15	0.14	1735.29
2265006005	4 Stroke Generator Sets	68	780	1507.10	46.33	6.95	0.51	0.31	0.28	2434.10
2265006010	4 Stroke Pumps	69	760	1375.48	49.99	7.72	0.49	0.37	0.34	2325.49
2265006015	4 Stroke Air Compressors	56	700	1160.36	31.86	8.47	0.44	0.29	0.26	2167.26
2265006025	4 Stroke Welders	68	710	1422.95	25.20	7.47	0.46	0.24	0.22	2224.87
2265006030	4 Stroke Pressure Washers	85	800	1547.98	55.24	6.77	0.51	0.37	0.34	2434.66
2265006035	4 Stroke Hydro Power Units	56	750	1600.17	33.82	6.39	0.49	0.31	0.28	2334.03
2265007010	4 Stroke Shredders > 6 HP	80	800	1445.66	45.05	7.36	0.51	0.29	0.26	2503.01
2265007015	4 Stroke Forest Equipment - Feller/Bunch/Skidder	70	810	1647.29	58.61	6.35	0.49	0.46	0.43	2432.73
2265008005	4 Stroke Airport Ground Support Equipment	56	600	577.42	18.30	10.63	0.37	0.20	0.18	1871.19
2265010010	4 Stroke Other Oil Field Equipment	90	740	1795.20	21.28	6.13	0.49	0.29	0.26	2322.73
2267001060	LPG Specialty Vehicle Carts	58	490	102.03	6.35	23.24	0.02	0.13	0.13	1472.22
2267002003	LPG Pavers	66	460	94.42	4.98	17.79	0.02	0.13	0.13	1393.87
2267002015	LPG Rollers	62	450	89.39	4.08	14.38	0.02	0.13	0.13	1344.97
2267002021	LPG Paving Equipment	59	480	98.67	5.80	21.08	0.02	0.13	0.13	1440.96
2267002024	LPG Surfacing Equipment	49	460	93.76	4.83	17.20	0.02	0.13	0.13	1385.05
2267002030	LPG Trenchers	66	460	95.08	5.09	18.19	0.02	0.13	0.13	1398.28
2267002033	LPG Bore/Drill Rigs	79	490	100.28	6.17	22.71	0.02	0.13	0.13	1465.60
2267002039	LPG Concrete/Industrial Saws	78	430	84.67	3.29	11.36	0.02	0.13	0.13	1302.30
2267002045	LPG Cranes	47	480	98.72	5.80	21.06	0.02	0.13	0.13	1440.96
2267002054	LPG Crushing/Proc. Equipment	85	480	98.41	5.73	20.82	0.02	0.13	0.13	1436.55
2267002057	LPG Rough Terrain Forklifts	63	470	96.51	5.36	19.25	0.02	0.13	0.13	1414.11

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[4]	$PM_{2.5}$[5,6]	GHG[7]
2267002060	LPG Rubber Tire Loaders	71	460	94.04	4.85	17.24	0.02	0.13	0.13	1385.05
2267002066	LPG Tractors/Loaders/ Backhoes	48	450	91.55	4.41	15.57	0.02	0.13	0.13	1362.61
2267002072	LPG Skid Steer Loaders	58	470	97.64	5.60	20.22	0.02	0.13	0.13	1429.54
2267002081	LPG Other Construction Equipment	48	480	99.09	5.89	21.45	0.02	0.13	0.13	1445.37
2267003010	LPG Aerial Lifts	46	480	97.88	5.71	20.82	0.02	0.13	0.13	1436.55
2267003020	LPG Forklifts	30	460	93.54	4.83	17.15	0.02	0.13	0.13	1385.05
2267003030	LPG Sweepers/Scrubbers	71	440	88.22	3.88	13.58	0.02	0.13	0.13	1333.56
2267003040	LPG Other General Industrial Equipment	54	450	90.76	4.37	15.41	0.02	0.13	0.13	1360.41
2267003050	LPG Other Material Handling Equipment	53	480	97.70	5.67	20.59	0.02	0.13	0.13	1434.34
2267003070	LPG Terminal Tractors	78	430	84.74	3.29	11.40	0.02	0.13	0.13	1302.30
2267004066	LPG Chippers/Stump Grinders	78	450	92.24	4.56	16.16	0.02	0.13	0.13	1371.43
2267005055	LPG Other Agricultural Equipment	55	490	103.39	6.50	23.68	0.02	0.13	0.13	1478.83
2267005060	LPG Irrigation Sets	60	450	93.23	4.61	16.25	0.02	0.13	0.13	1371.43
2267006005	LPG Generator Sets	68	480	66.39	4.28	20.86	0.02	0.13	0.13	1449.78
2267006010	LPG Pumps	69	470	65.49	3.88	18.74	0.02	0.13	0.13	1420.72
2267006015	LPG Air Compressors	56	460	64.87	3.62	17.33	0.02	0.13	0.13	1402.69
2267006025	LPG Welders	68	460	93.69	5.05	18.21	0.02	0.13	0.13	1400.49
2267006030	LPG Pressure Washers	85	470	95.54	5.49	20.18	0.02	0.13	0.13	1429.54
2267006035	LPG Hydro Power Units	56	460	63.33	3.24	15.59	0.02	0.13	0.13	1378.44
2267008005	LPG Airport Ground Support Equipment	56	450	91.40	4.52	16.10	0.02	0.13	0.13	1369.23
2268002081	CNG Other Construction Equipment	48	480	99.09	0.35	21.45	0.02	0.13	0.13	2885.02
2268003020	CNG Forklifts	30	460	93.91	0.29	17.29	0.02	0.13	0.13	2783.74

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2268003030	CNG Sweepers/Scrubbers	71	460	93.84	0.29	17.20	0.02	0.13	0.13	2783.74
2268003040	CNG Other General Industrial Equipment	54	460	92.92	0.29	16.67	0.02	0.13	0.13	2779.33
2268003060	CNG AC\Refrigeration	46	450	90.85	0.26	15.30	0.02	0.13	0.13	2733.09
2268003070	CNG Terminal Tractors	78	430	85.02	0.20	11.51	0.02	0.13	0.13	2636.22
2268005055	CNG Other Agricultural Equipment	55	510	120.57	0.46	27.23	0.02	0.13	0.13	3010.48
2268005060	CNG Irrigation Sets	60	510	121.21	0.46	27.03	0.02	0.13	0.13	3008.28
2268006005	CNG Generator Sets	68	490	68.24	0.26	21.98	0.02	0.13	0.13	2977.56
2268006010	CNG Pumps	69	480	67.47	0.24	20.44	0.02	0.13	0.13	2929.12
2268006015	CNG Air Compressors	56	470	66.30	0.22	18.32	0.02	0.13	0.13	2878.48
2268006020	CNG Gas Compressors	85	410	16.47	0.02	2.54	0.02	0.13	0.13	2583.45
2268006035	CNG Hydro Power Units	56	470	66.44	0.31	18.68	0.02	0.13	0.13	2834.38
2268010010	CNG Other Oil Field Equipment	90	410	67.96	0.11	6.22	0.02	0.13	0.13	2541.55
2270001060	Diesel Specialty Vehicle Carts	21	450	17.29	4.56	15.92	0.99	2.54	2.45	1443.83
2270002003	Diesel Pavers	59	380	4.76	0.90	10.72	0.84	0.88	0.84	1223.54
2270002006	Diesel Tampers/Rammers	43	1000	10.83	2.51	15.83	2.23	1.72	1.68	3214.63
2270002009	Diesel Plate Compactors	43	410	9.92	2.43	14.99	0.90	1.72	1.68	1308.18
2270002015	Diesel Rollers	59	390	5.78	1.01	11.09	0.86	0.99	0.97	1243.67
2270002018	Diesel Scrapers	59	370	4.70	0.66	10.98	0.82	0.68	0.66	1192.39
2270002021	Diesel Paving Equipment	59	390	6.26	1.15	11.69	0.86	1.06	1.04	1237.06
2270002024	Diesel Surfacing Equipment	59	380	7.92	1.23	13.27	0.86	1.19	1.17	1232.36
2270002027	Diesel Signal Boards/Light Plants	43	410	7.32	2.03	13.08	0.90	1.35	1.30	1301.57
2270002030	Diesel Trenchers	59	400	8.05	1.32	11.95	0.88	1.32	1.28	1283.65

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2270002033	Diesel Bore/Drill Rigs	43	370	5.49	1.32	15.37	0.84	1.06	1.01	1199.00
2270002036	Diesel Excavators	59	380	3.75	0.75	10.03	0.84	0.71	0.68	1203.70
2270002039	Diesel Concrete/Industrial Saws	59	410	8.78	1.41	11.69	0.90	1.46	1.41	1314.80
2270002042	Diesel Cement & Mortar Mixers	43	390	7.17	1.81	15.79	0.86	1.35	1.30	1252.49
2270002045	Diesel Cranes	43	370	3.02	0.84	12.06	0.82	0.64	0.62	1185.77
2270002048	Diesel Graders	59	370	3.33	0.75	10.05	0.82	0.68	0.66	1194.59
2270002051	Diesel Off-highway Trucks	59	370	3.66	0.64	11.27	0.82	0.57	0.55	1192.39
2270002054	Diesel Crushing/Proc. Equipment	43	380	4.21	0.99	12.72	0.84	0.79	0.77	1212.52
2270002057	Diesel Rough Terrain Forklifts	59	390	7.30	1.23	11.71	0.88	1.21	1.17	1265.72
2270002060	Diesel Rubber Tire Loaders	59	370	4.87	0.86	11.75	0.84	0.82	0.79	1199.00
2270002066	Diesel Tractors/Loaders/ Backhoes	21	460	14.64	3.42	15.61	1.01	2.36	2.27	1472.77
2270002069	Diesel Crawler Tractor/Dozers	59	370	4.50	0.77	11.09	0.84	0.73	0.71	1199.00
2270002072	Diesel Skid Steer Loaders	21	480	19.58	4.85	16.01	1.06	3.11	3.02	1532.88
2270002075	Diesel Off-Highway Tractors	59	370	6.11	0.93	12.97	0.82	0.84	0.82	1192.39
2270002078	Diesel Dumpers/Tenders	21	470	18.74	5.01	16.43	1.04	3.11	3.00	1512.75
2270002081	Diesel Other Construction Equipment	59	370	6.46	0.99	13.01	0.82	0.95	0.93	1194.59
2270003010	Diesel Aerial Lifts	21	480	18.65	4.94	17.46	1.06	2.95	2.87	1535.08
2270003020	Diesel Forklifts	59	400	6.50	0.90	9.97	0.88	0.90	0.88	1274.83
2270003030	Diesel Sweepers/Scrubbers	43	380	3.42	0.93	11.11	0.86	0.75	0.73	1227.95
2270003040	Diesel Other General Industrial Equipment	43	380	3.75	1.04	12.33	0.84	0.79	0.77	1214.72
2270003050	Diesel Other Material Handling Equipment	21	440	12.08	3.37	18.32	0.99	2.18	2.12	1419.29
2270003060	Diesel AC\Refrigeration	43	410	5.45	1.12	11.58	0.90	1.01	0.97	1310.39

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2270003070	Diesel Terminal Tractors	59	380	3.57	0.77	9.44	0.84	0.71	0.68	1210.31
2270004031	Diesel Leaf blowers/Vacuums	43	410	9.28	2.78	15.26	0.90	1.59	1.54	1305.98
2270004036	Diesel Snow blowers	43	370	4.70	1.15	13.60	0.82	0.86	0.84	1179.16
2270004046	Diesel Front Mowers	43	410	7.28	2.01	13.03	0.90	1.37	1.32	1308.18
2270004056	Diesel Lawn & Garden Tractors	43	410	7.47	2.07	12.94	0.90	1.30	1.26	1308.18
2270004066	Diesel Chippers/Stump Grinders	43	380	5.67	1.39	13.69	0.84	1.08	1.06	1225.75
2270004071	Diesel Commercial Turf Equipment	43	400	4.28	1.04	11.29	0.88	0.88	0.86	1272.62
2270004076	Diesel Other Lawn & Garden Equipment	43	410	7.54	1.94	13.83	0.90	1.46	1.41	1301.57
2270005010	Diesel 2-Wheel Tractors	59	410	15.61	2.12	12.37	0.90	1.92	1.85	1321.41
2270005015	Diesel Agricultural Tractors	59	380	7.23	1.39	13.30	0.84	1.32	1.30	1219.13
2270005020	Diesel Combines	59	370	5.71	1.32	15.04	0.82	1.61	1.54	1194.59
2270005025	Diesel Balers	59	400	9.44	2.36	13.41	0.88	1.87	1.83	1277.03
2270005030	Diesel Agricultural Mowers	59	410	11.36	2.05	14.13	0.90	2.12	2.05	1321.41
2270005035	Diesel Sprayers	59	380	7.21	2.01	13.38	0.84	1.52	1.48	1203.70
2270005040	Diesel Tillers > 6 HP	59	370	8.33	1.37	13.56	0.84	1.19	1.15	1194.59
2270005045	Diesel Swathers	59	400	8.60	1.72	14.99	0.90	1.96	1.92	1292.47
2270005055	Diesel Other Agricultural Equipment	59	380	7.50	1.59	14.16	0.84	1.57	1.50	1203.70
2270005060	Diesel Irrigation Sets	43	390	4.92	1.37	12.83	0.86	1.08	1.04	1243.67
2270006005	Diesel Generator Sets	43	390	6.95	1.85	13.98	0.88	1.35	1.30	1261.31
2270006010	Diesel Pumps	43	390	6.92	1.76	14.09	0.88	1.37	1.32	1261.31
2270006015	Diesel Air Compressors	43	400	5.49	1.30	12.55	0.88	1.08	1.06	1274.83
2270006020	Diesel Gas Compressors	43	410	5.69	0.95	10.67	0.90	0.77	0.75	1312.59

Table 4-1. Criteria Pollutant Emission Factors for Non-Road Engines and Equipment (cont.)

SCC	Equipment Description	Load Factor[1] (% Max Power)	BSFC[2] (lb/1000 hp-hr)	Emission Factors (lb/1000 hp-hr)						
				CO	VOC	NO_X	SO_2	PM_{10}[(4)]	$PM_{2.5}$[(5,6)]	GHG[7]
2270006025	Diesel Welders	21	480	20.31	5.12	15.19	1.06	3.06	2.98	1532.88
2270006030	Diesel Pressure Washers	43	380	6.33	1.83	14.18	0.86	1.12	1.10	1232.36
2270006035	Diesel Hydro Power Units	43	400	5.60	1.35	12.50	0.88	1.10	1.08	1281.44
2270007015	Diesel Forest Equipment - Feller/Bunch/Skidder	59	370	3.26	0.71	9.57	0.84	0.66	0.64	1196.80
2270008005	Diesel Airport Ground Support Equipment	59	380	4.96	0.88	11.44	0.84	0.82	0.79	1205.90
2270009010	Diesel Other Underground Mining Equipment	21	450	15.35	3.75	17.46	0.99	2.36	2.29	1432.80
2270010010	Diesel Other Oil Field Equipment	43	370	3.70	0.88	13.10	0.82	0.66	0.64	1183.57
2282005010	2 Stroke Outboard	21	850	419.61	235.67	5.93	0.44	3.31	3.04	2217.76
2282005015	2 Stroke Personal Water Craft	21	820	404.73	160.85	4.85	0.44	2.93	2.70	2208.10
2282010005	4 Stroke Inboard/Sterndrive	21	630	341.09	38.54	14.24	0.40	0.15	0.14	1982.28
2282020005	Diesel Inboard/Sterndrive	35	370	2.36	0.53	14.46	0.95	0.33	0.31	1183.57
2282020010	Diesel Outboards	35	410	8.40	2.71	13.21	1.06	1.57	1.52	1305.98
2285002015	Diesel Railway Maintenance	21	440	12.74	3.02	16.47	0.97	2.16	2.09	1408.26
2285004015	4 Stroke Railway Maintenance	62	750	1507.93	32.74	6.92	0.49	0.29	0.26	2345.06
2285006015	LPG Railway Maintenance	62	480	97.99	5.64	20.42	0.02	0.13	0.13	1432.14

1. Load factor and activity data obtained from EPA Office of Transportation Air Quality and were derived from *Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling*, EPA 420-P-005, NR-005c, April 2004.
2. BSFC and emission factors obtained from EPA Office of Transportation Air Quality and were derived from *Exhaust Emission Factors for Nonroad Engine Modeling: Spark-Ignition*, EPA 420-R-019, NR-010e, December 2005, and *Exhaust Emission Factors for Nonroad Engine Modeling: Compression-Ignition*, EPA 420-P-04-009, NR-009c, April 2004. The emission factors are composite emission factors that represent the national mix of model years and technology types believed to be in existence in 2007. They represent in-use emissions, and take into account NONROAD model deterioration and transient adjustment factors across the model years.
3. Activities for off-road motorcycles and all-terrain vehicles are in units of miles per year instead of hours per year.
4. PM_{10} is assumed to be equivalent to total PM for gasoline engines.
5. For gasoline engines, $PM_{2.5}$ is assumed to be 92% of the PM_{10} value.
6. For LPG and CNG engines, all PM is assumed to be $PM_{2.5}$.
7. The greenhouse gas (GHG) emission factors are the total of CO_2, CH_4, and N_2O. CH_4 and N_2O were converted to equivalent CO_2 (CO_2e) using a global warming potential (GWP) value of 25 for CH_4 and 298 for N_2O. These were added to the CO_2 emission factor and are presented as the GHG emission factors in units of lb/1000hp-hr. Calculations were made using the stated BSFC, the fuel density in Table 3-2, and if the fuel was not stated, it was assumed to be gasoline.

Table 4-2. Pre-1998 Non-Road CI Engine Criteria Pollutant Emission Factors (Power Rating >50 hp)

Equipment Description	Emission Factors (lb/1000 hp-hr)						
	CO	VOC[1]	NO_X	SO_X	PM_{10}[(2)]	$PM_{2.5}$[(3)]	GHG[4]
Construction Equipment							
Asphalt Pavers	7.05	1.35	22.71	2.05	1.98	1.92	1297.83
Plate Compactors	6.83	1.82	20.50	2.05	1.98	1.92	1297.83
Concrete Pavers	10.08	2.48	22.09	2.05	1.98	1.92	1297.83
Rollers	6.83	1.81	20.50	2.20	1.72	1.67	1297.83
Scrapers	11.02	1.57	19.18	1.98	2.78	2.69	1297.83
Paving Equipment	10.14	2.28	24.27	1.98	1.98	1.92	1297.83
Signal Boards	11.02	2.71	17.64	2.05	2.20	2.14	1297.83
Trenchers	20.15	3.47	22.09	2.05	3.17	3.08	1297.83
Bore/Drill Rigs	20.28	3.18	24.27	2.05	3.17	3.08	1297.83
Excavators	11.46	1.57	23.70	2.05	3.17	3.08	1297.83
Concrete/Industrial Saws	20.28	3.18	24.27	2.05	3.17	3.08	1297.83
Cement and Mortar Mixers	10.14	2.28	24.27	2.05	1.98	1.92	1297.83
Cranes	9.26	2.85	22.71	2.05	3.17	3.08	1297.83
Graders	8.38	3.47	21.16	1.92	2.20	2.14	1297.83
Off-Highway Trucks	6.17	1.90	21.16	1.96	1.76	1.71	1297.83
Crushing/Processing Equipment	20.28	3.18	24.27	2.05	3.17	3.08	1297.83
Rough Terrain Forklifts	22.05	3.78	17.64	2.05	3.53	3.42	1297.83
Rubber Tired Dozers	6.17	1.90	21.16	2.05	1.46	1.41	1297.83
Tractors/Loaders/Backhoes	14.99	3.16	22.27	1.87	2.31	2.25	1297.83
Crawler Tractors	10.58	2.85	22.71	1.87	2.45	2.37	1297.83
Skid Steer Loaders	19.84	4.72	21.16	2.05	3.17	3.08	1297.83
Off-Highway Tractors	32.36	5.54	26.26	2.05	4.48	4.34	1297.83
Dumpers/Tenders	6.17	1.90	21.16	1.96	3.17	3.08	1297.83
Other Construction Equipment	20.28	3.18	24.27	2.05	3.17	3.08	1297.83
Industrial Equipment							
Aerial Lifts	13.36	3.53	30.86	2.05	3.53	3.42	1297.83
Forklifts	13.36	3.53	30.86	2.05	3.53	3.42	1297.83
Sweepers/Scrubbers	13.36	3.53	30.86	2.05	3.53	3.42	1297.83
Other General Equipment	13.36	3.53	30.86	2.05	3.53	3.42	1297.83
Other Material Handling Equipment	13.36	3.53	30.86	2.05	3.53	3.42	1297.83
Lawn and Garden Equipment							
Rear Engine Riding Mowers	11.02	2.70	17.64	2.05	2.20	2.14	1297.83
Lawn and Garden Tractors	11.02	2.70	17.64	2.05	2.20	2.14	1297.83
Wood Splitters	11.02	2.70	17.64	2.05	2.20	2.14	1297.83
Chippers/Stump Grinders	11.02	2.70	17.64	2.05	2.20	2.14	1297.83
Other Equipment	11.02	2.70	17.64	2.05	2.20	2.14	1297.83

Table 4-2. Pre-1998 Non-Road CI Engine Criteria Pollutant Emission Factors (continued)

Equipment Description	Emission Factors (lb/1000 hp-hr)						
	CO	VOC[1]	NO_X	SO_X	PM_{10}[(2)]	$PM_{2.5}$[(3)]	GHG[4]
Agricultural Equipment							
Tractors	19.71	5.01	24.71	1.92	4.52	4.38	1300.20
Sprayers	8.33	5.01	17.15	2.03	3.33	3.23	1300.20
Tillers	11.02	2.71	17.64	2.03	2.20	2.14	1300.20
Hydro Power Units	8.33	5.01	17.15	2.03	3.33	3.23	1300.20
Other Equipment	9.63	4.11	24.52	2.03	3.33	3.23	1300.20
Logging Equipment							
Skidders	11.46	1.90	24.91	1.98	3.17	3.08	1297.93
Fellers/Bunchers	11.46	1.90	24.91	1.98	3.17	3.08	1297.93
Recreational Equipment							
Specialty Vehicles/Carts	11.02	3.46	17.64	2.05	2.20	2.14	1297.93

SOURCE: *Nonroad Engine and Vehicle Emission Study – Report*, EPA 460/3-91-02, 21A-2001, November 1991.

1. Reported as HC and assumed to be equal to VOC.
2. Reported as PM in the source document and assumed to be equal to PM_{10}.
3. Assumed to be 97% of PM_{10} per *Exhaust and Crankshaft Emission Factors for Nonroad Engine Modeling-Compression-Ignition*, EPA420-P-04-009, April 2004.
4. The Greenhouse gas (GHG) emission factors are the total of CO_2, CH_4, and N_2O with individual emission factors of 10.21kg/gal, 0.58g/gal, and 0.26 g/gal respectively. CH_4 and N_2O were converted to equivalent CO_2 (CO_2e) using a global warming potential (GWP) value of 25 for CH_4 and 298 for N_2O. These were added to the CO_2 and are presented as the GHG emission factors in units of lb/1000hp-hr. Fuel usage rates were based on the conservative 0.408 lb/hp-hr which is the average fuel usage rate for engines below 100 hp (*from Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling-Compression-Ignition*, EPA420-P-04-009). All engines are assumed to use diesel which has a density of 7.14lb/gal and was used for unit conversion.

Table 4-3. Weight Percent Speciation of VOC Emissions Non-Road Engines

Compound	HAP	Gasoline[1]	Diesel[2]	Natural Gas[3]			LPG[4]
				2-Stroke LB	4-Stroke LB	4-Stroke RB	
Acenaphthene	X	---	0.02%	0.00%	0.00%	---	---
Acenaphthylene	X	---	0.08%	0.00%	0.01%	---	---
Acetaldehyde	X	0.30%	11.88%	6.49%	7.00%	8.63%	0.88%
Acetylene		15.47%	---	---	---	---	---
Acrolein	X	---	1.43%	6.51%	4.31%	8.14%	---
Anthracene	X	---	0.03%	0.00%	---	---	---
Benz(a)anthracene	X	---	0.03%	0.00%	---	---	---
Benzaldehyde		0.26%	---	---	---	---	---
Benzene	X	5.83%	14.46%	1.62%	0.37%	4.89%	3.23%
Benzo(a)pyrene	X	---	0.00%	0.00%	---	---	---
Benzo(b)fluoranthene	X	---	0.00%	0.00%	0.00%	---	---
Benzo(k)fluoranthene	X	---	0.00%	0.00%	---	---	---
Benzo(g,h,i)perylene	X	---	0.01%	0.00%	0.00%	---	---
Benzo(e)pyrene		---	---	0.00%	0.00%	---	---
Biphenyl	X	---	---	0.00%	0.18%	---	---
1,3-Butadiene	X	0.99%	0.61%	0.69%	0.22%	2.05%	---
Butane		---	---	3.97%	0.45%	---	---
n-Butane		2.19%	---	---	---	---	---
1-Butene		0.40%	---	---	---	---	---
cis-2-Butene		0.22%	---	---	---	---	---
trans-2-Butene		0.28%	---	---	---	---	---
Butyr/Isobutyraldehyde		---	---	0.37%	0.09%	0.15%	0.59%
Carbon Tetrachloride	X	---	---	0.05%	0.03%	0.05%	---
Chlorobenzene		---	---	0.04%	0.03%	0.04%	---
Chloroethane	X	---	---	---	0.00%	---	---
Chloroform	X	---	---	0.04%	0.02%	0.04%	---
Chrysene	X	---	0.00%	0.00%	0.00%	---	---
Cyclohexane		---	---	0.26%	---	---	---
Cyclopentane		---	---	0.08%	0.19%	---	---
1,3-Cyclopentadiene		0.26%	---	---	---	---	---
Dibenz(a,h)anthracene	X	---	0.01%	---	---	---	---
1,1-Dichloroethane	X	---	---	0.03%	0.02%	0.03%	---
1,2-Dichloroethane	X	---	---	0.04%	0.02%	0.03%	---
1,2-Dichloropropane	X	---	---	0.04%	0.02%	0.04%	---
1,3-Dichloropropene	X	---	---	0.04%	0.02%	0.04%	---
Dicyclopentadiene		0.27%	---	---	---	---	---
1,2-Diethylbenzene		0.56%	---	---	---	---	---
1,3-Diethylbenzene		0.45%	---	---	---	---	---
2,2-Dimethylbutane		0.30%	---	---	---	---	---
2,3-Dimethylbutane		0.62%	---	---	---	---	---
trans-1,3-Dimethylcyclopentane		0.28%	---	---	---	---	---
2,3-Dimethylhexane		0.32%	---	---	---	---	---
2,4-Dimethylhexane		0.45%	---	---	---	---	---
2,5-Dimethylhexane		0.24%	---	---	---	---	---
2,3-Dimethylpentane		1.16%	---	---	---	---	---
2,4-Dimethylpentane		0.71%	---	---	---	---	---
1,2-Dimethyl-4-Ethylbenzene		0.17%	---	---	---	---	---
1,3-Dimethyl-2-Ethylbenzene		0.34%	---	---	---	---	---
1,3-Dimethyl-4-Ethylbenzene		0.20%	---	---	---	---	---
Ethylbenzene	X	2.00%	---	0.09%	0.03%	0.08%	0.29%
Ethylene		11.39%	---	---	---	---	18.53%
Ethylene Dibromide	X	---	---	0.06%	0.04%	0.07%	---
Fluoranthene	X	---	0.12%	0.00%	0.00%	---	---
Fluorene	X	---	0.45%	0.00%	0.01%	---	---
Formaldehyde	X	1.32%	18.28%	46.17%	44.24%	63.43%	23.82%
n-Heptane		0.78%	---	---	---	---	---
1-Hexene		0.20%	---	---	---	---	---
n-Hexane	X	0.45%	---	0.37%	0.93%	---	0.59%
trans-2-Hexene		0.16%	---	---	---	---	---
Indan		---	---	---	---	---	---
Indeno(1,2,3-c,d)pyrene	X	0.24%	0.01%	0.00%	---	---	---

Compound	HAP	Gasoline[1]	Diesel[2]	Natural Gas[3]			LPG[4]
				2-Stroke LB	4-Stroke LB	4-Stroke RB	
Isobutane		---	---	3.14%	---	---	---
Isobutene		2.02%	---	---	---	---	---
Isopentane		5.50%	---	---	---	---	---
Isoprene		0.32%	---	---	---	---	---
Methanol	X	0.15%	---	2.07%	2.10%	9.47%	---
2-Methyl-1-Butene		0.35%	---	---	---	---	---
2-Methyl-2-Butene		0.37%	---	---	---	---	---
Methylcyclohexane		0.24%	---	0.28%	1.03%	---	---
Methylcyclopentane		0.40%	---	---	---	---	---
1-Methylcyclopentene		0.16%	---	---	---	---	---
1-Methyl-2-Ethylbenzene		0.50%	---	---	---	---	---
1-Methyl-3-Ethylbenzene		1.52%	---	---	---	---	---
1-Methyl-4-Ethylbenzene		0.71%	---	---	---	---	---
2-Methylheptane		0.37%	---	---	---	---	---
3-Methylheptane		0.40%	---	---	---	---	---
4-Methylheptane		0.17%	---	---	---	---	---
2-Methylhexane		1.02%	---	---	---	---	---
3-Methylhexane		1.18%	---	---	---	---	---
3-Methyl-cis-3-Hexene		0.18%	---	---	---	---	---
2-Methylnaphthalene		---	---	0.02%	0.03%	---	---
3-Methyloctane		0.20%	---	---	---	---	---
2-Methyl-2-Pentene		0.18%	---	---	---	---	---
2-Methylpentane		1.73%	---	---	---	---	---
3-Methylpentane		0.99%	---	---	---	---	---
1-Methyl-3-Propylbenzene		0.26%	---	---	---	---	---
Methyl t-butyl ether	X	0.30%	---	---	---	---	---
Naphthalene	X	0.35%	1.31%	0.08%	0.06%	0.30%	---
n-Nonane		---	---	0.03%	0.09%	---	---
1-Nonene		0.61%	---	---	---	---	---
n-Octane		0.30%	---	0.06%	0.29%	---	---
1-Octene		0.22%	---	---	---	---	---
n-Pentane		0.71%	---	1.28%	2.18%	---	---
1-Pentene		0.27%	---	---	---	---	---
cis-2-Pentene		0.21%	---	---	---	---	---
trans-2-Pentene		0.34%	---	---	---	---	---
Perylene		---	---	0.00%	---	---	---
Phenanthrene	X	---	0.46%	0.00%	0.01%	---	---
Phenol	X	---	---	0.03%	0.02%	---	---
1,2-Propadiene		0.29%	---	---	---	---	---
Propane		---	---	24.01%	35.11%	---	---
n-Propylbenzene		0.38%	---	---	---	---	---
Propylene		4.72%	39.98%	---	---	---	49.71%
1-Propyne		0.48%	---	---	---	---	---
Pyrene	X	---	0.07%	0.00%	0.00%	---	---
Styrene	X	---	---	0.05%	0.02%	0.04%	---
Tetrachloroethane		---	---	---	0.00%	---	---
1,1,2,2,-Tetrachloroethane	X	---	---	0.06%	0.03%	0.08%	---
1,2,3,5-Tetramethylbenzene		0.22%	---	---	---	---	---
Tolualdehyde		0.16%	---	---	---	---	---
Toluene	X	8.21%	6.34%	0.81%	0.34%	1.73%	1.18%
1,1,2-Trichloroethane	X	---	---	0.04%	0.03%	0.05%	---
1,2,3-Trimethylbenzene		0.40%	---	0.03%	0.02%	---	---
1,2,4-Trimethylbenzene		2.18%	---	0.09%	0.01%	---	---
1,3,5-Trimethylbenzene		0.77%	---	0.01%	0.03%	---	---
2,2,5-Trimethylhexane		0.30%	---	---	---	---	---
2,2,4-Trimethylpentane	X	2.37%	---	0.71%	0.21%	---	---
2,3,4-Trimethylpentane		0.52%	---	---	---	---	---
Vinyl Chloride	X	---	---	0.02%	0.01%	0.02%	---
Vinylacetylene		0.23%	---	---	---	---	---
o-Vinyltoluene		0.26%	---	---	---	---	---
Xylenes	X	7.47%	4.42%	0.22%	0.15%	0.60%	1.18%

1. SOURCE: Emission factors used to calculate weight percent taken from EPA's SPECIATE profile #4738.
2. SOURCE: Emission factors used to calculate weight percent taken from Section 3.3 of AP-42
3. SOURCE: Emission factors used to calculate weight percent taken from Section 3.2 of AP-42.
4. SOURCE: Emission factors used to calculate weight percent taken from Mojave Desert AQMD.

"X" Indicates the compound is a HAP.

"---" Indicates No Data Available.

Figure 4-1. Example Data Collection Form for Non-Road Vehicles and Equipment

Installation Name: **Inventory Year (CY):**
Responsible Organization (Name & Office Symbol):
POC (Name, Phone # and e-mail address):

Equipment Type	Equipment ID	Equipment Manufacturer	Equipment Model Number	Fuel Type	Power Rating (hp)	Load Factor (% of max)[1]	Estimated Operating Time (hr/yr)	Estimated Fuel Usage (gal/yr)[2]

1. Load factor is the highest % of maximum power which the equipment was operated at durng the inventory year. If this is unknown, a default EPA value should be used.
2. While the quantity of fuel is generally needed only if the power rating and operating hours are unknkown, fuel consumption data may also be needed to estimate CO_2 emissions.

4.6 References

CCAR 2007, "California Climate Action Registry General Reporting Protocol Version 2.2," California Climate Action Registry (CCAR), 2007

DLA 2006, "Petroleum Quality Information System Fuels Data (2005)," Defense Logistics Agency (DLA), Defense Energy Support Center, Technology and Standardization Division, 2006

Eastern Research Group, Inc. 2000, "Documentation for the 1996 Base Year National Toxics Inventory for Nonroad Vehicle and Equipment Mobile Sources," June 2000

Environmental Security Technology Certification Program 2006, "Effect of Biodiesel on Diesel Engine Nitrogen Oxide and Other Regulated Emissions, Project Number WP-0308," May 2006

USAF 2002, "Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations (IERA/RSEQ, IERA-RS-BR-SR-2001-0010)," United States Air Force, January 2002 (Revised December 2003)

USEPA 1991, "Nonroad Engine and Vehicle Emission Study-Report," United States Environmental Protection Agency, November 1991

USEPA 1999, "Tier 2 Vehicle and Gasoline Sulfur Program," United States Environmental Protection Agency, December 1999

USEPA 2001, "Clean Air Highway Diesel Rule," U.S. Environmental Protection Agency, January 2001

USEPA 2002, "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions (EPA 420-P-02-001), United States Environmental Protection Agency, October 2002

USEPA 2004a, "Clean Air Nonroad Diesel Rule," United States Environmental Agency, June 2004

USEPA 2004b, "Exhaust Emission Factors for Nonroad Engine Modeling: Compression-Ignition (EPA 420-P-04-009, NR-009c), United States Environmental Protection Agency, April 2004

USEPA 2004c, "Median Life, Annual Activity, and Load Factor Values for Nonroad Engine Emissions Modeling (EPA 420-P-005, NR-005c), United States Environmental Protection Agency, 4 April 2004

USEPA 2005, "Exhaust Emission Factors for Nonroad Engine Modeling: Spark-Ignition (EPA 420-R-019, NR-010e)," U.S. Environmental Protection Agency, December 2005

USEPA 2010, "Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling: Compression-Ignition (EPA 420-R-10-018, NR-009d)," United States Environmental Protection Agency, July 2010

World LP Gas Association 2002, "Emissions, Test Methods, Standards and Technology," 2002

5 ON-ROAD VEHICLES (VEHE)

Air Force policy considers the dispensing of fuel into on-road vehicles a mobile source of emissions. However, if the regulator insists this category be included as a stationary source, subtract those emissions from the Mobile AEI and add them to the stationary AEI to avoid duplicate reporting. This is accomplished by manually calculating emissions generated from on-road vehicle refueling using the procedures given in the "Fuel Dispensing" section of this document, then subtracting those values from the emissions generated by on-road vehicles described in this section

5.1 Introduction

On-road vehicles encompass the full range of passenger cars, light duty trucks, heavy duty trucks, buses, and motorcycles that are specifically designed to operate on highways and other road systems. On-road vehicles in use on Air Force installations are *classified* either as Government Owned Vehicles (GOVs) or Privately Owned Vehicles (POVs). GOVs include all on-road vehicles that are owned or leased and operated by government organizations on the base (e.g., Air Force, Guard, Reserve, etc.). Such vehicles are typically referred to as "fleet vehicles", and range from small passenger cars to large vehicles such as refueling or fire trucks. POVs are those on-road vehicles that travel on an Air Force installation, but are owned or leased and operated by base employees, and visitors. Both GOVs and POVs typically operate on conventional gasoline and diesel motor fuels, but may also operate on alternative, non-petroleum based fuels.

The emissions of concern from the operation of on-road vehicles include the criteria pollutants: NO_X, VOC, CO, SO_2, $PM_{2.5}$ and PM_{10}, as well as HAPs such as 1,3-butadiene, benzene, acetaldehyde, formaldehyde, acrolein and Methyl tert-butyl ether (MTBE). Some of these direct pollutant emissions also participate in atmospheric reactions that contribute to the formation of ground level ozone and fine particulate matter pollution. Factors which impact the volume of pollutants emitted include the vehicle make and model, the Vehicle Miles Traveled (VMT), the average operating speed, vehicle age, climate, altitude, fuel type and quality, and maintenance procedures. To control vehicle emissions, the EPA has adopted an integrated approach to controlling on-road vehicle emissions. This approach has resulted in the establishment of regulatory standards that give full consideration to changes in vehicle and engine design, advanced emission controls, and the mandated use of reformulated and cleaner burning fuels.

Emissions from the operation of on-road vehicles are designated as exhaust, evaporative, or fugitive in nature. Exhaust emissions result from the combustion (sometimes incomplete) of the motor fuel while evaporative emissions result from the volatilization of the fuel in engine

components during the different stages of a vehicle's operating cycle. Additionally, fugitive particulate emissions, in the form of road dust, brake wear dust, and tire wear dust, can be attributed to the operation of on-road vehicles.

The EPA is currently proposing to regulate greenhouse gases (GHGs) for both mobile and stationary sources. As a matter of AF policy, GHG emissions are to be reported as part of the mobile air emission inventory. Specifically, carbon dioxide (CO_2) and methane (CH_4) emissions should be estimated for all mobile sources where emission factors are available. Additionally, although not currently regulated under the Clean Air Act, many regulatory agencies may request installations to include GHG emissions from motor vehicles in mobile source emissions inventories. Specific requests to calculate and provide CO_2 and/or CH_4 emissions data to regulatory agencies as part of the air emission inventory process should be reported through the appropriate Air Force Civil Engineer Center (AFCEC) channels, and coordinated through the chain-of-command. Such coordination should be accomplished prior to responding to the request in order to ensure a consistent Air Force response.

Since 1978, the U.S. Environmental Protection Agency (EPA) has used computer models to estimate emissions from cars, trucks and other mobile sources. The EPA's initial on-road vehicle emissions modeling software, known as the MOBILE model, was expanded many times over the years to incorporate new data on vehicle emissions, new vehicle emission standards and to better address new policy questions, while keeping the basic structure of the model constant. MOBILE uses average gram per mile emission rates and a series of correction factors to estimate emissions over a wide range of driving conditions. MOBILE6.2, finalized in 2004, was EPA's official model for highway vehicle emissions. A number of analysts have critiqued the MOBILE series of models and suggested that the EPA develop a modeling "toolkit" that would better serve the range of uses for highway vehicle modeling, including consistent modeling at the aggregate scale, mesoscale, and microscale analysis. In response to these and other concerns, the EPA has developed the Motor Vehicle Emissions Simulator (MOVES). MOVES incorporates extensive new data and advanced algorithms to better estimate highway vehicle emissions of greenhouse gases, criteria pollutants and selected air toxics at the national, regional and project level. The final version of MOVES was released in 2010. It is used for EPA internal policy analyses and is required for use (outside California) in the evaluation of State Implementation Plans (SIPs) and transportation conformity determinations.

The EPA has historically classified on-road vehicles into eight broad *categories*, with category differences based on the motor fuel type and Gross Vehicle Weight (GVW). MOBILE6 incorporated a new vehicle categorization system that more accurately reflects the way vehicles are categorized for emissions standards. MOVES, the successor to MOBILE6, expanded the general vehicle categories to 28 specific vehicle categories. MOVES was designed to reflect the general fleet distribution or fleet characterization (i.e., fractional vehicle category distribution by

year) for a specific location. MOBILE6 provides an output of vehicle emission rates (e.g., units of grams/mile) for any year from 1952-2050. MOVES can estimate emission rates (e.g., grams/mile, grams/vehicle) or input VMT and vehicle populations to output total emissions for any year from 1990 and 1999-2050. **Both the MOVES and MOBILE models incorporate emissions from on-road vehicle refueling, therefore, these emissions are <u>not</u> addressed in the "Fuel Dispensing" section of this document since they are already integrated in the emission factors presented in this section.**

Both MOVES and MOBILE6 emission models are better at showing relative changes in emissions over several years rather than obtaining "snapshot" accuracy for a given year. The EPA's April 2007 *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze*; Section 1.3.1 on Page 3 (USEPA 2007), "First, we recommend using models in a relative sense in concert with observed air quality data…" Therefore, **MOVES or MOBILE6 should <u>not</u> be used to create a Mobile Air Emission Inventory (AEI).**

5.1.1 Vehicle Categories

The 28 vehicle *categories* from MOVES have been grouped into seven major aggregate *categories* based on vehicle type and Gross Vehicle Weight Rating (GVWR). Table 5-1 provides the seven major aggregate *categories*. These *categories* were chosen based upon available MOBILE6 emission factor outputs and readily identifiable general vehicle groupings. The seven aggregate vehicle *categories* are:

- ***Light-Duty Gasoline Vehicles (LDGV)*** – All gasoline-powered passenger cars
- ***Light-Duty Diesel Vehicles (LDDV)*** – All diesel-powered passenger cars
- ***Light-Duty Gasoline Trucks (LDGT)*** – All smaller gasoline-powered trucks (0 to 8,500 lbs. GVWR)
- ***Light-Duty Diesel Trucks (LDDT)*** – All smaller diesel-powered trucks (0 to 8,500 lbs. GVWR)
- ***Heavy-Duty Gasoline Vehicles (HDGV)*** – All larger gasoline-powered vehicles (8,501to >60,000 lbs. GVWR)
- ***Heavy-Duty Diesel Vehicles (HDDV)*** – All larger diesel-powered vehicles (10,001to >60,000 lbs. GVWR)
- ***Motorcycles (MC)*** – All motorcycles (assumed to be gasoline powered)

5.1.2 Vehicle Fleet Characterization

Based upon a review of recent Air Force mobile source emission inventories, the vehicle categories that are most representative of the types of GOVs and POVs expected to be

encountered on a typical Air Force base were identified. The seven Air Force vehicle categories provide the most readily identifiable and discernible vehicle classes for vehicle mix identification and characterization. It is recognized that some vehicles encountered may not fit within the specific weight parameters of the categories chosen. In such instances, personnel conducting the air emissions inventory should use professional judgment to assign the vehicles to the listed category which most closely approximates (in terms of fuel type and vehicle weight) the vehicles in question. Table 5-2 provides a breakdown of the fleet characterization for the typical POV and GOV vehicle mix at an Air Force base. The vehicle mix provided in this table is to be used for estimating vehicle emissions unless specific vehicle mix data is available from a recent traffic study.

Table 5-1. Air Force On-Road Vehicle Categories

CATEGORY		VEHICLE CLASS DECRIPTION
Air Force	MOVES	
Gas/Diesel		
LDGV	LDGV	Light-Duty Gasoline Vehicles (Passenger Cars)
LDDV	LDDV	Light-Duty Diesel Vehicles (Passenger Cars)
LDGT	LDGT1	Light-Duty Gasoline Trucks 1 (0-6,000 lbs. GVWR, 0-3,750 lbs. LVW)
	LDGT2	Light-Duty Gasoline Trucks 2 (0-6,000 lbs. GVWR, 3,751-5,750 lbs. LVW)
	LDGT3	Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVWR, 0-5,750 lbs. ALVW)
	LDGT4	Light-Duty Gasoline Trucks 4 (6,001-8,500 lbs. GVWR, greater than 5,751 lbs. ALVW)
LDDT	LDDT1/2	Light-Duty Diesel Trucks 1 and 2 (0-6,000 lbs. GVWR)
	LDDT3/4	Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs. GVWR)
HDGV	HDGV2a	Class 2b Heavy-Duty Gasoline Vehicles (8,501-10,000 lbs. GVWR)
	HDDV2b	Class 2b Heavy-Duty Diesel Vehicles (8,501-10,000 lbs. GVWR)
	HDGV3	Class 3 Heavy-Duty Gasoline Vehicles (10,001-14,000 lbs. GVWR)
	HDGV4	Class 4 Heavy-Duty Gasoline Vehicles (14,001-16,000 lbs. GVWR)
	HDGV5	Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs. GVWR)
	HDGV6	Class 6 Heavy-Duty Gasoline Vehicles (19,501-26,000 lbs. GVWR)
	HDGV7	Class 7 Heavy-Duty Gasoline Vehicles (26,001-33,000 lbs. GVWR)
	HDGV8a	Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs. GVWR)
	HDGV8b	Class 8b Heavy-Duty Gasoline Vehicles (>60,000 lbs. GVWR)
	HDGB	Gasoline Buses (School, Transit and Urban)
HDDV	HDDV3	Class 3 Heavy-Duty Diesel Vehicles (10,001-14,000 lbs. GVWR)
	HDDV4	Class 4 Heavy-Duty Diesel Vehicles (14,001-16,000 lbs. GVWR)
	HDDV5	Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs. GVWR)
	HDDV6	Class 6 Heavy-Duty Diesel Vehicles (19,501-26,000 lbs. GVWR)
	HDDV7	Class 7 Heavy-Duty Diesel Vehicles (26,001-33,000 lbs. GVWR)
	HDDV8a	Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs. GVWR)
	HDDV8b	Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs. GVWR)
	HDDBT	Diesel Transit and Urban Buses
	HDDBS	Diesel School Buses
MC	MC	Motorcycles (Gasoline)
HYBRID		
LDGV (H)	---	---
LDGT (H)	---	---
CNG		
LDGV (C)	---	---
LDGT (C)	---	---
HDGV (C)	---	---

Table 5-2. Typical Air Force POV & GOV Mix

CATEGORY		2012 to 2020 Avg. National Vehicle Mix (%)		POV Mix (%)[1]	GOV Mix (%)[2]
Air Force	MOVES				
Gas/Diesel					
LDGV	LDGV	34.86	34.86	56.17	2.23
LDDV	LDDV	0.03	0.03	0.88	0.28
LDGT	LDGT1	9.57	56.00	34.62	35.54
	LDGT2	31.86			
	LDGT3	9.98			
	LDGT4	4.59			
LDDT	LDDT1/2	0.00	0.19	1.00	21.79
	LDDT3/4	0.19			
HDGV	HDGV2a	2.88	3.46	0.62	2.53
	HDGV2b				
	HDGV3	0.10			
	HDGV4	0.03			
	HDGV5	0.11			
	HDGV6	0.24			
	HDGV7	0.10			
	HDGV8a	0.00			
	HDGV8b	0.00			
	HDGB	0.00			
HDDV	HDGV2a	0.72	3.70	0.22	36.64
	HDDV2b				
	HDDV3	0.22			
	HDDV4	0.21			
	HDDV5	0.10			
	HDDV6	0.41			
	HDDV7	0.59			
	HDDV8a	0.35			
	HDDV8b	0.82			
	HDDBT	0.03			
	HDDBS	0.25			
MC	MC	1.76	1.76	4.49	0.00
HYBRID					
LDGV (H)	---	---	---	1.70	0.48
LDGT (H)	---	---	---	0.24	0.19
CNG					
LDGV (C)	---	---	---	0.06	0.00
LDGT (C)	---	---	---	0.00	0.30
HDGV (C)	---	---	---	0.00	0.02

1. SOURCE: POV vehicle mix was based on available Employee-Certification and Reporting System (ECARS) data collected on 3/7/14.
2. SOURCE: GOV vehicle mix was based on information provided by the Air Force Vehicle and Equipment Management Office (VEMSO).

"---" Indicates No Data Available

5.2 Emission Factors

Emissions from on-road vehicle use include exhaust emissions, which occurs both when the vehicle is in motion and while idling, as well as fugitive particulate emissions from road dust. Emission factors from each of these emission contribution sources are described below.

5.2.1 Vehicle Exhaust Emissions

The operation of on-road vehicles results in the generation of vehicle exhaust which emits criteria pollutants, HAPs, and CO_2. To complicate vehicle exhaust emissions estimation, the amount of emitted pollutants is based on the emission factors for VMT and for vehicle idling. Emissions from vehicle exhaust are therefore the sum of the emissions generated while the vehicle is in motion and while it is idling. **Both MOVES and MOBILE6 account for idling in proportion to normal driving, therefore calculation of idling emissions are <u>not</u> required for an AEI.** Additionally, particulate emissions estimation is made more complex by the fact that particulate emissions are emitted from vehicle exhaust – from both idle and non-idle use – and from the suspension of road dust. Emission factors from road dust have been generated in addition to those for vehicle idle and non-idle operation. The emission factors for each contributing source are described in more detail below.

5.2.1.1 Vehicle Exhaust Emissions – Normal Vehicle Operation

Emission factors for the Air Force vehicle categories were obtained directly from MOBILE6 as model emission factor outputs. The MOBILE6 model was used with state-specific information to generate an accurate estimation of on-road vehicle emissions for both high and low elevation locations. The MOBILE6 model was run for each state using standard model defaults and state-specific traffic and weather data, and the output used to generate criteria pollutants, HAPs, CO_2, and fugitive on-road emission factors for the seven aggregate vehicle categories identified in Table 5-1, Air Force On-Road Vehicles Categories. Emission factors for both high and low altitude environments were generated and provided in a **gram/mile format**. Table 5-9 through Table 5-24 are Air Force/State/Territory composite emission factors while category specific emission factors are provided in Table 5-25 through Table 5-40. The tables are further subdivided into emission factors for POVs and GOVs. Unless otherwise noted, emission factors are for January 1st of each calendar year. Several of the key inputs and model default values used to generate the emission factors are presented in Table 5-3.

Table 5-3. MOBILE6 Inputs Used to Generate On-Road Vehicle Emission Factors

Model Input	Input Value
Model Years	1981-2015
Calendar Years	2005-2015
Roadway Type	Arterial
Average Speed	25 mph
Temperature (high, low & average)	State specific 50 averages from NOAA
Diesel Sulfur Content	15 ppm
Fuel RVP	9.0
Gasoline Aromatics	25%
Gasoline Olefin Content	15%
Altitude Low	500 ft. above sea level
Altitude High	5,500 ft. above sea level
VMT Fraction*	Based on 2013

*EPA420-R-01-047. Fleet Characterization Data for MOBILE6 (September 2001), Appendix D

For those installations located outside of the continental United States (OCONUS), there is not a universally accepted set of emission factors based for areas outside of the United States. Additionally, determining the vehicle mix or classifying vehicles may be more difficult in a foreign country. Calculating emissions for on-road vehicles at OCONUS facilities can be approximated by calculating the average of all state-specific composite emission factors. The emission factors for vehicle emissions at OCONUS installations are provided in Table 5-41 and Table 5-42 and are to be used with the same methodology as calculating on-road vehicle emissions within the United States.

5.2.1.2 Vehicle Exhaust Emissions – Idling

An idling vehicle wastes fuel, increases the cost of maintenance, and creates air pollution. Several states have adopted anti-idling restrictions with some including these restrictions in their SIPs. Emission factors for emissions from idling vehicles were developed and are provided in a **gram/hour format** since, by definition, an idling vehicle is not in motion and emissions may not be calculated on miles driven but rather time in the idle mode. For this reason, the total amount of time that a vehicle spends in idle mode must be known or closely approximated. **Note that MOBILE6 emission factors already include vehicle idling in proportion to normal driving. For this reason, the emission factors given here are presented for the purpose of calculating theoretical emissions for NEPA or for intersection modeling.**

Idling emissions will vary depending on the temperature, so the emission factors were developed based on summer and winter conditions which are characterized by temperatures of 75°F and 30°F respectively. Table 5-4 and Table 5-5 provide these emission factors based on summer and winter conditions respectively while Table 5-6 provides an average of the two seasons.

Table 5-4. Idling Emission Factors for On-Road Vehicles During Summer Conditions

Vehicle Category	Emission Factors (g/hr)				
	CO	NO_X	VOC	PM_{10} (1)	$PM_{2.5}$ (2)
LDGV (Passenger Cars)	229	4.72	16.1	---	---
LDGT (0-8,500 lb GVWR)	339	5.71	24.1	---	---
HDGV (>8,500 lb GVWR)	738	10.2	35.8	---	---
LDDV (Passenger Cars)	9.97	6.50	3.53	---	---
LDDT (Light-Duty Trucks)	11.2	6.67	4.63	---	---
HDDV (>8,500 lb GVWR)	94.0	55.0	12.5	2.58	2.37
MC (Motorcycles)	435	1.69	19.4	---	---

SOURCE: EPA420-F-98-014, *Emission Facts: Idling Vehicle Emissions,* April 1998. Summer conditions are based on a temperature of 75°F and 9.0 psi RVP gasoline.

1. PM_{10} is an average of HDDV particulate emissions.
2. $PM_{2.5}$ value is assumed to be 92% of the PM_{10} value per *Air Emissions Factor Guide to Air Force Mobile Sources,* December 2009.

"---" Indicates No Data Available.

Table 5-5. Idling Emission Factors for On-Road Vehicles During Winter Conditions

Vehicle Category	Emission Factors (g/hr)				
	CO	NO_X	VOC	PM_{10} (1)	$PM_{2.5}$ (2)
LDGV (Passenger Cars)	371	6.16	21.1	---	---
LDGT (0-8,500 lb GVWR)	487	7.47	30.7	---	---
HDGV (>8,500 lb GVWR)	682	11.8	44.6	---	---
LDDV (Passenger Cars)	10.1	6.66	3.63	---	---
LDDT(Light-Duty Trucks)	11.5	6.89	4.79	---	---
HDDT (>8,500 lb GVWR)	94.6	56.7	12.6	2.58	2.37
MC (Motorcycles)	388	2.51	20.1	---	---

SOURCE: EPA420-F-98-014, *Emission Facts: Idling Vehicle Emissions,* April 1998. Winter conditions are based on a temperature of 30°F and 13.0 psi RVP gasoline.

1. PM_{10} is an average of HDDV particulate emissions.
2. $PM_{2.5}$ value is assumed to be 92% of the PM_{10} value per *Air Emissions Factor Guide to Air Force Mobile Sources,* December 2009.

"---" Indicates No Data Available

Table 5-6. Average Idling Emission Factors for On-Road Vehicles

Vehicle Category	Emission Factors (g/hr)				
	CO	NO_X	VOC	PM_{10}	$PM_{2.5}$
LDGV (Passenger Cars)	300	5.40	18.6	---	---
LDGT (0-8,500 lb GVWR)	413	6.60	27.4	---	---
HDGV (>8,500 lb GVWR)	710	11.0	40.2	---	---
LDDV (Passenger Cars)	10.0	6.60	3.60	---	---
LDDT(Light-Duty Trucks)	11.4	6.80	4.70	---	---
HDDT (>8,500 lb GVWR)	94.3	55.9	12.6	2.58	2.37
MC (Motorcycles)	412	2.10	19.8	---	---

SOURCE: Data represent average of summer and winter values listed in above tables.
"---" Indicates No Data Available.

5.2.1.3 Alternative Fuel Emission Reduction Factors

Progressively stringent requirements resulting from the Energy Policy Act (EP Act), Presidential Executive Orders, and DoD and Air Force pollution prevention and energy conservation initiatives will result in an increasing number of GOVs and POVs powered by alternative fuels such as E85 (a fuel blend consisting of 85% ethanol and 15% gasoline), Compressed Natural Gas (CNG), or B20 (a fuel blend consisting of 20% biodiesel and 80% petroleum diesel), and advanced hybrid electric vehicles (HEVs). Regardless of fuel type, all vehicles operating on alternative fuels are currently required to meet existing EPA emission standards established for gasoline and/or diesel powered vehicles. However, some fuels offer potential emission reductions beyond those standards.

Relative to conventional gasoline, the higher octane value and oxygen content of E85 fuel should lead to reduced vehicle emissions. EPA's Office of Transportation Air Quality (OTAQ) notes that while potential reductions will vary with engine design, E85 fuel should lead to reductions in VOCs, CO, PM, and NO_X relative to conventional gasoline (U.S. Environmental Protection Agency 2002; *Clean Alternative Fuels*). The case with HAP emissions is not as clear since some data indicates a reduction in benzene and fewer total toxics, but an increase in ethanol and acetaldehyde emissions (U.S. Environmental Protection Agency 2006; *E85 and Flex Fuel Vehicles*). Adding to the complexity, some studies have shown that with the use of a catalytic converter, there is virtually no difference in exhaust emissions from on-road vehicles powered by gasoline. Due to these inconsistencies and the lack of clear data trends, at this point in time the application of E85 emission reduction factors is not recommended.

CNG is recognized as one of the cleanest burning alternative fuels available and offers a number of advantages over gasoline (USDoE 2002). Relative to conventional light-duty gasoline powered vehicle applications, emissions from CNG-powered vehicles are estimated to be substantially lower for CO, PM, and NOX. On a gasoline gallon equivalent basis, CNG reduces CO2 emissions by 20-30% versus gasoline and diesel-powered vehicles.

There have been a few studies on the impact of B20 fuel on vehicle emissions. In October 2002, the EPA issued a draft technical report on biodiesel emissions (U.S. Environmental Protection Agency 2002; *A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions*) which used the results from 39 studies to compare the difference in emissions between vehicles using B20 versus diesel fuel. Relative to low sulfur diesel (sulfur content of 500 ppm), B20 use resulted in notable reduction of NO_X, PM, HC, and CO emissions. Since the publication of the study, Ultra-Low Sulfur Diesel (ULSD) regulations that limit the sulfur content of on-highway diesel fuel to 15 ppm have been enacted and are in place across the country. Another study conducted under the auspices of the DoD Environmental Security Technology Certification Program (ESTCP) sought to measure the impact of B20 on emissions from engines used in on-road and portable power generation applications (Department of Defense Environmental Security Technology Certification Program 2006; *Effect of Biodiesel on Diesel Engine Nitrogen Oxide and Other Regulated Emissions*). Whereas the EPA study used a B20/low sulfur diesel blend, the ESTCP study used a B20 biodiesel/ULSD blend to reflect the fact that conventional low sulfur diesel is no longer available for use in on-road vehicles. The ESTCP study concluded there were no statistically significant differences in criteria pollutant emissions between the B20 biodiesel blended with ULSD and the ULSD by itself. Likewise, no consistent trend was observed with regard to HAP emissions. While the study did not investigate the impact of B20 on direct CO_2 emissions, the EPA recently estimated a 10% reduction in CO_2 emissions which can be attributed to the use of B20 (U.S. Environmental Protection Agency, Office of Transportation Air Quality 2006; *Biodiesel*).

Hybrid Electric Vehicles (HEV) produce fewer criteria pollutant, HAP, and CO_2 emissions than comparable dedicated gasoline-powered vehicles because they utilize an electric motor in conjunction with a traditional, and often smaller, internal combustion engine. The electric motor decreases the frequency in which the combustion engine is used which reduces fuel consumption and, therefore, emissions. Overall emissions will vary depending on a number of factors including the vehicle's electrical storage capacity and how long it can operate in "electric-only" mode, how advanced the engine controls are, which emission standards the vehicles have been produced to meet, vehicle size, model year, etc. For these reasons, the emission profile of HEVs must be judged individually based on the miles traveled under each power mode, complicating attempts to estimate vehicle emission reductions. To estimate the potential emission reduction benefits from the use of HEVs, vehicle family application and emission certification data contained in the EPA OTAQ Certification and Fuel Economy Information System and the California Air Resources Board (CARB) On-Road Vehicle and Engine Certification website were utilized. The assessment of representative certification data indicated NO_X, CO, HC (assumed to be equal to VOCs), and CO_2 were substantially reduced on average (U.S. Environmental Protection Agency, Office of Transportation Air Quality, Certification and Fuel Economy Information System).

Based upon this data, reduction factors for alternative fuels were calculated for on-road vehicles and are provided in Table 5-8. To estimate potential emission reductions from the use of these alternative fuels and advanced vehicle technologies, calculate vehicle emissions using the MOBILE6 gasoline or diesel fuel emission factors provided and apply an appropriate percent impact based upon the values listed in the table.

Table 5-7. Alternative Fuel Emission Reduction Factors (FERFs)

Alternative Fuel (Original Fuel Type)	Vehicle Category	Fuel Reduction Emission Factor (%)					
		CO	NO_X	VOC	PM_{10}	$PM_{2.5}$	CO_2
CNG (Gasoline)	LDGV, LDGT, HDGV	90	60	70	90	90	22(1)
B20 (Diesel)[2]	LDDV, LDDT, HDDV	0	0	0	0	0	0
HEVs (Gasoline)	LDGV, LDGT	50	75	35	---	---	30

1. Based on emission factors using MOBILE6 default of 15 ppm ULSD for diesel, and results of Department of Defense ESCTP study, *Effect of Biodiesel on Diesel Engine Nitrogen Oxide and Other Regulated Emissions*, Project number WP-0308, May 2006, indicating no statistically significant difference in B20/ULSD vs. ULSD emissions.
2. Factors represent the difference in CO_2 emissions associated with the combustion of one gallon of gasoline and one gasoline equivalent of CNG. Source: California Climate Action Registry, General Reporting Protocol Version 2.2, Table C-3, March 2007.

"---" Indicates No Data Available.

5.2.2 Fugitive Particulate Matter (PM) Emissions

Though roads are themselves stationary, the generation of airborne road dust is the result of the turbulent wake created by on-road vehicles, which are mobile sources. Thus, road dust emissions are provided in this section of the Mobile Guide. **Note that this section does not describe emissions from asphalt paving since those operations are considered transitory and are addressed in the Transitory Guide.** Since fugitive PM emissions are the result of road dust suspended as the vehicle moves across a road surface, the extent of the emitted PM is dependent on whether the road surface is paved or unpaved. These surfaces are subjected to strong air currents from the turbulent wake that follows behind a vehicle as it passes. The currents disturb the loose material pulverized under the weight of the vehicle and PM is cast into the air. PM emissions will fluctuate for several reasons including construction activities in the area, road degradation due to vehicular traffic, and the application of granular materials for snow and ice control. Typically, the most important factors regarding road PM emissions are the number and weight of the vehicles which travel that road, and the VMT. Paved and unpaved road emission factors are already derived and may be found in Table 5-8.

Table 5-8. Fugitive PM Emission Factors

	POV		GOV	
	PM_{10} (g/mi)	**$PM_{2.5}$ (g/mi)**	**PM_{10} (g/mi)**	**$PM_{2.5}$ (g/mi)**
Paved Road	0.058	0.014	0.069	0.017
Unpaved Road	46.622	46.622	50.595	50.595

The emission factors for suspension of loose material on paved and unpaved road surfaces due to vehicle travel were derived from the following empirical equations from AP-42 Chapter 13.2 (Jan 2011):

$$EF(Pol)_P = k(Pol) \times (sL)^{0.91} \times W^{1.02}$$ AP-42 Chapter 13.2.1.3

Where,

$EF(Pol)_P$ = Particulate emission factor for paved roads (g/mi)

k(Pol) = Particle size multiplier (g/mi**).** **$PM_{2.5}$ = 0.25 and PM_{10} = 1.00**

sL = Road surface silt loading (g/m^2). **AP-42 Chapter 13.2.1 recommends a default value of 0.015 for limited access roadways (such as Air Force roads)**

W = Average weight of the vehicles traveling the road (tons). **POVs = 2.581 and GOVs = 3.096**

$$EF(Pol)_U = k(Pol) \times \left(\frac{s}{12}\right)^a \times \left(\frac{W}{3}\right)^b \times 453.6$$ AP-42 Chapter 13.2.2.2

Where,

$EF(Pol)_U$ = Particulate emission factor for unpaved roads (g/mi)

k(Pol) = Particle size multiplier (lb/mi). **$PM_{2.5}$ = 0.15 and PM_{10} = 1.5**

s = Surface material silt content (%). **AP-42 Chapter 13.2.2 value for construction site road value of 8.5**

a, b = Empirical constants for public roads from AP-42 Table 13.2.2-2. **a=0.9 and b=0.45**

453.6 = Factor converting lb to grams (g/lb)

***Note**: the equation above calls for the average weight of all vehicles traveling the road and is *not* intended to be used to calculate a separate emission factor for each vehicle weight class. Rather, one emission factor should be calculated to represent the "fleet" average weight of all vehicles.

5.2.2.1 Corrected Emission Factors Accounting for Precipitation

Average fugitive PM emissions are inversely proportional to the frequency of measurable precipitation (>0.01 inch). The total fugitive PM emissions are calculated using the appropriate emission factor listed above, the total vehicle miles traveled as determined by the user calculating emissions, and a precipitation correction term. When accounting for precipitation, the fugitive PM emission factors must be corrected. The corrected emission factors for both paved and unpaved roads are calculated as follows:

$$\boldsymbol{EF(\text{Pol})_{CP} = EF(Pol)_{P} \times \left(1 - \frac{P}{4N}\right)}$$

Equation 5-1

$$\boldsymbol{EF(\text{Pol})_{CU} = EF(Pol)_{U} \times \left(1 - \frac{P}{N}\right)}$$

Equation 5-2

Where,

$EF(Pol)_{CP/CU}$ = Corrected emission factor for paved or unpaved roads (g/mi)

P = Number of days in the inventory period in which at least 0.01 inches of precipitation was measured (days). See Figure 5-1 to determine this value based on the installation's geographic location.

N = Number of days in the inventory period (days). 1 year = 365 Days

***Note** – the paved road precipitation factor differs from the unpaved precipitation factor since it incorporates a factor of "4" in the denominator to account for the fact that paved roads dry more quickly than unpaved roads.

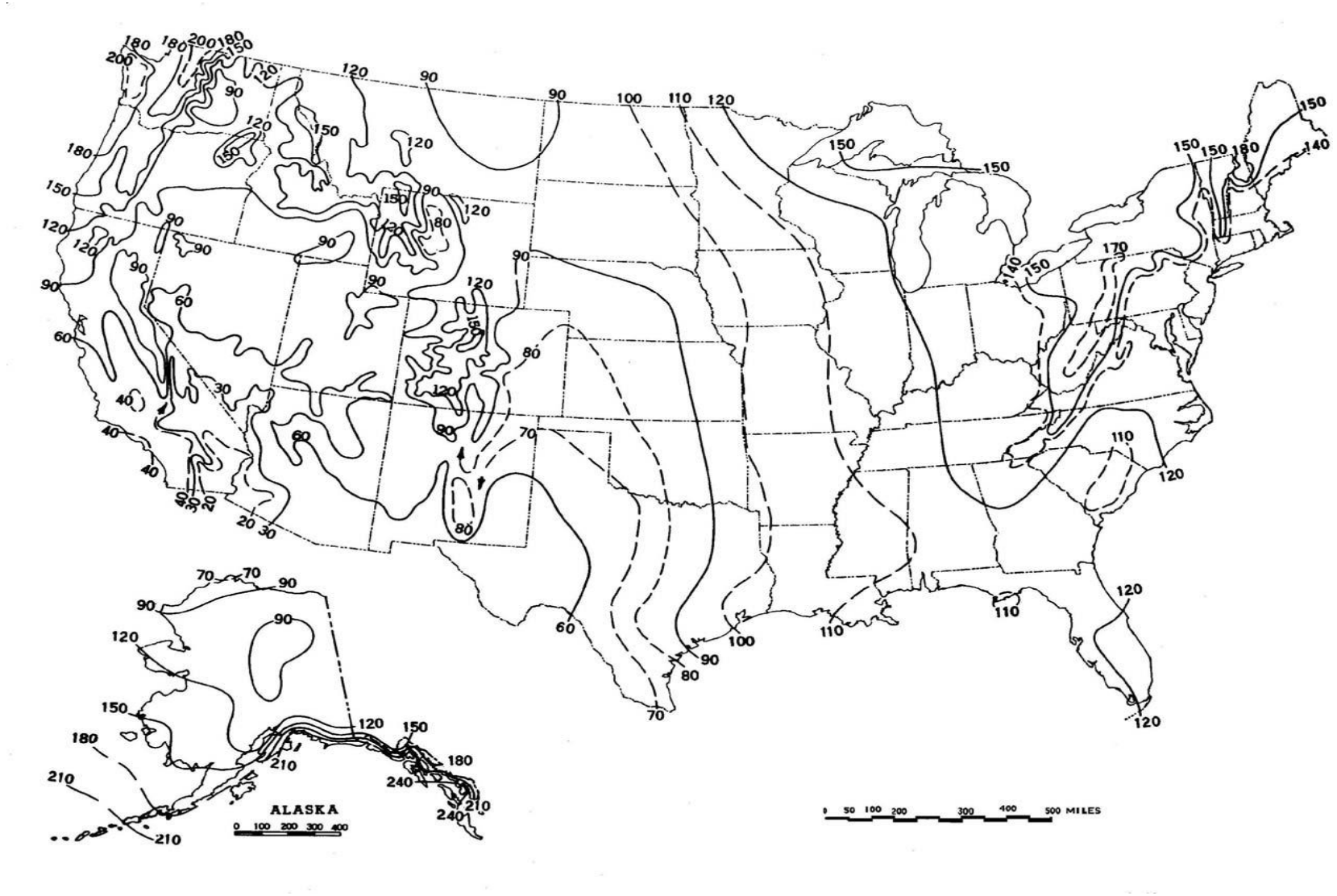

Figure 5-1. Mean Number of Days in the Year with Precipitation of 0.01 Inches or More

5.3 Emissions Calculation

Both MOVES and MOBILE6 emission models are better at showing relative changes in emissions over several years rather than obtaining "snapshot" accuracy for a given year. The EPA's April 2007 *Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, $PM_{2.5}$, and Regional Haze*; Section 1.3.1 on Page 3 (USEPA 2007), "First, we recommend using models in a relative sense in concert with observed air quality data…" Therefore, **MOVES or MOBILE6 should <u>not</u> be used to create a Mobile Air Emission Inventory (AEI).**

The total emissions from the operation of on-road vehicles are the sum of the emissions from the vehicle exhaust and fugitive PM from road dust. Since the emissions are dependent on the vehicle mix, there are three methods for estimating vehicle emissions. These methods are: using the typical Air Force POV and GOV fleet mix from Table 5-2, using POV and GOV fleet mix from recent traffic studies, or using Air Force/State composite emission factors, which is the simplest and preferred method. **Note that POV and GOV emissions should be calculated independently.**

5.3.1 Vehicle Exhaust Emissions – Typical Vehicle Operation

Calculating emissions from vehicle exhaust is dependent on the VMT and appropriate emission factor. Vehicle exhaust emissions are directly dependent on the vehicle mix at the installation. There are two circumstances that determine the method for calculating vehicle exhaust emissions – when the specific vehicle mix is known or when it is unknown. If the vehicle mix is known, that data may be used for emissions calculations, whereas if unknown, the mix from Table 5-2 may be assumed. Calculating these emissions is performed as follows:

5.3.1.1 Using Air Force/State/Territory Composite Emission Factors (Preferred Method)

This is the preferred method for emissions estimates because it is the simplest method to use. The emission factors used for this method are selected based on: (1) the emission inventory year, (2) the vehicle *classification* (POV versus GOV), (3) the state in which the installation is located, and (4) the altitude of the installation. According to 40 CFR 86.082-2, a designated "high-altitude" location' is any base within a county that has a substantial portion of its area located above 1,219 meters (4,000 feet). For the majority of applications, low-altitude is the appropriate choice. A list of those counties the EPA has designated as high-altitude appears in Appendix III of 40 CFR 1068 Subpart G. The Air Force/State/Territory composite emission factors ($EF(Pol)_{State}$) were derived using the assumed vehicle mix as given in Table 5-2 and are given in Table 5-9 through Table 5-24 (or Table 5-41 and Table 5-42 for OCONUS installations). However, these emission factors **must be adjusted** to reflect the reduction in emissions as a

result of vehicles that operate on alternative fuels. Emissions calculation using the adjusted emission factors is estimated as follows:

$$E(Pol)_{Total} = VMT_{Total} \times EF(Pol)_{Total} \times 0.002205$$

Equation 5-3

Where,

$E(Pol)_{Total}$ = Total annual emissions of specific pollutant from vehicle exhaust (lb/yr)

VMT_{Total} = Total annual vehicle miles traveled for all POV or GOV (mi/yr). This should be available for GOVs, and estimated for POVs using Equation 5-7. **Note that this includes both paved and unpaved roads, if applicable**.

$EF(Pol)_{Total}$ = Total adjusted AF/state composite emission factor for specific pollutant (g/mi). This is calculated using Equation 5-5 and Equation 5-6.

0.002205 = Factor for converting grams to pounds (lb/g)

The total adjusted Air Force/State/Territory composite emission factor ($EF(Pol)_{Total}$) is the sum of the adjusted emission factors for gas and diesel, hybrid, and CNG fuel vehicles. The adjusted emission factors account for the mix of vehicles that use alternative fuels with their respective reduction in emissions as shown:

$$EF(Pol)_{Total} = \sum EF(Pol)_{Fuel} = \sum \left[EF(Pol)_{State} \times \frac{MIX_{Fuel}}{100} \times \frac{FERF(Pol)_{Fuel}}{100} \right]$$

Equation 5-4

Where,

$EF(Pol)_{Fuel}$ = Adjusted emission factor for specific pollutant based on fuel and vehicle mix (g/mi)

$EF(Pol)_{State}$ = State composite emission factor for specific pollutant (g/mi). These are provided in Table 5-9 through Table 5-24.

MIX_{Fuel} = Percent of gas and diesel, hybrid, or CNG vehicles in total vehicle population (%)

$FERF(Pol)_{Fuel}$ = Pollutant fuel emission reduction factor, from Table 5-7 (%). **Use "100" if no alternative fuel is used, otherwise refer to Table 5-7.**

100 = Factor converting percent to a fraction (%)

The vehicle mix is significantly different between POV and GOV vehicles and separate calculations must be made for both types. Using the vehicle mix data from Table 5-2 and the FERF values from Table 5-7, an equation for the calculation for total state composite emission factor for both POVs and GOVs may be written as shown:

$$EF(Pol)_{Total-POV} = EF(Pol)_{State} \times \left[0.98 + \left(0.0194 \times \frac{FERF(Pol)_{Hyb}}{100}\right) + \left(0.0006 \times \frac{FERF(Pol)_{CNG}}{100}\right)\right]$$

Equation 5-5

$$EF(Pol)_{Total-GOV} = EF(Pol)_{State} \times \left[0.9901 + \left(0.0067 \times \frac{FERF(Pol)_{Hyb}}{100}\right) + \left(0.0032 \times \frac{FERF(Pol)_{CNG}}{100}\right)\right]$$

Equation 5-6

Where,

$\mathbf{EF(Pol)_{Total\text{-}POV}}$ = Total annual emissions of specific pollutant for POVs (g/yr)
$\mathbf{EF(Pol)_{Total\text{-}GOV}}$ = Total annual emissions of specific pollutant for GOVs (g/yr)
$\mathbf{FERF(Pol)_{Hyb}}$ = Pollutant-specific fuel emission reduction factor for hybrid vehicles (%)
$\mathbf{FERF(Pol)_{CNG}}$ = Pollutant-specific fuel emission reduction factor for CNG vehicles (%)

The total vehicle miles traveled (VMT_{Total}) for GOVs is the sum of all the miles put on GOVs during the inventory period. These values should be available through records kept by the base transportation organization or directly from the organizations that operate and/or maintain the vehicles (or may be estimated using Equation 5-13). Estimating the total vehicle miles traveled for POVs, however, is more challenging. The suggested method for estimating VMT_{Total} for POVs is to assume that each POV in operation on base travels twice the distance from the main base gate to the population centroid of the base. Not every person on base will operate their vehicle every day of the year. Rather, it is assumed that the vast majority of POVs will be driven during the workweek. Additionally, a statistical analysis of available ECARS data revealed that typically only 70% of the base population actually operates their vehicles on base during the week. Using this information, the VMT_{Total} for POVs is estimated as follows:

$$VMT_{Total-POV} = AVM \times N_{POV} = D \times 520 \times 0.7 \times P$$

Equation 5-7

Where,

AVM = Average annual vehicle miles traveled on base (mi/yr)
N_{POV} = Total number of POV vehicles
D = One-way distance from the main gate to the population centroid of the base (miles/trip)
520 = Factor for converting the number of miles per trip to miles per year (trips/year)
0.7 = Fraction of the base population that operate their vehicle during the week
P = Base population

In Equation 5-7, the "520" conversion factor was derived as follows:

$$2\,\frac{trips}{\cancel{day}} \times 5\,\frac{\cancel{days}}{\cancel{week}} \times 52\,\frac{\cancel{weeks}}{yr} = 520\,\frac{trips}{yr}$$

Emissions are calculated by first solving the emission factors for POVs and GOVs using Equation 5-5 and Equation 5-6 and state-specific total composite emission factor for all vehicle categories which can be found in Table 5-9 through Table 5-24. The adjusted emission factors are then used in Equation 5-3 for the total emissions of each pollutant. These steps must be completed independently for each pollutant of concern. Note GOVs and POVs should not be combined; GOV and POV emissions must be calculated independently. Due to the complexity of calculating on-road vehicle emissions, the following steps are recommended for use as a guideline for data collection and emissions calculations:

Step 1 – Gather fleet data. If the on-base vehicle mix is unknown, the first step is to determine the number of POVs (N_{POV}) and GOVs (N_{GOV}) operating on base. Also, the total vehicle miles traveled (VMT_{Total}) or average vehicle miles traveled (AVM) for GOVs should be recorded. This data often can be provided or estimated by the Security Forces Squadron (from the Pass & Registration section) and/or the Military Personnel Flight (MPF). With this information collected, the VMT_{Total} may be calculated. For POVs, VMT_{Total} is calculated using Equation 5-7 while Equation 5-13 may be used, if necessary, to calculate VMT_{Total} for GOVs.

Step 2 – Select emission factors. These are provided in Table 5-9 through Table 5-24. After the emission factors have been selected, they may be adjusted to reflect emissions reductions from the use of alternative fuels. Calculation of the adjusted composite emission factor ($EF(Pol)_{Total\text{-}POV}$ or $EF(Pol)_{Total\text{-}GOV}$) is accomplished using either Equation 5-5 or Equation 5-6.

Step 3 – Calculate emissions. Emissions of each pollutant (and *classification*) are calculated *independently* using Equation 5-3.

5.3.1.2 Using Specific Vehicle Mix Data

If necessary, emissions may be calculated using a specific vehicle mix different from the one provided in Table 5-2. Though this method is more intensive than the preferred method given above, it may be desirable if a recent traffic study conflicts with the typical vehicle mix provided, or if emissions from each vehicle category are required. The emission factors used for this method are selected based on: (1) the emission inventory year, (2) the vehicle *classification* (POV versus GOV), (3) the state in which the installation is located, (4) the vehicle category (LDGV, LDDV, etc.), and (5) the altitude of the installation. According to 40 CFR 86.082-2, a designated "high-altitude" location' is any base within a county that has a substantial portion of its area located above 1,219 meters (4,000 feet). For the majority of applications, low-altitude is the appropriate choice. A list of those counties the EPA has designated as high-altitude appears in Appendix III of 40 CFR 1068 Subpart G. The emission factors used for this method ($EF(Pol)_i$) are provided in Table 5-25 through Table 5-40. Emissions are estimated using the vehicle miles traveled for each vehicle category and summed as follows:

$$\boldsymbol{E(Pol)_{Total} = \sum_{i=1}^{7} \left[VMT_i \times EF(Pol)_i \times \frac{FERF(Pol)}{100} \times 0.002205 \right]}$$

Equation 5-8

Where,

VMT_i = Annual vehicle miles traveled by each vehicle category (mi/yr). **This includes miles traveled both on paved and unpaved roads, if applicable.**

$EF(Pol)_i$ = Emission factor for specific pollutant from vehicle exhaust (g/mi)

i = Specific vehicle category of seven Air Force categories (i.e., LDGV, LDDV, LGDT, LDDT, HDGV, HDDV, and MC)

If the annual VMT for each vehicle category is not known, the following equation may be used to approximate VMT for each specific vehicle category (VMT_i):

$$\boldsymbol{VMT_i = AVM_i \times n_i = AVM_i \times N \times \frac{MIX_i}{100}}$$

Equation 5-9

Where,

AVM_i = Average annual vehicle miles traveled by each vehicle category (mi/yr)

n_i = Number of vehicles in a specific vehicle category

N = Total number of vehicles, POV or GOV

MIX_i = Vehicle mix for a specific vehicle category

Emissions from GOVs or POVs are calculated using the general formula provided in Equation 5-8 and Equation 5-9. These steps must be completed independently for each pollutant of concern. Note GOVs and POVs should not be combined; GOV and POV emissions must be calculated independently. Due to the complexity of calculating on-road vehicle emissions, the following steps are recommended for use as a guideline for data collection and emissions calculations:

Step 1 – Gather fleet data. Data required to calculate vehicle emissions typically includes vehicle category, vehicle identification, model year, and vehicle miles traveled (VMT_i) during the course of the year in question.

a. GOV Fleet MIX Data: If a GOV is driven both on and off base during the course of the inventory year, an estimate must be made to apportion the number of miles driven between off base miles and on base miles. Figure 5-2 provides a sample form that can be used to collect and organize GOV data by vehicle category for use in emission calculations. The best way to collect GOV information is to provide blank forms for each vehicle category to the base organization(s) responsible for managing GOVs.

b. POV Fleet MIX Data: Prior to conducting an air emissions inventory that includes POVs, it is recommended that the individual responsible for preparing the mobile source emission inventory contacts the Base Development and/or Community Planning sections of the Civil Engineering Squadron to determine if a traffic survey has been conducted recently at the base. If available, such surveys typically contain information that will be useful in calculating POV emissions.

In many cases, however, a recent traffic survey for the base is not available, and available resources do not allow the conduct of a new traffic survey. In such cases, data provided by the Security Forces Squadron (from the Pass & Registration section) and/or the Military Personnel Flight (MPF) can be used to estimate POV fleet data. Types of data which can usually be obtained from the Security Forces Squadron and/or MPF include: 1) The estimated average number of registered POVs at the installation during the applicable inventory year; 2) the estimated percentage of registered vehicles which fall under the seven vehicle categories; 3) the estimated distance (in miles) of the average POV travels on the installation during a typical weekday and weekend day; and 4) the estimated number of non-registered vehicles which travel on the installation during a typical weekday and weekend day. Figure 5-3 provides a sample form that can be used to collect and organize POV data for use in emission calculations.

An alternative approach to obtaining vehicle registration information may be available at some installations. Rather than requesting the Security Forces Squadron and/or the MPF to generate estimates on the number and types of vehicles registered on base, some installations may be able to provide a listing of the vehicles contained in their databases.

Step 2 – Group vehicle categories. Upon gathering fleet data, group together all vehicles based on the Air Force vehicle categories (i.e., LDGV, LDDV, LGDT, LDDT, HDGV, HDDV, and MC). Record the number of vehicles (n_i) and total annual miles traveled (VMT_i) for each vehicle category.

a. If **VMT_i** is unknown, it may be estimated using Equation 5-9.

$$VMT_i = AVM_i \times n_i$$

b. If there is insufficient fleet data to provide the number of vehicles (n_i) for each vehicle category yet the total number of vehicles and the relative vehicle mix (MIX_i) for each specific vehicle category is known, use Equation 5-9 to approximate n_i:

$$n_i = N \times \frac{MIX_i}{100}$$

Step 3 – Select emission factors. The appropriate emission factors are selected based on the season, vehicle category, the calendar year you are performing the emissions calculation, the installation's location (i.e., the state it is located in), and the installation's altitude. Vehicle exhaust emission factors ($EF(Pol)_i$) are selected from Table 5-25 through Table 5-40.

Step 4 – Calculate emissions. For vehicle exhaust emissions, first calculate the emissions for each individual vehicle category ($EP(Pol)_i$) then sum these values for the total vehicle emissions for that pollutant. Pollutant emissions for each vehicle category are calculated and summed using Equation 5-8.

5.3.1.3 Using Air Force Typical Vehicle Mix Data

Another method for calculating on-road vehicle emissions is to calculate the emissions from each vehicle category using the typical Air Force vehicle mix. The method of calculation is similar to that of calculating emissions using specific vehicle mix data. The emission factors used for this method are selected based on: (1) the emission inventory year, (2) the vehicle *classification* (POV versus GOV), (3) the state in which the installation is located, (4) the vehicle category (LDGV, LDDV, etc.), and (5) the altitude of the installation. According to 40 CFR 86.082-2, a designated "high-altitude" location' is any base within a county that has a substantial portion of its area located above 1,219 meters (4,000 feet). For the majority of applications, low-altitude is the appropriate choice. A list of those counties the EPA has designated as high-altitude appears in Appendix III of 40 CFR 1068 Subpart G. The emission factors used for this method ($EF(Pol)_i$) are provided in Table 5-25 through Table 5-40. Emissions are estimated via this method using a slightly modified Equation 5-3 by substituting the correct emission factor as shown:

$$E(Pol)_{Total} = VMT_{Total} \times EF(Pol)_{Total} \times 0.002205$$

Equation 5-10

Where,

$EF(Pol)_{Total}$ = Total adjusted on-road vehicle exhaust emission (lb/yr). This is calculated using Equation 5-11.

The total adjusted on-road vehicle emission factor takes into account any reduction in emissions as a result of alternative fuel use. This is calculated as follows:

$$EF(Pol)_{Total} = \sum_{i=1}^{7} \left\{ \left(\frac{MIX_i}{100} \right) \times EF(Pol)_i \times \left[\frac{FERF(Pol)}{100} \right] \right\}$$

Equation 5-11

The total vehicle miles traveled (VMT_{Total}) is the sum of the average miles traveled for all vehicle categories as shown:

$$VMT_{Total} = \sum_{i=1}^{7} \left(AVM_i \times N \times \frac{MIX_i}{100} \right)$$

Equation 5-12

Equation 5-12 may be simplified if it is assumed that each vehicle category traveled the same distance per year, as shown below:

$$VMT_{Total} = AVM \times N$$

Equation 5-13

Emissions from vehicles are calculated by applying the general formulas provided in Equation 5-10 (further simplified with Equation 5-11, Equation 5-12, and Equation 5-13) and using the typical POV or GOV vehicle mix data from Table 5-2. <u>These steps must be completed independently for each pollutant of concern</u>. Note GOVs and POVs should not be combined; <u>GOV and POV emissions must be calculated independently</u>. Due to the complexity of calculating on-road vehicle emissions, the following steps are recommended for use as a guideline for data collection and emissions calculations:

<u>Step 1</u>- Gather fleet data. In this case fleet data or a traffic survey for the base is not available. Therefore, obtain the total number (N) of vehicles (POV or GOV) driving on base and the overall average annual vehicle miles traveled (AVM) for all vehicle categories. The data can often be provided or estimated by the Security Forces Squadron (from the Pass & Registration section) and/or the Military Personnel Flight (MPF) can be used to estimate POV fleet data.

Types of data that can usually be obtained from the Security Forces Squadron and/or MPF include: 1) The estimated average number of registered POVs and/or GOVs at the installation during the applicable inventory year; 2) the estimated distance (in miles) of the average POV travels on the installation during a typical weekday and weekend day; and 3) the estimated number of non-registered vehicles that travel on the installation during a typical weekday and weekend day.

An alternative approach to obtaining vehicle registration information may be available at some installations. Rather than requesting the Security Forces Squadron and/or the MPF to generate estimates on the number and types of vehicles registered on base, some installations may be able to provide a listing (preferably in both electronic and hardcopy format) of the vehicles contained in their databases. At a minimum, the listing should provide the number of registered vehicles.

Step 2 - Group vehicle categories. When the actual fleet mix data is unavailable, the typical fleet mix data from Table 5-2 may be applied. Upon gathering fleet data on the total number (N) of vehicles (POV or GOV) driving on base and overall average annual vehicle miles traveled (AVM), obtain and record the typical vehicle mix values (MIX_i) from Table 5-2 for each vehicle category. Then, assuming all vehicle categories traveled the same distance per year, calculate the total annual vehicle miles traveled (VMT_{Total}) for all vehicle categories combined with Equation 5-13.

Step 3 - Select emission factors. Selection of the appropriate emission factor is based on the vehicle category, the calendar year you are performing the emissions calculation, the installation's location (i.e., the state it is located in), and the installation's altitude. The emission factors are selected from Table 5-25 through Table 5-40.

Once the appropriate pollutant-specific emission factors ($EF(Pol)_i$) for each vehicle category are obtained, calculate the total composite emission factor using Equation 5-11.

Step 4 - Calculate emissions. The total pollutant emissions from all vehicle categories ($EP(Pol)_{Total}$) for on-road emissions are each calculated using Equation 5-10.

5.3.2 Vehicle Exhaust Emissions (Idling)

Calculating idling emissions is similar to the calculation of on-road vehicle emissions provided above with slight modifications to the equations supplied. The primary difference is that the emission factors for idling vehicles are presented in a g/hr format which means the time spent in idle mode must be known (or estimated). Idling emissions from typical on-road vehicle operation are already addressed in the previous section above. **This section describes the calculation of *theoretical* emissions from idling vehicles for NEPA and intersection modeling, not for a mobile AEI.**

5.3.2.1 Using Specific Vehicle Mix Data

If necessary, emissions may be calculated using a specific vehicle mix different from the one provided in Table 5-2. This method may be desirable if a recent traffic study conflicts with the typical vehicle mix provided. The emission factors used for this method are selected based on: (1) the vehicle category (LDGV, LDDV, etc.) and (2) the season in which the emissions are being calculated (summer, winter, or average). The emission factors used for this method ($EF(Pol)_i$) are provided in Table 5-4 through Table 5-6. Emissions are estimated using the vehicle idling time for each vehicle category and summed as follows:

$$E(Pol)_{Total} = \sum_{i=1}^{7} \left[VIT_i \times EF(Pol)_i \times \frac{FERF(Pol)}{100} \times 0.002205 \right]$$

Equation 5-14

Where,

$E(Pol)_{Total}$ = Total theoretical emissions of specific pollutant from vehicle idling (lb/yr)

VIT_i = Annual vehicle idling time (hr/yr)

$EF(Pol)_i$ = Idling emission factor for a specific pollutant (g/hr). This is provided in Table 5-4, Table 5-5, and Table 5-6

The vehicle idling time is the most difficult parameter to determine. Depending on the proposed action, idling times of varying lengths may be recommended for each vehicle *category* and/or *classification*. The idling time for each vehicle category may be estimated using an average idling time as shown:

$$VIT_i = AVIT_i \times n_i = AVIT_i \times N \times \frac{MIX_i}{100}$$

Equation 5-15

Where,

$AVIT_i$ = Average annual vehicle idling time (hr/yr)

5.3.2.2 Using Air Force Typical Vehicle Mix Data

If the specific vehicle mix data is not available from a recent traffic study, the typical vehicle mix from Table 5-2 may be assumed. The emission factors used for this method are selected based on: (1) the vehicle category (LDGV, LDDV, etc.) and (2) the season in which the emissions are being calculated (summer, winter, or average). The emission factors used for this method ($EF_{Idle}(Pol)_i$) are provided in Table 5-4 through Table 5-6. Theoretical emissions from vehicle idling is estimated as follows:

$$E(Pol)_{Total} = VIT_{Total} \times EF(Pol)_{Total} \times 0.002205$$

Equation 5-16

Where,

$\mathbf{VIT_{Total}}$ = Total annual vehicle idling time for all POV or GOV (hr/yr)

$\mathbf{EF(Pol)_{Total}}$ = Total adjusted idling emission factor (g/hr). This is calculated by Equation 5-17.

The total adjusted idling emission factor takes into account any reduction in emissions as a result of alternative fuel use. This is calculated as shown:

$$\boldsymbol{EF(Pol)_{Total} = \sum_{i=1}^{7} \left\{ \left(\frac{MIX_i}{100} \right) \times EF(Pol)_i \times \left[\frac{FERF(Pol)}{100} \right] \right\}}$$

Equation 5-17

The total vehicle idling time (VIT_{Total}) is the sum of the average idling time for all vehicle categories as shown:

$$\boldsymbol{VIT_{Total} = \sum_{i=1}^{7} \left(AVIT_i \times N \times \frac{MIX_i}{100} \right)}$$

Equation 5-18

Equation 5-18 may be simplified if it is assumed that each vehicle category will idle for the same amount of time per year, as shown below:

$$\boldsymbol{VIT_{Total} = AVIT \times N}$$

Equation 5-19

In the absence of average vehicle idling time (AVIT) data, contact base Civil Engineering for assistance in estimating this value.

5.3.3 Fugitive PM Emissions

Particulate emissions are generated from vehicle exhaust and are described in the previous sections. Fugitive particulate emissions, however, are generated from the operation of on-road vehicles across a paved or unpaved road surfaces. The amount of particulate generated is a function of the road surface (paved or unpaved) and the total vehicle miles traveled (VMT_{Total}). The emission factors are selected from Table 5-8 based on (1) the road surface (paved or unpaved and (2) vehicle classification (POV or GOV). The selected emission factors must be corrected based on the amount of days in the year with precipitation of 0.01 inches or more using the appropriate equation (either Equation 5-1 or Equation 5-2) based on the road surface. Using

the corrected emission factor for paved ($EF(Pol)_{CP}$) and unpaved ($EF(Pol)_{CU}$) roads, fugitive PM emissions are calculated as follows:

$$E(Pol)_{Total} = VMT_{Total} \times \left[\left(\frac{\%VMT_P}{100} \times EF(Pol)_{CP}\right) + \left(\frac{\%VMT_U}{100} \times EF(Pol)_{CU}\right)\right] \times 0.002205$$

Equation 5-20

Where,

$E(Pol)_{Total}$ = Total annual emissions of fugitive PM from on-road vehicles (lb/yr)
$\%VMT_P$ = Percent of total miles driven on paved roads (%)
$\%VMT_U$ = Percent of total miles driven on unpaved roads (%)

5.3.4 VOC Speciation

On-road vehicles have the potential to produce a significant amount of air pollutants released to the atmosphere. The amount of pollution is a function of the amount of on-road vehicles, the average number of miles driven, the time of year, the content of the fuel used, and even the average idling time. The large number of variables impacting air emissions from on-road vehicles increases the complexity of quantifying their emissions. However, measurements are continually being taken to develop more accurate air emission estimates. Individual VOCs may be estimated using the weight fractions of each chemical to the total emitted VOC.

The weight fractions provided in this document were determined using test data from a variety of sources including the EPA's *SPECIATE* database. The emission profiles used to determine the VOC weight percent are assumed to be representative of the vehicle category's emissions. However, this information should only be used when no alternative emission profiles are available. The average weight percent of individual pollutants were calculated as follows:

$$P_{Pol} = \frac{A_{Pol}}{AVOC_{Total}}$$

Equation 5-21

Where,

P_{Pol} = Weight percent of a given pollutant (%)
A_{Pol} = Individual pollutant emission factor (mg/mi)
$AVOC_{Total}$ = Total VOC emission factor (mg/mi)

Speciated VOCs are calculated by taking the product of the total VOCs and the weighted percentage of the individual VOC as follows:

$$E_{Pol} = E_{VOC} \times \frac{P_{Pol}}{100}$$

Equation 5-22

Where,

$\mathbf{E_{Pol}}$ = Emissions of speciated VOC (lb/yr)
100 = Factor for converting percent to a fraction (%)
$\mathbf{E_{VOC}}$ **-=** Emissions of total VOC (lb/yr)

The percentages of each VOC to total VOC are provided in Table 5-43. Note that the light duty gas vehicles, trucks, and heavy duty gas vehicles (LDGV, LDGT, and HDGV) are not further subdivided into hybrid and CNG fueled vehicles. To calculate the emissions specific to these vehicles, apply the vehicle mix (use the default values if no onsite data is available).

5.4 Information Resources

Information required for calculating emissions from GOVs can usually be obtained from the base transportation organization as it typically maintains records on most, if not all, GOVs assigned to the installation. At some installations it may also be necessary to obtain information directly from the organizations that use and/or maintain the vehicles. For example, the Fire Department may need to be contacted to obtain information specific to fire trucks and rescue vehicles.

In some cases, it may be necessary to obtain and review data contained in the base's vehicle maintenance index file (VMIF), on-line vehicle interactive management system (OLVIMS) report, or equivalent vehicle information management system to verify vehicle class/type as some installations do not use the same classification system used by EPA. Some facilities may have a cross-reference tool with management codes that will assist in interpreting how vehicle usage is being tracked (e.g., miles, hours, and kilometers).

Most information required to calculate POV emissions may be obtained from the Security Forces Squadron. The Pass & Registration section of the base Security Forces Squadron usually maintains computer records on all POVs registered at the installation. Some installations perform vehicle registration at MPF. The office that handles vehicle registrations (Pass & Registration or MPF) is also in a good position to survey base personnel on their vehicle usage. Since the Security Forces Squadron is responsible for staffing the base gates, they are usually the best source of information on non-registered vehicles.

If the POV information needed to calculate vehicle emissions cannot be obtained from the Security Forces Squadron, it might be necessary to survey a representative number of base personnel to obtain the required information. It is also highly recommended that personnel conducting the air emissions inventory check with the Base Development and/or Community Planning sections of the Civil Engineering Squadron to determine whether any recent traffic surveys have been conducted at the base.

For purposes of estimating the length of typical on-base POV trips, consider the trip length in terms of the mileage from the main gate to a common on-base destination and back. For instance, if most POVs are believed to be traveling to the Base Exchange, the Commissary, or the Medical Clinic, estimate the distance from the main gate to those locations. In such instances, it may be assumed that a median round trip distance of 3-4 miles is appropriate for use. However, it may also be necessary to estimate vehicle travel distances for individuals who travel on and off base more than once per day, such as personnel who leave the base during lunchtime. In the absence of base-specific survey data, it can be conservatively assumed that 5% of base personnel will travel off base during lunchtime. Since this is a second trip through the gate, you should assume the daily on-base mileage is doubled for those individuals. If base organizations are unable to provide required data, it may be possible to obtain trip length and driver behavior data that can be extrapolated to on-base conditions from the local metropolitan planning office (MPO).

Finally, the base Weather Detachment should be contacted to verify the installation's altitude to determine whether the installation is below or above the low/high altitude threshold (4,000 feet above sea level).

5.5 Example Problems

5.5.1 Problem 1 – Calculating POV and GOV Emissions – Air Force/State/Territory Composite Emission Factor Method

Anytown AFB is inventorying its calendar year 2013 CO emissions for their POVs and GOVs operated by the facility during the year. Data indicates that there are a total of 422 POVs and 38 GOVs which traveled an average of 4,563 miles each. Calculate CO emissions for CY2013 if Anytown AFB is located in Alabama at an elevation of 1,100 feet above sea level.

Step 1 – Gather fleet data. The data required to calculate emissions is provided in the problem statement. This information includes the number of POVs (**N_{POV} = 422**), the number of GOVs (**N_{GOV} = 38**), and the average miles traveled for each GOV (**AVM = 4,563 miles/yr**).

Next, calculate total vehicle miles traveled (VMT_{Total}). Using the number of POVs and GOVs, the average vehicle miles traveled (AVM) and Equation 5-7, the VMT_{Total} is calculated as follows:

$$VMT_{Total} = AVM \times N$$

For POVs:

$$\boldsymbol{VMT_{Total-POV}} = 4{,}563\,\frac{miles}{yr} \times 422 = \mathbf{1925586}\,\frac{\boldsymbol{miles}}{\boldsymbol{yr}}$$

For GOVs:

$$\boldsymbol{VMT_{Total-GOV}} = 4{,}563\,\frac{miles}{yr} \times 38 = \mathbf{173394}\,\frac{\boldsymbol{miles}}{\boldsymbol{yr}}$$

Step 2 – Select emission factors. Since the altitude given (1,100 feet above sea level) is beneath the 4,000 feet threshold, this location is regarded as a "low altitude" location. According to Table 5-9, for CY2013 at a low altitude location in Alabama, the CO emission factor ($EF(CO)_{Alabama}$) for POVs is **9.214 g/mi**. Similarly, the CO emission factor ($EF(CO)_{Alabama}$) for GOVs, according to Table 5-17, is **7.477 g/mi**.

Next, calculate the adjusted emission factors. To adjust the emission factor ($EF(CO)_{Alabama}$) for vehicles that operate on alternative fuels, the emission factors recorded in Step 3 are adjusted using Equation 5-5 and Equation 5-6 for POVs and GOVs respectively. The FERF for CO, according to Table 5-7, is 90% and 50% for CNG and hybrid vehicles respectively.

For POVs:

$$EF(Pol)_{Total} = EF(Pol)_{State} \times \left[0.98 + \left(0.0194 \times \frac{FERF(Pol)_{Hyb}}{100}\right) + \left(0.0006 \times \frac{FERF(Pol)_{CNG}}{100}\right)\right]$$

$$EF(CO)_{Total} = 9.214\,\frac{g}{mi} \times \left[0.98 + \left(0.0194 \times \frac{50\%}{100\%}\right) + \left(0.0006 \times \frac{90\%}{100\%}\right)\right]$$

$$EF(CO)_{Total} = 9.214\,\frac{g}{mi} \times [0.98 + (0.0194 \times 0.5) + (0.0006 \times 0.9)]$$

$$EF(CO)_{Total} = 9.214\,\frac{g}{mi} \times [0.98 + (0.0097) + (0.00054)]$$

$$\boldsymbol{EF(CO)_{Total}} = 9.214\,\frac{g}{mi} \times [0.99024] = \mathbf{9.124}\,\frac{\boldsymbol{g}}{\boldsymbol{mi}}$$

For GOVs:

$$EF(Pol)_{Total} = EF(Pol)_{State} \times \left[0.9901 + \left(0.0067 \times \frac{FERF(Pol)_{Hyb}}{100}\right) + \left(0.0032 \times \frac{FERF(Pol)_{CNG}}{100}\right)\right]$$

$$EF(CO)_{Total} = 7.477\,\frac{g}{mi} \times \left[0.9901 + \left(0.0067 \times \frac{50\%}{100\%}\right) + \left(0.0032 \times \frac{90\%}{100\%}\right)\right]$$

$$EF(CO)_{Total} = 7.477\,\frac{g}{mi} \times [0.9901 + (0.0067 \times 0.5) + (0.0032 \times 0.9)]$$

$$EF(CO)_{Total} = 7.477\,\frac{g}{mi} \times [0.9901 + (0.00335) + (0.00288)]$$

$$\boldsymbol{EF(CO)_{Total}} = 7.477\,\frac{g}{mi} \times [0.99633] = \boldsymbol{7.450\,\frac{g}{mi}}$$

Step 3 – Calculate emissions. Emissions are calculated using the adjusted emission factors from Step 4, the VMT_{Total} calculated from Step 2, and Equation 5-3 as shown:

$$E(Pol)_{Total} = VMT_{Total} \times EF(Pol)_{Total} \times 0.002205$$

For POVs:

$$E(CO)_{Total} = 1925586\,\frac{\cancel{miles}}{yr} \times 9.124\,\frac{\cancel{g}}{\cancel{mi}} \times 0.002205\,\frac{lb}{\cancel{g}}$$

$$\boxed{\boldsymbol{E(CO)_{Total} = 38,739.75\,\frac{lb}{yr}}}$$

For GOVs:

$$E(CO)_{Total} = 173394\,\frac{\cancel{miles}}{yr} \times 7.450\,\frac{\cancel{g}}{\cancel{mi}} \times 0.002205\,\frac{lb}{\cancel{g}}$$

$$\boxed{\boldsymbol{E(CO)_{Total} = 2,848.39\,\frac{lb}{yr}}}$$

5.5.2 Problem 2 – Calculating GOV Emissions – Using Specific Vehicle Mix Data

Anytown AFB is inventorying its CY2013 CO emissions for their 15 GOVs operated by the facility during the year. The AFB is located in Alabama at an elevation of 1,100 feet above sea level. For this example, vehicle data was collected and organized by vehicle category using the form shown in Figure 5-2.

Step 1 – Gather fleet data and Step 2 – Group vehicle categories. Since the data was available from the Environmental manager, Steps 1 and 2 are combined using the form from Figure 5-2.

Installation Name: Anytown AFB			**Inventory Year:** 2013	
Responsible Organization (Name and Office Symbol):				
POC (Name, Phone #, and email):				
Vehicle Category:				
Vehicle Identification Number (VIN)	**Vehicle Description**	**Bldg. Number**	**Model Year**	**Miles Driven (mi/yr)**
LDGV				
Vehicle #1	Sedan	Bldg. 45-2	1999	4,900
Vehicle #10	Sedan	Bldg. 45-2	1999	5,670
Vehicle #11	Sedan	Bldg. 15-1	2004	4,368
Vehicle #15	Sedan	Bldg. 23-6	2002	6,670
Vehicle #8	Sedan	Bldg. 15	1998	2,700
Vehicle #3	Sedan	Bldg. 1	2004	7,400
Vehicle #5	Sedan	Bldg. 10	1997	1,730
Vehicle #9	Sedan	Bldg. 10	1997	1,450
		Average	**2000**	**4,361**
		Total		**34,888**
LDGT				
Vehicle #6	Pickup	Bldg. 15	2000	4,600
Vehicle #7	Pickup	Bldg. 15	2000	5,200
Vehicle #13	Van	Bldg. 15	1999	6,500
Vehicle #14	SUV	Bldg. 15	2003	3,200
		Average	**2000**	**4,875**
		Total		**19,500**
HDGV				
Vehicle #2	Flatbed	Bldg. 15	1998	4,450
		Average	**1998**	**4,450**
		Total		**4,450**
LDDT				
Vehicle #4	Pickup	Bldg. 1	2004	4,300
		Average	**2004**	**4,300**
		Total		**4,300**
HDDV				
Vehicle #12	Fire Truck	Bldg. 45-2	2002	5,300
		Average	**2002**	**5,300**
		Total		**5,300**

Step 3 – Select emission factors. Since the altitude of this Air Force installation falls below the 4,000 feet above sea level threshold, the facility is considered to be in a "low altitude" location.

For GOVs in CY 2013 at low altitude locations in Alabama, the CO emission factors for each vehicle category are given in Table 5-33. The emission factors are provided in the table below.

Vehicle Category	CO Emission Factor (g/mi)
LDGV	8.110
LDGT	10.530
HDGV	9.600
LDDV	0.808
LDDT	0.657
HDDV	0.919
MC	0.000

Step 4 – Calculate emissions. No information was provided regarding whether or not any of the vehicles operated on alternative fuel. Using the vehicle miles traveled for each vehicle category (VMT_i) from the fleet data, the emission factors recorded in Step 3, and Equation 5-8, the emissions are first calculated for each vehicle category as follows:

$$E(Pol)_{Total} = \sum_{i=1}^{7}\left[VMT_i \times EF(Pol)_i \times \frac{FERF(Pol)}{100} \times 0.002205\right]$$

$$\boldsymbol{E(CO)_{LDGV}} = 34{,}888\frac{\cancel{mi}}{yr} \times 8.110\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{623.9\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{LDGT}} = 19{,}500\frac{\cancel{mi}}{yr} \times 10.530\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{452.8\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{HDGV}} = 4{,}450\frac{\cancel{mi}}{yr} \times 9.600\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{94.2\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{LDDV}} = 0\frac{\cancel{mi}}{yr} \times 0.808\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{0.0\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{LDDT}} = 4{,}300\frac{\cancel{mi}}{yr} \times 0.657\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{6.2\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{HDDV}} = 5{,}300\frac{\cancel{mi}}{yr} \times 0.919\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{10.7\frac{lb}{yr}}$$

$$\boldsymbol{E(CO)_{MC}} = 0\frac{\cancel{mi}}{yr} \times 0.000\frac{\cancel{g}}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\frac{lb}{\cancel{g}} = \boldsymbol{0.0\frac{lb}{yr}}$$

Finally, the total CO emissions are calculated by summing the contributing CO emissions from each vehicle category.

$$E(Pol)_{Total} = \sum_{i=1}^{7} E(Pol)_i$$

$$E(CO)_{TOTAL} = (623.9 + 452.8 + 94.2 + 0 + 6.2 + 10.7 + 0)\frac{lb}{yr}$$

$$\boxed{\boldsymbol{E(CO)_{TOTAL} = 1187.8\frac{lb}{yr}}}$$

5.5.3 Problem 3 – Calculating POV Emissions – Using Specific Vehicle Mix Data

Anytown AFB (located in Alabama at an elevation of 1,100 feet above sea level) is conducting an emissions inventory to quantify calendar year 2013 emissions attributable to the operation of POVs. Using the information provided by the Security Forces Squadron, the following data was used to calculate the CY2013 emissions of CO from the operation of POVs. The collected POV data was organized by vehicle category using the form shown in Figure 5-3.

Step 1 – Gather fleet data. Fleet data information is provided in the following figure.

Step 2 – Group vehicle categories. The first step in grouping the vehicle categories is to calculate the estimated total number of vehicles (N) driving on base. Using the data provided in the form referenced in Step 1, the total number of POVs is estimated as follows:

$$N = Registered + Unregistered$$

$$\boldsymbol{N} = 1{,}675 + 125 = \boldsymbol{1{,}800\ vehicles}$$

Installation Name: Anytown AFB	**Inventory Year:** 2013
Responsible Organization (Name and Office Symbol): 58 CES/CD	
POC (Name, Phone #, and email): SSgt John Jones, DSN 234-5678	

Question	**Response**
Can you provide the listing of all registered vehicles on base? (Y/N)? If so, be sure to include all specific information (make/model year, etc.) about the vehicles.	N
What is the estimated average number of registered POVs at the installation during the inventory period?	1,675
What is the estimated percentage of registered vehicles which actually travel on the installation during a typical weekday (Monday-Friday)?	75
What is the estimated percentage of registered vehicles which actually travel on the installation during a typical weekend day (Saturday and Sunday)?	50
What is the estimated distance the average POV travels on base during a typical weekday?	6 mi/day
What is the estimated distance the average POV travels on base during a typical weekend day?	4 mi/day
What is the estimated number of non-registered POVs which travel on base during a typical weekday?	125
What is the estimated average model year of all POVs driven on base during the inventory year? (NOTE: This is not required if the average model years are listed below for each vehicle category)	

Using registration information, provide an estimate of the percentage of registered POVs which fall under each of the 7 vehicle categories listed below.

Vehicle Category	**Category Description**	**Estimated % of Registered Vehicles**
LDGV	Light-Duty Gasoline Vehicles – All gasoline-powered passenger cars	36
LDDV	Light-Duty Diesel Vehicles – All diesel-powered passenger cars	1
LDGT	Light-Duty Gasoline Trucks – All smaller gasoline-powered trucks (0 to 8,500 lbs. GVWR)	54
LDDT	Light-Duty Diesel Trucks (LDDT) – All smaller diesel-powered trucks (0 to 8,500 lbs. GVWR)	1
HDGV	Heavy-Duty Gasoline Vehicles (HDGV) – All larger gasoline-powered vehicles (8,501to >60,000 lbs. GVWR)	4
HDDV	Heavy-Duty Diesel Vehicles – All larger diesel-powered vehicles (10,001to >60,000 lbs. GVWR)	3
MC	Motorcycles (MC) – All motorcycles (assumed to be gasoline powered)	1

Next, the number of vehicles which fall under each vehicle category are calculated under the assumption that the fleet mix for the unregistered vehicles is the same as for the registered vehicles. By slightly modifying Equation 5-9, the number of vehicles for each category (n_i) may be derived from the total number of vehicles (N) and vehicle category mix (MIX_i).

$$n_i = N \times \frac{MIX_i}{100}$$

$$\mathbf{n_{LDGV}} = 1{,}800 \times \frac{36\%}{100\%} = \mathbf{648\ Vehicles}$$

$$\mathbf{n_{LDDV}} = 1{,}800 \times \frac{1\%}{100\%} = \mathbf{18\ Vehicles}$$

$$\mathbf{n_{LDGT}} = 1{,}800 \times \frac{54\%}{100\%} = \mathbf{972\ Vehicles}$$

$$\mathbf{n_{LDDT}} = 1{,}800 \times \frac{1\%}{100\%} = \mathbf{18\ Vehicles}$$

$$\mathbf{n_{HDGV}} = 1{,}800 \times \frac{4\%}{100\%} = \mathbf{72\ Vehicles}$$

$$\mathbf{n_{HDDV}} = 1{,}800 \times \frac{3\%}{100\%} = \mathbf{54\ Vehicles}$$

$$\mathbf{n_{MC}} = 1{,}800 \times \frac{1\%}{100\%} = \mathbf{18\ Vehicles}$$

Next, the average annual vehicle miles traveled (AVM_i) is calculated. Using the data provided in the form above, the average vehicle miles traveled is calculated as follows:

$$AVM_i = \frac{52\ weeks}{yr} \times \left[\left(\frac{75\%}{100\%} \times 6\frac{mi}{day} \times 5\frac{day}{week}\right) + \left(\frac{50\%}{100\%} \times 4\frac{mi}{day} \times 2\frac{day}{week}\right)\right]$$

$$AVM_i = \frac{52\ weeks}{yr} \times \left[\left(0.75 \times 6\frac{mi}{\cancel{day}} \times 5\frac{\cancel{day}}{week}\right) + \left(0.5 \times 4\frac{mi}{\cancel{day}} \times 2\frac{\cancel{day}}{week}\right)\right]$$

$$AVM_i = \frac{52\ weeks}{yr} \times \left[\left(22.5\frac{mi}{week}\right) + \left(4\frac{mi}{week}\right)\right]$$

$$\boldsymbol{AVM_i} = \frac{52\ \cancel{weeks}}{yr} \times \left[\left(26.5\frac{mi}{\cancel{week}}\right)\right] = \mathbf{1{,}378\frac{mi}{yr}}$$

Finally, the total annual vehicle miles traveled for each category (VMT_i) is calculated using Equation 5-9.

$$VMT_i = AVM_i \times n_i$$

$$\mathbf{VMT_{LDGV}} = 1378\frac{\text{mi}}{\text{yr}} \times 648\ \text{vehicles} = \mathbf{892{,}944\frac{mi}{yr}}$$

$$\mathbf{VMT_{LDDV}} = 1378\frac{\text{mi}}{\text{yr}} \times 18\ \text{vehicles} = \mathbf{24{,}804\frac{mi}{yr}}$$

$$\mathbf{VMT_{LDGT}} = 1378\frac{\text{mi}}{\text{yr}} \times 972\ \text{vehicles} = \mathbf{1{,}339{,}416\frac{mi}{yr}}$$

$$\mathbf{VMT_{LDDT}} = 1378\,\frac{\text{mi}}{\text{yr}} \times 18\text{ vehicles} = \mathbf{24,804}\,\frac{\mathbf{mi}}{\mathbf{yr}}$$

$$\mathbf{VMT_{HDGV}} = 1378\,\frac{\text{mi}}{\text{yr}} \times 72\text{ vehicles} = \mathbf{99,216}\,\frac{\mathbf{mi}}{\mathbf{yr}}$$

$$\mathbf{VMT_{HDDV}} = 1378\,\frac{\text{mi}}{\text{yr}} \times 54\text{ vehicles} = \mathbf{74,412}\,\frac{\mathbf{mi}}{\mathbf{yr}}$$

$$\mathbf{VMT_{MC}} = 1378\,\frac{\text{mi}}{\text{yr}} \times 18\text{ vehicles} = \mathbf{24,804}\,\frac{\mathbf{mi}}{\mathbf{yr}}$$

Step 3 – Select emission factors. Emission factors for POVs for CY2013 are provided in Table 5-25. The CO emission factors for a low altitude base in Alabama for 2013 are provided in the sub-table below.

Vehicle Category	CO Emission Factor (g/mi)
LDGV	8.110
LDDV	0.808
LDGT	10.550
LDDT	0.657
HDGV	8.180
HDDV	0.427
MC	14.280

Step 4 – Calculate emissions. Emissions are calculated using the vehicle miles traveled as calculated in Step 2, the emission factors recorded in Step 3, and Equation 5-8. First the CO emissions from each vehicle category are individually calculated and then summed for total CO emissions. Also, since no information was provided regarding the use of alternative fuels, a fuel emission reduction factor (FERF) value of "100" is used.

$$E(Pol)_{Total} = \sum_{i=1}^{7}\left[VMT_i \times EF(Pol)_i \times \frac{FERF(Pol)}{100} \times 0.002205\right]$$

$$\mathbf{E(CO)_{LDGV}} = 892{,}944\,\frac{\cancel{\text{mi}}}{\text{yr}} \times 8.110\,\frac{\text{g}}{\cancel{\text{mi}}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{\text{lb}}{\text{g}} = \mathbf{15,968.1}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{LDDV}} = 24{,}804\,\frac{\cancel{\text{mi}}}{\text{yr}} \times 0.808\,\frac{\text{g}}{\cancel{\text{mi}}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{\text{lb}}{\text{g}} = \mathbf{44.2}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{LDGT}} = 1{,}339{,}416\,\frac{\cancel{\text{mi}}}{\text{yr}} \times 10.550\,\frac{\text{g}}{\cancel{\text{mi}}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{\text{lb}}{\text{g}} = \mathbf{31,158.5}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{LDDT}} = 24{,}804\,\frac{\cancel{mi}}{yr} \times 0.657\,\frac{g}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{lb}{g} = \mathbf{35.9}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{HDGV}} = 99{,}216\,\frac{\cancel{mi}}{yr} \times\ 8.180\,\frac{g}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{lb}{g} = \mathbf{1{,}789.5}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{HDDV}} = 74{,}412\,\frac{\cancel{mi}}{yr} \times 0.427\,\frac{g}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{lb}{g} = \mathbf{70.1}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

$$\mathbf{E(CO)_{MC}} = 24{,}804\,\frac{\cancel{mi}}{yr} \times 14.280\,\frac{g}{\cancel{mi}} \times \frac{100\%}{100\%} \times 0.002205\,\frac{lb}{g} = \mathbf{781.0}\,\frac{\mathbf{lb}}{\mathbf{yr}}$$

The total CO emissions are calculated by summing the CO emissions from each contributing vehicle category:

$$E(Pol)_{Total} = \sum_{i=1}^{7} E(Pol)_i$$

$$E(CO)_{Total} = (15968.1 + 44.2 + 31158.5 + 35.9 + 1789.5 + 70.1 + 781.0)\,\frac{lb}{yr}$$

$$\boxed{\boldsymbol{E(CO)_{TOTAL} = 49{,}847.3\ \frac{lb}{yr}}}$$

5.5.4 Problem 4 – Calculating POV Emissions – Using Typical Vehicle Mix Data

An Air Force base is interested in determining the NO_X generated by the operation of POVs driven on base. There are approximately 600 POVs that average 3,700 miles per year, but no vehicle studies have been performed to describe the vehicle mix. Using the typical Air Force vehicle mix, determine the NO_X generated by the operation of these vehicles on base for CY 2013. The base is located in Colorado at an elevation of 6,240 feet above sea level.

Step 1 – Gather fleet data. The problem statement provided information regarding the number of POVs (**N = 600**) and the average vehicle miles driven by each vehicle (**AVM = 3,700 miles per year**).

Step 2 – Group vehicle categories. The first step is to determine the total annual vehicle miles traveled (VMT_{Total}) for all vehicles. Using the number of POVs and average miles traveled as recorded in Step 1, the total vehicle miles traveled is calculated using Equation 5-13 as shown:

$$VMT_{Total} = AVM \times N$$

$$\boldsymbol{VMT_{Total}} = 3{,}700\,\frac{mi}{yr} \times 600 = \mathbf{2{,}220{,}000}\,\frac{\boldsymbol{mi}}{\boldsymbol{yr}}$$

Since the typical Air Force vehicle mix is assumed for this example, the vehicle mix (MIX_i) for each category for POVs has been extracted from Table 5-2 and presented in the following sub-table.

Vehicle Category	POV Vehicle Mix (%)
LDGV	56.17
LDDV	0.88
LDGT	34.62
LDDT	1.00
HDGV	0.62
HDDV	0.22
MC	4.49
LDGV (H)	1.70
LDGT (H)	0.24
LDGV (C)	0.06
LDGT (C)	0.00
HDGV (C)	0.00

Step 3 – Select emission factors. The emission factors for CY 2013 POVs are presented in Table 5-25. Since the elevation of the base is above the 4,000 feet above sea level threshold, the facility is classified as a "high altitude" location. The emission factors for NO_X for high altitude locations in Colorado have been extracted from the table and presented in the following sub-table.

Vehicle Category	NO_X Emission Factor (g/mi)
LDGV	0.449
LDDV	0.200
LDGT	0.834
LDDT	0.460
HDGV	1.158
HDDV	1.412
MC	0.880
LDGV (H)	0.449
LDGT (H)	0.834
LDGV (C)	0.449
LDGT (C)	0.834
HDGV (C)	1.158

Step 4 – Calculate emissions. First, a total composite emission factor is calculated by taking the product of the emission factor for each vehicle category ($EF(Pol)_i$ – from the sub-table in Step 3),

the vehicle mix value for the corresponding vehicle category (MIX_i – from the sub-table in Step 2), and the appropriate fuel emission reduction factor from Table 5-7. These values are calculated as follows:

$$\boldsymbol{EF(Pol)_{Total} = \sum_{i=1}^{7} \left\{ \left(\frac{MIX_i}{100} \right) \times EF(Pol)_i \times \left[\frac{FERF(Pol)}{100} \right] \right\}}$$

$$\boldsymbol{EF(NO_X)_{LDGV} = \left(\frac{56.17\%}{100\%}\right) \times 0.449 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.252 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDDV} = \left(\frac{0.88\%}{100\%}\right) \times 0.200 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.00176 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDGT} = \left(\frac{34.62\%}{100\%}\right) \times 0.834 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.289 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDDT} = \left(\frac{1.00\%}{100\%}\right) \times 0.460 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.00460 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{HDGV} = \left(\frac{0.62\%}{100\%}\right) \times 1.158 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.00718 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{HDDV} = \left(\frac{0.22\%}{100\%}\right) \times 1.412 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.00311 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{MC} = \left(\frac{4.49\%}{100\%}\right) \times 0.880 \frac{g}{mi} \times \left(\frac{100\%}{100\%}\right) = 0.0395 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDGV(H)} = \left(\frac{1.70\%}{100\%}\right) \times 0.449 \frac{g}{mi} \times \left(\frac{75\%}{100\%}\right) = 0.00572 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDGT(H)} = \left(\frac{0.24\%}{100\%}\right) \times 0.834 \frac{g}{mi} \times \left(\frac{75\%}{100\%}\right) = 0.00150 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDGV(C)} = \left(\frac{0.06\%}{100\%}\right) \times 0.449 \frac{g}{mi} \times \left(\frac{60\%}{100\%}\right) = 0.000162 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{LDGT(C)} = \left(\frac{0.00\%}{100\%}\right) \times 0.834 \frac{g}{mi} \times \left(\frac{60\%}{100\%}\right) = 0.00 \frac{g}{mi}}$$

$$\boldsymbol{EF(NO_X)_{HDGV(C)} = \left(\frac{0.00\%}{100\%}\right) \times 1.158 \frac{g}{mi} \times \left(\frac{60\%}{100\%}\right) = 0.00 \frac{g}{mi}}$$

Next, sum these values for a total composite emission factor ($EF(Pol)_{Total}$) as shown:

$$EF(Pol)_{Total} = \sum_{i=1}^{7} EF(Pol)_i$$

$$\boldsymbol{EF(NO_X)_{Total}} = (0.252 + 0.00176 + 0.289 + 0.00460 + 0.00718 + 0.00311 + 0.0395 + 0.00572 + 0.00150 + 0.000162 + 0.00 + 0.00)\frac{g}{mi}$$
$$= \boldsymbol{0.605\frac{g}{mi}}$$

Finally, using the total vehicle miles traveled (VMT_{Total}) from Step 2 and the total composite emission factor, the total NO_X emissions are calculated using Equation 5-10 as shown:

$$E(Pol)_{Total} = VMT_{Total} \times EF(Pol)_{Total} \times 0.002205$$

$$E(NO_X)_{Total} = 2{,}220{,}000\frac{\cancel{mi}}{yr} \times 0.605\frac{\cancel{g}}{\cancel{mi}} \times 0.002205\frac{lb}{\cancel{g}}$$

$$\boxed{\boldsymbol{E(NO_X)_{Total} = 2961.5\frac{lb}{yr}}}$$

5.5.5 Problem 5 – Calculating Fugitive PM Emissions

Determine the fugitive PM_{10} generated from the POVs and GOVs provided in Problem 1 given that the base is located in central Alabama. It can be assumed that all 100% of all miles traveled by POVs are on paved roads, whereas GOVs traveled 90% on paved roads and 10% on unpaved roads.

Step 1 – Gather fleet data. Calculation of fugitive PM_{10} emissions from on-road vehicle operation requires that the total vehicle miles driven (VMT_{Total}) for POVs and GOVs is known. These values have been calculated in Step 1 of Problem 1 ($VMT_{Total\ -\ POV}$ = 1,925,586 and $VMT_{Total\ -}$ GOV = 173,394 miles/year).

Step 2 – Select emission factors. Fugitive PM_{10} emission factors are provided in Table 5-8. For POVs, the emission factors for paved and unpaved roads are **0.058** and **46.622 g/mi** respectively. Similarly, for GOVs, the emission factors for paved and unpaved roads are **0.069** and **50.595 g/mi** respectively.

Once selected, the emission factors must be corrected to account for precipitation at the base. It is given that the base is located in central Alabama. Based on this information, a review of Figure 5-1 reveals that the base is estimated to have 110 days in the year with precipitation of

0.01 inches or more. The emission factors are corrected using this value and Equation 5-1 or Equation 5-2.

For POVs:

$$EF(\text{Pol})_{CP} = EF(Pol)_P \times \left(1 - \frac{P}{4N}\right)$$

$$EF(\text{PM}_{10})_{CP} = 0.058\frac{g}{mi} \times \left(1 - \frac{110}{4\times365}\right)$$

$$\boldsymbol{EF(\text{PM}_{10})_{CP}} = 0.058\frac{g}{mi} \times \left(1 - \frac{110}{1460}\right) = \mathbf{0.054}\frac{\boldsymbol{g}}{\boldsymbol{mi}}$$

For GOVs:

$$EF(\text{PM}_{10})_{CP} = 0.069\frac{g}{mi} \times \left(1 - \frac{110}{4\times365}\right)$$

$$\boldsymbol{EF(\text{PM}_{10})_{CP}} = 0.069\frac{g}{mi} \times \left(1 - \frac{110}{1460}\right) = \mathbf{0.064}\frac{\boldsymbol{g}}{\boldsymbol{mi}}$$

$$EF(\text{Pol})_{CU} = EF(Pol)_U \times \left(1 - \frac{P}{N}\right)$$

$$\boldsymbol{EF(\text{PM}_{10})_{CU}} = 50.595\frac{g}{mi} \times \left(1 - \frac{110}{365}\right) = \mathbf{35.347}\frac{\boldsymbol{g}}{\boldsymbol{mi}}$$

Step 3 – Calculate emissions. Using the $\text{VMT}_{\text{Total}}$ for POVs and GOVs as recorded in Step 1, the estimated percentage of driving on paved and unpaved roads (as given in the problem statement), and Equation 5-20, emissions are calculated as follows:

$$E(Pol)_{Total} = VMT_{Total} \times \left[\left(\frac{\%VMT_P}{100} \times EF(Pol)_{CP}\right) + \left(\frac{\%VMT_U}{100} \times EF(Pol)_{CU}\right)\right] \times 0.002205$$

For POVs:

$$E(PM_{10})_{Total} = 1925586\frac{mi}{yr} \times \left[\left(\frac{100\%}{100\%} \times 0.054\frac{g}{mi}\right) + (0)\right] \times 0.002205\frac{lb}{g}$$

$$E(PM_{10})_{Total} = 1925586\frac{\cancel{mi}}{yr} \times \left[\left(1 \times 0.054\frac{\cancel{g}}{\cancel{mi}}\right)\right] \times 0.002205\frac{lb}{\cancel{g}}$$

$$\boxed{\boldsymbol{E(PM_{10})_{Total}} = \mathbf{229.3}\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

For GOVs:

$$E(PM_{10})_{Total} = 173394\,\frac{mi}{yr} \times \left[\left(\frac{90\%}{100\%} \times 0.064\,\frac{g}{mi}\right) + \left(\frac{10\%}{100\%} \times 35.347\,\frac{g}{mi}\right)\right] \times 0.002205\,\frac{lb}{g}$$

$$E(PM_{10})_{Total} = 173394\,\frac{mi}{yr} \times \left[\left(0.9 \times 0.064\,\frac{g}{mi}\right) + \left(0.1 \times 35.347\,\frac{g}{mi}\right)\right] \times 0.002205\,\frac{lb}{g}$$

$$E(PM_{10})_{Total} = 173394\,\frac{mi}{yr} \times \left[\left(0.0576\,\frac{g}{mi}\right) + \left(3.5347\,\frac{g}{mi}\right)\right] \times 0.002205\,\frac{lb}{g}$$

$$E(PM_{10})_{Total} = 173394\,\frac{\cancel{mi}}{yr} \times \left[3.5923\,\frac{\cancel{g}}{\cancel{mi}}\right] \times 0.002205\,\frac{lb}{\cancel{g}}$$

$$\boxed{\boldsymbol{E(PM_{10})_{Total} = 1373.5\,\frac{lb}{yr}}}$$

Table 5-9. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2013 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.579	0.008	9.893	0.856	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.597	0.008	9.214	0.810	0.026	0.012	428.710	0.097
ALASKA	HIGH	All Vehicles	0.679	0.008	17.404	0.867	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.700	0.008	16.611	0.832	0.026	0.012	428.710	0.097
ARIZONA	HIGH	All Vehicles	0.585	0.008	10.265	0.868	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.602	0.008	9.580	0.820	0.026	0.012	428.710	0.097
ARKANSAS	HIGH	All Vehicles	0.587	0.008	10.425	0.872	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.605	0.008	9.735	0.824	0.026	0.012	428.710	0.097
CALIFORNIA	HIGH	All Vehicles	0.577	0.008	10.087	0.825	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.595	0.008	9.422	0.784	0.026	0.012	428.710	0.097
COLORADO	HIGH	All Vehicles	0.611	0.008	12.998	0.789	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.630	0.008	12.285	0.752	0.026	0.012	428.710	0.097
CONNECTICUT	HIGH	All Vehicles	0.605	0.008	12.347	0.824	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.623	0.008	11.644	0.785	0.026	0.012	428.710	0.097
DELAWARE	HIGH	All Vehicles	0.591	0.008	10.980	0.835	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.609	0.008	10.297	0.792	0.026	0.012	428.710	0.097
FLORIDA	HIGH	All Vehicles	0.569	0.008	8.829	0.839	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.586	0.008	8.156	0.795	0.026	0.012	428.710	0.097
GEORGIA	HIGH	All Vehicles	0.578	0.008	9.789	0.853	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.595	0.008	9.111	0.808	0.026	0.012	428.710	0.097
HAWAII	HIGH	All Vehicles	0.554	0.008	8.357	0.800	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.571	0.008	7.721	0.760	0.026	0.012	428.710	0.097
IDAHO	HIGH	All Vehicles	0.615	0.008	13.267	0.790	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.634	0.008	12.550	0.753	0.026	0.012	428.710	0.097
ILLINOIS	HIGH	All Vehicles	0.602	0.008	11.811	0.850	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.620	0.008	11.113	0.806	0.026	0.012	428.710	0.097
INDIANA	HIGH	All Vehicles	0.600	0.008	11.769	0.838	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.619	0.008	11.074	0.795	0.026	0.012	428.710	0.097
IOWA	HIGH	All Vehicles	0.614	0.008	12.781	0.827	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.633	0.008	12.066	0.783	0.026	0.012	428.710	0.097
KANSAS	HIGH	All Vehicles	0.599	0.008	11.388	0.866	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.617	0.008	10.687	0.818	0.026	0.012	428.710	0.097
KENTUCKY	HIGH	All Vehicles	0.591	0.008	10.985	0.838	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.609	0.008	10.302	0.795	0.026	0.012	428.710	0.097
LOUISIANA	HIGH	All Vehicles	0.578	0.008	9.568	0.863	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.595	0.008	8.883	0.816	0.026	0.012	428.710	0.097
MAINE	HIGH	All Vehicles	0.628	0.008	14.149	0.819	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.648	0.008	13.414	0.781	0.026	0.012	428.710	0.097
MARYLAND	HIGH	All Vehicles	0.592	0.008	11.179	0.824	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.611	0.008	10.495	0.782	0.026	0.012	428.710	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.606	0.008	12.517	0.824	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.625	0.008	11.812	0.785	0.026	0.012	428.710	0.097
MICHIGAN	HIGH	All Vehicles	0.617	0.008	13.344	0.803	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.636	0.008	12.624	0.765	0.026	0.012	428.710	0.097
MINNESOTA	HIGH	All Vehicles	0.635	0.008	14.461	0.853	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.655	0.008	13.714	0.813	0.026	0.012	428.710	0.097
MISSISSIPPI	HIGH	All Vehicles	0.581	0.008	9.915	0.864	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.598	0.008	9.231	0.816	0.026	0.012	428.710	0.097
MISSOURI	HIGH	All Vehicles	0.598	0.008	11.348	0.854	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.616	0.008	10.653	0.808	0.026	0.012	428.710	0.097
MONTANA	HIGH	All Vehicles	0.623	0.008	13.770	0.808	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.642	0.008	13.042	0.771	0.026	0.012	428.710	0.097
NEBRASKA	HIGH	All Vehicles	0.607	0.008	12.199	0.821	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.626	0.008	11.495	0.777	0.026	0.012	428.710	0.097
NEVADA	HIGH	All Vehicles	0.598	0.008	11.833	0.817	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.617	0.008	11.139	0.777	0.026	0.012	428.710	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.619	0.008	13.551	0.806	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.639	0.008	12.827	0.768	0.026	0.012	428.710	0.097
NEW JERSEY	HIGH	All Vehicles	0.596	0.008	11.468	0.826	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.614	0.008	10.780	0.785	0.026	0.012	428.710	0.097
NEW MEXICO	HIGH	All Vehicles	0.592	0.008	11.283	0.813	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.610	0.008	10.599	0.773	0.026	0.012	428.710	0.097
NEW YORK	HIGH	All Vehicles	0.614	0.008	13.116	0.798	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.633	0.008	12.400	0.759	0.026	0.012	428.710	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.582	0.008	10.315	0.845	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.600	0.008	9.640	0.801	0.026	0.012	428.710	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.637	0.008	14.597	0.858	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.656	0.008	13.847	0.817	0.026	0.012	428.710	0.097
OHIO	HIGH	All Vehicles	0.601	0.008	11.944	0.828	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.620	0.008	11.247	0.788	0.026	0.012	428.710	0.097
OKLAHOMA	HIGH	All Vehicles	0.592	0.008	10.676	0.879	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.610	0.008	9.975	0.829	0.026	0.012	428.710	0.097
OREGON	HIGH	All Vehicles	0.602	0.008	12.413	0.797	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.620	0.008	11.714	0.760	0.026	0.012	428.710	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.554	0.008	9.135	0.790	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.571	0.008	8.489	0.751	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.604	0.008	12.303	0.821	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.623	0.008	11.601	0.782	0.026	0.012	428.710	0.097
PUERTO RICO	HIGH	All Vehicles	0.562	0.008	7.736	0.821	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.578	0.008	7.083	0.778	0.026	0.012	428.710	0.097
RHODE ISLAND	HIGH	All Vehicles	0.600	0.008	12.032	0.814	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.618	0.008	11.336	0.775	0.026	0.012	428.710	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.580	0.008	9.947	0.857	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.598	0.008	9.268	0.811	0.026	0.012	428.710	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.619	0.008	13.144	0.833	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.638	0.008	12.422	0.790	0.026	0.012	428.710	0.097
TENNESSEE	HIGH	All Vehicles	0.587	0.008	10.631	0.839	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.605	0.008	9.951	0.795	0.026	0.012	428.710	0.097
TEXAS	HIGH	All Vehicles	0.582	0.008	9.866	0.875	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.599	0.008	9.173	0.826	0.026	0.012	428.710	0.097
UTAH	HIGH	All Vehicles	0.605	0.008	12.291	0.800	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.624	0.008	11.588	0.759	0.026	0.012	428.710	0.097
VERMONT	HIGH	All Vehicles	0.623	0.008	13.778	0.811	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.642	0.008	13.049	0.774	0.026	0.012	428.710	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.571	0.008	7.896	0.840	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.587	0.008	7.203	0.796	0.026	0.012	428.710	0.097
VIRGINIA	HIGH	All Vehicles	0.589	0.008	10.938	0.825	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.607	0.008	10.258	0.784	0.026	0.012	428.710	0.097
WASHINGTON	HIGH	All Vehicles	0.604	0.008	12.593	0.800	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.623	0.008	11.891	0.764	0.026	0.012	428.710	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.596	0.008	11.707	0.814	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.615	0.008	11.015	0.775	0.026	0.012	428.710	0.097
WISCONSIN	HIGH	All Vehicles	0.625	0.008	13.810	0.826	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.644	0.008	13.078	0.787	0.026	0.012	428.710	0.097
WYOMING	HIGH	All Vehicles	0.621	0.008	13.666	0.803	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.640	0.008	12.941	0.766	0.026	0.012	428.710	0.097

Table 5-10. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2014 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.537	0.008	9.586	0.807	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.555	0.008	8.910	0.762	0.026	0.012	428.820	0.097
ALASKA	HIGH	All Vehicles	0.629	0.008	16.908	0.818	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.650	0.008	16.118	0.783	0.026	0.012	428.820	0.097
ARIZONA	HIGH	All Vehicles	0.542	0.008	9.948	0.818	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.560	0.008	9.266	0.771	0.026	0.012	428.820	0.097
ARKANSAS	HIGH	All Vehicles	0.545	0.008	10.103	0.822	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.562	0.008	9.417	0.775	0.026	0.012	428.820	0.097
CALIFORNIA	HIGH	All Vehicles	0.535	0.008	9.781	0.777	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.553	0.008	9.120	0.737	0.026	0.012	428.820	0.097
COLORADO	HIGH	All Vehicles	0.567	0.008	12.622	0.744	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.586	0.008	11.913	0.707	0.026	0.012	428.820	0.097
CONNECTICUT	HIGH	All Vehicles	0.561	0.008	11.987	0.777	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.579	0.008	11.288	0.738	0.026	0.012	428.820	0.097
DELAWARE	HIGH	All Vehicles	0.548	0.008	10.650	0.788	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.566	0.008	9.971	0.745	0.026	0.012	428.820	0.097
FLORIDA	HIGH	All Vehicles	0.528	0.008	8.545	0.790	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.544	0.008	7.875	0.747	0.026	0.012	428.820	0.097
GEORGIA	HIGH	All Vehicles	0.536	0.008	9.484	0.804	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.553	0.008	8.810	0.759	0.026	0.012	428.820	0.097
HAWAII	HIGH	All Vehicles	0.514	0.008	8.094	0.754	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.531	0.008	7.461	0.715	0.026	0.012	428.820	0.097
IDAHO	HIGH	All Vehicles	0.570	0.008	12.885	0.745	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.589	0.008	12.172	0.708	0.026	0.012	428.820	0.097
ILLINOIS	HIGH	All Vehicles	0.558	0.008	11.460	0.802	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.576	0.008	10.766	0.758	0.026	0.012	428.820	0.097
INDIANA	HIGH	All Vehicles	0.557	0.008	11.420	0.790	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.575	0.008	10.729	0.748	0.026	0.012	428.820	0.097
IOWA	HIGH	All Vehicles	0.570	0.008	12.405	0.779	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.588	0.008	11.694	0.737	0.026	0.012	428.820	0.097
KANSAS	HIGH	All Vehicles	0.556	0.008	11.043	0.817	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.574	0.008	10.346	0.770	0.026	0.012	428.820	0.097
KENTUCKY	HIGH	All Vehicles	0.548	0.008	10.655	0.790	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.566	0.008	9.975	0.748	0.026	0.012	428.820	0.097
LOUISIANA	HIGH	All Vehicles	0.536	0.008	9.266	0.813	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.553	0.008	8.584	0.767	0.026	0.012	428.820	0.097
MAINE	HIGH	All Vehicles	0.582	0.008	13.743	0.772	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.601	0.008	13.011	0.735	0.026	0.012	428.820	0.097
MARYLAND	HIGH	All Vehicles	0.549	0.008	10.845	0.777	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.567	0.008	10.165	0.736	0.026	0.012	428.820	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.562	0.008	12.153	0.776	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.581	0.008	11.451	0.738	0.026	0.012	428.820	0.097
MICHIGAN	HIGH	All Vehicles	0.572	0.008	12.959	0.757	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.591	0.008	12.242	0.720	0.026	0.012	428.820	0.097
MINNESOTA	HIGH	All Vehicles	0.588	0.008	14.044	0.804	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.608	0.008	13.301	0.764	0.026	0.012	428.820	0.097
MISSISSIPPI	HIGH	All Vehicles	0.539	0.008	9.605	0.814	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.556	0.008	8.925	0.768	0.026	0.012	428.820	0.097
MISSOURI	HIGH	All Vehicles	0.554	0.008	11.006	0.805	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.572	0.008	10.315	0.760	0.026	0.012	428.820	0.097
MONTANA	HIGH	All Vehicles	0.577	0.008	13.373	0.762	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.596	0.008	12.649	0.725	0.026	0.012	428.820	0.097
NEBRASKA	HIGH	All Vehicles	0.563	0.008	11.838	0.774	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.581	0.008	11.138	0.731	0.026	0.012	428.820	0.097
NEVADA	HIGH	All Vehicles	0.555	0.008	11.485	0.770	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.573	0.008	10.795	0.731	0.026	0.012	428.820	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.574	0.008	13.160	0.760	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.593	0.008	12.440	0.723	0.026	0.012	428.820	0.097
NEW JERSEY	HIGH	All Vehicles	0.552	0.008	11.128	0.779	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.571	0.008	10.443	0.738	0.026	0.012	428.820	0.097
NEW MEXICO	HIGH	All Vehicles	0.549	0.008	10.949	0.767	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.567	0.008	10.268	0.727	0.026	0.012	428.820	0.097
NEW YORK	HIGH	All Vehicles	0.569	0.008	12.737	0.752	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.588	0.008	12.024	0.715	0.026	0.012	428.820	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.540	0.008	10.001	0.797	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.558	0.008	9.330	0.754	0.026	0.012	428.820	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.590	0.008	14.175	0.808	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.610	0.008	13.430	0.768	0.026	0.012	428.820	0.097
OHIO	HIGH	All Vehicles	0.557	0.008	11.592	0.781	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.576	0.008	10.899	0.741	0.026	0.012	428.820	0.097
OKLAHOMA	HIGH	All Vehicles	0.549	0.008	10.346	0.829	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.566	0.008	9.649	0.780	0.026	0.012	428.820	0.097
OREGON	HIGH	All Vehicles	0.558	0.008	12.055	0.752	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.576	0.008	11.359	0.715	0.026	0.012	428.820	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.514	0.008	8.862	0.745	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.531	0.008	8.219	0.707	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.560	0.008	11.943	0.774	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.578	0.008	11.245	0.735	0.026	0.012	428.820	0.097
PUERTO RICO	HIGH	All Vehicles	0.522	0.008	7.474	0.773	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.538	0.008	6.824	0.731	0.026	0.012	428.820	0.097
RHODE ISLAND	HIGH	All Vehicles	0.556	0.008	11.681	0.767	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.574	0.008	10.988	0.729	0.026	0.012	428.820	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.538	0.008	9.639	0.808	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.555	0.008	8.963	0.763	0.026	0.012	428.820	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.574	0.008	12.759	0.786	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.592	0.008	12.041	0.743	0.026	0.012	428.820	0.097
TENNESSEE	HIGH	All Vehicles	0.544	0.008	10.309	0.791	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.562	0.008	9.632	0.748	0.026	0.012	428.820	0.097
TEXAS	HIGH	All Vehicles	0.540	0.008	9.556	0.825	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.556	0.008	8.867	0.777	0.026	0.012	428.820	0.097
UTAH	HIGH	All Vehicles	0.561	0.008	11.930	0.754	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.579	0.008	11.231	0.714	0.026	0.012	428.820	0.097
VERMONT	HIGH	All Vehicles	0.577	0.008	13.381	0.765	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.596	0.008	12.657	0.728	0.026	0.012	428.820	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.530	0.008	7.623	0.790	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.546	0.008	6.934	0.747	0.026	0.012	428.820	0.097
VIRGINIA	HIGH	All Vehicles	0.546	0.008	10.610	0.778	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.564	0.008	9.934	0.737	0.026	0.012	428.820	0.097
WASHINGTON	HIGH	All Vehicles	0.560	0.008	12.230	0.755	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.579	0.008	11.531	0.719	0.026	0.012	428.820	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.553	0.008	11.362	0.768	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.571	0.008	10.675	0.729	0.026	0.012	428.820	0.097
WISCONSIN	HIGH	All Vehicles	0.579	0.008	13.410	0.779	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.598	0.008	12.682	0.740	0.026	0.012	428.820	0.097
WYOMING	HIGH	All Vehicles	0.575	0.008	13.273	0.758	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.594	0.008	12.552	0.721	0.026	0.012	428.820	0.097

Table 5-11. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2015 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.501	0.008	9.336	0.765	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.518	0.008	8.662	0.720	0.026	0.012	428.820	0.097
ALASKA	HIGH	All Vehicles	0.586	0.008	16.513	0.778	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.607	0.008	15.725	0.743	0.026	0.012	428.820	0.097
ARIZONA	HIGH	All Vehicles	0.506	0.008	9.691	0.776	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.523	0.008	9.011	0.730	0.026	0.012	428.820	0.097
ARKANSAS	HIGH	All Vehicles	0.508	0.008	9.843	0.780	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.525	0.008	9.158	0.733	0.026	0.012	428.820	0.097
CALIFORNIA	HIGH	All Vehicles	0.499	0.008	9.534	0.736	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.517	0.008	8.874	0.697	0.026	0.012	428.820	0.097
COLORADO	HIGH	All Vehicles	0.529	0.008	12.322	0.706	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.547	0.008	11.614	0.670	0.026	0.012	428.820	0.097
CONNECTICUT	HIGH	All Vehicles	0.523	0.008	11.697	0.737	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.541	0.008	11.000	0.699	0.026	0.012	428.820	0.097
DELAWARE	HIGH	All Vehicles	0.511	0.008	10.384	0.747	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.529	0.008	9.707	0.705	0.026	0.012	428.820	0.097
FLORIDA	HIGH	All Vehicles	0.493	0.008	8.313	0.747	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.509	0.008	7.644	0.705	0.026	0.012	428.820	0.097
GEORGIA	HIGH	All Vehicles	0.500	0.008	9.236	0.762	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.517	0.008	8.564	0.718	0.026	0.012	428.820	0.097
HAWAII	HIGH	All Vehicles	0.480	0.008	7.880	0.714	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.497	0.008	7.248	0.675	0.026	0.012	428.820	0.097
IDAHO	HIGH	All Vehicles	0.531	0.008	12.580	0.707	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.550	0.008	11.868	0.671	0.026	0.012	428.820	0.097
ILLINOIS	HIGH	All Vehicles	0.520	0.008	11.178	0.760	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.538	0.008	10.485	0.718	0.026	0.012	428.820	0.097
INDIANA	HIGH	All Vehicles	0.519	0.008	11.139	0.749	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.537	0.008	10.450	0.708	0.026	0.012	428.820	0.097
IOWA	HIGH	All Vehicles	0.531	0.008	12.104	0.740	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.550	0.008	11.394	0.698	0.026	0.012	428.820	0.097
KANSAS	HIGH	All Vehicles	0.518	0.008	10.765	0.775	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.536	0.008	10.069	0.729	0.026	0.012	428.820	0.097
KENTUCKY	HIGH	All Vehicles	0.511	0.008	10.388	0.749	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.529	0.008	9.710	0.707	0.026	0.012	428.820	0.097
LOUISIANA	HIGH	All Vehicles	0.500	0.008	9.020	0.770	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.517	0.008	8.339	0.725	0.026	0.012	428.820	0.097
MAINE	HIGH	All Vehicles	0.543	0.008	13.418	0.733	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.562	0.008	12.688	0.696	0.026	0.012	428.820	0.097
MARYLAND	HIGH	All Vehicles	0.512	0.008	10.576	0.737	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.530	0.008	9.897	0.696	0.026	0.012	428.820	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.524	0.008	11.861	0.737	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.542	0.008	11.160	0.699	0.026	0.012	428.820	0.097
MICHIGAN	HIGH	All Vehicles	0.533	0.008	12.651	0.719	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.552	0.008	11.935	0.682	0.026	0.012	428.820	0.097
MINNESOTA	HIGH	All Vehicles	0.549	0.008	13.710	0.763	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.568	0.008	12.969	0.724	0.026	0.012	428.820	0.097
MISSISSIPPI	HIGH	All Vehicles	0.503	0.008	9.354	0.771	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.520	0.008	8.675	0.726	0.026	0.012	428.820	0.097
MISSOURI	HIGH	All Vehicles	0.517	0.008	10.730	0.764	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.535	0.008	10.041	0.719	0.026	0.012	428.820	0.097
MONTANA	HIGH	All Vehicles	0.538	0.008	13.057	0.723	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.557	0.008	12.334	0.687	0.026	0.012	428.820	0.097
NEBRASKA	HIGH	All Vehicles	0.525	0.008	11.548	0.735	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.543	0.008	10.849	0.692	0.026	0.012	428.820	0.097
NEVADA	HIGH	All Vehicles	0.517	0.008	11.206	0.731	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.535	0.008	10.517	0.692	0.026	0.012	428.820	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.535	0.008	12.848	0.722	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.554	0.008	12.130	0.685	0.026	0.012	428.820	0.097
NEW JERSEY	HIGH	All Vehicles	0.515	0.008	10.853	0.739	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.533	0.008	10.170	0.699	0.026	0.012	428.820	0.097
NEW MEXICO	HIGH	All Vehicles	0.512	0.008	10.679	0.727	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.530	0.008	10.000	0.688	0.026	0.012	428.820	0.097
NEW YORK	HIGH	All Vehicles	0.531	0.008	12.433	0.714	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.550	0.008	11.722	0.677	0.026	0.012	428.820	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.504	0.008	9.747	0.755	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.521	0.008	9.077	0.713	0.026	0.012	428.820	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.550	0.008	13.839	0.767	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.569	0.008	13.095	0.728	0.026	0.012	428.820	0.097
OHIO	HIGH	All Vehicles	0.520	0.008	11.309	0.741	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.538	0.008	10.617	0.701	0.026	0.012	428.820	0.097
OKLAHOMA	HIGH	All Vehicles	0.512	0.008	10.080	0.786	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.529	0.008	9.384	0.738	0.026	0.012	428.820	0.097
OREGON	HIGH	All Vehicles	0.520	0.008	11.767	0.713	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.538	0.008	11.073	0.678	0.026	0.012	428.820	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.479	0.008	8.640	0.706	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.497	0.008	7.998	0.668	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.522	0.008	11.655	0.734	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.540	0.008	10.958	0.696	0.026	0.012	428.820	0.097
PUERTO RICO	HIGH	All Vehicles	0.487	0.008	7.259	0.731	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.503	0.008	6.610	0.690	0.026	0.012	428.820	0.097
RHODE ISLAND	HIGH	All Vehicles	0.518	0.008	11.398	0.728	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.537	0.008	10.707	0.690	0.026	0.012	428.820	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.502	0.008	9.388	0.766	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.519	0.008	8.713	0.721	0.026	0.012	428.820	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.535	0.008	12.451	0.746	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.554	0.008	11.735	0.704	0.026	0.012	428.820	0.097
TENNESSEE	HIGH	All Vehicles	0.508	0.008	10.048	0.750	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.525	0.008	9.373	0.708	0.026	0.012	428.820	0.097
TEXAS	HIGH	All Vehicles	0.503	0.008	9.304	0.782	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.520	0.008	8.617	0.735	0.026	0.012	428.820	0.097
UTAH	HIGH	All Vehicles	0.523	0.008	11.641	0.715	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.541	0.008	10.943	0.676	0.026	0.012	428.820	0.097
VERMONT	HIGH	All Vehicles	0.538	0.008	13.064	0.726	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.557	0.008	12.341	0.689	0.026	0.012	428.820	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.495	0.008	7.399	0.747	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.511	0.008	6.711	0.705	0.026	0.012	428.820	0.097
VIRGINIA	HIGH	All Vehicles	0.510	0.008	10.346	0.738	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.527	0.008	9.671	0.697	0.026	0.012	428.820	0.097
WASHINGTON	HIGH	All Vehicles	0.522	0.008	11.938	0.716	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.541	0.008	11.241	0.681	0.026	0.012	428.820	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.516	0.008	11.085	0.728	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.534	0.008	10.399	0.690	0.026	0.012	428.820	0.097
WISCONSIN	HIGH	All Vehicles	0.540	0.008	13.091	0.739	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.559	0.008	12.365	0.701	0.026	0.012	428.820	0.097
WYOMING	HIGH	All Vehicles	0.536	0.008	12.959	0.719	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.555	0.008	12.240	0.683	0.026	0.012	428.820	0.097

Table 5-12. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2016 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.468	0.008	9.102	0.728	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.484	0.008	8.429	0.684	0.026	0.012	428.950	0.097
ALASKA	HIGH	All Vehicles	0.546	0.008	16.104	0.738	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.566	0.008	15.318	0.703	0.026	0.012	428.950	0.097
ARIZONA	HIGH	All Vehicles	0.472	0.008	9.448	0.738	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.489	0.008	8.770	0.693	0.026	0.012	428.950	0.097
ARKANSAS	HIGH	All Vehicles	0.474	0.008	9.596	0.742	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.491	0.008	8.913	0.696	0.026	0.012	428.950	0.097
CALIFORNIA	HIGH	All Vehicles	0.465	0.008	9.298	0.700	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.483	0.008	8.640	0.661	0.026	0.012	428.950	0.097
COLORADO	HIGH	All Vehicles	0.492	0.008	12.021	0.671	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.511	0.008	11.315	0.635	0.026	0.012	428.950	0.097
CONNECTICUT	HIGH	All Vehicles	0.487	0.008	11.411	0.700	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.505	0.008	10.715	0.663	0.026	0.012	428.950	0.097
DELAWARE	HIGH	All Vehicles	0.476	0.008	10.127	0.710	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.494	0.008	9.451	0.669	0.026	0.012	428.950	0.097
FLORIDA	HIGH	All Vehicles	0.460	0.008	8.101	0.711	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.476	0.008	7.434	0.669	0.026	0.012	428.950	0.097
GEORGIA	HIGH	All Vehicles	0.467	0.008	9.005	0.725	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.483	0.008	8.333	0.682	0.026	0.012	428.950	0.097
HAWAII	HIGH	All Vehicles	0.448	0.008	7.684	0.679	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.464	0.008	7.053	0.641	0.026	0.012	428.950	0.097
IDAHO	HIGH	All Vehicles	0.495	0.008	12.273	0.672	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.513	0.008	11.563	0.636	0.026	0.012	428.950	0.097
ILLINOIS	HIGH	All Vehicles	0.485	0.008	10.902	0.723	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.503	0.008	10.211	0.681	0.026	0.012	428.950	0.097
INDIANA	HIGH	All Vehicles	0.484	0.008	10.865	0.712	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.502	0.008	10.176	0.672	0.026	0.012	428.950	0.097
IOWA	HIGH	All Vehicles	0.495	0.008	11.805	0.703	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.513	0.008	11.097	0.662	0.026	0.012	428.950	0.097
KANSAS	HIGH	All Vehicles	0.483	0.008	10.497	0.737	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.501	0.008	9.802	0.692	0.026	0.012	428.950	0.097
KENTUCKY	HIGH	All Vehicles	0.477	0.008	10.131	0.713	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.494	0.008	9.454	0.671	0.026	0.012	428.950	0.097
LOUISIANA	HIGH	All Vehicles	0.467	0.008	8.792	0.733	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.483	0.008	8.113	0.688	0.026	0.012	428.950	0.097
MAINE	HIGH	All Vehicles	0.505	0.008	13.090	0.696	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.524	0.008	12.362	0.660	0.026	0.012	428.950	0.097
MARYLAND	HIGH	All Vehicles	0.478	0.008	10.315	0.701	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.495	0.008	9.637	0.661	0.026	0.012	428.950	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.488	0.008	11.571	0.700	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.506	0.008	10.872	0.663	0.026	0.012	428.950	0.097
MICHIGAN	HIGH	All Vehicles	0.497	0.008	12.342	0.683	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.515	0.008	11.628	0.646	0.026	0.012	428.950	0.097
MINNESOTA	HIGH	All Vehicles	0.511	0.008	13.373	0.724	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.530	0.008	12.633	0.685	0.026	0.012	428.950	0.097
MISSISSIPPI	HIGH	All Vehicles	0.469	0.008	9.119	0.734	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.486	0.008	8.441	0.689	0.026	0.012	428.950	0.097
MISSOURI	HIGH	All Vehicles	0.482	0.008	10.464	0.726	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.500	0.008	9.775	0.683	0.026	0.012	428.950	0.097
MONTANA	HIGH	All Vehicles	0.501	0.008	12.738	0.687	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.520	0.008	12.017	0.651	0.026	0.012	428.950	0.097
NEBRASKA	HIGH	All Vehicles	0.489	0.008	11.262	0.698	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.507	0.008	10.565	0.656	0.026	0.012	428.950	0.097
NEVADA	HIGH	All Vehicles	0.482	0.008	10.931	0.695	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.500	0.008	10.244	0.657	0.026	0.012	428.950	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.499	0.008	12.535	0.685	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.517	0.008	11.817	0.649	0.026	0.012	428.950	0.097
NEW JERSEY	HIGH	All Vehicles	0.480	0.008	10.586	0.703	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.498	0.008	9.904	0.663	0.026	0.012	428.950	0.097
NEW MEXICO	HIGH	All Vehicles	0.477	0.008	10.417	0.692	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.495	0.008	9.739	0.653	0.026	0.012	428.950	0.097
NEW YORK	HIGH	All Vehicles	0.495	0.008	12.129	0.678	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.513	0.008	11.419	0.642	0.026	0.012	428.950	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.470	0.008	9.505	0.718	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.487	0.008	8.837	0.676	0.026	0.012	428.950	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.512	0.008	13.498	0.728	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.531	0.008	12.756	0.689	0.026	0.012	428.950	0.097
OHIO	HIGH	All Vehicles	0.484	0.008	11.031	0.704	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.502	0.008	10.341	0.665	0.026	0.012	428.950	0.097
OKLAHOMA	HIGH	All Vehicles	0.478	0.008	9.827	0.748	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.495	0.008	9.132	0.700	0.026	0.012	428.950	0.097
OREGON	HIGH	All Vehicles	0.484	0.008	11.482	0.678	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.503	0.008	10.789	0.643	0.026	0.012	428.950	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.447	0.008	8.431	0.672	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.464	0.008	7.791	0.635	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.486	0.008	11.370	0.698	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.505	0.008	10.675	0.660	0.026	0.012	428.950	0.097
PUERTO RICO	HIGH	All Vehicles	0.454	0.008	7.069	0.695	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.470	0.008	6.422	0.655	0.026	0.012	428.950	0.097
RHODE ISLAND	HIGH	All Vehicles	0.483	0.008	11.120	0.692	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.501	0.008	10.430	0.655	0.026	0.012	428.950	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.468	0.008	9.153	0.728	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.485	0.008	8.479	0.684	0.026	0.012	428.950	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.498	0.008	12.144	0.708	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.517	0.008	11.429	0.667	0.026	0.012	428.950	0.097
TENNESSEE	HIGH	All Vehicles	0.473	0.008	9.799	0.714	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.491	0.008	9.125	0.672	0.026	0.012	428.950	0.097
TEXAS	HIGH	All Vehicles	0.470	0.008	9.069	0.744	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.486	0.008	8.383	0.698	0.026	0.012	428.950	0.097
UTAH	HIGH	All Vehicles	0.487	0.008	11.355	0.680	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.506	0.008	10.659	0.641	0.026	0.012	428.950	0.097
VERMONT	HIGH	All Vehicles	0.501	0.008	12.745	0.690	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.520	0.008	12.023	0.653	0.026	0.012	428.950	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.462	0.008	7.202	0.711	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.478	0.008	6.515	0.669	0.026	0.012	428.950	0.097
VIRGINIA	HIGH	All Vehicles	0.475	0.008	10.090	0.701	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.493	0.008	9.417	0.662	0.026	0.012	428.950	0.097
WASHINGTON	HIGH	All Vehicles	0.487	0.008	11.649	0.681	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.505	0.008	10.953	0.646	0.026	0.012	428.950	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.480	0.008	10.814	0.692	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.498	0.008	10.129	0.655	0.026	0.012	428.950	0.097
WISCONSIN	HIGH	All Vehicles	0.503	0.008	12.770	0.702	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.522	0.008	12.045	0.664	0.026	0.012	428.950	0.097
WYOMING	HIGH	All Vehicles	0.500	0.008	12.643	0.683	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.518	0.008	11.925	0.647	0.026	0.012	428.950	0.097

Table 5-13. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2017 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.440	0.008	8.918	0.696	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.457	0.008	8.246	0.653	0.026	0.012	428.960	0.097
ALASKA	HIGH	All Vehicles	0.513	0.008	15.797	0.706	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.533	0.008	15.012	0.672	0.026	0.012	428.960	0.097
ARIZONA	HIGH	All Vehicles	0.444	0.008	9.258	0.706	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.461	0.008	8.581	0.661	0.026	0.012	428.960	0.097
ARKANSAS	HIGH	All Vehicles	0.446	0.008	9.403	0.709	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.463	0.008	8.721	0.664	0.026	0.012	428.960	0.097
CALIFORNIA	HIGH	All Vehicles	0.438	0.008	9.114	0.670	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.455	0.008	8.457	0.631	0.026	0.012	428.960	0.097
COLORADO	HIGH	All Vehicles	0.463	0.008	11.791	0.642	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.481	0.008	11.087	0.607	0.026	0.012	428.960	0.097
CONNECTICUT	HIGH	All Vehicles	0.458	0.008	11.191	0.670	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.476	0.008	10.496	0.633	0.026	0.012	428.960	0.097
DELAWARE	HIGH	All Vehicles	0.448	0.008	9.928	0.679	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.465	0.008	9.253	0.639	0.026	0.012	428.960	0.097
FLORIDA	HIGH	All Vehicles	0.433	0.008	7.933	0.679	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.449	0.008	7.266	0.638	0.026	0.012	428.960	0.097
GEORGIA	HIGH	All Vehicles	0.439	0.008	8.822	0.693	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.456	0.008	8.152	0.650	0.026	0.012	428.960	0.097
HAWAII	HIGH	All Vehicles	0.421	0.008	7.527	0.650	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.438	0.008	6.898	0.612	0.026	0.012	428.960	0.097
IDAHO	HIGH	All Vehicles	0.465	0.008	12.039	0.643	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.483	0.008	11.330	0.608	0.026	0.012	428.960	0.097
ILLINOIS	HIGH	All Vehicles	0.456	0.008	10.688	0.692	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.474	0.008	9.999	0.650	0.026	0.012	428.960	0.097
INDIANA	HIGH	All Vehicles	0.455	0.008	10.653	0.682	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.473	0.008	9.966	0.642	0.026	0.012	428.960	0.097
IOWA	HIGH	All Vehicles	0.465	0.008	11.576	0.673	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.483	0.008	10.869	0.632	0.026	0.012	428.960	0.097
KANSAS	HIGH	All Vehicles	0.455	0.008	10.288	0.705	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.472	0.008	9.595	0.661	0.026	0.012	428.960	0.097
KENTUCKY	HIGH	All Vehicles	0.448	0.008	9.932	0.682	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.466	0.008	9.256	0.641	0.026	0.012	428.960	0.097
LOUISIANA	HIGH	All Vehicles	0.439	0.008	8.612	0.701	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.455	0.008	7.934	0.657	0.026	0.012	428.960	0.097
MAINE	HIGH	All Vehicles	0.475	0.008	12.840	0.666	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.494	0.008	12.113	0.630	0.026	0.012	428.960	0.097
MARYLAND	HIGH	All Vehicles	0.449	0.008	10.113	0.671	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.467	0.008	9.436	0.631	0.026	0.012	428.960	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.459	0.008	11.348	0.670	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.477	0.008	10.650	0.633	0.026	0.012	428.960	0.097
MICHIGAN	HIGH	All Vehicles	0.467	0.008	12.105	0.653	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.485	0.008	11.393	0.617	0.026	0.012	428.960	0.097
MINNESOTA	HIGH	All Vehicles	0.480	0.008	13.116	0.693	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.499	0.008	12.378	0.654	0.026	0.012	428.960	0.097
MISSISSIPPI	HIGH	All Vehicles	0.441	0.008	8.934	0.702	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.458	0.008	8.257	0.658	0.026	0.012	428.960	0.097
MISSOURI	HIGH	All Vehicles	0.453	0.008	10.257	0.695	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.471	0.008	9.570	0.652	0.026	0.012	428.960	0.097
MONTANA	HIGH	All Vehicles	0.471	0.008	12.495	0.657	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.489	0.008	11.775	0.622	0.026	0.012	428.960	0.097
NEBRASKA	HIGH	All Vehicles	0.460	0.008	11.043	0.668	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.478	0.008	10.347	0.627	0.026	0.012	428.960	0.097
NEVADA	HIGH	All Vehicles	0.453	0.008	10.719	0.665	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.471	0.008	10.033	0.627	0.026	0.012	428.960	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.469	0.008	12.295	0.656	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.487	0.008	11.579	0.620	0.026	0.012	428.960	0.097
NEW JERSEY	HIGH	All Vehicles	0.452	0.008	10.379	0.672	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.469	0.008	9.698	0.633	0.026	0.012	428.960	0.097
NEW MEXICO	HIGH	All Vehicles	0.448	0.008	10.214	0.662	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.466	0.008	9.537	0.624	0.026	0.012	428.960	0.097
NEW YORK	HIGH	All Vehicles	0.465	0.008	11.896	0.649	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.483	0.008	11.188	0.613	0.026	0.012	428.960	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.442	0.008	9.316	0.687	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.459	0.008	8.649	0.645	0.026	0.012	428.960	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.481	0.008	13.240	0.696	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.500	0.008	12.498	0.658	0.026	0.012	428.960	0.097
OHIO	HIGH	All Vehicles	0.455	0.008	10.817	0.674	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.473	0.008	10.128	0.635	0.026	0.012	428.960	0.097
OKLAHOMA	HIGH	All Vehicles	0.449	0.008	9.629	0.716	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.466	0.008	8.936	0.669	0.026	0.012	428.960	0.097
OREGON	HIGH	All Vehicles	0.455	0.008	11.262	0.649	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.473	0.008	10.571	0.614	0.026	0.012	428.960	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.420	0.008	8.266	0.643	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.437	0.008	7.627	0.606	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.457	0.008	11.150	0.668	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.475	0.008	10.456	0.631	0.026	0.012	428.960	0.097
PUERTO RICO	HIGH	All Vehicles	0.428	0.008	6.916	0.665	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.444	0.008	6.270	0.625	0.026	0.012	428.960	0.097
RHODE ISLAND	HIGH	All Vehicles	0.454	0.008	10.905	0.662	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.472	0.008	10.216	0.625	0.026	0.012	428.960	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.441	0.008	8.967	0.696	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.457	0.008	8.296	0.653	0.026	0.012	428.960	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.468	0.008	11.909	0.678	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.487	0.008	11.195	0.637	0.026	0.012	428.960	0.097
TENNESSEE	HIGH	All Vehicles	0.445	0.008	9.605	0.683	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.462	0.008	8.932	0.641	0.026	0.012	428.960	0.097
TEXAS	HIGH	All Vehicles	0.442	0.008	8.884	0.711	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.458	0.008	8.200	0.666	0.026	0.012	428.960	0.097
UTAH	HIGH	All Vehicles	0.458	0.008	11.136	0.650	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.476	0.008	10.440	0.612	0.026	0.012	428.960	0.097
VERMONT	HIGH	All Vehicles	0.471	0.008	12.501	0.660	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.490	0.008	11.781	0.624	0.026	0.012	428.960	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.435	0.008	7.044	0.679	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.451	0.008	6.358	0.638	0.026	0.012	428.960	0.097
VIRGINIA	HIGH	All Vehicles	0.447	0.008	9.892	0.671	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.464	0.008	9.220	0.632	0.026	0.012	428.960	0.097
WASHINGTON	HIGH	All Vehicles	0.457	0.008	11.426	0.652	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.475	0.008	10.732	0.617	0.026	0.012	428.960	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.452	0.008	10.604	0.662	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.470	0.008	9.921	0.625	0.026	0.012	428.960	0.097
WISCONSIN	HIGH	All Vehicles	0.473	0.008	12.525	0.671	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.491	0.008	11.801	0.634	0.026	0.012	428.960	0.097
WYOMING	HIGH	All Vehicles	0.469	0.008	12.402	0.654	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.488	0.008	11.685	0.618	0.026	0.012	428.960	0.097

Table 5-14. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2018 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.414	0.008	8.729	0.667	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.431	0.008	8.059	0.624	0.026	0.012	429.030	0.097
ALASKA	HIGH	All Vehicles	0.482	0.008	15.462	0.676	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.502	0.008	14.678	0.642	0.026	0.012	429.030	0.097
ARIZONA	HIGH	All Vehicles	0.418	0.008	9.062	0.676	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.435	0.008	8.385	0.632	0.026	0.012	429.030	0.097
ARKANSAS	HIGH	All Vehicles	0.420	0.008	9.204	0.680	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.437	0.008	8.523	0.635	0.026	0.012	429.030	0.097
CALIFORNIA	HIGH	All Vehicles	0.412	0.008	8.923	0.641	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.429	0.008	8.267	0.603	0.026	0.012	429.030	0.097
COLORADO	HIGH	All Vehicles	0.435	0.008	11.544	0.615	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.453	0.008	10.841	0.580	0.026	0.012	429.030	0.097
CONNECTICUT	HIGH	All Vehicles	0.431	0.008	10.956	0.642	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.449	0.008	10.262	0.605	0.026	0.012	429.030	0.097
DELAWARE	HIGH	All Vehicles	0.422	0.008	9.719	0.651	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.439	0.008	9.045	0.611	0.026	0.012	429.030	0.097
FLORIDA	HIGH	All Vehicles	0.408	0.008	7.764	0.650	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.424	0.008	7.098	0.611	0.026	0.012	429.030	0.097
GEORGIA	HIGH	All Vehicles	0.414	0.008	8.635	0.664	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.430	0.008	7.966	0.622	0.026	0.012	429.030	0.097
HAWAII	HIGH	All Vehicles	0.397	0.008	7.369	0.623	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.413	0.008	6.741	0.585	0.026	0.012	429.030	0.097
IDAHO	HIGH	All Vehicles	0.437	0.008	11.787	0.616	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.456	0.008	11.079	0.581	0.026	0.012	429.030	0.097
ILLINOIS	HIGH	All Vehicles	0.429	0.008	10.463	0.663	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.447	0.008	9.775	0.622	0.026	0.012	429.030	0.097
INDIANA	HIGH	All Vehicles	0.428	0.008	10.429	0.653	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.446	0.008	9.742	0.613	0.026	0.012	429.030	0.097
IOWA	HIGH	All Vehicles	0.438	0.008	11.332	0.644	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.456	0.008	10.626	0.604	0.026	0.012	429.030	0.097
KANSAS	HIGH	All Vehicles	0.428	0.008	10.071	0.676	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.445	0.008	9.379	0.632	0.026	0.012	429.030	0.097
KENTUCKY	HIGH	All Vehicles	0.422	0.008	9.722	0.653	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.439	0.008	9.048	0.613	0.026	0.012	429.030	0.097
LOUISIANA	HIGH	All Vehicles	0.414	0.008	8.429	0.672	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.430	0.008	7.752	0.628	0.026	0.012	429.030	0.097
MAINE	HIGH	All Vehicles	0.447	0.008	12.571	0.637	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.465	0.008	11.844	0.602	0.026	0.012	429.030	0.097
MARYLAND	HIGH	All Vehicles	0.423	0.008	9.900	0.643	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.440	0.008	9.225	0.604	0.026	0.012	429.030	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.432	0.008	11.110	0.642	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.450	0.008	10.414	0.605	0.026	0.012	429.030	0.097
MICHIGAN	HIGH	All Vehicles	0.439	0.008	11.852	0.626	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.457	0.008	11.140	0.590	0.026	0.012	429.030	0.097
MINNESOTA	HIGH	All Vehicles	0.452	0.008	12.840	0.663	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.470	0.008	12.102	0.625	0.026	0.012	429.030	0.097
MISSISSIPPI	HIGH	All Vehicles	0.416	0.008	8.744	0.673	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.432	0.008	8.069	0.629	0.026	0.012	429.030	0.097
MISSOURI	HIGH	All Vehicles	0.427	0.008	10.040	0.666	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.444	0.008	9.354	0.624	0.026	0.012	429.030	0.097
MONTANA	HIGH	All Vehicles	0.443	0.008	12.232	0.629	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.461	0.008	11.514	0.594	0.026	0.012	429.030	0.097
NEBRASKA	HIGH	All Vehicles	0.433	0.008	10.810	0.640	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.451	0.008	10.115	0.599	0.026	0.012	429.030	0.097
NEVADA	HIGH	All Vehicles	0.426	0.008	10.495	0.637	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.444	0.008	9.810	0.600	0.026	0.012	429.030	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.441	0.008	12.037	0.628	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.459	0.008	11.322	0.592	0.026	0.012	429.030	0.097
NEW JERSEY	HIGH	All Vehicles	0.425	0.008	10.161	0.644	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.443	0.008	9.481	0.605	0.026	0.012	429.030	0.097
NEW MEXICO	HIGH	All Vehicles	0.422	0.008	10.000	0.634	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.440	0.008	9.324	0.597	0.026	0.012	429.030	0.097
NEW YORK	HIGH	All Vehicles	0.437	0.008	11.647	0.621	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.456	0.008	10.939	0.585	0.026	0.012	429.030	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.416	0.008	9.120	0.658	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.433	0.008	8.454	0.617	0.026	0.012	429.030	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.453	0.008	12.961	0.666	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.472	0.008	12.220	0.628	0.026	0.012	429.030	0.097
OHIO	HIGH	All Vehicles	0.428	0.008	10.590	0.646	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.446	0.008	9.902	0.607	0.026	0.012	429.030	0.097
OKLAHOMA	HIGH	All Vehicles	0.423	0.008	9.424	0.686	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.440	0.008	8.732	0.640	0.026	0.012	429.030	0.097
OREGON	HIGH	All Vehicles	0.428	0.008	11.027	0.622	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.446	0.008	10.337	0.588	0.026	0.012	429.030	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.396	0.008	8.095	0.616	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.412	0.008	7.457	0.580	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.430	0.008	10.917	0.640	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.448	0.008	10.224	0.603	0.026	0.012	429.030	0.097
PUERTO RICO	HIGH	All Vehicles	0.403	0.008	6.766	0.637	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.419	0.008	6.121	0.598	0.026	0.012	429.030	0.097
RHODE ISLAND	HIGH	All Vehicles	0.427	0.008	10.677	0.634	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.445	0.008	9.989	0.598	0.026	0.012	429.030	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.415	0.008	8.778	0.667	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.432	0.008	8.107	0.625	0.026	0.012	429.030	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.441	0.008	11.658	0.649	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.459	0.008	10.945	0.609	0.026	0.012	429.030	0.097
TENNESSEE	HIGH	All Vehicles	0.419	0.008	9.402	0.654	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.436	0.008	8.731	0.613	0.026	0.012	429.030	0.097
TEXAS	HIGH	All Vehicles	0.416	0.008	8.696	0.682	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.433	0.008	8.012	0.637	0.026	0.012	429.030	0.097
UTAH	HIGH	All Vehicles	0.431	0.008	10.902	0.623	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.449	0.008	10.208	0.585	0.026	0.012	429.030	0.097
VERMONT	HIGH	All Vehicles	0.443	0.008	12.239	0.632	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.462	0.008	11.520	0.596	0.026	0.012	429.030	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.410	0.008	6.891	0.650	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.426	0.008	6.206	0.610	0.026	0.012	429.030	0.097
VIRGINIA	HIGH	All Vehicles	0.421	0.008	9.684	0.643	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.438	0.008	9.013	0.604	0.026	0.012	429.030	0.097
WASHINGTON	HIGH	All Vehicles	0.430	0.008	11.188	0.625	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.448	0.008	10.494	0.590	0.026	0.012	429.030	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.425	0.008	10.382	0.635	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.443	0.008	9.700	0.598	0.026	0.012	429.030	0.097
WISCONSIN	HIGH	All Vehicles	0.445	0.008	12.262	0.643	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.463	0.008	11.539	0.606	0.026	0.012	429.030	0.097
WYOMING	HIGH	All Vehicles	0.442	0.008	12.142	0.626	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.460	0.008	11.426	0.591	0.026	0.012	429.030	0.097

Table 5-15. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2019 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.396	0.008	8.597	0.644	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.412	0.008	7.927	0.602	0.026	0.012	429.090	0.097
ALASKA	HIGH	All Vehicles	0.460	0.008	15.216	0.654	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.480	0.008	14.434	0.620	0.026	0.012	429.090	0.097
ARIZONA	HIGH	All Vehicles	0.399	0.008	8.924	0.653	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.416	0.008	8.248	0.610	0.026	0.012	429.090	0.097
ARKANSAS	HIGH	All Vehicles	0.401	0.008	9.063	0.657	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.418	0.008	8.383	0.613	0.026	0.012	429.090	0.097
CALIFORNIA	HIGH	All Vehicles	0.393	0.008	8.788	0.619	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.410	0.008	8.133	0.582	0.026	0.012	429.090	0.097
COLORADO	HIGH	All Vehicles	0.415	0.008	11.367	0.595	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.433	0.008	10.664	0.559	0.026	0.012	429.090	0.097
CONNECTICUT	HIGH	All Vehicles	0.411	0.008	10.788	0.620	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.429	0.008	10.095	0.584	0.026	0.012	429.090	0.097
DELAWARE	HIGH	All Vehicles	0.402	0.008	9.570	0.629	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.420	0.008	8.897	0.589	0.026	0.012	429.090	0.097
FLORIDA	HIGH	All Vehicles	0.389	0.008	7.647	0.628	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.405	0.008	6.982	0.588	0.026	0.012	429.090	0.097
GEORGIA	HIGH	All Vehicles	0.395	0.008	8.504	0.641	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.411	0.008	7.836	0.600	0.026	0.012	429.090	0.097
HAWAII	HIGH	All Vehicles	0.379	0.008	7.260	0.601	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.395	0.008	6.633	0.564	0.026	0.012	429.090	0.097
IDAHO	HIGH	All Vehicles	0.417	0.008	11.606	0.595	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.435	0.008	10.899	0.560	0.026	0.012	429.090	0.097
ILLINOIS	HIGH	All Vehicles	0.410	0.008	10.302	0.641	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.427	0.008	9.615	0.600	0.026	0.012	429.090	0.097
INDIANA	HIGH	All Vehicles	0.409	0.008	10.268	0.631	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.426	0.008	9.583	0.592	0.026	0.012	429.090	0.097
IOWA	HIGH	All Vehicles	0.418	0.008	11.157	0.622	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.436	0.008	10.452	0.582	0.026	0.012	429.090	0.097
KANSAS	HIGH	All Vehicles	0.409	0.008	9.916	0.654	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.426	0.008	9.225	0.610	0.026	0.012	429.090	0.097
KENTUCKY	HIGH	All Vehicles	0.403	0.008	9.574	0.631	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.420	0.008	8.900	0.591	0.026	0.012	429.090	0.097
LOUISIANA	HIGH	All Vehicles	0.395	0.008	8.301	0.649	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.411	0.008	7.625	0.606	0.026	0.012	429.090	0.097
MAINE	HIGH	All Vehicles	0.426	0.008	12.375	0.616	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.445	0.008	11.650	0.581	0.026	0.012	429.090	0.097
MARYLAND	HIGH	All Vehicles	0.404	0.008	9.749	0.621	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.421	0.008	9.074	0.582	0.026	0.012	429.090	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.412	0.008	10.940	0.620	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.430	0.008	10.244	0.584	0.026	0.012	429.090	0.097
MICHIGAN	HIGH	All Vehicles	0.419	0.008	11.669	0.604	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.437	0.008	10.958	0.569	0.026	0.012	429.090	0.097
MINNESOTA	HIGH	All Vehicles	0.431	0.008	12.640	0.640	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.449	0.008	11.903	0.603	0.026	0.012	429.090	0.097
MISSISSIPPI	HIGH	All Vehicles	0.397	0.008	8.611	0.650	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.413	0.008	7.937	0.607	0.026	0.012	429.090	0.097
MISSOURI	HIGH	All Vehicles	0.407	0.008	9.886	0.644	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.425	0.008	9.201	0.602	0.026	0.012	429.090	0.097
MONTANA	HIGH	All Vehicles	0.422	0.008	12.043	0.608	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.441	0.008	11.325	0.573	0.026	0.012	429.090	0.097
NEBRASKA	HIGH	All Vehicles	0.413	0.008	10.643	0.618	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.431	0.008	9.949	0.578	0.026	0.012	429.090	0.097
NEVADA	HIGH	All Vehicles	0.407	0.008	10.334	0.615	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.425	0.008	9.650	0.579	0.026	0.012	429.090	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.420	0.008	11.851	0.607	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.439	0.008	11.137	0.571	0.026	0.012	429.090	0.097
NEW JERSEY	HIGH	All Vehicles	0.406	0.008	10.005	0.622	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.423	0.008	9.326	0.584	0.026	0.012	429.090	0.097
NEW MEXICO	HIGH	All Vehicles	0.403	0.008	9.847	0.613	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.420	0.008	9.172	0.575	0.026	0.012	429.090	0.097
NEW YORK	HIGH	All Vehicles	0.417	0.008	11.467	0.600	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.435	0.008	10.761	0.565	0.026	0.012	429.090	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.397	0.008	8.981	0.635	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.414	0.008	8.316	0.595	0.026	0.012	429.090	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.432	0.008	12.758	0.643	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.451	0.008	12.019	0.606	0.026	0.012	429.090	0.097
OHIO	HIGH	All Vehicles	0.409	0.008	10.427	0.624	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.427	0.008	9.740	0.586	0.026	0.012	429.090	0.097
OKLAHOMA	HIGH	All Vehicles	0.404	0.008	9.280	0.663	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.421	0.008	8.589	0.617	0.026	0.012	429.090	0.097
OREGON	HIGH	All Vehicles	0.409	0.008	10.859	0.602	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.427	0.008	10.169	0.567	0.026	0.012	429.090	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.378	0.008	7.976	0.596	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.394	0.008	7.339	0.560	0.026	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.411	0.008	10.749	0.618	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.428	0.008	10.057	0.582	0.026	0.012	429.090	0.097
PUERTO RICO	HIGH	All Vehicles	0.385	0.008	6.664	0.615	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.401	0.008	6.020	0.576	0.026	0.012	429.090	0.097
RHODE ISLAND	HIGH	All Vehicles	0.408	0.008	10.513	0.613	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.425	0.008	9.827	0.577	0.026	0.012	429.090	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.396	0.008	8.644	0.644	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.413	0.008	7.974	0.602	0.026	0.012	429.090	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.421	0.008	11.477	0.627	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.439	0.008	10.765	0.587	0.026	0.012	429.090	0.097
TENNESSEE	HIGH	All Vehicles	0.400	0.008	9.259	0.632	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.417	0.008	8.588	0.592	0.026	0.012	429.090	0.097
TEXAS	HIGH	All Vehicles	0.397	0.008	8.563	0.659	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.414	0.008	7.881	0.614	0.026	0.012	429.090	0.097
UTAH	HIGH	All Vehicles	0.412	0.008	10.734	0.601	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.429	0.008	10.041	0.564	0.026	0.012	429.090	0.097
VERMONT	HIGH	All Vehicles	0.423	0.008	12.050	0.611	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.441	0.008	11.331	0.575	0.026	0.012	429.090	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.392	0.008	6.786	0.628	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.407	0.008	6.102	0.588	0.026	0.012	429.090	0.097
VIRGINIA	HIGH	All Vehicles	0.401	0.008	9.536	0.621	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.419	0.008	8.866	0.583	0.026	0.012	429.090	0.097
WASHINGTON	HIGH	All Vehicles	0.410	0.008	11.016	0.604	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.428	0.008	10.324	0.570	0.026	0.012	429.090	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.406	0.008	10.223	0.613	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.423	0.008	9.542	0.577	0.026	0.012	429.090	0.097
WISCONSIN	HIGH	All Vehicles	0.424	0.008	12.071	0.621	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.443	0.008	11.350	0.584	0.026	0.012	429.090	0.097
WYOMING	HIGH	All Vehicles	0.421	0.008	11.954	0.605	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.440	0.008	11.239	0.570	0.026	0.012	429.090	0.097

Table 5-16. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2020 POV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.383	0.008	8.492	0.615	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.399	0.008	7.823	0.574	0.025	0.012	429.080	0.097
ALASKA	HIGH	All Vehicles	0.444	0.008	15.039	0.632	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.464	0.008	14.257	0.599	0.025	0.012	429.080	0.097
ARIZONA	HIGH	All Vehicles	0.386	0.008	8.816	0.624	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.403	0.008	8.141	0.582	0.025	0.012	429.080	0.097
ARKANSAS	HIGH	All Vehicles	0.388	0.008	8.954	0.628	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.404	0.008	8.274	0.585	0.012	0.025	429.080	0.097
CALIFORNIA	HIGH	All Vehicles	0.381	0.008	8.683	0.592	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.397	0.008	8.028	0.554	0.025	0.012	429.080	0.097
COLORADO	HIGH	All Vehicles	0.401	0.008	11.234	0.572	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.419	0.008	10.532	0.537	0.025	0.012	429.080	0.097
CONNECTICUT	HIGH	All Vehicles	0.397	0.008	10.662	0.595	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.415	0.008	9.969	0.559	0.025	0.012	429.080	0.097
DELAWARE	HIGH	All Vehicles	0.389	0.008	9.456	0.602	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.406	0.008	8.784	0.563	0.025	0.012	429.080	0.097
FLORIDA	HIGH	All Vehicles	0.377	0.008	7.552	0.598	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.392	0.008	6.888	0.560	0.025	0.012	429.080	0.097
GEORGIA	HIGH	All Vehicles	0.382	0.008	8.401	0.612	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.398	0.008	7.733	0.572	0.025	0.012	429.080	0.097
HAWAII	HIGH	All Vehicles	0.366	0.008	7.171	0.573	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.383	0.008	6.544	0.537	0.025	0.012	429.080	0.097
IDAHO	HIGH	All Vehicles	0.403	0.008	11.470	0.573	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.421	0.008	10.764	0.538	0.025	0.012	429.080	0.097
ILLINOIS	HIGH	All Vehicles	0.396	0.008	10.180	0.615	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.414	0.008	9.493	0.574	0.025	0.012	429.080	0.097
INDIANA	HIGH	All Vehicles	0.395	0.008	10.147	0.605	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.413	0.008	9.462	0.567	0.025	0.012	429.080	0.097
IOWA	HIGH	All Vehicles	0.404	0.008	11.025	0.599	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.422	0.008	10.321	0.560	0.025	0.012	429.080	0.097
KANSAS	HIGH	All Vehicles	0.395	0.008	9.797	0.627	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.412	0.008	9.107	0.584	0.025	0.012	429.080	0.097
KENTUCKY	HIGH	All Vehicles	0.389	0.008	9.460	0.604	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.407	0.008	8.787	0.565	0.025	0.012	429.080	0.097
LOUISIANA	HIGH	All Vehicles	0.382	0.008	8.199	0.619	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.398	0.008	7.524	0.577	0.025	0.012	429.080	0.097
MAINE	HIGH	All Vehicles	0.412	0.008	12.231	0.593	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.430	0.008	11.507	0.558	0.025	0.012	429.080	0.097
MARYLAND	HIGH	All Vehicles	0.390	0.008	9.633	0.595	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.407	0.008	8.959	0.557	0.025	0.012	429.080	0.097
MASSACHUSETTS	HIGH	All Vehicles	0.398	0.008	10.812	0.595	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.416	0.008	10.116	0.559	0.025	0.012	429.080	0.097
MICHIGAN	HIGH	All Vehicles	0.405	0.008	11.532	0.582	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.423	0.008	10.822	0.547	0.025	0.012	429.080	0.097
MINNESOTA	HIGH	All Vehicles	0.416	0.008	12.492	0.617	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.435	0.008	11.756	0.580	0.025	0.012	429.080	0.097
MISSISSIPPI	HIGH	All Vehicles	0.384	0.008	8.507	0.620	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.400	0.008	7.833	0.578	0.025	0.012	429.080	0.097
MISSOURI	HIGH	All Vehicles	0.394	0.008	9.768	0.617	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.411	0.008	9.083	0.576	0.025	0.012	429.080	0.097
MONTANA	HIGH	All Vehicles	0.408	0.008	11.903	0.586	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.427	0.008	11.186	0.551	0.025	0.012	429.080	0.097
NEBRASKA	HIGH	All Vehicles	0.400	0.008	10.517	0.594	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.417	0.008	9.824	0.554	0.025	0.012	429.080	0.097
NEVADA	HIGH	All Vehicles	0.393	0.008	10.212	0.590	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.411	0.008	9.529	0.554	0.025	0.012	429.080	0.097
NEW HAMPSHIRE	HIGH	All Vehicles	0.406	0.008	11.713	0.584	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.425	0.008	11.000	0.549	0.025	0.012	429.080	0.097
NEW JERSEY	HIGH	All Vehicles	0.392	0.008	9.887	0.597	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.410	0.008	9.208	0.559	0.025	0.012	429.080	0.097
NEW MEXICO	HIGH	All Vehicles	0.389	0.008	9.731	0.587	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.407	0.008	9.056	0.550	0.025	0.012	429.080	0.097
NEW YORK	HIGH	All Vehicles	0.403	0.008	11.333	0.578	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.421	0.008	10.627	0.543	0.025	0.012	429.080	0.097
NORTH CAROLINA	HIGH	All Vehicles	0.384	0.008	8.873	0.607	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.401	0.008	8.209	0.568	0.025	0.012	429.080	0.097
NORTH DAKOTA	HIGH	All Vehicles	0.417	0.008	12.609	0.620	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.436	0.008	11.871	0.583	0.025	0.012	429.080	0.097
OHIO	HIGH	All Vehicles	0.395	0.008	10.305	0.598	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.413	0.008	9.618	0.561	0.025	0.012	429.080	0.097
OKLAHOMA	HIGH	All Vehicles	0.391	0.008	9.168	0.634	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.407	0.008	8.477	0.590	0.025	0.012	429.080	0.097
OREGON	HIGH	All Vehicles	0.395	0.008	10.732	0.578	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.413	0.008	10.043	0.544	0.025	0.012	429.080	0.097
PACIFIC ISLANDS	HIGH	All Vehicles	0.365	0.008	7.882	0.569	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.382	0.008	7.246	0.533	0.025	0.012	0.000	0.097
PENNSYLVANIA	HIGH	All Vehicles	0.397	0.008	10.623	0.593	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.415	0.008	9.932	0.557	0.025	0.012	429.080	0.097
PUERTO RICO	HIGH	All Vehicles	0.373	0.008	6.579	0.585	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.389	0.008	5.936	0.547	0.025	0.012	429.080	0.097
RHODE ISLAND	HIGH	All Vehicles	0.394	0.008	10.390	0.588	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.412	0.008	9.704	0.552	0.025	0.012	429.080	0.097
SOUTH CAROLINA	HIGH	All Vehicles	0.383	0.008	8.539	0.616	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.400	0.008	7.870	0.574	0.025	0.012	429.080	0.097
SOUTH DAKOTA	HIGH	All Vehicles	0.407	0.008	11.342	0.603	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.425	0.008	10.631	0.564	0.025	0.012	429.080	0.097
TENNESSEE	HIGH	All Vehicles	0.387	0.008	9.148	0.605	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.404	0.008	8.478	0.565	0.025	0.012	429.080	0.097
TEXAS	HIGH	All Vehicles	0.384	0.008	8.459	0.629	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.401	0.008	7.777	0.585	0.025	0.012	429.080	0.097
UTAH	HIGH	All Vehicles	0.398	0.008	10.608	0.578	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.416	0.008	9.915	0.541	0.025	0.012	429.080	0.097
VERMONT	HIGH	All Vehicles	0.409	0.008	11.909	0.588	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.427	0.008	11.191	0.553	0.025	0.012	429.080	0.097
VIRGIN ISLANDS	HIGH	All Vehicles	0.380	0.008	6.698	0.597	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.395	0.008	6.015	0.558	0.025	0.012	429.080	0.097
VIRGINIA	HIGH	All Vehicles	0.388	0.008	9.423	0.595	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.405	0.008	8.753	0.557	0.025	0.012	429.080	0.097
WASHINGTON	HIGH	All Vehicles	0.397	0.008	10.888	0.580	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.415	0.008	10.196	0.546	0.025	0.012	429.080	0.097
WEST VIRGINIA	HIGH	All Vehicles	0.392	0.008	10.103	0.588	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.410	0.008	9.422	0.552	0.025	0.012	429.080	0.097
WISCONSIN	HIGH	All Vehicles	0.410	0.008	11.930	0.598	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.429	0.008	11.209	0.562	0.025	0.012	429.080	0.097
WYOMING	HIGH	All Vehicles	0.407	0.008	11.815	0.583	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.425	0.008	11.101	0.548	0.025	0.012	429.080	0.097

Table 5-17. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2013 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	1.535	0.011	9.817	0.915	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.544	0.011	7.477	0.782	0.054	0.036	792.420	0.074
ALASKA	HIGH	All Vehicles	1.635	0.011	15.477	0.938	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.646	0.011	12.755	0.811	0.054	0.036	792.420	0.074
ARIZONA	HIGH	All Vehicles	1.540	0.011	10.095	0.921	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.549	0.011	7.736	0.788	0.054	0.036	792.420	0.074
ARKANSAS	HIGH	All Vehicles	1.542	0.011	10.214	0.923	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.551	0.011	7.844	0.789	0.054	0.036	792.420	0.074
CALIFORNIA	HIGH	All Vehicles	1.536	0.011	9.957	0.895	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.545	0.011	7.631	0.765	0.054	0.036	792.420	0.074
COLORADO	HIGH	All Vehicles	1.572	0.011	12.158	0.869	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.582	0.011	9.674	0.741	0.054	0.036	792.420	0.074
CONNECTICUT	HIGH	All Vehicles	1.565	0.011	11.662	0.897	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.574	0.011	9.213	0.768	0.054	0.036	792.420	0.074
DELAWARE	HIGH	All Vehicles	1.548	0.011	10.624	0.900	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.558	0.011	8.248	0.769	0.054	0.036	792.420	0.074
FLORIDA	HIGH	All Vehicles	1.523	0.011	9.013	0.907	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.532	0.011	6.721	0.774	0.054	0.036	792.420	0.074
GEORGIA	HIGH	All Vehicles	1.534	0.011	9.738	0.913	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.543	0.011	7.405	0.780	0.054	0.036	792.420	0.074
HAWAII	HIGH	All Vehicles	1.514	0.011	8.665	0.876	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.522	0.011	6.431	0.747	0.054	0.036	792.420	0.074
IDAHO	HIGH	All Vehicles	1.576	0.011	12.363	0.870	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.585	0.011	9.864	0.742	0.054	0.036	792.420	0.074
ILLINOIS	HIGH	All Vehicles	1.560	0.011	11.248	0.911	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.569	0.011	8.827	0.779	0.054	0.036	792.420	0.074
INDIANA	HIGH	All Vehicles	1.559	0.011	11.218	0.903	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.568	0.011	8.801	0.772	0.054	0.036	792.420	0.074
IOWA	HIGH	All Vehicles	1.572	0.011	11.977	0.896	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.582	0.011	9.505	0.764	0.054	0.036	792.420	0.074
KANSAS	HIGH	All Vehicles	1.555	0.011	10.932	0.918	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.564	0.011	8.520	0.784	0.054	0.036	792.420	0.074
KENTUCKY	HIGH	All Vehicles	1.549	0.011	10.628	0.902	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.558	0.011	8.251	0.771	0.054	0.036	792.420	0.074
LOUISIANA	HIGH	All Vehicles	1.532	0.011	9.568	0.918	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.541	0.011	7.236	0.784	0.054	0.036	792.420	0.074
MAINE	HIGH	All Vehicles	1.588	0.011	13.024	0.897	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.598	0.011	10.477	0.768	0.054	0.036	792.420	0.074
MARYLAND	HIGH	All Vehicles	1.551	0.011	10.774	0.892	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.560	0.011	8.389	0.761	0.054	0.036	792.420	0.074
MASSACHUSETTS	HIGH	All Vehicles	1.567	0.011	11.792	0.897	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.576	0.011	9.334	0.768	0.054	0.036	792.420	0.074
MICHIGAN	HIGH	All Vehicles	1.577	0.011	12.416	0.882	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.587	0.011	9.913	0.753	0.054	0.036	792.420	0.074
MINNESOTA	HIGH	All Vehicles	1.594	0.011	13.250	0.927	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.604	0.011	10.686	0.795	0.054	0.036	792.420	0.074
MISSISSIPPI	HIGH	All Vehicles	1.536	0.011	9.831	0.919	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.545	0.011	7.486	0.785	0.054	0.036	792.420	0.074
MISSOURI	HIGH	All Vehicles	1.554	0.011	10.900	0.911	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.563	0.011	8.497	0.778	0.054	0.036	792.420	0.074
MONTANA	HIGH	All Vehicles	1.583	0.011	12.738	0.887	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.593	0.011	10.212	0.758	0.054	0.036	792.420	0.074
NEBRASKA	HIGH	All Vehicles	1.565	0.011	11.538	0.890	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.574	0.011	9.098	0.757	0.054	0.036	792.420	0.074
NEVADA	HIGH	All Vehicles	1.558	0.011	11.274	0.890	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.567	0.011	8.853	0.761	0.054	0.036	792.420	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	1.580	0.011	12.573	0.885	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.590	0.011	10.059	0.756	0.054	0.036	792.420	0.074
NEW JERSEY	HIGH	All Vehicles	1.554	0.011	10.993	0.895	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.564	0.011	8.593	0.764	0.054	0.036	792.420	0.074
NEW MEXICO	HIGH	All Vehicles	1.551	0.011	10.858	0.886	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.560	0.011	8.467	0.756	0.054	0.036	792.420	0.074
NEW YORK	HIGH	All Vehicles	1.574	0.011	12.244	0.877	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.584	0.011	9.753	0.748	0.054	0.036	792.420	0.074
NORTH CAROLINA	HIGH	All Vehicles	1.540	0.011	10.128	0.908	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.549	0.011	7.782	0.776	0.054	0.036	792.420	0.074
NORTH DAKOTA	HIGH	All Vehicles	1.595	0.011	13.352	0.931	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.605	0.011	10.780	0.799	0.054	0.036	792.420	0.074
OHIO	HIGH	All Vehicles	1.560	0.011	11.354	0.898	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.569	0.011	8.927	0.768	0.054	0.036	792.420	0.074
OKLAHOMA	HIGH	All Vehicles	1.546	0.011	10.399	0.926	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.555	0.011	8.010	0.790	0.054	0.036	792.420	0.074
OREGON	HIGH	All Vehicles	1.564	0.011	11.725	0.872	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.573	0.011	9.272	0.746	0.054	0.036	792.420	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	1.519	0.011	9.273	0.865	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.528	0.011	6.996	0.738	0.054	0.036	792.420	0.074
PENNSYLVANIA	HIGH	All Vehicles	1.564	0.011	11.629	0.895	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.573	0.011	9.183	0.765	0.054	0.036	792.420	0.074
PUERTO RICO	HIGH	All Vehicles	1.513	0.011	8.174	0.893	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.522	0.011	5.952	0.761	0.054	0.036	792.420	0.074
RHODE ISLAND	HIGH	All Vehicles	1.560	0.011	11.427	0.888	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.569	0.011	8.995	0.759	0.054	0.036	792.420	0.074
SOUTH CAROLINA	HIGH	All Vehicles	1.536	0.011	9.857	0.915	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.545	0.011	7.515	0.782	0.054	0.036	792.420	0.074
SOUTH DAKOTA	HIGH	All Vehicles	1.577	0.011	12.252	0.903	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.587	0.011	9.760	0.771	0.054	0.036	792.420	0.074
TENNESSEE	HIGH	All Vehicles	1.544	0.011	10.364	0.902	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.553	0.011	8.001	0.770	0.054	0.036	792.420	0.074
TEXAS	HIGH	All Vehicles	1.536	0.011	9.791	0.926	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.545	0.011	7.441	0.791	0.054	0.036	792.420	0.074
UTAH	HIGH	All Vehicles	1.564	0.011	11.616	0.877	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.574	0.011	9.170	0.746	0.054	0.036	792.420	0.074
VERMONT	HIGH	All Vehicles	1.583	0.011	12.744	0.890	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.593	0.011	10.217	0.761	0.054	0.036	792.420	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	1.519	0.011	8.276	0.909	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.527	0.011	6.015	0.774	0.054	0.036	792.420	0.074
VIRGINIA	HIGH	All Vehicles	1.548	0.011	10.593	0.894	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.557	0.011	8.221	0.764	0.054	0.036	792.420	0.074
WASHINGTON	HIGH	All Vehicles	1.566	0.011	11.859	0.875	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.576	0.011	9.397	0.749	0.054	0.036	792.420	0.074
WEST VIRGINIA	HIGH	All Vehicles	1.556	0.011	11.179	0.888	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.566	0.011	8.766	0.758	0.054	0.036	792.420	0.074
WISCONSIN	HIGH	All Vehicles	1.584	0.011	12.762	0.903	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.594	0.011	10.233	0.772	0.054	0.036	792.420	0.074
WYOMING	HIGH	All Vehicles	1.581	0.011	12.662	0.882	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.591	0.011	10.141	0.754	0.054	0.036	792.420	0.074

Table 5-18. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2014 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	1.348	0.011	9.414	0.859	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.355	0.011	7.179	0.734	0.049	0.031	792.370	0.074
ALASKA	HIGH	All Vehicles	1.440	0.011	14.861	0.882	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.448	0.011	12.255	0.762	0.049	0.031	792.370	0.074
ARIZONA	HIGH	All Vehicles	1.353	0.011	9.681	0.865	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.360	0.011	7.428	0.740	0.049	0.031	792.370	0.074
ARKANSAS	HIGH	All Vehicles	1.355	0.011	9.796	0.867	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.362	0.011	7.532	0.741	0.049	0.031	792.370	0.074
CALIFORNIA	HIGH	All Vehicles	1.349	0.011	9.550	0.841	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.356	0.011	7.328	0.719	0.049	0.031	792.370	0.074
COLORADO	HIGH	All Vehicles	1.382	0.011	11.669	0.817	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.390	0.011	9.295	0.697	0.049	0.031	792.370	0.074
CONNECTICUT	HIGH	All Vehicles	1.375	0.011	11.192	0.843	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.382	0.011	8.851	0.722	0.049	0.031	792.370	0.074
DELAWARE	HIGH	All Vehicles	1.360	0.011	10.192	0.846	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.367	0.011	7.922	0.723	0.049	0.031	792.370	0.074
FLORIDA	HIGH	All Vehicles	1.337	0.011	8.639	0.852	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.344	0.011	6.451	0.727	0.049	0.031	792.370	0.074
GEORGIA	HIGH	All Vehicles	1.347	0.011	9.338	0.858	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.354	0.011	7.109	0.733	0.049	0.031	792.370	0.074
HAWAII	HIGH	All Vehicles	1.328	0.011	8.306	0.823	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.335	0.011	6.174	0.701	0.049	0.031	792.370	0.074
IDAHO	HIGH	All Vehicles	1.385	0.011	11.867	0.818	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.393	0.011	9.478	0.698	0.049	0.031	792.370	0.074
ILLINOIS	HIGH	All Vehicles	1.370	0.011	10.792	0.856	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.378	0.011	8.479	0.732	0.049	0.031	792.370	0.074
INDIANA	HIGH	All Vehicles	1.369	0.011	10.763	0.849	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.377	0.011	8.453	0.726	0.049	0.031	792.370	0.074
IOWA	HIGH	All Vehicles	1.382	0.011	11.494	0.842	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.390	0.011	9.131	0.718	0.049	0.031	792.370	0.074
KANSAS	HIGH	All Vehicles	1.366	0.011	10.487	0.862	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.374	0.011	8.182	0.736	0.049	0.031	792.370	0.074
KENTUCKY	HIGH	All Vehicles	1.360	0.011	10.195	0.848	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.368	0.011	7.924	0.724	0.049	0.031	792.370	0.074
LOUISIANA	HIGH	All Vehicles	1.345	0.011	9.174	0.862	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.352	0.011	6.946	0.736	0.049	0.031	792.370	0.074
MAINE	HIGH	All Vehicles	1.397	0.011	12.502	0.843	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.404	0.011	10.066	0.722	0.049	0.031	792.370	0.074
MARYLAND	HIGH	All Vehicles	1.362	0.011	10.336	0.838	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.370	0.011	8.058	0.715	0.049	0.031	792.370	0.074
MASSACHUSETTS	HIGH	All Vehicles	1.377	0.011	11.317	0.844	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.384	0.011	8.967	0.722	0.049	0.031	792.370	0.074
MICHIGAN	HIGH	All Vehicles	1.387	0.011	11.918	0.829	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.394	0.011	9.525	0.708	0.049	0.031	792.370	0.074
MINNESOTA	HIGH	All Vehicles	1.401	0.011	12.718	0.871	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.409	0.011	10.266	0.747	0.049	0.031	792.370	0.074
MISSISSIPPI	HIGH	All Vehicles	1.349	0.011	9.427	0.863	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.356	0.011	7.187	0.737	0.049	0.031	792.370	0.074
MISSOURI	HIGH	All Vehicles	1.365	0.011	10.457	0.856	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.373	0.011	8.161	0.731	0.049	0.031	792.370	0.074
MONTANA	HIGH	All Vehicles	1.392	0.011	12.227	0.834	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.400	0.011	9.812	0.713	0.049	0.031	792.370	0.074
NEBRASKA	HIGH	All Vehicles	1.375	0.011	11.071	0.836	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.383	0.011	8.739	0.712	0.049	0.031	792.370	0.074
NEVADA	HIGH	All Vehicles	1.369	0.011	10.818	0.837	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.376	0.011	8.505	0.715	0.049	0.031	792.370	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	1.389	0.011	12.069	0.832	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.397	0.011	9.665	0.711	0.049	0.031	792.370	0.074
NEW JERSEY	HIGH	All Vehicles	1.366	0.011	10.547	0.841	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.373	0.011	8.253	0.718	0.049	0.031	792.370	0.074
NEW MEXICO	HIGH	All Vehicles	1.363	0.011	10.418	0.833	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.370	0.011	8.133	0.711	0.049	0.031	792.370	0.074
NEW YORK	HIGH	All Vehicles	1.384	0.011	11.752	0.825	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.392	0.011	9.370	0.704	0.049	0.031	792.370	0.074
NORTH CAROLINA	HIGH	All Vehicles	1.352	0.011	9.714	0.853	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.359	0.011	7.473	0.729	0.049	0.031	792.370	0.074
NORTH DAKOTA	HIGH	All Vehicles	1.403	0.011	12.816	0.874	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.411	0.011	10.357	0.751	0.049	0.031	792.370	0.074
OHIO	HIGH	All Vehicles	1.371	0.011	10.894	0.844	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.378	0.011	8.575	0.722	0.049	0.031	792.370	0.074
OKLAHOMA	HIGH	All Vehicles	1.358	0.011	9.974	0.869	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.366	0.011	7.692	0.742	0.049	0.031	792.370	0.074
OREGON	HIGH	All Vehicles	1.374	0.011	11.253	0.820	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.381	0.011	8.909	0.701	0.049	0.031	792.370	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	1.333	0.011	8.894	0.814	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.340	0.011	6.719	0.694	0.049	0.031	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	1.374	0.011	11.160	0.841	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.382	0.011	8.822	0.719	0.049	0.031	792.370	0.074
PUERTO RICO	HIGH	All Vehicles	1.333	0.011	8.894	0.814	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.340	0.011	6.719	0.694	0.049	0.031	0.000	0.074
RHODE ISLAND	HIGH	All Vehicles	1.371	0.011	10.966	0.835	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.378	0.011	8.642	0.714	0.049	0.031	792.370	0.074
SOUTH CAROLINA	HIGH	All Vehicles	1.349	0.011	9.453	0.860	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.356	0.011	7.216	0.734	0.049	0.031	792.370	0.074
SOUTH DAKOTA	HIGH	All Vehicles	1.386	0.011	11.758	0.848	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.394	0.011	9.376	0.724	0.049	0.031	792.370	0.074
TENNESSEE	HIGH	All Vehicles	1.356	0.011	9.941	0.848	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.363	0.011	7.684	0.724	0.049	0.031	792.370	0.074
TEXAS	HIGH	All Vehicles	1.349	0.011	9.389	0.869	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.356	0.011	7.144	0.742	0.049	0.031	792.370	0.074
UTAH	HIGH	All Vehicles	1.375	0.011	11.147	0.824	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.382	0.011	8.809	0.702	0.049	0.031	792.370	0.074
VERMONT	HIGH	All Vehicles	1.392	0.011	12.232	0.837	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.400	0.011	9.816	0.716	0.049	0.031	792.370	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	1.333	0.011	7.926	0.853	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.340	0.011	5.768	0.726	0.049	0.031	792.370	0.074
VIRGINIA	HIGH	All Vehicles	1.359	0.011	10.162	0.840	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.367	0.011	7.896	0.718	0.049	0.031	792.370	0.074
WASHINGTON	HIGH	All Vehicles	1.376	0.011	11.383	0.823	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.384	0.011	9.029	0.704	0.049	0.031	792.370	0.074
WEST VIRGINIA	HIGH	All Vehicles	1.367	0.011	10.727	0.834	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.375	0.011	8.420	0.713	0.049	0.031	792.370	0.074
WISCONSIN	HIGH	All Vehicles	1.393	0.011	12.249	0.848	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.401	0.011	9.832	0.726	0.049	0.031	792.370	0.074
WYOMING	HIGH	All Vehicles	1.390	0.011	12.154	0.830	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.398	0.011	9.744	0.709	0.049	0.031	792.370	0.074

Table 5-19. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2015 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	1.199	0.011	9.126	0.812	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.205	0.011	6.947	0.694	0.045	0.027	792.190	0.074
ALASKA	HIGH	All Vehicles	1.284	0.011	14.416	0.836	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.291	0.011	11.867	0.723	0.045	0.027	792.190	0.074
ARIZONA	HIGH	All Vehicles	1.203	0.011	9.386	0.818	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.209	0.011	7.188	0.699	0.045	0.027	792.190	0.074
ARKANSAS	HIGH	All Vehicles	1.205	0.011	9.497	0.819	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.211	0.011	7.289	0.700	0.045	0.027	792.190	0.074
CALIFORNIA	HIGH	All Vehicles	1.199	0.011	9.258	0.795	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.206	0.011	7.092	0.680	0.045	0.027	792.190	0.074
COLORADO	HIGH	All Vehicles	1.230	0.011	11.318	0.774	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.237	0.011	8.999	0.660	0.045	0.027	792.190	0.074
CONNECTICUT	HIGH	All Vehicles	1.223	0.011	10.854	0.798	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.230	0.011	8.569	0.683	0.045	0.027	792.190	0.074
DELAWARE	HIGH	All Vehicles	1.210	0.011	9.882	0.800	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.216	0.011	7.667	0.684	0.045	0.027	792.190	0.074
FLORIDA	HIGH	All Vehicles	1.189	0.011	8.372	0.805	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.195	0.011	6.240	0.686	0.045	0.027	792.190	0.074
GEORGIA	HIGH	All Vehicles	1.198	0.011	9.053	0.810	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.204	0.011	6.879	0.692	0.045	0.027	792.190	0.074
HAWAII	HIGH	All Vehicles	1.180	0.011	8.049	0.778	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.186	0.011	5.972	0.663	0.045	0.027	792.190	0.074
IDAHO	HIGH	All Vehicles	1.233	0.011	11.510	0.775	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.240	0.011	9.177	0.661	0.045	0.027	792.190	0.074
ILLINOIS	HIGH	All Vehicles	1.219	0.011	10.465	0.810	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.226	0.011	8.207	0.693	0.045	0.027	792.190	0.074
INDIANA	HIGH	All Vehicles	1.218	0.011	10.437	0.803	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.225	0.011	8.183	0.687	0.045	0.027	792.190	0.074
IOWA	HIGH	All Vehicles	1.230	0.011	11.146	0.797	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.237	0.011	8.839	0.679	0.045	0.027	792.190	0.074
KANSAS	HIGH	All Vehicles	1.216	0.011	10.168	0.815	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.222	0.011	7.919	0.696	0.045	0.027	792.190	0.074
KENTUCKY	HIGH	All Vehicles	1.210	0.011	9.885	0.802	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.217	0.011	7.670	0.685	0.045	0.027	792.190	0.074
LOUISIANA	HIGH	All Vehicles	1.196	0.011	8.893	0.815	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.203	0.011	6.720	0.696	0.045	0.027	792.190	0.074
MAINE	HIGH	All Vehicles	1.244	0.011	12.126	0.798	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.251	0.011	9.747	0.684	0.045	0.027	792.190	0.074
MARYLAND	HIGH	All Vehicles	1.212	0.011	10.023	0.793	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.218	0.011	7.799	0.677	0.045	0.027	792.190	0.074
MASSACHUSETTS	HIGH	All Vehicles	1.225	0.011	10.975	0.798	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.232	0.011	8.682	0.684	0.045	0.027	792.190	0.074
MICHIGAN	HIGH	All Vehicles	1.234	0.011	11.559	0.786	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.241	0.011	9.222	0.671	0.045	0.027	792.190	0.074
MINNESOTA	HIGH	All Vehicles	1.248	0.011	12.336	0.825	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.255	0.011	9.940	0.708	0.045	0.027	792.190	0.074
MISSISSIPPI	HIGH	All Vehicles	1.199	0.011	9.139	0.815	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.206	0.011	6.955	0.697	0.045	0.027	792.190	0.074
MISSOURI	HIGH	All Vehicles	1.215	0.011	10.139	0.809	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.221	0.011	7.899	0.691	0.045	0.027	792.190	0.074
MONTANA	HIGH	All Vehicles	1.239	0.011	11.860	0.790	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.246	0.011	9.501	0.676	0.045	0.027	792.190	0.074
NEBRASKA	HIGH	All Vehicles	1.224	0.011	10.736	0.791	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.231	0.011	8.459	0.674	0.045	0.027	792.190	0.074
NEVADA	HIGH	All Vehicles	1.218	0.011	10.491	0.792	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.225	0.011	8.233	0.677	0.045	0.027	792.190	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	1.236	0.011	11.706	0.788	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.243	0.011	9.358	0.673	0.045	0.027	792.190	0.074
NEW JERSEY	HIGH	All Vehicles	1.215	0.011	10.227	0.795	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.222	0.011	7.989	0.679	0.045	0.027	792.190	0.074
NEW MEXICO	HIGH	All Vehicles	1.212	0.011	10.102	0.788	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.219	0.011	7.873	0.672	0.045	0.027	792.190	0.074
NEW YORK	HIGH	All Vehicles	1.232	0.011	11.398	0.781	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.239	0.011	9.073	0.667	0.045	0.027	792.190	0.074
NORTH CAROLINA	HIGH	All Vehicles	1.203	0.011	9.417	0.806	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.209	0.011	7.232	0.690	0.045	0.027	792.190	0.074
NORTH DAKOTA	HIGH	All Vehicles	1.250	0.011	12.431	0.828	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.257	0.011	10.028	0.712	0.045	0.027	792.190	0.074
OHIO	HIGH	All Vehicles	1.220	0.011	10.565	0.799	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.226	0.011	8.302	0.683	0.045	0.027	792.190	0.074
OKLAHOMA	HIGH	All Vehicles	1.208	0.011	9.670	0.821	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.215	0.011	7.443	0.701	0.045	0.027	792.190	0.074
OREGON	HIGH	All Vehicles	1.223	0.011	10.914	0.777	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.229	0.011	8.626	0.664	0.045	0.027	792.190	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	1.184	0.011	8.623	0.769	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.191	0.011	6.503	0.656	0.045	0.027	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	1.223	0.011	10.823	0.796	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.230	0.011	8.541	0.681	0.045	0.027	792.190	0.074
PUERTO RICO	HIGH	All Vehicles	1.180	0.011	7.585	0.792	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.186	0.011	5.519	0.674	0.045	0.027	792.190	0.074
RHODE ISLAND	HIGH	All Vehicles	1.220	0.011	10.635	0.790	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.226	0.011	8.367	0.676	0.045	0.027	792.190	0.074
SOUTH CAROLINA	HIGH	All Vehicles	1.199	0.011	9.164	0.812	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.206	0.011	6.983	0.694	0.045	0.027	792.190	0.074
SOUTH DAKOTA	HIGH	All Vehicles	1.234	0.011	11.403	0.803	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.241	0.011	9.077	0.686	0.045	0.027	792.190	0.074
TENNESSEE	HIGH	All Vehicles	1.206	0.011	9.639	0.801	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.213	0.011	7.437	0.684	0.045	0.027	792.190	0.074
TEXAS	HIGH	All Vehicles	1.199	0.011	9.101	0.821	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.206	0.011	6.912	0.701	0.045	0.027	792.190	0.074
UTAH	HIGH	All Vehicles	1.223	0.011	10.810	0.780	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.230	0.011	8.528	0.664	0.045	0.027	792.190	0.074
VERMONT	HIGH	All Vehicles	1.239	0.011	11.865	0.793	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.246	0.011	9.505	0.678	0.045	0.027	792.190	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	1.185	0.011	7.678	0.805	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.191	0.011	5.575	0.685	0.045	0.027	792.190	0.074
VIRGINIA	HIGH	All Vehicles	1.209	0.011	9.853	0.795	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.216	0.011	7.643	0.679	0.045	0.027	792.190	0.074
WASHINGTON	HIGH	All Vehicles	1.225	0.011	11.041	0.780	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.232	0.011	8.743	0.667	0.045	0.027	792.190	0.074
WEST VIRGINIA	HIGH	All Vehicles	1.216	0.011	10.403	0.790	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.223	0.011	8.152	0.675	0.045	0.027	792.190	0.074
WISCONSIN	HIGH	All Vehicles	1.240	0.011	11.881	0.804	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.247	0.011	9.519	0.688	0.045	0.027	792.190	0.074
WYOMING	HIGH	All Vehicles	1.238	0.011	11.789	0.786	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.245	0.011	9.435	0.672	0.045	0.027	792.190	0.074

Table 5-20. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2016 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	1.072	0.011	8.846	0.770	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.078	0.011	6.711	0.656	0.043	0.025	792.230	0.074
ALASKA	HIGH	All Vehicles	1.150	0.011	13.925	0.790	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.156	0.011	11.424	0.680	0.043	0.025	792.230	0.074
ARIZONA	HIGH	All Vehicles	1.076	0.011	9.095	0.776	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.082	0.011	6.942	0.661	0.043	0.025	792.230	0.074
ARKANSAS	HIGH	All Vehicles	1.078	0.011	9.202	0.777	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.084	0.011	7.039	0.663	0.043	0.025	792.230	0.074
CALIFORNIA	HIGH	All Vehicles	1.073	0.011	8.971	0.755	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.078	0.011	6.850	0.644	0.043	0.025	792.230	0.074
COLORADO	HIGH	All Vehicles	1.101	0.011	10.952	0.734	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.107	0.011	8.679	0.624	0.043	0.025	792.230	0.074
CONNECTICUT	HIGH	All Vehicles	1.095	0.011	10.505	0.757	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.101	0.011	8.266	0.646	0.043	0.025	792.230	0.074
DELAWARE	HIGH	All Vehicles	1.082	0.011	9.570	0.759	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.088	0.011	7.401	0.647	0.043	0.025	792.230	0.074
FLORIDA	HIGH	All Vehicles	1.063	0.011	8.121	0.764	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.069	0.011	6.033	0.650	0.043	0.025	792.230	0.074
GEORGIA	HIGH	All Vehicles	1.071	0.011	8.775	0.769	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.077	0.011	6.646	0.655	0.043	0.025	792.230	0.074
HAWAII	HIGH	All Vehicles	1.055	0.011	7.809	0.739	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.061	0.011	5.776	0.628	0.043	0.025	792.230	0.074
IDAHO	HIGH	All Vehicles	1.103	0.011	11.136	0.734	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.109	0.011	8.849	0.625	0.043	0.025	792.230	0.074
ILLINOIS	HIGH	All Vehicles	1.091	0.011	10.130	0.768	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.097	0.011	7.918	0.655	0.043	0.025	792.230	0.074
INDIANA	HIGH	All Vehicles	1.090	0.011	10.104	0.761	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.096	0.011	7.895	0.649	0.043	0.025	792.230	0.074
IOWA	HIGH	All Vehicles	1.101	0.011	10.785	0.754	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.107	0.011	8.524	0.642	0.043	0.025	792.230	0.074
KANSAS	HIGH	All Vehicles	1.088	0.011	9.847	0.773	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.094	0.011	7.643	0.658	0.043	0.025	792.230	0.074
KENTUCKY	HIGH	All Vehicles	1.083	0.011	9.574	0.760	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.088	0.011	7.403	0.648	0.043	0.025	792.230	0.074
LOUISIANA	HIGH	All Vehicles	1.070	0.011	8.622	0.773	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.076	0.011	6.494	0.658	0.043	0.025	792.230	0.074
MAINE	HIGH	All Vehicles	1.113	0.011	11.728	0.756	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.119	0.011	9.394	0.646	0.043	0.025	792.230	0.074
MARYLAND	HIGH	All Vehicles	1.084	0.011	9.706	0.752	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.090	0.011	7.528	0.640	0.043	0.025	792.230	0.074
MASSACHUSETTS	HIGH	All Vehicles	1.096	0.011	10.622	0.757	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.102	0.011	8.374	0.646	0.043	0.025	792.230	0.074
MICHIGAN	HIGH	All Vehicles	1.105	0.011	11.183	0.744	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.111	0.011	8.891	0.634	0.043	0.025	792.230	0.074
MINNESOTA	HIGH	All Vehicles	1.117	0.011	11.928	0.780	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.124	0.011	9.578	0.668	0.043	0.025	792.230	0.074
MISSISSIPPI	HIGH	All Vehicles	1.073	0.011	8.858	0.773	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.079	0.011	6.719	0.659	0.043	0.025	792.230	0.074
MISSOURI	HIGH	All Vehicles	1.087	0.011	9.818	0.767	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.093	0.011	7.623	0.653	0.043	0.025	792.230	0.074
MONTANA	HIGH	All Vehicles	1.109	0.011	11.472	0.748	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.115	0.011	9.158	0.638	0.043	0.025	792.230	0.074
NEBRASKA	HIGH	All Vehicles	1.095	0.011	10.391	0.749	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.101	0.011	8.160	0.637	0.043	0.025	792.230	0.074
NEVADA	HIGH	All Vehicles	1.090	0.011	10.156	0.751	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.096	0.011	7.944	0.640	0.043	0.025	792.230	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	1.106	0.011	11.324	0.746	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.113	0.011	9.022	0.636	0.043	0.025	792.230	0.074
NEW JERSEY	HIGH	All Vehicles	1.087	0.011	9.902	0.754	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.093	0.011	7.710	0.643	0.043	0.025	792.230	0.074
NEW MEXICO	HIGH	All Vehicles	1.084	0.011	9.782	0.747	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.090	0.011	7.599	0.636	0.043	0.025	792.230	0.074
NEW YORK	HIGH	All Vehicles	1.102	0.011	11.028	0.740	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.108	0.011	8.748	0.630	0.043	0.025	792.230	0.074
NORTH CAROLINA	HIGH	All Vehicles	1.076	0.011	9.125	0.765	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.082	0.011	6.984	0.653	0.043	0.025	792.230	0.074
NORTH DAKOTA	HIGH	All Vehicles	1.119	0.011	12.019	0.783	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.125	0.011	9.662	0.671	0.043	0.025	792.230	0.074
OHIO	HIGH	All Vehicles	1.091	0.011	10.227	0.757	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.097	0.011	8.009	0.646	0.043	0.025	792.230	0.074
OKLAHOMA	HIGH	All Vehicles	1.081	0.011	9.369	0.779	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.087	0.011	7.187	0.663	0.043	0.025	792.230	0.074
OREGON	HIGH	All Vehicles	1.094	0.011	10.564	0.737	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.100	0.011	8.321	0.628	0.043	0.025	792.230	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	1.059	0.011	8.361	0.731	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.064	0.011	6.286	0.622	0.043	0.025	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	1.094	0.011	10.475	0.755	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.100	0.011	8.239	0.644	0.043	0.025	792.230	0.074
PUERTO RICO	HIGH	All Vehicles	1.056	0.011	7.362	0.752	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.061	0.011	5.340	0.639	0.043	0.025	792.230	0.074
RHODE ISLAND	HIGH	All Vehicles	1.091	0.011	10.295	0.749	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.097	0.011	8.072	0.639	0.043	0.025	792.230	0.074
SOUTH CAROLINA	HIGH	All Vehicles	1.073	0.011	8.882	0.771	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.079	0.011	6.745	0.657	0.043	0.025	792.230	0.074
SOUTH DAKOTA	HIGH	All Vehicles	1.104	0.011	11.032	0.760	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.111	0.011	8.751	0.648	0.043	0.025	792.230	0.074
TENNESSEE	HIGH	All Vehicles	1.079	0.011	9.337	0.760	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.085	0.011	7.180	0.647	0.043	0.025	792.230	0.074
TEXAS	HIGH	All Vehicles	1.073	0.011	8.823	0.779	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.079	0.011	6.678	0.664	0.043	0.025	792.230	0.074
UTAH	HIGH	All Vehicles	1.095	0.011	10.463	0.739	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.101	0.011	8.227	0.628	0.043	0.025	792.230	0.074
VERMONT	HIGH	All Vehicles	1.109	0.011	11.476	0.751	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.115	0.011	9.162	0.640	0.043	0.025	792.230	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	1.061	0.011	7.453	0.764	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.066	0.011	5.394	0.649	0.043	0.025	792.230	0.074
VIRGINIA	HIGH	All Vehicles	1.082	0.011	9.543	0.754	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.088	0.011	7.378	0.642	0.043	0.025	792.230	0.074
WASHINGTON	HIGH	All Vehicles	1.096	0.011	10.685	0.739	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.102	0.011	8.433	0.631	0.043	0.025	792.230	0.074
WEST VIRGINIA	HIGH	All Vehicles	1.088	0.011	10.072	0.749	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.094	0.011	7.866	0.638	0.043	0.025	792.230	0.074
WISCONSIN	HIGH	All Vehicles	1.110	0.011	11.491	0.761	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.116	0.011	9.175	0.649	0.043	0.025	792.230	0.074
WYOMING	HIGH	All Vehicles	1.108	0.011	11.404	0.744	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.114	0.011	9.096	0.635	0.043	0.025	792.230	0.074

Table 5-21. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2017 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.963	0.011	8.622	0.733	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.968	0.011	6.530	0.623	0.041	0.024	792.140	0.074
ALASKA	HIGH	All Vehicles	1.035	0.011	13.558	0.753	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.040	0.011	11.102	0.648	0.041	0.024	792.140	0.074
ARIZONA	HIGH	All Vehicles	0.967	0.011	8.865	0.738	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.972	0.011	6.754	0.628	0.041	0.024	792.140	0.074
ARKANSAS	HIGH	All Vehicles	0.968	0.011	8.969	0.739	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.973	0.011	6.848	0.629	0.041	0.024	792.140	0.074
CALIFORNIA	HIGH	All Vehicles	0.963	0.011	8.744	0.719	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.968	0.011	6.664	0.611	0.041	0.024	792.140	0.074
COLORADO	HIGH	All Vehicles	0.989	0.011	10.670	0.700	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.994	0.011	8.440	0.594	0.041	0.024	792.140	0.074
CONNECTICUT	HIGH	All Vehicles	0.984	0.011	10.235	0.721	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.989	0.011	8.039	0.614	0.041	0.024	792.140	0.074
DELAWARE	HIGH	All Vehicles	0.972	0.011	9.326	0.723	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.977	0.011	7.199	0.614	0.041	0.024	792.140	0.074
FLORIDA	HIGH	All Vehicles	0.955	0.011	7.917	0.726	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.959	0.011	5.871	0.617	0.041	0.024	792.140	0.074
GEORGIA	HIGH	All Vehicles	0.962	0.011	8.553	0.731	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.967	0.011	6.466	0.622	0.041	0.024	792.140	0.074
HAWAII	HIGH	All Vehicles	0.947	0.011	7.613	0.703	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.952	0.011	5.621	0.596	0.041	0.024	792.140	0.074
IDAHO	HIGH	All Vehicles	0.991	0.011	10.849	0.700	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.997	0.011	8.605	0.594	0.041	0.024	792.140	0.074
ILLINOIS	HIGH	All Vehicles	0.980	0.011	9.870	0.731	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.985	0.011	7.701	0.622	0.041	0.024	792.140	0.074
INDIANA	HIGH	All Vehicles	0.980	0.011	9.845	0.725	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.985	0.011	7.679	0.617	0.041	0.024	792.140	0.074
IOWA	HIGH	All Vehicles	0.989	0.011	10.507	0.719	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.995	0.011	8.288	0.610	0.041	0.024	792.140	0.074
KANSAS	HIGH	All Vehicles	0.977	0.011	9.595	0.735	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.982	0.011	7.434	0.625	0.041	0.024	792.140	0.074
KENTUCKY	HIGH	All Vehicles	0.972	0.011	9.330	0.724	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.977	0.011	7.201	0.615	0.041	0.024	792.140	0.074
LOUISIANA	HIGH	All Vehicles	0.961	0.011	8.404	0.735	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.966	0.011	6.319	0.625	0.041	0.024	792.140	0.074
MAINE	HIGH	All Vehicles	1.001	0.011	11.424	0.720	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.006	0.011	9.134	0.614	0.041	0.024	792.140	0.074
MARYLAND	HIGH	All Vehicles	0.974	0.011	9.458	0.716	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.979	0.011	7.322	0.608	0.041	0.024	792.140	0.074
MASSACHUSETTS	HIGH	All Vehicles	0.985	0.011	10.349	0.721	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.990	0.011	8.144	0.614	0.041	0.024	792.140	0.074
MICHIGAN	HIGH	All Vehicles	0.993	0.011	10.894	0.709	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.998	0.011	8.646	0.603	0.041	0.024	792.140	0.074
MINNESOTA	HIGH	All Vehicles	1.005	0.011	11.617	0.743	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.010	0.011	9.311	0.635	0.041	0.024	792.140	0.074
MISSISSIPPI	HIGH	All Vehicles	0.964	0.011	8.634	0.736	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.969	0.011	6.537	0.626	0.041	0.024	792.140	0.074
MISSOURI	HIGH	All Vehicles	0.977	0.011	9.567	0.730	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.982	0.011	7.414	0.621	0.041	0.024	792.140	0.074
MONTANA	HIGH	All Vehicles	0.997	0.011	11.175	0.713	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.002	0.011	8.905	0.607	0.041	0.024	792.140	0.074
NEBRASKA	HIGH	All Vehicles	0.984	0.011	10.123	0.714	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.989	0.011	7.935	0.605	0.041	0.024	792.140	0.074
NEVADA	HIGH	All Vehicles	0.979	0.011	9.896	0.715	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.984	0.011	7.726	0.608	0.041	0.024	792.140	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	0.995	0.011	11.031	0.711	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.000	0.011	8.772	0.605	0.041	0.024	792.140	0.074
NEW JERSEY	HIGH	All Vehicles	0.976	0.011	9.649	0.718	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.981	0.011	7.499	0.611	0.041	0.024	792.140	0.074
NEW MEXICO	HIGH	All Vehicles	0.974	0.011	9.532	0.712	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.979	0.011	7.391	0.605	0.041	0.024	792.140	0.074
NEW YORK	HIGH	All Vehicles	0.991	0.011	10.743	0.706	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.996	0.011	8.507	0.599	0.041	0.024	792.140	0.074
NORTH CAROLINA	HIGH	All Vehicles	0.966	0.011	8.893	0.728	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.971	0.011	6.795	0.620	0.041	0.024	792.140	0.074
NORTH DAKOTA	HIGH	All Vehicles	1.006	0.011	11.706	0.746	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.011	0.011	9.393	0.638	0.041	0.024	792.140	0.074
OHIO	HIGH	All Vehicles	0.981	0.011	9.965	0.722	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.986	0.011	7.789	0.614	0.041	0.024	792.140	0.074
OKLAHOMA	HIGH	All Vehicles	0.971	0.011	9.131	0.741	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.976	0.011	6.992	0.629	0.041	0.024	792.140	0.074
OREGON	HIGH	All Vehicles	0.983	0.011	10.293	0.703	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.988	0.011	8.094	0.598	0.041	0.024	792.140	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	0.950	0.011	8.151	0.696	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.955	0.011	6.118	0.591	0.041	0.024	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	0.983	0.011	10.206	0.719	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.988	0.011	8.012	0.612	0.041	0.024	792.140	0.074
PUERTO RICO	HIGH	All Vehicles	0.948	0.011	7.178	0.715	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.952	0.011	5.197	0.606	0.041	0.024	792.140	0.074
RHODE ISLAND	HIGH	All Vehicles	0.980	0.011	10.031	0.714	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.985	0.011	7.851	0.608	0.041	0.024	792.140	0.074
SOUTH CAROLINA	HIGH	All Vehicles	0.964	0.011	8.657	0.733	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.968	0.011	6.563	0.623	0.041	0.024	792.140	0.074
SOUTH DAKOTA	HIGH	All Vehicles	0.993	0.011	10.747	0.724	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.998	0.011	8.509	0.615	0.041	0.024	792.140	0.074
TENNESSEE	HIGH	All Vehicles	0.969	0.011	9.099	0.724	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.974	0.011	6.985	0.615	0.041	0.024	792.140	0.074
TEXAS	HIGH	All Vehicles	0.964	0.011	8.600	0.740	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.969	0.011	6.498	0.630	0.041	0.024	792.140	0.074
UTAH	HIGH	All Vehicles	0.984	0.011	10.194	0.704	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.989	0.011	8.001	0.597	0.041	0.024	792.140	0.074
VERMONT	HIGH	All Vehicles	0.997	0.011	11.179	0.715	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.002	0.011	8.909	0.609	0.041	0.024	792.140	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	0.952	0.011	7.267	0.726	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.957	0.011	5.250	0.615	0.041	0.024	792.140	0.074
VIRGINIA	HIGH	All Vehicles	0.972	0.011	9.299	0.718	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.977	0.011	7.176	0.610	0.041	0.024	792.140	0.074
WASHINGTON	HIGH	All Vehicles	0.985	0.011	10.411	0.705	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.990	0.011	8.202	0.600	0.041	0.024	792.140	0.074
WEST VIRGINIA	HIGH	All Vehicles	0.978	0.011	9.814	0.714	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.983	0.011	7.651	0.607	0.041	0.024	792.140	0.074
WISCONSIN	HIGH	All Vehicles	0.998	0.011	11.193	0.725	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.003	0.011	8.921	0.617	0.041	0.024	792.140	0.074
WYOMING	HIGH	All Vehicles	0.996	0.011	11.109	0.710	0.041	0.024	792.140	0.074
	LOW	All Vehicles	1.001	0.011	8.844	0.604	0.041	0.024	792.140	0.074

Table 5-22. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2018 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.858	0.011	8.389	0.698	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.862	0.011	6.325	0.593	0.038	0.021	792.140	0.074
ALASKA	HIGH	All Vehicles	0.924	0.011	13.155	0.716	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.930	0.011	10.727	0.614	0.038	0.021	792.140	0.074
ARIZONA	HIGH	All Vehicles	0.861	0.011	8.623	0.703	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.866	0.011	6.541	0.597	0.038	0.021	792.140	0.074
ARKANSAS	HIGH	All Vehicles	0.863	0.011	8.724	0.704	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.867	0.011	6.631	0.598	0.038	0.021	792.140	0.074
CALIFORNIA	HIGH	All Vehicles	0.858	0.011	8.504	0.685	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.862	0.011	6.453	0.582	0.038	0.021	792.140	0.074
COLORADO	HIGH	All Vehicles	0.882	0.011	10.365	0.666	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.887	0.011	8.163	0.564	0.038	0.021	792.140	0.074
CONNECTICUT	HIGH	All Vehicles	0.877	0.011	9.945	0.687	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.882	0.011	7.777	0.584	0.038	0.021	792.140	0.074
DELAWARE	HIGH	All Vehicles	0.866	0.011	9.067	0.688	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.871	0.011	6.968	0.584	0.038	0.021	792.140	0.074
FLORIDA	HIGH	All Vehicles	0.850	0.011	7.709	0.692	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.855	0.011	5.690	0.587	0.038	0.021	792.140	0.074
GEORGIA	HIGH	All Vehicles	0.857	0.011	8.322	0.697	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.862	0.011	6.264	0.591	0.038	0.021	792.140	0.074
HAWAII	HIGH	All Vehicles	0.843	0.011	7.412	0.671	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.847	0.011	5.449	0.568	0.038	0.021	792.140	0.074
IDAHO	HIGH	All Vehicles	0.884	0.011	10.539	0.667	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.889	0.011	8.323	0.565	0.038	0.021	792.140	0.074
ILLINOIS	HIGH	All Vehicles	0.874	0.011	9.593	0.696	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.878	0.011	7.452	0.591	0.038	0.021	792.140	0.074
INDIANA	HIGH	All Vehicles	0.873	0.011	9.568	0.691	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.878	0.011	7.430	0.586	0.038	0.021	792.140	0.074
IOWA	HIGH	All Vehicles	0.882	0.011	10.208	0.684	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.887	0.011	8.017	0.579	0.038	0.021	792.140	0.074
KANSAS	HIGH	All Vehicles	0.871	0.011	9.328	0.700	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.876	0.011	7.195	0.594	0.038	0.021	792.140	0.074
KENTUCKY	HIGH	All Vehicles	0.866	0.011	9.071	0.690	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.871	0.011	6.971	0.585	0.038	0.021	792.140	0.074
LOUISIANA	HIGH	All Vehicles	0.856	0.011	8.179	0.700	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.861	0.011	6.122	0.594	0.038	0.021	792.140	0.074
MAINE	HIGH	All Vehicles	0.892	0.011	11.093	0.686	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.897	0.011	8.832	0.583	0.038	0.021	792.140	0.074
MARYLAND	HIGH	All Vehicles	0.868	0.011	9.194	0.682	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.873	0.011	7.087	0.579	0.038	0.021	792.140	0.074
MASSACHUSETTS	HIGH	All Vehicles	0.878	0.011	10.055	0.687	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.883	0.011	7.878	0.584	0.038	0.021	792.140	0.074
MICHIGAN	HIGH	All Vehicles	0.885	0.011	10.582	0.675	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.890	0.011	8.362	0.573	0.038	0.021	792.140	0.074
MINNESOTA	HIGH	All Vehicles	0.896	0.011	11.280	0.707	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.901	0.011	9.002	0.602	0.038	0.021	792.140	0.074
MISSISSIPPI	HIGH	All Vehicles	0.859	0.011	8.401	0.701	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.863	0.011	6.332	0.595	0.038	0.021	792.140	0.074
MISSOURI	HIGH	All Vehicles	0.870	0.011	9.301	0.695	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.875	0.011	7.176	0.590	0.038	0.021	792.140	0.074
MONTANA	HIGH	All Vehicles	0.889	0.011	10.853	0.679	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.894	0.011	8.611	0.576	0.038	0.021	792.140	0.074
NEBRASKA	HIGH	All Vehicles	0.877	0.011	9.837	0.680	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.882	0.011	7.677	0.575	0.038	0.021	792.140	0.074
NEVADA	HIGH	All Vehicles	0.872	0.011	9.618	0.682	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.877	0.011	7.476	0.579	0.038	0.021	792.140	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	0.887	0.011	10.714	0.677	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.892	0.011	8.484	0.575	0.038	0.021	792.140	0.074
NEW JERSEY	HIGH	All Vehicles	0.870	0.011	9.379	0.684	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.875	0.011	7.257	0.581	0.038	0.021	792.140	0.074
NEW MEXICO	HIGH	All Vehicles	0.868	0.011	9.266	0.678	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.873	0.011	7.154	0.575	0.038	0.021	792.140	0.074
NEW YORK	HIGH	All Vehicles	0.883	0.011	10.436	0.672	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.888	0.011	8.228	0.569	0.038	0.021	792.140	0.074
NORTH CAROLINA	HIGH	All Vehicles	0.861	0.011	8.649	0.694	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.865	0.011	6.579	0.589	0.038	0.021	792.140	0.074
NORTH DAKOTA	HIGH	All Vehicles	0.897	0.011	11.366	0.709	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.902	0.011	9.081	0.605	0.038	0.021	792.140	0.074
OHIO	HIGH	All Vehicles	0.874	0.011	9.684	0.687	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.879	0.011	7.537	0.584	0.038	0.021	792.140	0.074
OKLAHOMA	HIGH	All Vehicles	0.866	0.011	8.881	0.705	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.870	0.011	6.770	0.598	0.038	0.021	792.140	0.074
OREGON	HIGH	All Vehicles	0.876	0.011	10.002	0.670	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.881	0.011	7.830	0.569	0.038	0.021	792.140	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	0.846	0.011	7.932	0.664	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.850	0.011	5.927	0.563	0.038	0.021	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	0.876	0.011	9.918	0.685	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.881	0.011	7.752	0.582	0.038	0.021	792.140	0.074
PUERTO RICO	HIGH	All Vehicles	0.844	0.011	6.993	0.682	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.848	0.011	5.041	0.577	0.038	0.021	792.140	0.074
RHODE ISLAND	HIGH	All Vehicles	0.874	0.011	9.748	0.680	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.878	0.011	7.596	0.578	0.038	0.021	792.140	0.074
SOUTH CAROLINA	HIGH	All Vehicles	0.858	0.011	8.422	0.698	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.863	0.011	6.356	0.593	0.038	0.021	792.140	0.074
SOUTH DAKOTA	HIGH	All Vehicles	0.885	0.011	10.439	0.689	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.890	0.011	8.230	0.585	0.038	0.021	792.140	0.074
TENNESSEE	HIGH	All Vehicles	0.864	0.011	8.849	0.689	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.868	0.011	6.762	0.585	0.038	0.021	792.140	0.074
TEXAS	HIGH	All Vehicles	0.859	0.011	8.368	0.705	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.863	0.011	6.294	0.599	0.038	0.021	792.140	0.074
UTAH	HIGH	All Vehicles	0.877	0.011	9.905	0.671	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.882	0.011	7.740	0.567	0.038	0.021	792.140	0.074
VERMONT	HIGH	All Vehicles	0.889	0.011	10.857	0.681	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.894	0.011	8.615	0.578	0.038	0.021	792.140	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	0.848	0.011	7.081	0.692	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.853	0.011	5.092	0.585	0.038	0.021	792.140	0.074
VIRGINIA	HIGH	All Vehicles	0.866	0.011	9.041	0.684	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.870	0.011	6.947	0.580	0.038	0.021	792.140	0.074
WASHINGTON	HIGH	All Vehicles	0.877	0.011	10.115	0.672	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.882	0.011	7.934	0.571	0.038	0.021	792.140	0.074
WEST VIRGINIA	HIGH	All Vehicles	0.871	0.011	9.538	0.680	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.876	0.011	7.403	0.577	0.038	0.021	792.140	0.074
WISCONSIN	HIGH	All Vehicles	0.890	0.011	10.871	0.690	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.895	0.011	8.627	0.586	0.038	0.021	792.140	0.074
WYOMING	HIGH	All Vehicles	0.888	0.011	10.790	0.676	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.893	0.011	8.553	0.573	0.038	0.021	792.140	0.074

Table 5-23. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2019 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.783	0.011	8.218	0.669	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.786	0.011	6.187	0.567	0.037	0.020	792.170	0.074
ALASKA	HIGH	All Vehicles	0.845	0.011	12.849	0.690	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.850	0.011	10.456	0.591	0.037	0.020	792.170	0.074
ARIZONA	HIGH	All Vehicles	0.786	0.011	8.446	0.674	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.790	0.011	6.396	0.571	0.037	0.020	792.170	0.074
ARKANSAS	HIGH	All Vehicles	0.787	0.011	8.544	0.675	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.791	0.011	6.484	0.572	0.037	0.020	792.170	0.074
CALIFORNIA	HIGH	All Vehicles	0.782	0.011	8.329	0.657	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.786	0.011	6.310	0.557	0.037	0.020	792.170	0.074
COLORADO	HIGH	All Vehicles	0.805	0.011	10.138	0.641	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.809	0.011	7.969	0.541	0.037	0.020	792.170	0.074
CONNECTICUT	HIGH	All Vehicles	0.800	0.011	9.730	0.660	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.804	0.011	7.595	0.559	0.037	0.020	792.170	0.074
DELAWARE	HIGH	All Vehicles	0.790	0.011	8.876	0.661	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.794	0.011	6.810	0.559	0.037	0.020	792.170	0.074
FLORIDA	HIGH	All Vehicles	0.775	0.011	7.558	0.663	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.779	0.011	5.572	0.561	0.037	0.020	792.170	0.074
GEORGIA	HIGH	All Vehicles	0.782	0.011	8.154	0.668	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.786	0.011	6.128	0.566	0.037	0.020	792.170	0.074
HAWAII	HIGH	All Vehicles	0.768	0.011	7.268	0.644	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.772	0.011	5.336	0.543	0.037	0.020	792.170	0.074
IDAHO	HIGH	All Vehicles	0.807	0.011	10.306	0.641	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.811	0.011	8.124	0.542	0.037	0.020	792.170	0.074
ILLINOIS	HIGH	All Vehicles	0.797	0.011	9.387	0.668	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.801	0.011	7.279	0.566	0.037	0.020	792.170	0.074
INDIANA	HIGH	All Vehicles	0.797	0.011	9.363	0.663	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.801	0.011	7.258	0.562	0.037	0.020	792.170	0.074
IOWA	HIGH	All Vehicles	0.805	0.011	9.985	0.657	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.810	0.011	7.828	0.555	0.037	0.020	792.170	0.074
KANSAS	HIGH	All Vehicles	0.795	0.011	9.131	0.672	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.799	0.011	7.030	0.569	0.037	0.020	792.170	0.074
KENTUCKY	HIGH	All Vehicles	0.791	0.011	8.880	0.662	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.795	0.011	6.812	0.560	0.037	0.020	792.170	0.074
LOUISIANA	HIGH	All Vehicles	0.781	0.011	8.016	0.671	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.785	0.011	5.991	0.568	0.037	0.020	792.170	0.074
MAINE	HIGH	All Vehicles	0.815	0.011	10.846	0.659	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.819	0.011	8.618	0.559	0.037	0.020	792.170	0.074
MARYLAND	HIGH	All Vehicles	0.792	0.011	9.000	0.655	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.796	0.011	6.925	0.554	0.037	0.020	792.170	0.074
MASSACHUSETTS	HIGH	All Vehicles	0.801	0.011	9.837	0.660	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.806	0.011	7.693	0.560	0.037	0.020	792.170	0.074
MICHIGAN	HIGH	All Vehicles	0.808	0.011	10.349	0.649	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.812	0.011	8.162	0.549	0.037	0.020	792.170	0.074
MINNESOTA	HIGH	All Vehicles	0.818	0.011	11.027	0.679	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.823	0.011	8.783	0.578	0.037	0.020	792.170	0.074
MISSISSIPPI	HIGH	All Vehicles	0.783	0.011	8.230	0.672	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.787	0.011	6.194	0.569	0.037	0.020	792.170	0.074
MISSOURI	HIGH	All Vehicles	0.794	0.011	9.104	0.667	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.798	0.011	7.012	0.565	0.037	0.020	792.170	0.074
MONTANA	HIGH	All Vehicles	0.812	0.011	10.612	0.653	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.816	0.011	8.404	0.553	0.037	0.020	792.170	0.074
NEBRASKA	HIGH	All Vehicles	0.801	0.011	9.625	0.652	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.805	0.011	7.498	0.550	0.037	0.020	792.170	0.074
NEVADA	HIGH	All Vehicles	0.796	0.011	9.411	0.655	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.800	0.011	7.303	0.555	0.037	0.020	792.170	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	0.810	0.011	10.477	0.651	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.814	0.011	8.280	0.551	0.037	0.020	792.170	0.074
NEW JERSEY	HIGH	All Vehicles	0.794	0.011	9.179	0.657	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.798	0.011	7.090	0.556	0.037	0.020	792.170	0.074
NEW MEXICO	HIGH	All Vehicles	0.792	0.011	9.070	0.651	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.796	0.011	6.990	0.551	0.037	0.020	792.170	0.074
NEW YORK	HIGH	All Vehicles	0.806	0.011	10.207	0.646	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.811	0.011	8.032	0.546	0.037	0.020	792.170	0.074
NORTH CAROLINA	HIGH	All Vehicles	0.785	0.011	8.470	0.665	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.789	0.011	6.433	0.564	0.037	0.020	792.170	0.074
NORTH DAKOTA	HIGH	All Vehicles	0.820	0.011	11.111	0.682	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.824	0.011	8.860	0.580	0.037	0.020	792.170	0.074
OHIO	HIGH	All Vehicles	0.798	0.011	9.476	0.660	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.802	0.011	7.362	0.559	0.037	0.020	792.170	0.074
OKLAHOMA	HIGH	All Vehicles	0.790	0.011	8.697	0.676	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.794	0.011	6.619	0.572	0.037	0.020	792.170	0.074
OREGON	HIGH	All Vehicles	0.799	0.011	9.785	0.644	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.803	0.011	7.646	0.545	0.037	0.020	792.170	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	0.771	0.011	7.773	0.638	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.775	0.011	5.800	0.539	0.037	0.020	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	0.800	0.011	9.703	0.658	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.804	0.011	7.570	0.558	0.037	0.020	792.170	0.074
PUERTO RICO	HIGH	All Vehicles	0.769	0.011	6.862	0.653	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.773	0.011	4.941	0.551	0.037	0.020	792.170	0.074
RHODE ISLAND	HIGH	All Vehicles	0.797	0.011	9.538	0.654	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.801	0.011	7.419	0.554	0.037	0.020	792.170	0.074
SOUTH CAROLINA	HIGH	All Vehicles	0.783	0.011	8.251	0.669	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.787	0.011	6.218	0.567	0.037	0.020	792.170	0.074
SOUTH DAKOTA	HIGH	All Vehicles	0.808	0.011	10.210	0.662	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.812	0.011	8.034	0.560	0.037	0.020	792.170	0.074
TENNESSEE	HIGH	All Vehicles	0.788	0.011	8.664	0.661	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.792	0.011	6.611	0.560	0.037	0.020	792.170	0.074
TEXAS	HIGH	All Vehicles	0.783	0.011	8.199	0.676	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.787	0.011	6.158	0.572	0.037	0.020	792.170	0.074
UTAH	HIGH	All Vehicles	0.800	0.011	9.691	0.644	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.804	0.011	7.559	0.544	0.037	0.020	792.170	0.074
VERMONT	HIGH	All Vehicles	0.812	0.011	10.616	0.655	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.816	0.011	8.408	0.555	0.037	0.020	792.170	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	0.774	0.011	6.949	0.662	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.778	0.011	4.992	0.559	0.037	0.020	792.170	0.074
VIRGINIA	HIGH	All Vehicles	0.790	0.011	8.851	0.657	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.794	0.011	6.789	0.556	0.037	0.020	792.170	0.074
WASHINGTON	HIGH	All Vehicles	0.801	0.011	9.895	0.646	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.805	0.011	7.747	0.547	0.037	0.020	792.170	0.074
WEST VIRGINIA	HIGH	All Vehicles	0.795	0.011	9.334	0.653	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.799	0.011	7.232	0.553	0.037	0.020	792.170	0.074
WISCONSIN	HIGH	All Vehicles	0.813	0.011	10.629	0.663	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.817	0.011	8.419	0.562	0.037	0.020	792.170	0.074
WYOMING	HIGH	All Vehicles	0.811	0.011	10.550	0.650	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.815	0.011	8.347	0.550	0.037	0.020	792.170	0.074

Table 5-24. Air Force/State/Territory-Specific On-Road Composite Vehicle Emission Factors – 2020 GOV

State	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	All Vehicles	0.720	0.011	8.086	0.632	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.724	0.011	6.075	0.532	0.036	0.019	792.080	0.074
ALASKA	HIGH	All Vehicles	0.780	0.011	12.628	0.662	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.784	0.011	10.257	0.566	0.036	0.019	792.080	0.074
ARIZONA	HIGH	All Vehicles	0.723	0.011	8.310	0.636	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.727	0.011	6.281	0.536	0.036	0.019	792.080	0.074
ARKANSAS	HIGH	All Vehicles	0.725	0.011	8.406	0.638	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.728	0.011	6.367	0.537	0.036	0.019	792.080	0.074
CALIFORNIA	HIGH	All Vehicles	0.720	0.011	8.194	0.621	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.723	0.011	6.196	0.523	0.036	0.019	792.080	0.074
COLORADO	HIGH	All Vehicles	0.741	0.011	9.969	0.612	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.745	0.011	7.821	0.515	0.036	0.019	792.080	0.074
CONNECTICUT	HIGH	All Vehicles	0.737	0.011	9.568	0.628	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.741	0.011	7.455	0.530	0.036	0.019	792.080	0.074
DELAWARE	HIGH	All Vehicles	0.728	0.011	8.731	0.626	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.731	0.011	6.686	0.528	0.036	0.019	792.080	0.074
FLORIDA	HIGH	All Vehicles	0.713	0.011	7.438	0.624	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.716	0.011	5.473	0.525	0.036	0.019	792.080	0.074
GEORGIA	HIGH	All Vehicles	0.719	0.011	8.023	0.630	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.723	0.011	6.017	0.531	0.036	0.019	792.080	0.074
HAWAII	HIGH	All Vehicles	0.706	0.011	7.152	0.606	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.710	0.011	5.241	0.509	0.036	0.019	792.080	0.074
IDAHO	HIGH	All Vehicles	0.743	0.011	10.134	0.613	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.747	0.011	7.973	0.516	0.036	0.019	792.080	0.074
ILLINOIS	HIGH	All Vehicles	0.734	0.011	9.232	0.635	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.738	0.011	7.145	0.536	0.036	0.019	792.080	0.074
INDIANA	HIGH	All Vehicles	0.734	0.011	9.208	0.630	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.737	0.011	7.124	0.531	0.036	0.019	792.080	0.074
IOWA	HIGH	All Vehicles	0.742	0.011	9.818	0.627	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.746	0.011	7.682	0.528	0.036	0.019	792.080	0.074
KANSAS	HIGH	All Vehicles	0.732	0.011	8.981	0.637	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.736	0.011	6.902	0.537	0.036	0.019	792.080	0.074
KENTUCKY	HIGH	All Vehicles	0.728	0.011	8.734	0.627	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.731	0.011	6.688	0.528	0.036	0.019	792.080	0.074
LOUISIANA	HIGH	All Vehicles	0.719	0.011	7.887	0.632	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.722	0.011	5.883	0.533	0.036	0.019	792.080	0.074
MAINE	HIGH	All Vehicles	0.751	0.011	10.663	0.631	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.755	0.011	8.457	0.533	0.036	0.019	792.080	0.074
MARYLAND	HIGH	All Vehicles	0.729	0.011	8.852	0.622	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.733	0.011	6.798	0.524	0.036	0.019	792.080	0.074
MASSACHUSETTS	HIGH	All Vehicles	0.738	0.011	9.673	0.628	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.742	0.011	7.551	0.531	0.036	0.019	792.080	0.074
MICHIGAN	HIGH	All Vehicles	0.744	0.011	10.175	0.621	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.748	0.011	8.010	0.523	0.036	0.019	792.080	0.074
MINNESOTA	HIGH	All Vehicles	0.755	0.011	10.841	0.649	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.758	0.011	8.618	0.551	0.036	0.019	792.080	0.074
MISSISSIPPI	HIGH	All Vehicles	0.721	0.011	8.098	0.634	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.724	0.011	6.082	0.534	0.036	0.019	792.080	0.074
MISSOURI	HIGH	All Vehicles	0.731	0.011	8.954	0.633	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.735	0.011	6.883	0.533	0.036	0.019	792.080	0.074
MONTANA	HIGH	All Vehicles	0.748	0.011	10.434	0.624	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.752	0.011	8.247	0.527	0.036	0.019	792.080	0.074
NEBRASKA	HIGH	All Vehicles	0.737	0.011	9.465	0.622	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.741	0.011	7.359	0.523	0.036	0.019	792.080	0.074
NEVADA	HIGH	All Vehicles	0.733	0.011	9.256	0.622	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.737	0.011	7.168	0.525	0.036	0.019	792.080	0.074
NEW HAMPSHIRE	HIGH	All Vehicles	0.746	0.011	10.302	0.623	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.750	0.011	8.126	0.525	0.036	0.019	792.080	0.074
NEW JERSEY	HIGH	All Vehicles	0.731	0.011	9.028	0.624	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.735	0.011	6.960	0.526	0.036	0.019	792.080	0.074
NEW MEXICO	HIGH	All Vehicles	0.729	0.011	8.921	0.619	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.733	0.011	6.862	0.521	0.036	0.019	792.080	0.074
NEW YORK	HIGH	All Vehicles	0.743	0.011	10.037	0.617	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.747	0.011	7.883	0.520	0.036	0.019	792.080	0.074
NORTH CAROLINA	HIGH	All Vehicles	0.722	0.011	8.333	0.629	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.726	0.011	6.316	0.530	0.036	0.019	792.080	0.074
NORTH DAKOTA	HIGH	All Vehicles	0.756	0.011	10.923	0.652	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.760	0.011	8.693	0.553	0.036	0.019	792.080	0.074
OHIO	HIGH	All Vehicles	0.734	0.011	9.319	0.628	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.738	0.011	7.226	0.529	0.036	0.019	792.080	0.074
OKLAHOMA	HIGH	All Vehicles	0.727	0.011	8.556	0.639	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.731	0.011	6.499	0.538	0.036	0.019	792.080	0.074
OREGON	HIGH	All Vehicles	0.736	0.011	9.622	0.613	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.740	0.011	7.505	0.517	0.036	0.019	792.080	0.074
PACIFIC ISLANDS	HIGH	All Vehicles	0.708	0.011	7.649	0.602	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.712	0.011	5.696	0.506	0.036	0.019	0.000	0.074
PENNSYLVANIA	HIGH	All Vehicles	0.736	0.011	9.542	0.626	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.740	0.011	7.430	0.529	0.036	0.019	792.080	0.074
PUERTO RICO	HIGH	All Vehicles	0.708	0.011	6.755	0.613	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.711	0.011	4.854	0.515	0.036	0.019	792.080	0.074
RHODE ISLAND	HIGH	All Vehicles	0.734	0.011	9.380	0.622	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.738	0.011	7.282	0.524	0.036	0.019	792.080	0.074
SOUTH CAROLINA	HIGH	All Vehicles	0.720	0.011	8.118	0.632	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.724	0.011	6.106	0.532	0.036	0.019	792.080	0.074
SOUTH DAKOTA	HIGH	All Vehicles	0.745	0.011	10.039	0.632	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.748	0.011	7.885	0.533	0.036	0.019	792.080	0.074
TENNESSEE	HIGH	All Vehicles	0.725	0.011	8.523	0.626	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.729	0.011	6.490	0.527	0.036	0.019	792.080	0.074
TEXAS	HIGH	All Vehicles	0.721	0.011	8.068	0.637	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.724	0.011	6.047	0.537	0.036	0.019	792.080	0.074
UTAH	HIGH	All Vehicles	0.737	0.011	9.530	0.615	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.741	0.011	7.419	0.517	0.036	0.019	792.080	0.074
VERMONT	HIGH	All Vehicles	0.748	0.011	10.438	0.626	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.752	0.011	8.251	0.529	0.036	0.019	792.080	0.074
VIRGIN ISLANDS	HIGH	All Vehicles	0.712	0.011	6.841	0.621	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.715	0.011	4.904	0.521	0.036	0.019	792.080	0.074
VIRGINIA	HIGH	All Vehicles	0.727	0.011	8.706	0.623	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.731	0.011	6.665	0.524	0.036	0.019	792.080	0.074
WASHINGTON	HIGH	All Vehicles	0.737	0.011	9.731	0.615	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.741	0.011	7.604	0.519	0.036	0.019	792.080	0.074
WEST VIRGINIA	HIGH	All Vehicles	0.732	0.011	9.180	0.621	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.736	0.011	7.099	0.523	0.036	0.019	792.080	0.074
WISCONSIN	HIGH	All Vehicles	0.749	0.011	10.451	0.634	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.753	0.011	8.262	0.535	0.036	0.019	792.080	0.074
WYOMING	HIGH	All Vehicles	0.747	0.011	10.374	0.621	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.751	0.011	8.192	0.524	0.036	0.019	792.080	0.074

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.110	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.550	0.982	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.125	0.016	26.000	1.048	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.110	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.550	0.963	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.372	0.016	8.180	0.819	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.497	0.007	15.330	0.610	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.933	0.010	19.030	1.060	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.200	0.016	31.130	0.954	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.497	0.007	15.330	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.933	0.010	19.030	1.058	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.463	0.016	9.800	0.673	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.470	0.610	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.784	0.010	10.960	0.993	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.129	0.016	26.260	1.053	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.470	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.784	0.010	10.960	0.974	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.376	0.016	8.270	0.819	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	8.620	0.612	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.787	0.010	11.130	0.996	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.130	0.016	26.400	1.054	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	8.620	0.606	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.787	0.010	11.130	0.977	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.378	0.016	8.310	0.819	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.430	0.007	8.320	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.810	0.959	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.129	0.016	25.820	1.014	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.430	0.007	8.320	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.810	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.377	0.016	8.130	0.787	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	11.120	0.554	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.834	0.010	14.090	0.938	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.158	0.016	27.940	0.932	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	11.120	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.834	0.010	14.090	0.930	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.016	8.790	0.686	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.490	0.588	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.350	0.973	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.152	0.016	27.470	0.986	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.490	0.584	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.350	0.962	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.404	0.016	8.640	0.743	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.592	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.796	0.010	11.800	0.970	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.138	0.016	26.490	1.010	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.796	0.010	11.800	0.955	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.387	0.016	8.340	0.774	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.432	0.007	7.060	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	9.320	0.965	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.114	0.016	25.360	1.054	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.432	0.007	7.060	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	9.320	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.358	0.016	7.980	0.833	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.000	0.604	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.774	0.010	10.430	0.979	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.124	0.016	25.930	1.047	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.000	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.774	0.010	10.430	0.960	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.370	0.016	8.160	0.819	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	6.650	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	8.890	0.924	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.112	0.016	24.580	1.009	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	6.650	0.571	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	8.890	0.908	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.356	0.016	7.740	0.797	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	11.380	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.839	0.010	14.390	0.941	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.161	0.016	28.140	0.930	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	11.380	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.839	0.010	14.390	0.933	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.416	0.016	8.860	0.682	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	9.980	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	12.730	0.989	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.146	0.016	27.090	1.013	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	9.980	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	12.730	0.974	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.397	0.016	8.520	0.769	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.940	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.812	0.010	12.690	0.978	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.146	0.016	27.040	1.002	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.940	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.812	0.010	12.690	0.964	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.397	0.016	8.510	0.761	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	10.900	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.834	0.010	13.820	0.973	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.155	0.016	27.780	0.967	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	10.900	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.834	0.010	13.820	0.960	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.409	0.016	8.740	0.715	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	9.550	0.606	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	12.220	0.994	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.140	0.016	26.980	1.032	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	9.550	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	12.220	0.976	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.390	0.016	8.490	0.789	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.797	0.010	11.800	0.972	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.138	0.016	26.510	1.012	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.797	0.010	11.800	0.957	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.387	0.016	8.340	0.776	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	7.770	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.771	0.010	10.150	0.984	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.121	0.016	25.910	1.062	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	7.770	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.771	0.010	10.150	0.964	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.367	0.016	8.150	0.833	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.461	0.007	12.210	0.576	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.859	0.010	15.380	0.983	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.169	0.016	28.780	0.950	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.461	0.007	12.210	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.859	0.010	15.380	0.975	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.426	0.016	9.060	0.693	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.370	0.584	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.800	0.010	12.030	0.959	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.140	0.016	26.610	0.995	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.370	0.580	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.800	0.010	12.030	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.390	0.016	8.380	0.759	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.660	0.588	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.824	0.010	13.540	0.974	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.154	0.016	27.590	0.984	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.660	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.824	0.010	13.540	0.964	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.406	0.016	8.680	0.740	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	11.450	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.841	0.010	14.470	0.958	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.162	0.016	28.200	0.943	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	11.450	0.562	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.841	0.010	14.470	0.949	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.416	0.016	8.870	0.693	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.467	0.007	12.500	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.867	0.010	15.710	1.026	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.172	0.016	29.010	0.980	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.467	0.007	12.500	0.596	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.867	0.010	15.710	1.016	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.428	0.016	9.130	0.716	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.120	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.560	0.987	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.125	0.016	26.070	1.055	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.120	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.560	0.968	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.372	0.016	8.200	0.825	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.520	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.805	0.010	12.190	0.985	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.141	0.016	26.860	1.021	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.520	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.805	0.010	12.190	0.968	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.391	0.016	8.450	0.780	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.850	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.850	0.010	14.950	0.967	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.166	0.016	28.510	0.944	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.850	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.850	0.010	14.950	0.959	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.421	0.016	8.970	0.691	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	10.350	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.822	0.010	13.160	0.961	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.150	0.016	27.350	0.968	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	10.350	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.822	0.010	13.160	0.947	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.402	0.016	8.610	0.721	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.000	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	12.770	0.961	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.147	0.016	27.090	0.984	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.000	0.579	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	12.770	0.949	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.398	0.016	8.530	0.745	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.640	0.567	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.845	0.010	14.710	0.963	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.164	0.016	28.350	0.944	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.640	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.845	0.010	14.710	0.955	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.419	0.016	8.920	0.692	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	9.650	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.806	0.010	12.350	0.965	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.143	0.016	26.820	0.995	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	9.650	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.806	0.010	12.350	0.951	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.394	0.016	8.440	0.757	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.439	0.007	9.480	0.579	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.800	0.010	12.150	0.952	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.141	0.016	26.690	0.985	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.439	0.007	9.480	0.576	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.800	0.010	12.150	0.939	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.392	0.016	8.400	0.750	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.452	0.007	11.230	0.561	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.837	0.010	14.220	0.950	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.159	0.016	28.030	0.940	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.452	0.007	11.230	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.837	0.010	14.220	0.941	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.414	0.016	8.820	0.692	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.435	0.007	8.530	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	11.050	0.977	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.131	0.016	26.090	1.030	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.435	0.007	8.530	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	11.050	0.961	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.379	0.016	8.210	0.799	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.468	0.007	12.630	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.870	0.010	15.860	1.033	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.173	0.016	29.110	0.982	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.468	0.007	12.630	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.870	0.010	15.860	1.023	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.430	0.016	9.160	0.717	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.445	0.007	10.110	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	12.890	0.972	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.148	0.016	27.170	0.993	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.445	0.007	10.110	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	12.890	0.960	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.399	0.016	8.550	0.752	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	8.850	0.614	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	11.390	0.999	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.132	0.016	26.660	1.057	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	8.850	0.607	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	11.390	0.979	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.380	0.016	8.390	0.818	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.560	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.450	0.940	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.153	0.016	27.520	0.954	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.560	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.450	0.932	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.406	0.016	8.660	0.715	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.409	0.007	7.390	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	9.790	0.913	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.121	0.016	25.180	0.987	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.409	0.007	7.390	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	9.790	0.901	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.366	0.016	7.920	0.772	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.450	0.586	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.300	0.969	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.152	0.016	27.430	0.984	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.450	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.300	0.959	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.404	0.016	8.630	0.741	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.431	0.007	6.010	0.586	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	8.100	0.942	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.104	0.016	24.430	1.044	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.431	0.007	6.010	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	8.100	0.921	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.346	0.016	7.690	0.832	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.190	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	13.000	0.959	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.149	0.016	27.240	0.979	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.190	0.578	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	13.000	0.949	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.401	0.016	8.570	0.739	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.437	0.007	8.160	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.610	0.983	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.126	0.016	26.030	1.048	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.437	0.007	8.160	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.610	0.964	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.372	0.016	8.190	0.818	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.250	0.580	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.841	0.010	14.230	0.985	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.159	0.016	28.050	0.971	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.250	0.575	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.841	0.010	14.230	0.972	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.413	0.016	8.830	0.716	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.840	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.790	0.010	11.400	0.970	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.134	0.016	26.320	1.018	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.840	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.790	0.010	11.400	0.954	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.382	0.016	8.280	0.784	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.050	0.615	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.480	0.995	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.124	0.016	26.140	1.069	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.050	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.777	0.010	10.480	0.974	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.371	0.016	8.230	0.837	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.440	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.280	0.944	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.151	0.016	27.420	0.950	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.440	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.280	0.933	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.403	0.016	8.630	0.706	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.860	0.571	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.851	0.010	14.960	0.972	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.166	0.016	28.510	0.947	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.860	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.851	0.010	14.960	0.963	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.421	0.016	8.970	0.693	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.443	0.007	6.100	0.598	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.751	0.010	8.170	0.960	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.107	0.016	24.950	1.072	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.443	0.007	6.100	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.751	0.010	8.170	0.937	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.349	0.016	7.850	0.857	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-25. On-Road Vehicle Emission Factors – 2013 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	9.140	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.760	0.961	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.138	0.016	26.430	1.001	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	9.140	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.760	0.948	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.387	0.016	8.320	0.767	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.444	0.007	10.740	0.570	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.824	0.010	13.650	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.155	0.016	27.650	0.956	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.444	0.007	10.740	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.824	0.010	13.650	0.938	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.408	0.016	8.700	0.715	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.441	0.007	9.880	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.808	0.010	12.630	0.957	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.146	0.016	27.000	0.982	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.441	0.007	9.880	0.577	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.808	0.010	12.630	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.397	0.016	8.500	0.745	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.460	0.007	11.890	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.853	0.010	14.990	0.989	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.166	0.016	28.540	0.961	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.460	0.007	11.890	0.577	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.853	0.010	14.990	0.979	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.421	0.016	8.980	0.705	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.760	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.848	0.010	14.840	0.960	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.165	0.016	28.430	0.940	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.412	0.007	1.054	0.334	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.760	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.848	0.010	14.840	0.953	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.420	0.016	8.950	0.688	0.048	0.032	877.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.384	0.007	0.427	0.165	0.065	0.049	787.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.830	0.557	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.725	0.010	10.140	0.924	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.952	0.016	25.180	0.955	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.830	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.725	0.010	10.140	0.907	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.161	0.016	7.920	0.747	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.869	0.010	18.300	0.999	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.016	0.016	30.140	0.867	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.869	0.010	18.300	0.996	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.238	0.016	9.480	0.613	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.190	0.562	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.732	0.010	10.540	0.935	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.955	0.016	25.430	0.959	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.190	0.557	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.732	0.010	10.540	0.917	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.165	0.016	8.000	0.747	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	8.330	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	10.710	0.938	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.957	0.016	25.570	0.960	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	8.330	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	10.710	0.920	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.167	0.016	8.040	0.747	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.393	0.007	8.060	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.725	0.010	10.400	0.903	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.956	0.016	25.000	0.923	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.393	0.007	8.060	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.725	0.010	10.400	0.890	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.166	0.016	7.870	0.718	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	10.810	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.778	0.010	13.550	0.885	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.981	0.016	27.060	0.848	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	10.810	0.509	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.778	0.010	13.550	0.877	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.196	0.016	8.510	0.625	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.200	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.840	0.917	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.975	0.016	26.600	0.898	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.200	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.840	0.907	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.016	8.370	0.677	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.546	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	11.350	0.914	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.963	0.016	25.650	0.920	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.542	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	11.350	0.900	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.175	0.016	8.070	0.706	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.395	0.007	6.800	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	8.970	0.908	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.943	0.016	24.550	0.960	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.395	0.007	6.800	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	8.970	0.890	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.150	0.016	7.730	0.759	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	7.740	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.723	0.010	10.030	0.922	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.951	0.016	25.100	0.954	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	7.740	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.723	0.010	10.030	0.905	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.160	0.016	7.900	0.747	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	6.410	0.529	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	8.550	0.870	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.941	0.016	23.800	0.919	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	6.410	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	8.550	0.855	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.148	0.016	7.490	0.726	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	11.070	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.782	0.010	13.850	0.887	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.983	0.016	27.250	0.846	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	11.070	0.510	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.782	0.010	13.850	0.880	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.199	0.016	8.570	0.621	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.680	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	12.240	0.932	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.016	26.230	0.922	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.680	0.549	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	12.240	0.918	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.183	0.016	8.250	0.701	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	9.650	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.200	0.921	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.016	26.180	0.913	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	9.650	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.200	0.909	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.183	0.016	8.240	0.693	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	10.590	0.529	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.778	0.010	13.290	0.917	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.978	0.016	26.900	0.880	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	10.590	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.778	0.010	13.290	0.904	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.193	0.016	8.460	0.651	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	9.260	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.753	0.010	11.760	0.936	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.965	0.016	26.120	0.940	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	9.260	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.753	0.010	11.760	0.919	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.177	0.016	8.220	0.719	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.744	0.010	11.350	0.916	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.963	0.016	25.670	0.922	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.744	0.010	11.350	0.902	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.175	0.016	8.080	0.708	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	7.500	0.561	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	9.760	0.926	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.949	0.016	25.080	0.967	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	7.500	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	9.760	0.907	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.158	0.016	7.890	0.760	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.420	0.007	11.890	0.532	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.801	0.010	14.790	0.926	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.990	0.016	27.870	0.864	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.420	0.007	11.890	0.530	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.801	0.010	14.790	0.919	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.207	0.016	8.770	0.631	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.090	0.539	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	11.570	0.904	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.965	0.016	25.770	0.906	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.090	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	11.570	0.891	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.177	0.016	8.110	0.692	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.360	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.769	0.010	13.030	0.918	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.977	0.016	26.720	0.896	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.360	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.769	0.010	13.030	0.909	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.191	0.016	8.410	0.674	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.414	0.007	11.140	0.521	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.785	0.010	13.920	0.903	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.983	0.016	27.300	0.858	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.414	0.007	11.140	0.518	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.785	0.010	13.920	0.895	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.199	0.016	8.590	0.631	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.426	0.007	12.160	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.809	0.010	15.110	0.967	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.992	0.016	28.090	0.891	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.426	0.007	12.160	0.549	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.809	0.010	15.110	0.957	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.210	0.016	8.840	0.652	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.401	0.007	7.840	0.560	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.150	0.929	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.952	0.016	25.240	0.961	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.401	0.007	7.840	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.150	0.911	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.161	0.016	7.940	0.752	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.230	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.730	0.927	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.966	0.016	26.000	0.930	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.230	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.730	0.912	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.178	0.016	8.180	0.711	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	14.380	0.912	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.987	0.016	27.600	0.858	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	14.380	0.904	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.203	0.016	8.690	0.629	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	10.050	0.524	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.767	0.010	12.660	0.906	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.973	0.016	26.490	0.880	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	10.050	0.520	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.767	0.010	12.660	0.892	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.187	0.016	8.330	0.656	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.710	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	12.290	0.905	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.971	0.016	26.230	0.896	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.710	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	12.290	0.895	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.184	0.016	8.250	0.679	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.330	0.523	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.789	0.010	14.150	0.908	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.985	0.016	27.450	0.859	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.330	0.521	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.789	0.010	14.150	0.900	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.201	0.016	8.640	0.630	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.370	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.880	0.909	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.968	0.016	25.970	0.906	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.370	0.537	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.880	0.897	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.180	0.016	8.170	0.690	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	9.200	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	11.690	0.897	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.966	0.016	25.840	0.897	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	9.200	0.531	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	11.690	0.885	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.178	0.016	8.130	0.684	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.412	0.007	10.920	0.517	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	13.670	0.896	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.982	0.016	27.140	0.855	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.412	0.007	10.920	0.514	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	13.670	0.887	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.016	8.540	0.630	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	8.260	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.731	0.010	10.630	0.920	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.957	0.016	25.260	0.938	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	8.260	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.731	0.010	10.630	0.905	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.167	0.016	7.950	0.729	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.427	0.007	12.290	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	15.250	0.973	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.993	0.016	28.190	0.893	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.427	0.007	12.290	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	15.250	0.963	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.016	8.870	0.653	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	9.820	0.544	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	12.400	0.916	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.972	0.016	26.310	0.904	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	9.820	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	12.400	0.905	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.185	0.016	8.280	0.686	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	8.560	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	10.960	0.940	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.959	0.016	25.810	0.963	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	8.560	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	10.960	0.922	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.169	0.016	8.120	0.746	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.403	0.007	10.270	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.940	0.886	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.976	0.016	26.640	0.868	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.403	0.007	10.270	0.523	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.940	0.879	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.190	0.016	8.380	0.652	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	7.160	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	9.430	0.860	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.949	0.016	24.380	0.898	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	7.160	0.520	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	9.430	0.849	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.157	0.016	7.670	0.704	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.160	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.790	0.914	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.975	0.016	26.560	0.896	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.160	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.790	0.904	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.016	8.360	0.675	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.394	0.007	5.760	0.539	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	7.790	0.886	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.935	0.016	23.660	0.950	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.394	0.007	5.760	0.537	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	7.790	0.867	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.140	0.016	7.440	0.758	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.900	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	12.510	0.904	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.973	0.016	26.370	0.891	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.900	0.533	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	12.510	0.894	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.186	0.016	8.300	0.674	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.890	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.200	0.925	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.953	0.016	25.200	0.955	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.890	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.200	0.908	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.162	0.016	7.930	0.746	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	10.930	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.785	0.010	13.680	0.928	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.981	0.016	27.160	0.883	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	10.930	0.530	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.785	0.010	13.680	0.916	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.196	0.016	8.540	0.652	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.560	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.737	0.010	10.970	0.913	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.960	0.016	25.480	0.927	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.560	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.737	0.010	10.970	0.899	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.171	0.016	8.020	0.715	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	7.780	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.080	0.936	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.952	0.016	25.320	0.974	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	7.780	0.560	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.726	0.010	10.080	0.917	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.161	0.016	7.970	0.763	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.140	0.516	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.770	0.890	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.975	0.016	26.550	0.864	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.140	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.770	0.879	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.188	0.016	8.360	0.643	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	14.390	0.916	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.987	0.016	27.610	0.862	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.524	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	14.390	0.908	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.203	0.016	8.690	0.631	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	5.830	0.550	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.702	0.010	7.860	0.903	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.937	0.016	24.160	0.976	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	5.830	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.702	0.010	7.860	0.881	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.142	0.016	7.600	0.781	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-26. On-Road Vehicle Emission Factors – 2014 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.870	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.310	0.906	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.963	0.016	25.600	0.912	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.870	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.310	0.893	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.175	0.016	8.050	0.700	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.405	0.007	10.440	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.769	0.010	13.130	0.891	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.978	0.016	26.770	0.870	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.405	0.007	10.440	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.769	0.010	13.130	0.884	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.192	0.016	8.420	0.652	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.600	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.754	0.010	12.150	0.902	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.016	26.140	0.895	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.600	0.533	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.754	0.010	12.150	0.891	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.183	0.016	8.230	0.679	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.419	0.007	11.560	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	14.410	0.932	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.987	0.016	27.630	0.874	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.419	0.007	11.560	0.532	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	14.410	0.923	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.203	0.016	8.690	0.642	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.440	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.791	0.010	14.270	0.905	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.986	0.016	27.530	0.855	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.220	0.007	0.933	0.318	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.440	0.519	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.791	0.010	14.270	0.898	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.203	0.016	8.660	0.627	0.045	0.029	877.300	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.007	0.378	0.157	0.058	0.042	786.800	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.610	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	9.820	0.873	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.828	0.016	24.870	0.873	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.610	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	9.820	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.010	0.016	7.820	0.682	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	14.630	0.527	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.816	0.010	17.710	0.949	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.883	0.016	29.780	0.795	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	14.630	0.526	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.816	0.010	17.710	0.947	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.077	0.016	9.370	0.560	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.960	0.522	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	10.200	0.883	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.831	0.016	25.120	0.877	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.960	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	10.200	0.867	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.013	0.016	7.900	0.682	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	8.110	0.523	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	10.360	0.886	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.832	0.016	25.260	0.878	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	8.110	0.518	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	10.360	0.870	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.015	0.016	7.950	0.682	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	7.850	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	10.070	0.854	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.832	0.016	24.700	0.845	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	7.850	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	10.070	0.842	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.014	0.016	7.770	0.656	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	10.570	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	13.120	0.839	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.853	0.016	26.730	0.776	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	10.570	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	13.120	0.832	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.040	0.016	8.410	0.571	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.960	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.430	0.869	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.848	0.016	26.280	0.822	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.960	0.502	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.430	0.859	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.034	0.016	8.270	0.619	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.670	0.507	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.698	0.010	10.980	0.864	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.838	0.016	25.340	0.842	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.670	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.698	0.010	10.980	0.852	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.022	0.016	7.970	0.645	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.363	0.007	6.580	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.665	0.010	8.680	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.821	0.016	24.260	0.877	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.363	0.007	6.580	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.665	0.010	8.680	0.840	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.000	0.016	7.630	0.693	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	7.510	0.516	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	9.710	0.871	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.828	0.016	24.800	0.872	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	7.510	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	9.710	0.855	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.009	0.016	7.800	0.682	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	6.220	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	8.280	0.821	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.819	0.016	23.520	0.840	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	6.220	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	8.280	0.808	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.999	0.016	7.400	0.663	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	10.820	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.734	0.010	13.400	0.841	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.855	0.016	26.920	0.774	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	10.820	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.734	0.010	13.400	0.835	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.043	0.016	8.470	0.568	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.450	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.713	0.010	11.850	0.882	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.844	0.016	25.910	0.844	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.450	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.713	0.010	11.850	0.869	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.029	0.016	8.150	0.641	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.410	0.509	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.810	0.872	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.844	0.016	25.870	0.835	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.410	0.506	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.810	0.861	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.029	0.016	8.140	0.634	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	10.350	0.492	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	12.860	0.869	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.851	0.016	26.570	0.805	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	10.350	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	12.860	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.038	0.016	8.360	0.595	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	9.020	0.519	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	11.380	0.885	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.840	0.016	25.810	0.860	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	9.020	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	11.380	0.870	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.024	0.016	8.120	0.657	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.680	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.698	0.010	10.990	0.866	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.838	0.016	25.360	0.844	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.680	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.698	0.010	10.990	0.853	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.022	0.016	7.980	0.647	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	7.280	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.677	0.010	9.450	0.874	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.826	0.016	24.780	0.884	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	7.280	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.677	0.010	9.450	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.007	0.016	7.800	0.694	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.385	0.007	11.630	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	14.310	0.878	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.861	0.016	27.530	0.791	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.385	0.007	11.630	0.493	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	14.310	0.872	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.050	0.016	8.660	0.577	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.870	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.701	0.010	11.200	0.855	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.840	0.016	25.460	0.829	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.870	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.701	0.010	11.200	0.843	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.024	0.016	8.010	0.632	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	10.120	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.722	0.010	12.610	0.870	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.850	0.016	26.400	0.820	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	10.120	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.722	0.010	12.610	0.861	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.036	0.016	8.300	0.616	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	10.890	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.737	0.010	13.470	0.856	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.855	0.016	26.970	0.785	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	10.890	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.737	0.010	13.470	0.849	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.043	0.016	8.480	0.576	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.390	0.007	11.900	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	14.620	0.917	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.863	0.016	27.750	0.816	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.390	0.007	11.900	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	14.620	0.908	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.052	0.016	8.730	0.595	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.368	0.007	7.620	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.820	0.878	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.828	0.016	24.940	0.879	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.368	0.007	7.620	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.820	0.861	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.010	0.016	7.840	0.687	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.000	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.350	0.877	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.840	0.016	25.690	0.851	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.000	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.350	0.863	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.024	0.016	8.080	0.650	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.280	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.744	0.010	13.920	0.865	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.016	27.270	0.786	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.280	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.744	0.010	13.920	0.858	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.047	0.016	8.580	0.574	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	9.810	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.250	0.858	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.847	0.016	26.170	0.805	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	9.810	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.250	0.845	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.033	0.016	8.230	0.599	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.480	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.711	0.010	11.890	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.845	0.016	25.920	0.820	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.480	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.711	0.010	11.890	0.847	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.030	0.016	8.150	0.621	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.380	0.007	11.080	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.740	0.010	13.690	0.861	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.857	0.016	27.120	0.786	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.380	0.007	11.080	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.740	0.010	13.690	0.853	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.045	0.016	8.530	0.576	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.140	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.500	0.860	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.842	0.016	25.660	0.829	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.140	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.500	0.849	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.026	0.016	8.070	0.631	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.970	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.702	0.010	11.320	0.849	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.841	0.016	25.530	0.821	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.970	0.494	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.702	0.010	11.320	0.838	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.025	0.016	8.030	0.625	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.378	0.007	10.680	0.481	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.733	0.010	13.230	0.849	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.854	0.016	26.810	0.783	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.378	0.007	10.680	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.733	0.010	13.230	0.841	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.041	0.016	8.430	0.575	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	8.040	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	10.280	0.870	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.833	0.016	24.950	0.858	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	8.040	0.509	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	10.280	0.856	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.015	0.016	7.850	0.666	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.391	0.007	12.020	0.518	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.761	0.010	14.760	0.923	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.864	0.016	27.850	0.818	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.391	0.007	12.020	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.761	0.010	14.760	0.914	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.053	0.016	8.760	0.597	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.372	0.007	9.580	0.506	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.714	0.010	12.000	0.868	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.845	0.016	25.990	0.828	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.372	0.007	9.580	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.714	0.010	12.000	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.031	0.016	8.180	0.627	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	8.320	0.524	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	10.600	0.889	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.834	0.016	25.500	0.881	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	8.320	0.519	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	10.600	0.871	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.017	0.016	8.020	0.681	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	10.040	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.520	0.840	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.849	0.016	26.320	0.795	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	10.040	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.520	0.833	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.035	0.016	8.280	0.596	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.342	0.007	6.960	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	9.130	0.813	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.825	0.016	24.080	0.822	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.342	0.007	6.960	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	9.130	0.803	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.006	0.016	7.580	0.643	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.920	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	12.380	0.865	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.848	0.016	26.240	0.820	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.920	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	12.380	0.856	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.034	0.016	8.260	0.617	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.362	0.007	5.550	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	7.530	0.835	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.813	0.016	23.370	0.868	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.362	0.007	5.550	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	7.530	0.818	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.992	0.016	7.350	0.692	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.670	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.713	0.010	12.100	0.856	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.846	0.016	26.060	0.816	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.670	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.713	0.010	12.100	0.847	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.032	0.016	8.200	0.616	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.670	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.870	0.874	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.829	0.016	24.900	0.873	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.670	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.870	0.858	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.011	0.016	7.830	0.681	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.383	0.007	10.680	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.736	0.010	13.240	0.880	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.853	0.016	26.830	0.808	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.383	0.007	10.680	0.493	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.736	0.010	13.240	0.868	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.041	0.016	8.440	0.596	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.340	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	10.610	0.864	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.835	0.016	25.170	0.848	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.340	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	10.610	0.850	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.018	0.016	7.920	0.653	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.550	0.525	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.750	0.884	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.828	0.016	25.010	0.890	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.550	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	9.750	0.866	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.009	0.016	7.870	0.697	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.900	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.360	0.843	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.848	0.016	26.230	0.791	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.900	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.360	0.833	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.034	0.016	8.250	0.587	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.290	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	13.930	0.868	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.016	27.280	0.789	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.290	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	13.930	0.861	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.047	0.016	8.580	0.577	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	5.610	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	7.600	0.851	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.815	0.016	23.870	0.891	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	5.610	0.507	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	7.600	0.831	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.994	0.016	7.510	0.712	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-27. On-Road Vehicle Emission Factors – 2015 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.640	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.950	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.838	0.016	25.290	0.834	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.640	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.950	0.845	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.022	0.016	7.950	0.639	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.371	0.007	10.210	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	12.710	0.844	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.850	0.016	26.450	0.796	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.371	0.007	10.210	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	12.710	0.838	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.037	0.016	8.320	0.596	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	9.370	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.708	0.010	11.760	0.854	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.844	0.016	25.830	0.819	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	9.370	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.708	0.010	11.760	0.844	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.029	0.016	8.120	0.621	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.384	0.007	11.310	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	13.950	0.884	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.016	27.300	0.800	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.384	0.007	11.310	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.747	0.010	13.950	0.875	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.047	0.016	8.590	0.586	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	11.190	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	13.810	0.858	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.016	27.200	0.782	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.007	0.782	0.307	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	11.190	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	13.810	0.852	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.046	0.016	8.560	0.572	0.042	0.027	876.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.027	0.007	0.317	0.151	0.051	0.036	786.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.430	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.470	0.824	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.727	0.016	24.570	0.812	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.430	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.470	0.810	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.886	0.016	7.730	0.634	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	14.360	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	17.000	0.889	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.775	0.016	29.410	0.739	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	14.360	0.495	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	17.000	0.887	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.945	0.016	9.250	0.521	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	7.770	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	9.830	0.834	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.729	0.016	24.810	0.816	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	7.770	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	9.830	0.819	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.889	0.016	7.800	0.635	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.920	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	9.990	0.836	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.730	0.016	24.950	0.817	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.920	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	9.990	0.821	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.890	0.016	7.850	0.634	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	7.670	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.700	0.806	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.729	0.016	24.400	0.786	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	7.670	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.700	0.795	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.890	0.016	7.670	0.610	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	10.360	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	12.620	0.790	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.748	0.016	26.400	0.721	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	10.360	0.445	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	12.620	0.783	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.912	0.016	8.300	0.530	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.760	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.960	0.819	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.744	0.016	25.950	0.765	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.760	0.471	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.960	0.810	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.016	8.160	0.576	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	8.480	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	10.580	0.815	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.735	0.016	25.030	0.783	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	8.480	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	10.580	0.804	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.896	0.016	7.870	0.600	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.335	0.007	6.410	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	8.380	0.810	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.720	0.016	23.960	0.816	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.335	0.007	6.410	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	8.380	0.794	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.877	0.016	7.530	0.644	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.330	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	9.360	0.822	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.726	0.016	24.500	0.811	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.330	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	9.360	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.885	0.016	7.700	0.634	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	6.060	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	7.990	0.776	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.718	0.016	23.230	0.781	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	6.060	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	7.990	0.764	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.876	0.016	7.300	0.617	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	10.610	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.890	0.792	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.750	0.016	26.590	0.720	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	10.610	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.890	0.786	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.914	0.016	8.360	0.527	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	9.250	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.665	0.010	11.410	0.831	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.740	0.016	25.590	0.785	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	9.250	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.665	0.010	11.410	0.819	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.903	0.016	8.050	0.596	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.220	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.370	0.822	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.740	0.016	25.550	0.777	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.220	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.370	0.811	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.902	0.016	8.030	0.589	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.140	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	12.370	0.817	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.746	0.016	26.250	0.748	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.140	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.681	0.010	12.370	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.910	0.016	8.250	0.552	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	8.820	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	10.960	0.835	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.736	0.016	25.490	0.800	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	8.820	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	10.960	0.820	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.016	8.020	0.611	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.490	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	10.580	0.817	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.735	0.016	25.050	0.785	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.490	0.473	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.652	0.010	10.580	0.805	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.896	0.016	7.880	0.602	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.090	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	9.110	0.826	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.724	0.016	24.480	0.822	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.090	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	9.110	0.809	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.883	0.016	7.700	0.645	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.410	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	13.760	0.826	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.755	0.016	27.200	0.736	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.410	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	13.760	0.820	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.921	0.016	8.550	0.536	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.670	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	10.780	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.736	0.016	25.150	0.772	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.670	0.467	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	10.780	0.796	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.016	7.910	0.588	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.920	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.674	0.010	12.130	0.820	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.745	0.016	26.070	0.763	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.920	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.674	0.010	12.130	0.811	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.909	0.016	8.200	0.573	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.349	0.007	10.670	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	12.960	0.806	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.750	0.016	26.640	0.730	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.349	0.007	10.670	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	12.960	0.799	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.915	0.016	8.380	0.535	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.359	0.007	11.670	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	14.050	0.861	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.757	0.016	27.410	0.758	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.359	0.007	11.670	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	14.050	0.853	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.923	0.016	8.620	0.553	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.440	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.470	0.829	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.727	0.016	24.630	0.818	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.440	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.470	0.813	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.886	0.016	7.750	0.639	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	8.800	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	10.930	0.827	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.737	0.016	25.380	0.791	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	8.800	0.478	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	10.930	0.814	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.016	7.980	0.604	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.351	0.007	11.060	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.390	0.814	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.753	0.016	26.930	0.731	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.351	0.007	11.060	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.390	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.918	0.016	8.470	0.534	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	9.600	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	11.790	0.808	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.743	0.016	25.840	0.748	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	9.600	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	11.790	0.796	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.906	0.016	8.130	0.556	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.290	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	11.450	0.808	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.741	0.016	25.600	0.763	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.290	0.467	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	11.450	0.799	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.903	0.016	8.050	0.577	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.860	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	13.170	0.810	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.752	0.016	26.790	0.731	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.860	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	13.170	0.803	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.916	0.016	8.420	0.535	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	8.940	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	11.070	0.811	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.738	0.016	25.340	0.771	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	8.940	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	11.070	0.801	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.900	0.016	7.970	0.586	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.780	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	10.900	0.801	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.737	0.016	25.220	0.764	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.780	0.464	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	10.900	0.791	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.899	0.016	7.930	0.582	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	10.470	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.683	0.010	12.730	0.800	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.749	0.016	26.480	0.728	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	10.470	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.683	0.010	12.730	0.792	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.913	0.016	8.330	0.535	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.336	0.007	7.860	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	9.910	0.821	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.730	0.016	24.650	0.798	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.336	0.007	7.860	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	9.910	0.808	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.891	0.016	7.750	0.619	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	11.790	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.709	0.010	14.190	0.867	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.757	0.016	27.510	0.760	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	11.790	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.709	0.010	14.190	0.858	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.924	0.016	8.650	0.554	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.380	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	11.550	0.818	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.741	0.016	25.670	0.770	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.380	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	11.550	0.808	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.904	0.016	8.070	0.583	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	8.130	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	10.220	0.838	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.731	0.016	25.190	0.819	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	8.130	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	10.220	0.822	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.892	0.016	7.920	0.633	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.840	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	12.050	0.792	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.745	0.016	26.000	0.740	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.840	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	12.050	0.786	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.908	0.016	8.180	0.555	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	6.810	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	8.810	0.769	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.724	0.016	23.790	0.764	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	6.810	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	8.810	0.759	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.883	0.016	7.480	0.598	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.720	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.920	0.816	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.744	0.016	25.920	0.763	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.720	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.920	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.016	8.150	0.574	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.334	0.007	5.390	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.610	0.010	7.280	0.789	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.713	0.016	23.080	0.807	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.334	0.007	5.390	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.610	0.010	7.280	0.773	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.870	0.016	7.260	0.643	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.470	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	11.650	0.807	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.742	0.016	25.740	0.759	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.470	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	11.650	0.799	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.905	0.016	8.090	0.573	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	7.480	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.520	0.825	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.727	0.016	24.590	0.812	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	7.480	0.481	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.520	0.811	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.886	0.016	7.730	0.634	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	10.470	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	12.740	0.827	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.749	0.016	26.500	0.751	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	10.470	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.687	0.010	12.740	0.817	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.913	0.016	8.330	0.553	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.150	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	10.230	0.815	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.732	0.016	24.860	0.789	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.150	0.473	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	10.230	0.802	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.893	0.016	7.820	0.608	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.370	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.400	0.834	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.726	0.016	24.700	0.828	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.370	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.637	0.010	9.400	0.818	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.885	0.016	7.770	0.648	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.700	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.900	0.794	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.743	0.016	25.910	0.735	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.700	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.900	0.785	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.016	8.150	0.545	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	11.070	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.390	0.817	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.753	0.016	26.940	0.733	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	11.070	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.390	0.810	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.918	0.016	8.470	0.536	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	5.440	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	7.340	0.803	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.715	0.016	23.570	0.828	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	5.440	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	7.340	0.785	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.871	0.016	7.410	0.661	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-28. On-Road Vehicle Emission Factors – 2016 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.450	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	10.550	0.809	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.735	0.016	24.980	0.776	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.450	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	10.550	0.798	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.896	0.016	7.850	0.595	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	10.010	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.673	0.010	12.230	0.796	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.746	0.016	26.120	0.741	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	10.010	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.673	0.010	12.230	0.791	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.910	0.016	8.210	0.555	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.170	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.661	0.010	11.320	0.805	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.740	0.016	25.510	0.762	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.170	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.661	0.010	11.320	0.796	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.902	0.016	8.020	0.577	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.090	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	13.410	0.831	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.753	0.016	26.960	0.744	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.090	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	13.410	0.823	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.918	0.016	8.480	0.544	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.970	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	13.290	0.808	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.752	0.016	26.860	0.728	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.007	0.694	0.296	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.970	0.454	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	13.290	0.802	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.917	0.016	8.450	0.532	0.041	0.026	876.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.881	0.007	0.281	0.146	0.047	0.032	786.100	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.280	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.200	0.782	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.016	24.280	0.749	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.280	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.200	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.774	0.016	7.630	0.583	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.353	0.007	14.150	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.716	0.010	16.500	0.846	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.677	0.016	29.070	0.684	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.353	0.007	14.150	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.716	0.010	16.500	0.844	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.825	0.016	9.140	0.481	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	7.620	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.607	0.010	9.560	0.791	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.636	0.016	24.520	0.752	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	7.620	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.607	0.010	9.560	0.777	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.776	0.016	7.710	0.584	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.317	0.007	7.760	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	9.710	0.793	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.637	0.016	24.660	0.753	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.317	0.007	7.760	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	9.710	0.779	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.777	0.016	7.750	0.583	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.307	0.007	7.520	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.430	0.765	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.637	0.016	24.110	0.725	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.307	0.007	7.520	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.430	0.755	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.777	0.016	7.580	0.561	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	10.190	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	12.260	0.751	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.653	0.016	26.090	0.666	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	10.190	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	12.260	0.745	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.016	8.200	0.488	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.590	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.620	0.778	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.650	0.016	25.650	0.706	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.590	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.620	0.770	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.792	0.016	8.060	0.530	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.330	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	10.280	0.774	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.642	0.016	24.740	0.722	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.330	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	10.280	0.763	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.783	0.016	7.780	0.552	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	6.260	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	8.150	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.628	0.016	23.680	0.752	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	6.260	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	8.150	0.753	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.766	0.016	7.440	0.592	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.180	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.100	0.780	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.016	24.210	0.748	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.180	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.100	0.766	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.773	0.016	7.610	0.583	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	5.930	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	7.780	0.736	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.627	0.016	22.960	0.720	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	5.930	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	7.780	0.725	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.765	0.016	7.220	0.567	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	10.440	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.646	0.010	12.520	0.753	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.655	0.016	26.280	0.665	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	10.440	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.646	0.010	12.520	0.747	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.799	0.016	8.260	0.485	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.080	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	11.080	0.789	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.646	0.016	25.290	0.725	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.080	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	11.080	0.778	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.788	0.016	7.950	0.549	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.050	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.050	0.781	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.646	0.016	25.250	0.718	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.050	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.050	0.771	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.788	0.016	7.940	0.543	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	9.960	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.643	0.010	12.020	0.776	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.016	25.940	0.690	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	9.960	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.643	0.010	12.020	0.766	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.795	0.016	8.160	0.508	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	8.660	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	10.650	0.792	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.643	0.016	25.190	0.739	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	8.660	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	10.650	0.779	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.784	0.016	7.920	0.563	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.330	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	10.290	0.776	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.642	0.016	24.760	0.724	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.330	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	10.290	0.765	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.782	0.016	7.780	0.554	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	6.940	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	8.860	0.783	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.632	0.016	24.190	0.758	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	6.940	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	8.860	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.771	0.016	7.610	0.593	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.328	0.007	11.230	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.661	0.010	13.370	0.785	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.659	0.016	26.880	0.679	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.328	0.007	11.230	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.661	0.010	13.370	0.779	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.804	0.016	8.450	0.493	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.520	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.618	0.010	10.480	0.766	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.643	0.016	24.850	0.712	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.520	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.618	0.010	10.480	0.756	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.784	0.016	7.810	0.542	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.750	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	11.790	0.779	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.651	0.016	25.770	0.705	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.750	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	11.790	0.771	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.793	0.016	8.100	0.528	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.323	0.007	10.500	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.648	0.010	12.590	0.766	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.655	0.016	26.330	0.674	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.323	0.007	10.500	0.428	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.648	0.010	12.590	0.759	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.799	0.016	8.280	0.493	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	11.480	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.667	0.010	13.650	0.818	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.661	0.016	27.090	0.700	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	11.480	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.667	0.010	13.650	0.810	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.806	0.016	8.520	0.509	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	7.280	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.210	0.786	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.016	24.350	0.754	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	7.280	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.210	0.771	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.774	0.016	7.650	0.587	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	8.640	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.623	0.010	10.620	0.785	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.643	0.016	25.080	0.730	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	8.640	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.623	0.010	10.620	0.773	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.784	0.016	7.880	0.556	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.000	0.773	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.016	26.620	0.675	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.000	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.802	0.016	8.370	0.491	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	9.440	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	11.460	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.648	0.016	25.540	0.690	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	9.440	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	11.460	0.756	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.791	0.016	8.030	0.511	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.130	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	11.130	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.647	0.016	25.300	0.705	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.130	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	11.130	0.759	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.789	0.016	7.950	0.532	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.690	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	12.790	0.770	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.656	0.016	26.470	0.675	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.690	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	12.790	0.764	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.800	0.016	8.320	0.492	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	8.780	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.622	0.010	10.760	0.771	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.645	0.016	25.050	0.712	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	8.780	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.622	0.010	10.760	0.761	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.016	7.870	0.540	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.620	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.618	0.010	10.590	0.761	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.016	24.920	0.705	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.620	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.618	0.010	10.590	0.752	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.785	0.016	7.840	0.536	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	10.290	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	12.370	0.760	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.016	26.170	0.672	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	10.290	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	12.370	0.753	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.016	8.230	0.492	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.710	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	9.640	0.779	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.638	0.016	24.360	0.736	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.710	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	9.640	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.778	0.016	7.660	0.570	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.333	0.007	11.600	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.669	0.010	13.780	0.823	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.661	0.016	27.190	0.702	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.333	0.007	11.600	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.669	0.010	13.780	0.815	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.807	0.016	8.550	0.510	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.220	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.629	0.010	11.230	0.777	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.647	0.016	25.370	0.711	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.220	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.629	0.010	11.230	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.789	0.016	7.980	0.537	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	7.970	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	9.930	0.795	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.639	0.016	24.890	0.756	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	7.970	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	9.930	0.780	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.779	0.016	7.830	0.583	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	9.680	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.710	0.753	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.650	0.016	25.700	0.684	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	9.680	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.710	0.748	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.793	0.016	8.080	0.511	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	6.670	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	8.570	0.730	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.632	0.016	23.510	0.705	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	6.670	0.428	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	8.570	0.721	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.771	0.016	7.390	0.550	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.550	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	11.580	0.775	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.649	0.016	25.620	0.705	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.550	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	11.580	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.792	0.016	8.050	0.529	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	5.250	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	7.080	0.748	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.623	0.016	22.810	0.743	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	5.250	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	7.080	0.733	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.759	0.016	7.170	0.591	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.310	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	11.320	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.648	0.016	25.440	0.701	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.310	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	11.320	0.759	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.790	0.016	8.000	0.528	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.330	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.260	0.783	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.635	0.016	24.310	0.749	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.330	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.260	0.769	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.774	0.016	7.640	0.583	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.326	0.007	10.290	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.648	0.010	12.370	0.786	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.016	26.190	0.693	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.326	0.007	10.290	0.437	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.648	0.010	12.370	0.776	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.016	8.230	0.509	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.000	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.611	0.010	9.940	0.774	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.639	0.016	24.570	0.728	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.000	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.611	0.010	9.940	0.762	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.780	0.016	7.730	0.559	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	7.210	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.140	0.791	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.016	24.410	0.763	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	7.210	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	9.140	0.776	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.773	0.016	7.680	0.596	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.540	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.560	0.755	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.649	0.016	25.610	0.678	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.540	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.560	0.746	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.792	0.016	8.050	0.501	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.010	0.777	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.016	26.630	0.677	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.010	0.770	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.802	0.016	8.370	0.493	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	5.290	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	7.140	0.761	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.624	0.016	23.300	0.763	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	5.290	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	7.140	0.744	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.761	0.016	7.320	0.608	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-29. On-Road Vehicle Emission Factors – 2017 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.300	0.445	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	10.250	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.642	0.016	24.690	0.716	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.300	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	10.250	0.757	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.782	0.016	7.760	0.547	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.840	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	11.880	0.757	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.651	0.016	25.820	0.685	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.840	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	11.880	0.752	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.794	0.016	8.120	0.511	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.010	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	11.010	0.765	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.646	0.016	25.210	0.704	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.010	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	11.010	0.756	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.788	0.016	7.930	0.532	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.327	0.007	10.910	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.657	0.010	13.030	0.790	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.016	26.650	0.687	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.327	0.007	10.910	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.657	0.010	13.030	0.782	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.802	0.016	8.380	0.501	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.800	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	12.910	0.768	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.016	26.550	0.672	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.786	0.007	0.623	0.290	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.800	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	12.910	0.762	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.801	0.016	8.350	0.490	0.039	0.024	876.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.770	0.007	0.252	0.143	0.044	0.029	785.900	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.150	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.890	0.739	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.563	0.016	24.060	0.710	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.150	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.890	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.686	0.016	7.560	0.553	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.329	0.007	13.950	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	15.890	0.798	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.600	0.016	28.810	0.646	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.329	0.007	13.950	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	15.890	0.797	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.732	0.016	9.060	0.455	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	7.490	0.437	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	9.230	0.747	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.565	0.016	24.310	0.713	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	7.490	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	9.230	0.734	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.689	0.016	7.640	0.554	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.630	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	9.370	0.750	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.565	0.016	24.440	0.714	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.630	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	9.370	0.736	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.689	0.016	7.680	0.553	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	7.400	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	9.110	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.565	0.016	23.900	0.687	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	7.400	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	9.110	0.714	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.689	0.016	7.510	0.533	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	10.040	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.604	0.010	11.820	0.710	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.580	0.016	25.860	0.630	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	10.040	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.604	0.010	11.820	0.704	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.707	0.016	8.130	0.462	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.450	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.210	0.735	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.576	0.016	25.420	0.669	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.450	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.210	0.728	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.703	0.016	7.990	0.503	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.190	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	9.920	0.732	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.569	0.016	24.520	0.684	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.190	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	9.920	0.722	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.694	0.016	7.710	0.524	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	6.140	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	7.870	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.557	0.016	23.470	0.712	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	6.140	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	7.870	0.712	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.680	0.016	7.380	0.562	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	7.060	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	8.790	0.737	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.562	0.016	24.000	0.709	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	7.060	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	8.790	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.686	0.016	7.540	0.553	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	5.820	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	7.510	0.697	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.556	0.016	22.750	0.683	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	5.820	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	7.510	0.686	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.678	0.016	7.150	0.538	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	10.290	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.607	0.010	12.080	0.712	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.581	0.016	26.040	0.628	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	10.290	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.607	0.010	12.080	0.706	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.708	0.016	8.190	0.459	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.940	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.690	0.746	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.573	0.016	25.070	0.686	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.940	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.690	0.735	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.016	7.880	0.520	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	8.910	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.660	0.738	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.573	0.016	25.030	0.679	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	8.910	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.660	0.729	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.016	7.870	0.515	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	9.810	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	11.590	0.733	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.578	0.016	25.710	0.652	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	9.810	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	11.590	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.705	0.016	8.080	0.481	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	8.520	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	10.270	0.749	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.570	0.016	24.970	0.699	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	8.520	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	10.270	0.736	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.016	7.850	0.533	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.190	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	9.930	0.733	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.569	0.016	24.540	0.686	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.190	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	9.930	0.723	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.694	0.016	7.710	0.525	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	6.820	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	8.560	0.740	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.561	0.016	23.980	0.718	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	6.820	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	8.560	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.684	0.016	7.540	0.563	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	11.060	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	12.880	0.742	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.585	0.016	26.640	0.642	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	11.060	0.416	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	12.880	0.736	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.713	0.016	8.370	0.467	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.380	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	10.110	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.570	0.016	24.630	0.674	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.380	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	10.110	0.715	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.016	7.740	0.514	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.600	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	11.370	0.736	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.577	0.016	25.540	0.667	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.600	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	11.370	0.729	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.704	0.016	8.030	0.501	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.340	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	12.140	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.581	0.016	26.100	0.637	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.340	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	12.140	0.718	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.709	0.016	8.200	0.466	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	11.310	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	13.150	0.772	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.586	0.016	26.850	0.662	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	11.310	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	13.150	0.765	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.715	0.016	8.440	0.482	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	7.160	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.900	0.743	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.563	0.016	24.130	0.714	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	7.160	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.900	0.729	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.686	0.016	7.580	0.557	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.500	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.250	0.742	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.571	0.016	24.860	0.692	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.500	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.250	0.731	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.016	7.810	0.527	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	12.530	0.731	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.016	26.380	0.638	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	12.530	0.725	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.711	0.016	8.290	0.465	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	9.290	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.050	0.724	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.575	0.016	25.320	0.652	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	9.290	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.050	0.714	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.702	0.016	7.960	0.484	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.980	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	10.730	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.574	0.016	25.070	0.667	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.980	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	10.730	0.718	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.700	0.016	7.880	0.504	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.530	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.612	0.010	12.330	0.728	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.582	0.016	26.240	0.638	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.530	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.612	0.010	12.330	0.722	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.710	0.016	8.250	0.466	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.640	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	10.380	0.729	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.016	24.820	0.674	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.640	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	10.380	0.719	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.697	0.016	7.800	0.512	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.490	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	10.220	0.719	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.571	0.016	24.700	0.668	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.490	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	10.220	0.711	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.016	7.760	0.508	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	10.140	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	11.920	0.718	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.580	0.016	25.940	0.635	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	10.140	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	11.920	0.711	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.707	0.016	8.150	0.465	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	7.580	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	9.300	0.736	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.566	0.016	24.140	0.697	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	7.580	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	9.300	0.725	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.690	0.016	7.590	0.540	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.310	0.007	11.430	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.629	0.010	13.280	0.777	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.587	0.016	26.940	0.664	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.310	0.007	11.430	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.629	0.010	13.280	0.770	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.716	0.016	8.470	0.483	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.080	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.830	0.735	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.574	0.016	25.150	0.674	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.080	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.830	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.700	0.016	7.900	0.509	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	7.830	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.590	0.752	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.566	0.016	24.670	0.716	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	7.830	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.590	0.737	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.691	0.016	7.750	0.553	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	9.530	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	11.290	0.712	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.577	0.016	25.470	0.647	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	9.530	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	11.290	0.707	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.704	0.016	8.000	0.484	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	6.560	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	8.270	0.691	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.561	0.016	23.300	0.668	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	6.560	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	8.270	0.683	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.684	0.016	7.320	0.522	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.410	0.425	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.170	0.733	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.576	0.016	25.390	0.667	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.410	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.170	0.725	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.703	0.016	7.980	0.502	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	5.140	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	6.850	0.707	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.552	0.016	22.610	0.704	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	5.140	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	6.850	0.693	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.674	0.016	7.110	0.561	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.170	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.920	0.725	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.575	0.016	25.210	0.664	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.170	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	10.920	0.718	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.701	0.016	7.920	0.500	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.200	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.940	0.740	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.563	0.016	24.090	0.710	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.200	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.940	0.727	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.687	0.016	7.570	0.553	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.304	0.007	10.140	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	11.930	0.742	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.580	0.016	25.960	0.655	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.304	0.007	10.140	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.609	0.010	11.930	0.733	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.707	0.016	8.160	0.481	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.860	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	9.590	0.731	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.567	0.016	24.360	0.689	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.860	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	9.590	0.720	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.692	0.016	7.660	0.530	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.080	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.830	0.748	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.562	0.016	24.200	0.723	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.080	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	8.830	0.733	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.686	0.016	7.610	0.565	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	9.390	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.150	0.713	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.576	0.016	25.380	0.641	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	9.390	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.150	0.705	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.702	0.016	7.980	0.474	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	12.540	0.734	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.016	26.390	0.640	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	12.540	0.728	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.711	0.016	8.290	0.467	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	5.180	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	6.910	0.719	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.554	0.016	23.090	0.722	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	5.180	0.425	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	6.910	0.703	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.675	0.016	7.260	0.576	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-30. On-Road Vehicle Emission Factors – 2018 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.160	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.890	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.569	0.016	24.470	0.679	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.160	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.890	0.716	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.694	0.016	7.690	0.519	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.690	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.460	0.716	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.578	0.016	25.590	0.648	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.690	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.460	0.711	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.705	0.016	8.040	0.485	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.870	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	10.620	0.723	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.573	0.016	24.990	0.666	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.870	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	10.620	0.715	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.016	7.850	0.504	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	10.750	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	12.560	0.746	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.016	26.410	0.649	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	10.750	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	12.560	0.739	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.711	0.016	8.300	0.474	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	10.640	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.440	0.726	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.016	26.310	0.635	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.007	0.579	0.276	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	10.640	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.440	0.720	0.025	0.011	551.300	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.711	0.016	8.270	0.463	0.038	0.023	875.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.007	0.235	0.136	0.038	0.023	785.500	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	7.050	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.690	0.707	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.495	0.016	23.850	0.663	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	7.050	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.690	0.695	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.604	0.016	7.490	0.516	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	13.790	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.643	0.010	15.470	0.768	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.016	28.550	0.605	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	13.790	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.643	0.010	15.470	0.766	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.016	8.970	0.425	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.380	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.547	0.010	9.020	0.715	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.497	0.016	24.090	0.666	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.380	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.547	0.010	9.020	0.702	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.606	0.016	7.570	0.517	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	7.520	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	9.160	0.717	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.498	0.016	24.220	0.667	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	7.520	0.416	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	9.160	0.704	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.607	0.016	7.610	0.516	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	7.300	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.900	0.692	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.497	0.016	23.690	0.642	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	7.300	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.900	0.683	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.606	0.016	7.440	0.497	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.920	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	11.530	0.681	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.016	25.630	0.589	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.920	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	11.530	0.675	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.622	0.016	8.050	0.430	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.330	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	10.930	0.705	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.507	0.016	25.190	0.626	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.330	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	10.930	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.619	0.016	7.920	0.469	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.090	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	9.690	0.701	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.501	0.016	24.300	0.640	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.090	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	9.690	0.691	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.611	0.016	7.640	0.489	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	6.050	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.531	0.010	7.710	0.693	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.491	0.016	23.260	0.666	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	6.050	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.531	0.010	7.710	0.681	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.598	0.016	7.310	0.524	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	6.950	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.590	0.705	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.495	0.016	23.780	0.663	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	6.950	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.590	0.693	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.604	0.016	7.470	0.516	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.730	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.519	0.010	7.360	0.666	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.490	0.016	22.550	0.638	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.730	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.519	0.010	7.360	0.656	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.597	0.016	7.090	0.503	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	10.170	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.770	0.683	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.511	0.016	25.810	0.587	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	10.170	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.770	0.678	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.623	0.016	8.110	0.428	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	8.830	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.430	0.715	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.505	0.016	24.850	0.642	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	8.830	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.430	0.705	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.615	0.016	7.810	0.486	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.800	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.400	0.707	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.505	0.016	24.800	0.636	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.800	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.400	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.615	0.016	7.790	0.480	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	9.690	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	11.300	0.703	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.509	0.016	25.480	0.610	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	9.690	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	11.300	0.694	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.620	0.016	8.010	0.448	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	8.400	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	10.030	0.717	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.502	0.016	24.740	0.654	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	8.400	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	10.030	0.705	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.612	0.016	7.770	0.498	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.090	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	9.690	0.702	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.501	0.016	24.320	0.642	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.090	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	9.690	0.692	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.611	0.016	7.640	0.490	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	6.720	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	8.370	0.707	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.016	23.760	0.671	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	6.720	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	8.370	0.694	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.602	0.016	7.470	0.525	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.930	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	12.550	0.712	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.515	0.016	26.400	0.600	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.930	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	12.550	0.707	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.628	0.016	8.300	0.435	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.270	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	9.870	0.694	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.502	0.016	24.410	0.631	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.270	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	9.870	0.685	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.612	0.016	7.670	0.479	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.490	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.090	0.706	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.508	0.016	25.310	0.625	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.490	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.090	0.699	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.619	0.016	7.950	0.468	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	10.220	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	11.830	0.695	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.511	0.016	25.860	0.596	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	10.220	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	11.830	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.624	0.016	8.130	0.435	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	11.180	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	12.820	0.741	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.516	0.016	26.610	0.619	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	11.180	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	12.820	0.734	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.629	0.016	8.360	0.449	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.050	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.700	0.710	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.495	0.016	23.910	0.668	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.050	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.700	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.604	0.016	7.510	0.520	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	8.390	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.000	0.711	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.502	0.016	24.630	0.647	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	8.390	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.000	0.700	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.612	0.016	7.740	0.492	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	12.210	0.701	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.016	26.150	0.596	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	12.210	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.626	0.016	8.220	0.433	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	9.170	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	10.780	0.694	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.506	0.016	25.090	0.609	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	9.170	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	10.780	0.685	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.617	0.016	7.880	0.451	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.870	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	10.470	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.505	0.016	24.850	0.624	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.870	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	10.470	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.616	0.016	7.810	0.471	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.410	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.020	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.512	0.016	26.000	0.596	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.410	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.020	0.693	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.625	0.016	8.170	0.434	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.530	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.130	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.503	0.016	24.600	0.631	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.530	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.130	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.614	0.016	7.730	0.478	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.380	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	9.970	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.503	0.016	24.480	0.625	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.380	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	9.970	0.681	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.613	0.016	7.690	0.474	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	10.020	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.581	0.010	11.630	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.511	0.016	25.710	0.594	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	10.020	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.581	0.010	11.630	0.683	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.623	0.016	8.080	0.434	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	7.480	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.090	0.704	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.498	0.016	23.930	0.652	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	7.480	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.090	0.694	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.607	0.016	7.520	0.504	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	11.300	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	12.940	0.746	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.516	0.016	26.700	0.620	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	11.300	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.602	0.010	12.940	0.739	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.630	0.016	8.390	0.450	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.960	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.560	0.704	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.505	0.016	24.920	0.630	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.960	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.560	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.616	0.016	7.830	0.475	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	7.720	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.370	0.719	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.499	0.016	24.450	0.669	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	7.720	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.370	0.706	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.608	0.016	7.680	0.516	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	9.420	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	11.010	0.683	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.508	0.016	25.240	0.606	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	9.420	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	11.010	0.679	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.619	0.016	7.930	0.453	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.256	0.007	6.470	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.523	0.010	8.090	0.661	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.493	0.016	23.090	0.625	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.256	0.007	6.470	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.523	0.010	8.090	0.654	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.602	0.016	7.260	0.488	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.290	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.890	0.703	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.507	0.016	25.160	0.624	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.290	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.890	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.618	0.016	7.910	0.468	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	5.050	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.521	0.010	6.710	0.675	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.486	0.016	22.410	0.658	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	5.050	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.521	0.010	6.710	0.662	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.593	0.016	7.040	0.523	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.060	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.650	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.506	0.016	24.980	0.621	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.060	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	10.650	0.689	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.617	0.016	7.850	0.467	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.100	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.740	0.707	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.496	0.016	23.880	0.663	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.100	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.740	0.696	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.604	0.016	7.500	0.516	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.286	0.007	10.010	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	11.630	0.712	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.016	25.720	0.612	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.286	0.007	10.010	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	11.630	0.703	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.622	0.016	8.080	0.449	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.760	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	9.370	0.700	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.499	0.016	24.140	0.645	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.760	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	9.370	0.690	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.609	0.016	7.580	0.495	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	6.980	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.544	0.010	8.630	0.715	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.495	0.016	23.980	0.676	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	6.980	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.544	0.010	8.630	0.701	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.604	0.016	7.540	0.528	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.270	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	10.880	0.683	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.507	0.016	25.150	0.599	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.270	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	10.880	0.676	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.618	0.016	7.900	0.442	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	12.220	0.704	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.016	26.150	0.598	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	12.220	0.698	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.626	0.016	8.220	0.435	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	5.080	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	6.770	0.686	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.487	0.016	22.880	0.675	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	5.080	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	6.770	0.672	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.594	0.016	7.190	0.538	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-31. On-Road Vehicle Emission Factors – 2019 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.060	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.660	0.695	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.501	0.016	24.250	0.635	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.060	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.660	0.686	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.611	0.016	7.620	0.485	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.580	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.170	0.687	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.509	0.016	25.360	0.607	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.580	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.170	0.682	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.620	0.016	7.970	0.453	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.760	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	10.360	0.693	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.016	24.760	0.623	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.760	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	10.360	0.686	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.615	0.016	7.780	0.471	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.620	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	12.240	0.716	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.016	26.170	0.607	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.620	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.591	0.010	12.240	0.709	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.626	0.016	8.220	0.442	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.510	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	12.130	0.697	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.016	26.080	0.594	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.007	0.524	0.271	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.510	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.587	0.010	12.130	0.691	0.025	0.011	551.500	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.625	0.016	8.190	0.432	0.037	0.022	875.700	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.007	0.213	0.134	0.036	0.022	785.400	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	6.970	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.520	0.658	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.443	0.016	23.700	0.612	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.800	0.003	26.910	3.180	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	6.970	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.520	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.540	0.016	7.450	0.473	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.160	0.003	14.280	2.410	0.037	0.021	177.400	0.011
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	13.680	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.625	0.010	15.150	0.734	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.472	0.016	28.370	0.567	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.980	0.003	31.650	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	13.680	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.625	0.010	15.150	0.733	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.576	0.016	8.910	0.395	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.410	0.003	16.960	2.050	0.037	0.021	177.400	0.011
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.265	0.007	7.310	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.533	0.010	8.850	0.666	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.444	0.016	23.930	0.615	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.810	0.003	27.160	3.280	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.265	0.007	7.310	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.533	0.010	8.850	0.655	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.542	0.016	7.520	0.473	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.170	0.003	14.420	2.480	0.037	0.021	177.400	0.011
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	7.440	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.535	0.010	8.980	0.669	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.445	0.016	24.060	0.616	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.810	0.003	27.370	3.340	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	7.440	0.397	0.011	0.025	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.535	0.010	8.980	0.658	0.011	0.025	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.543	0.016	7.560	0.473	0.021	0.036	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.019	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.023	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.020	0.034	785.200	0.027
		NA	MC	Motorcycles	1.170	0.003	14.540	2.530	0.021	0.037	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.258	0.007	7.220	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.730	0.646	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.445	0.016	23.530	0.593	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.820	0.003	26.280	2.880	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.258	0.007	7.220	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.730	0.638	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.542	0.016	7.400	0.456	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.180	0.003	13.960	2.160	0.037	0.021	177.400	0.011
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.840	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	11.300	0.645	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.456	0.016	25.470	0.549	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.880	0.003	28.240	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.840	0.366	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	11.300	0.640	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.556	0.016	8.000	0.399	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.270	0.003	15.050	2.020	0.037	0.021	177.400	0.011
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.250	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.720	0.664	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.453	0.016	25.030	0.581	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.870	0.003	27.860	2.760	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.250	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.720	0.658	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.553	0.016	7.870	0.433	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.250	0.003	14.840	2.060	0.037	0.021	177.400	0.011
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	9.500	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.448	0.016	24.150	0.593	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	27.020	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	9.500	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.546	0.016	7.590	0.449	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.210	0.003	14.370	2.240	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.980	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.517	0.010	7.560	0.643	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.439	0.016	23.110	0.612	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.770	0.003	26.730	2.990	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.980	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.517	0.010	7.560	0.632	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.535	0.016	7.260	0.479	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.110	0.003	14.160	2.270	0.037	0.021	177.400	0.011
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	6.880	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.430	0.656	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.442	0.016	23.630	0.611	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.800	0.003	26.850	3.160	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	6.880	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.430	0.646	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.540	0.016	7.420	0.473	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.150	0.003	14.250	2.390	0.037	0.021	177.400	0.011
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.249	0.007	5.670	0.377	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.506	0.010	7.220	0.618	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.438	0.016	22.400	0.587	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.790	0.003	25.120	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.249	0.007	5.670	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.506	0.010	7.220	0.609	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.534	0.016	7.040	0.459	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.140	0.003	13.310	2.110	0.037	0.021	177.400	0.011
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	10.080	0.369	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	11.540	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.457	0.016	25.650	0.548	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	10.080	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	11.540	0.643	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.557	0.016	8.060	0.397	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.280	0.003	15.140	2.000	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	8.740	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.230	0.672	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.451	0.016	24.690	0.596	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.670	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	8.740	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.230	0.663	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.550	0.016	7.760	0.447	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.230	0.003	14.730	2.300	0.037	0.021	177.400	0.011
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.720	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.200	0.665	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.451	0.016	24.640	0.590	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.550	2.950	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.720	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.200	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.550	0.016	7.740	0.442	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.230	0.003	14.670	2.220	0.037	0.021	177.400	0.011
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	9.600	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	11.080	0.666	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.455	0.016	25.320	0.568	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.880	0.003	28.410	3.000	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	9.600	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	11.080	0.658	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.555	0.016	7.960	0.415	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.260	0.003	15.150	2.250	0.037	0.021	177.400	0.011
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	8.320	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.548	0.010	9.830	0.672	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.449	0.016	24.590	0.606	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	27.810	3.290	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	8.320	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.548	0.010	9.830	0.662	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.547	0.016	7.730	0.458	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.200	0.003	14.800	2.490	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.500	0.658	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.448	0.016	24.160	0.594	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	27.070	3.010	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.500	0.649	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.546	0.016	7.590	0.451	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.210	0.003	14.390	2.260	0.037	0.021	177.400	0.011
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.640	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.526	0.010	8.210	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.441	0.016	23.610	0.618	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.790	0.003	27.220	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.640	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.526	0.010	8.210	0.646	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.538	0.016	7.420	0.480	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.130	0.003	14.430	2.480	0.037	0.021	177.400	0.011
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	10.840	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	12.300	0.676	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.460	0.016	26.230	0.561	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.910	0.003	29.210	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	10.840	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	12.300	0.672	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.561	0.016	8.240	0.404	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.310	0.003	15.590	2.030	0.037	0.021	177.400	0.011
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.190	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	9.680	0.651	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.449	0.016	24.250	0.585	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	27.100	2.920	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.190	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	9.680	0.643	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.547	0.016	7.620	0.441	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.210	0.003	14.410	2.190	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.400	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	10.870	0.666	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.454	0.016	25.150	0.580	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.870	0.003	27.960	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.400	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.557	0.010	10.870	0.660	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.554	0.016	7.900	0.431	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.260	0.003	14.900	2.050	0.037	0.021	177.400	0.011
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.130	0.375	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.600	0.659	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.457	0.016	25.700	0.556	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.890	0.003	28.590	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.130	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.600	0.653	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.558	0.016	8.080	0.403	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.280	0.003	15.250	2.030	0.037	0.021	177.400	0.011
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	11.090	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	12.560	0.704	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.461	0.016	26.440	0.578	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.910	0.003	29.750	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	11.090	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	12.560	0.698	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.563	0.016	8.310	0.417	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.310	0.003	15.900	2.120	0.037	0.021	177.400	0.011
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.980	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.530	0.661	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.443	0.016	23.760	0.616	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.800	0.003	27.120	3.260	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.980	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.530	0.650	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.540	0.016	7.470	0.476	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.150	0.003	14.400	2.470	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	8.310	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.810	0.667	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.449	0.016	24.480	0.599	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	27.560	3.170	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	8.310	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.810	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.548	0.016	7.690	0.453	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.210	0.003	14.660	2.390	0.037	0.021	177.400	0.011
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.510	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.970	0.666	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.459	0.016	25.980	0.557	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.900	0.003	28.890	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.510	0.377	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.970	0.661	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.560	0.016	8.160	0.402	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.300	0.003	15.410	2.020	0.037	0.021	177.400	0.011
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.090	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.570	0.656	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.453	0.016	24.930	0.568	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.940	3.040	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.090	0.371	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.570	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.552	0.016	7.830	0.417	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.240	0.003	14.890	2.280	0.037	0.021	177.400	0.011
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.790	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	10.260	0.655	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.451	0.016	24.690	0.579	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.790	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	10.260	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.551	0.016	7.760	0.434	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.240	0.003	14.620	2.070	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.320	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	11.780	0.662	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.458	0.016	25.840	0.557	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.900	0.003	28.730	2.730	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.320	0.375	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	11.780	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.559	0.016	8.120	0.403	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.290	0.003	15.330	2.030	0.037	0.021	177.400	0.011
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.450	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.930	0.656	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.450	0.016	24.440	0.585	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.850	0.003	27.280	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.450	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.930	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.549	0.016	7.680	0.440	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.220	0.003	14.520	2.170	0.037	0.021	177.400	0.011
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	8.300	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	9.780	0.647	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.449	0.016	24.320	0.579	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.850	0.003	27.090	2.810	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	8.300	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	9.780	0.640	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.548	0.016	7.640	0.436	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.220	0.003	14.410	2.100	0.037	0.021	177.400	0.011
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.930	0.372	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	11.390	0.653	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.456	0.016	25.540	0.554	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.890	0.003	28.410	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.930	0.370	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	11.390	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.557	0.016	8.030	0.402	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.280	0.003	15.150	2.030	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	7.400	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.532	0.010	8.910	0.657	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.445	0.016	23.770	0.602	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.820	0.003	26.700	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	7.400	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.532	0.010	8.910	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.543	0.016	7.470	0.462	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.180	0.003	14.180	2.300	0.037	0.021	177.400	0.011
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	11.200	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.680	0.708	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.462	0.016	26.530	0.579	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.920	0.003	29.870	2.840	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	11.200	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.680	0.702	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.563	0.016	8.340	0.417	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.320	0.003	15.970	2.120	0.037	0.021	177.400	0.011
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.880	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.360	0.662	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.452	0.016	24.760	0.585	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.610	2.850	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.880	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.360	0.655	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.551	0.016	7.780	0.438	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.240	0.003	14.700	2.130	0.037	0.021	177.400	0.011
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	7.640	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	9.190	0.671	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.446	0.016	24.300	0.618	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.810	0.003	27.830	3.440	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	7.640	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	9.190	0.660	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.544	0.016	7.630	0.473	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.170	0.003	14.790	2.610	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	9.340	0.379	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.800	0.645	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.454	0.016	25.080	0.563	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.870	0.003	27.650	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	9.340	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.800	0.640	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.554	0.016	7.880	0.418	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.260	0.003	14.710	2.000	0.037	0.021	177.400	0.011
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.244	0.007	6.410	0.374	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.509	0.010	7.940	0.616	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.441	0.016	22.940	0.577	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.810	0.003	25.480	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.244	0.007	6.410	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.509	0.010	7.940	0.609	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.538	0.016	7.210	0.446	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.160	0.003	13.500	2.080	0.037	0.021	177.400	0.011
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.210	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.680	0.662	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.453	0.016	25.000	0.580	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.870	0.003	27.810	2.750	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.210	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.680	0.656	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.553	0.016	7.860	0.432	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.250	0.003	14.810	2.050	0.037	0.021	177.400	0.011
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	4.980	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.508	0.010	6.590	0.624	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.435	0.016	22.270	0.603	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.760	0.003	25.900	2.960	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	4.980	0.381	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.508	0.010	6.590	0.613	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.530	0.016	7.000	0.476	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.090	0.003	13.710	2.260	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.970	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.440	0.655	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.452	0.016	24.820	0.577	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.580	2.740	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.970	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.551	0.010	10.440	0.649	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.552	0.016	7.800	0.431	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.240	0.003	14.680	2.040	0.037	0.021	177.400	0.011
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.020	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.570	0.659	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.443	0.016	23.720	0.612	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.800	0.003	26.920	3.190	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.020	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.570	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.540	0.016	7.450	0.472	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.160	0.003	14.290	2.410	0.037	0.021	177.400	0.011
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	9.920	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.400	0.674	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.456	0.016	25.560	0.571	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.880	0.003	28.690	2.980	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	9.920	0.380	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.400	0.667	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.556	0.016	8.030	0.416	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.270	0.003	15.310	2.230	0.037	0.021	177.400	0.011
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.680	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.536	0.010	9.190	0.655	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.446	0.016	23.980	0.596	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.830	0.003	26.940	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.680	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.536	0.010	9.190	0.646	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.544	0.016	7.540	0.455	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.190	0.003	14.320	2.300	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	6.900	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.470	0.665	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.443	0.016	23.830	0.623	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.790	0.003	27.500	3.370	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	6.900	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.529	0.010	8.470	0.653	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.540	0.016	7.490	0.483	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.140	0.003	14.590	2.560	0.037	0.021	177.400	0.011
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.190	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.660	0.646	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.453	0.016	24.990	0.558	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.870	0.003	27.870	2.830	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.190	0.366	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.660	0.639	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.553	0.016	7.850	0.409	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.250	0.003	14.850	2.110	0.037	0.021	177.400	0.011
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	10.520	0.379	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.980	0.668	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.459	0.016	25.990	0.559	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.900	0.003	28.930	2.720	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	10.520	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	11.980	0.663	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.560	0.016	8.170	0.403	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.300	0.003	15.440	2.030	0.037	0.021	177.400	0.011
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	5.010	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.515	0.010	6.650	0.632	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.436	0.016	22.740	0.618	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.730	0.003	27.660	3.060	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	5.010	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.515	0.010	6.650	0.620	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.531	0.016	7.140	0.488	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.060	0.003	14.620	2.350	0.037	0.021	177.400	0.011

Table 5-32. On-Road Vehicle Emission Factors – 2020 POV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	7.980	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.470	0.652	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.448	0.016	24.090	0.588	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.840	0.003	26.900	2.900	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	7.980	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.470	0.644	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.546	0.016	7.570	0.446	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.210	0.003	14.300	2.170	0.037	0.021	177.400	0.011
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	9.490	0.381	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.950	0.648	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.455	0.016	25.200	0.564	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.880	0.003	27.780	2.690	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	9.490	0.380	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.950	0.644	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.554	0.016	7.920	0.418	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.260	0.003	14.790	2.000	0.037	0.021	177.400	0.011
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	8.680	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.547	0.010	10.160	0.652	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.451	0.016	24.610	0.578	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.860	0.003	27.370	2.770	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	8.680	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.547	0.010	10.160	0.645	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.550	0.016	7.730	0.434	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.230	0.003	14.560	2.070	0.037	0.021	177.400	0.011
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	10.530	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	11.990	0.679	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.459	0.016	26.010	0.567	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.900	0.003	29.090	2.780	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	10.530	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	11.990	0.673	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.560	0.016	8.170	0.410	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.290	0.003	15.530	2.080	0.037	0.021	177.400	0.011
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.430	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.880	0.661	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.459	0.016	25.910	0.554	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.007	0.472	0.267	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	0.900	0.003	28.760	2.710	0.037	0.021	177.400	0.011
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.430	0.374	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.880	0.656	0.025	0.011	551.400	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.559	0.016	8.140	0.401	0.036	0.021	875.500	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	0.494	0.007	0.191	0.131	0.034	0.020	785.200	0.027
		NA	MC	Motorcycles	1.290	0.003	15.340	2.020	0.037	0.021	177.400	0.011

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.110	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.774	0.010	10.530	0.980	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.307	0.018	30.460	1.439	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.110	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.774	0.010	10.530	0.962	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.593	0.018	9.600	1.177	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	18.280	0.997	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.170	0.018	35.460	1.102	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	18.280	0.995	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.426	0.018	11.170	0.830	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.470	0.610	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.782	0.010	10.950	0.991	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.312	0.018	30.770	1.442	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.470	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.782	0.010	10.950	0.972	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.598	0.018	9.690	1.175	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	8.620	0.612	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.786	0.010	11.120	0.994	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.313	0.018	30.930	1.443	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	8.620	0.606	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.786	0.010	11.120	0.975	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.600	0.018	9.750	1.174	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.430	0.007	8.320	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.775	0.010	10.800	0.957	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.312	0.018	30.250	1.378	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.430	0.007	8.320	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.775	0.010	10.800	0.943	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.599	0.018	9.530	1.123	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	11.120	0.554	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.832	0.010	14.080	0.937	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.346	0.018	32.740	1.236	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	11.120	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.832	0.010	14.080	0.928	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.640	0.018	10.310	0.964	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.490	0.588	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.340	0.971	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.339	0.018	32.180	1.311	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.490	0.584	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.340	0.960	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.631	0.018	10.140	1.040	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.592	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.790	0.968	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.322	0.018	31.040	1.364	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.790	0.953	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.611	0.018	9.780	1.099	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.432	0.007	7.060	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.756	0.010	9.310	0.964	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.295	0.018	29.710	1.463	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.432	0.007	7.060	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.756	0.010	9.310	0.944	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.578	0.018	9.360	1.209	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.000	0.604	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.772	0.010	10.420	0.977	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.306	0.018	30.370	1.439	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.436	0.007	8.000	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.772	0.010	10.420	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.591	0.018	9.570	1.178	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	6.650	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	8.880	0.922	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.292	0.018	28.800	1.393	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	6.650	0.571	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	8.880	0.906	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.574	0.018	9.070	1.152	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	11.380	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.837	0.010	14.380	0.939	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.349	0.018	32.970	1.228	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	11.380	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.837	0.010	14.380	0.931	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.644	0.018	10.390	0.955	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	9.980	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.812	0.010	12.720	0.987	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.332	0.018	31.730	1.361	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	9.980	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.812	0.010	12.720	0.972	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.623	0.018	10.000	1.087	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.940	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	12.680	0.976	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.332	0.018	31.680	1.344	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.940	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.811	0.010	12.680	0.963	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.622	0.018	9.980	1.073	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	10.900	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.832	0.010	13.800	0.971	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.343	0.018	32.540	1.298	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	10.900	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.832	0.010	13.800	0.958	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.636	0.018	10.250	1.017	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	9.550	0.606	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.805	0.010	12.210	0.992	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.325	0.018	31.600	1.400	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.449	0.007	9.550	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.805	0.010	12.210	0.974	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.614	0.018	9.960	1.123	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.790	0.970	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.322	0.018	31.060	1.368	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.180	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.795	0.010	11.790	0.955	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.611	0.018	9.780	1.102	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	7.770	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.770	0.010	10.140	0.982	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.303	0.018	30.350	1.466	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	7.770	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.770	0.010	10.140	0.962	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.588	0.018	9.560	1.204	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.461	0.007	12.210	0.576	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.857	0.010	15.360	0.981	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.359	0.018	33.720	1.248	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.461	0.007	12.210	0.574	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.857	0.010	15.360	0.973	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.656	0.018	10.620	0.966	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.370	0.584	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.798	0.010	12.020	0.957	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.325	0.018	31.180	1.340	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	9.370	0.580	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.798	0.010	12.020	0.944	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.614	0.018	9.820	1.075	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.660	0.588	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.823	0.010	13.530	0.973	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.341	0.018	32.320	1.305	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.660	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.823	0.010	13.530	0.962	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.633	0.018	10.180	1.034	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	11.450	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.840	0.010	14.460	0.956	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.350	0.018	33.030	1.249	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	11.450	0.562	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.840	0.010	14.460	0.948	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.645	0.018	10.410	0.972	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.467	0.007	12.500	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.866	0.010	15.700	1.025	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.362	0.018	33.990	1.293	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.467	0.007	12.500	0.596	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.866	0.010	15.700	1.014	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.659	0.018	10.710	1.001	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.120	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.540	0.985	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.307	0.018	30.540	1.451	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.120	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.540	0.966	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.593	0.018	9.620	1.187	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.520	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.804	0.010	12.180	0.983	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.325	0.018	31.460	1.380	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	9.520	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.804	0.010	12.180	0.966	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.615	0.018	9.910	1.108	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.850	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.849	0.010	14.940	0.966	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.355	0.018	33.400	1.243	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.850	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.849	0.010	14.940	0.958	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.651	0.018	10.520	0.965	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	10.350	0.569	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.150	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.336	0.018	32.040	1.307	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.451	0.007	10.350	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.821	0.010	13.150	0.945	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.628	0.018	10.100	1.030	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.000	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.810	0.010	12.760	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.333	0.018	31.740	1.313	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.000	0.579	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.810	0.010	12.760	0.947	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.624	0.018	10.000	1.047	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.640	0.567	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.844	0.010	14.690	0.961	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.352	0.018	33.210	1.247	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.640	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.844	0.010	14.690	0.953	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.648	0.018	10.460	0.969	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	9.650	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.804	0.010	12.340	0.963	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.328	0.018	31.420	1.335	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	9.650	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.804	0.010	12.340	0.950	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.618	0.018	9.900	1.069	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.439	0.007	9.480	0.579	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.799	0.010	12.140	0.950	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.326	0.018	31.270	1.322	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.439	0.007	9.480	0.576	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.799	0.010	12.140	0.938	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.616	0.018	9.850	1.060	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.452	0.007	11.230	0.561	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.835	0.010	14.200	0.948	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.018	32.840	1.248	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.452	0.007	11.230	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.835	0.010	14.200	0.939	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.642	0.018	10.350	0.973	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.435	0.007	8.530	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	11.040	0.975	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.314	0.018	30.560	1.402	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.435	0.007	8.530	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	11.040	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.601	0.018	9.630	1.141	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.468	0.007	12.630	0.603	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	15.850	1.031	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.363	0.018	34.100	1.295	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.468	0.007	12.630	0.599	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	15.850	1.021	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.661	0.018	10.740	1.002	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.445	0.007	10.110	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.813	0.010	12.880	0.971	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.334	0.018	31.830	1.327	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.445	0.007	10.110	0.585	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.813	0.010	12.880	0.958	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.625	0.018	10.030	1.058	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	8.850	0.614	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.792	0.010	11.380	0.997	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.316	0.018	31.230	1.447	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	8.850	0.607	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.792	0.010	11.380	0.977	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.603	0.018	9.840	1.173	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.560	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.818	0.010	13.430	0.938	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.340	0.018	32.240	1.257	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.560	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.818	0.010	13.430	0.931	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.633	0.018	10.160	0.995	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.409	0.007	7.390	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.748	0.010	9.780	0.912	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.302	0.018	29.490	1.346	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.409	0.007	7.390	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.748	0.010	9.780	0.900	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.587	0.018	9.290	1.105	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.450	0.586	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.819	0.010	13.290	0.968	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.338	0.018	32.140	1.307	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.446	0.007	10.450	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.819	0.010	13.290	0.957	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.630	0.018	10.130	1.038	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.431	0.007	6.010	0.586	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.740	0.010	8.090	0.940	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.283	0.018	28.620	1.463	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.431	0.007	6.010	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.740	0.010	8.090	0.920	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.563	0.018	9.020	1.219	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.190	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.813	0.010	12.990	0.957	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.335	0.018	31.910	1.302	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.442	0.007	10.190	0.578	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.813	0.010	12.990	0.947	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.627	0.018	10.050	1.036	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.437	0.007	8.160	0.605	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.600	0.981	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.308	0.018	30.490	1.438	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.437	0.007	8.160	0.600	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.600	0.963	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.594	0.018	9.610	1.176	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.250	0.580	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.839	0.010	14.210	0.983	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.018	32.850	1.299	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.250	0.575	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.839	0.010	14.210	0.971	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.641	0.018	10.350	1.015	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.840	0.594	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.788	0.010	11.390	0.968	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.318	0.018	30.830	1.382	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	8.840	0.589	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.788	0.010	11.390	0.952	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.605	0.018	9.710	1.118	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.050	0.615	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.470	0.993	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.306	0.018	30.630	1.474	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.440	0.007	8.050	0.609	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	10.470	0.972	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.592	0.018	9.650	1.208	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.440	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.270	0.943	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.338	0.018	32.130	1.276	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.447	0.007	10.440	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.820	0.010	13.270	0.931	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.630	0.018	10.120	1.004	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.860	0.571	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.849	0.010	14.950	0.970	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.355	0.018	33.400	1.249	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.457	0.007	11.860	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.849	0.010	14.950	0.961	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.651	0.018	10.520	0.969	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.443	0.007	6.100	0.598	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.749	0.010	8.160	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.286	0.018	29.230	1.511	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.443	0.007	6.100	0.595	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.749	0.010	8.160	0.936	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.567	0.018	9.210	1.260	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-33. On-Road Vehicle Emission Factors – 2013 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	9.140	0.587	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	11.750	0.960	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.322	0.018	30.970	1.350	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.438	0.007	9.140	0.583	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.793	0.010	11.750	0.946	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.611	0.018	9.760	1.088	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.444	0.007	10.740	0.570	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.822	0.010	13.630	0.943	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.342	0.018	32.390	1.257	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.444	0.007	10.740	0.568	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.822	0.010	13.630	0.936	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.635	0.018	10.200	0.993	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.441	0.007	9.880	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	12.620	0.955	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.331	0.018	31.630	1.312	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.441	0.007	9.880	0.577	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	12.620	0.944	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.622	0.018	9.970	1.047	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.460	0.007	11.890	0.581	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.851	0.010	14.970	0.987	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.355	0.018	33.430	1.272	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.460	0.007	11.890	0.577	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.851	0.010	14.970	0.977	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.651	0.018	10.530	0.988	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.760	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.846	0.010	14.830	0.959	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.354	0.018	33.310	1.238	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.708	0.393	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.208	0.012	2.262	0.662	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.455	0.007	11.760	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.846	0.010	14.830	0.951	0.025	0.011	549.800	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.649	0.018	10.490	0.961	0.051	0.033	988.900	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.200	0.003	0.808	0.132	0.053	0.037	314.000	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.460	0.006	0.657	0.387	0.060	0.044	599.200	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	3.148	0.012	0.919	0.332	0.115	0.087	1246.800	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.830	0.557	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.723	0.010	10.130	0.923	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.098	0.018	29.620	1.318	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.830	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.723	0.010	10.130	0.906	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.337	0.018	9.330	1.084	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.564	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	18.280	0.997	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.170	0.018	35.460	1.102	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.453	0.007	14.940	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.868	0.010	18.280	0.995	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.426	0.018	11.170	0.830	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.190	0.562	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	10.530	0.933	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.101	0.018	29.910	1.320	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.190	0.557	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	10.530	0.916	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.342	0.018	9.420	1.082	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	8.330	0.563	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.734	0.010	10.700	0.936	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.103	0.018	30.080	1.321	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	8.330	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.734	0.010	10.700	0.918	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.343	0.018	9.470	1.081	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.393	0.007	8.060	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.390	0.902	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.102	0.018	29.410	1.262	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.393	0.007	8.060	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.390	0.888	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.343	0.018	9.260	1.034	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	10.810	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	13.540	0.883	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.130	0.018	31.830	1.129	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	10.810	0.509	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	13.540	0.875	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.377	0.018	10.020	0.887	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.200	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.830	0.915	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.124	0.018	31.290	1.198	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.200	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.830	0.905	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.369	0.018	9.850	0.957	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.546	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.340	0.912	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.110	0.018	30.180	1.248	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.542	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.340	0.898	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.353	0.018	9.500	1.011	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.395	0.007	6.800	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	8.960	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.087	0.018	28.880	1.342	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.395	0.007	6.800	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	8.960	0.888	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.324	0.018	9.100	1.115	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	7.740	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	10.020	0.920	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.097	0.018	29.530	1.318	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	7.740	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	10.020	0.903	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.336	0.018	9.300	1.085	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	6.410	0.529	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	8.540	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.085	0.018	28.000	1.279	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	6.410	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	8.540	0.854	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.322	0.018	8.820	1.063	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	11.070	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	13.830	0.885	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.133	0.018	32.050	1.122	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	11.070	0.510	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.781	0.010	13.830	0.878	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.380	0.018	10.090	0.878	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.680	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.230	0.930	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.118	0.018	30.850	1.244	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.680	0.549	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.230	0.916	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.362	0.018	9.720	0.999	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	9.650	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	12.190	0.920	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.118	0.018	30.800	1.229	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	9.650	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	12.190	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.362	0.018	9.700	0.987	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	10.590	0.529	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	13.280	0.915	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.127	0.018	31.640	1.186	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	10.590	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.776	0.010	13.280	0.903	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.018	9.960	0.935	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	9.260	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.740	0.934	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.112	0.018	30.730	1.280	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.410	0.007	9.260	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.752	0.010	11.740	0.918	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.355	0.018	9.680	1.033	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.340	0.914	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.110	0.018	30.200	1.252	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	8.900	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.742	0.010	11.340	0.900	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.352	0.018	9.510	1.014	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	7.500	0.561	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	9.750	0.924	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.094	0.018	29.510	1.343	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	7.500	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	9.750	0.906	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.333	0.018	9.290	1.109	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.420	0.007	11.890	0.532	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.799	0.010	14.780	0.924	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.141	0.018	32.780	1.139	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.420	0.007	11.890	0.530	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.799	0.010	14.780	0.917	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.390	0.018	10.320	0.887	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.090	0.539	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	11.560	0.902	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.112	0.018	30.310	1.226	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.090	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	11.560	0.889	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.355	0.018	9.550	0.989	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.360	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.768	0.010	13.020	0.917	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.125	0.018	31.430	1.193	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.360	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.768	0.010	13.020	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.371	0.018	9.900	0.951	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.414	0.007	11.140	0.521	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	13.910	0.902	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.133	0.018	32.120	1.141	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.414	0.007	11.140	0.518	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	13.910	0.893	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.381	0.018	10.110	0.894	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.426	0.007	12.160	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	15.090	0.965	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.143	0.018	33.050	1.180	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.426	0.007	12.160	0.549	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.807	0.010	15.090	0.956	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.393	0.018	10.410	0.919	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.401	0.007	7.840	0.560	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.140	0.927	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.098	0.018	29.700	1.329	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.401	0.007	7.840	0.555	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.140	0.910	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.337	0.018	9.350	1.093	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.230	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	11.720	0.926	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.113	0.018	30.590	1.262	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	9.230	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	11.720	0.910	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.356	0.018	9.630	1.019	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.791	0.010	14.370	0.910	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.137	0.018	32.470	1.136	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.791	0.010	14.370	0.903	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.386	0.018	10.230	0.886	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	10.050	0.524	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.650	0.904	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.122	0.018	31.160	1.195	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.411	0.007	10.050	0.520	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.766	0.010	12.650	0.891	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.367	0.018	9.810	0.947	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.710	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.755	0.010	12.270	0.904	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.119	0.018	30.860	1.201	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.710	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.755	0.010	12.270	0.893	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.363	0.018	9.720	0.963	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.330	0.523	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.787	0.010	14.130	0.906	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.135	0.018	32.290	1.139	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.330	0.521	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.787	0.010	14.130	0.898	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.383	0.018	10.170	0.891	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.370	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	11.870	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.115	0.018	30.550	1.222	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.370	0.537	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	11.870	0.895	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.359	0.018	9.620	0.983	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	9.200	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.746	0.010	11.680	0.895	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.114	0.018	30.400	1.210	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	9.200	0.531	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.746	0.010	11.680	0.884	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.357	0.018	9.570	0.975	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.412	0.007	10.920	0.517	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.779	0.010	13.660	0.894	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.131	0.018	31.930	1.140	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.412	0.007	10.920	0.514	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.779	0.010	13.660	0.885	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.378	0.018	10.050	0.895	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	8.260	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	10.620	0.918	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.103	0.018	29.710	1.283	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.398	0.007	8.260	0.548	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.730	0.010	10.620	0.903	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.344	0.018	9.360	1.050	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.427	0.007	12.290	0.556	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.810	0.010	15.240	0.971	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.144	0.018	33.160	1.182	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.427	0.007	12.290	0.552	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.810	0.010	15.240	0.962	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.394	0.018	10.440	0.920	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	9.820	0.544	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	12.390	0.915	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.120	0.018	30.950	1.214	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	9.820	0.540	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.759	0.010	12.390	0.903	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.364	0.018	9.750	0.973	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	8.560	0.565	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.739	0.010	10.950	0.939	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.105	0.018	30.370	1.324	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	8.560	0.559	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.739	0.010	10.950	0.920	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.346	0.018	9.560	1.079	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.403	0.007	10.270	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.763	0.010	12.920	0.884	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.125	0.018	31.340	1.150	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.403	0.007	10.270	0.523	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.763	0.010	12.920	0.878	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.371	0.018	9.870	0.915	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	7.160	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.699	0.010	9.420	0.859	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.093	0.018	28.680	1.235	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	7.160	0.520	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.699	0.010	9.420	0.848	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.332	0.018	9.030	1.020	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.160	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.764	0.010	12.780	0.912	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.123	0.018	31.250	1.195	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.407	0.007	10.160	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.764	0.010	12.780	0.902	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.369	0.018	9.840	0.954	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.394	0.007	5.760	0.539	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	7.780	0.884	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.077	0.018	27.830	1.343	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.394	0.007	5.760	0.537	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	7.780	0.865	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.313	0.018	8.760	1.125	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.900	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.490	0.902	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.121	0.018	31.030	1.191	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.404	0.007	9.900	0.533	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.758	0.010	12.490	0.893	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.366	0.018	9.770	0.953	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.890	0.558	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.190	0.924	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.098	0.018	29.650	1.317	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.399	0.007	7.890	0.553	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.190	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.338	0.018	9.340	1.083	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	10.930	0.535	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	13.670	0.926	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.131	0.018	31.940	1.186	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	10.930	0.530	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.783	0.010	13.670	0.914	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.378	0.018	10.060	0.933	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.560	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.736	0.010	10.950	0.912	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.106	0.018	29.970	1.265	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.560	0.543	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.736	0.010	10.950	0.897	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.348	0.018	9.440	1.029	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	7.780	0.566	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.070	0.934	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.097	0.018	29.780	1.350	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	7.780	0.560	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.724	0.010	10.070	0.915	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.336	0.018	9.380	1.112	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.140	0.516	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.760	0.888	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.123	0.018	31.240	1.167	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.408	0.007	10.140	0.512	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.765	0.010	12.760	0.877	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.368	0.018	9.840	0.923	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.792	0.010	14.380	0.914	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.137	0.018	32.480	1.141	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.417	0.007	11.540	0.524	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.792	0.010	14.380	0.906	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.386	0.018	10.230	0.891	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	5.830	0.550	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	7.850	0.901	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.080	0.018	28.420	1.386	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.406	0.007	5.830	0.547	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	7.850	0.880	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.315	0.018	8.950	1.163	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-34. On-Road Vehicle Emission Factors – 2014 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.870	0.541	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	11.300	0.904	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.110	0.018	30.110	1.236	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.400	0.007	8.870	0.538	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	11.300	0.891	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.352	0.018	9.480	1.001	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.405	0.007	10.440	0.527	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.767	0.010	13.120	0.889	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.127	0.018	31.490	1.150	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.405	0.007	10.440	0.525	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.767	0.010	13.120	0.883	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.018	9.920	0.914	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.600	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.753	0.010	12.140	0.900	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.118	0.018	30.750	1.200	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.402	0.007	9.600	0.533	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.753	0.010	12.140	0.889	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.362	0.018	9.690	0.964	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.419	0.007	11.560	0.536	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.794	0.010	14.400	0.930	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.137	0.018	32.500	1.162	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.419	0.007	11.560	0.532	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.794	0.010	14.400	0.921	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.386	0.018	10.240	0.908	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.440	0.522	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.789	0.010	14.260	0.904	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.136	0.018	32.380	1.131	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.676	0.368	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.745	0.012	2.002	0.630	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	11.440	0.519	0.025	0.011	368.100	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.789	0.010	14.260	0.896	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.385	0.018	10.200	0.883	0.048	0.030	987.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.163	0.003	0.774	0.119	0.049	0.033	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.416	0.006	0.631	0.363	0.056	0.040	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.695	0.012	0.814	0.316	0.099	0.072	1246.100	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.610	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	9.810	0.872	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.959	0.018	29.520	1.232	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.610	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	9.810	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.169	0.018	9.290	1.019	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	14.630	0.527	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	17.690	0.947	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.023	0.018	35.340	1.027	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.415	0.007	14.630	0.526	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.814	0.010	17.690	0.945	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.246	0.018	11.120	0.778	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.960	0.522	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.686	0.010	10.190	0.882	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.962	0.018	29.820	1.233	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.960	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.686	0.010	10.190	0.866	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.172	0.018	9.390	1.016	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	8.110	0.523	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.689	0.010	10.350	0.885	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.964	0.018	29.980	1.234	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	8.110	0.518	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.689	0.010	10.350	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.174	0.018	9.440	1.015	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	7.850	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	10.060	0.852	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.963	0.018	29.320	1.181	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	7.850	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	10.060	0.840	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.173	0.018	9.230	0.973	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	10.570	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.729	0.010	13.100	0.837	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.988	0.018	31.720	1.055	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	10.570	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.729	0.010	13.100	0.830	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.203	0.018	9.990	0.833	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.960	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.420	0.867	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.982	0.018	31.180	1.119	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.960	0.502	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.420	0.858	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.197	0.018	9.820	0.898	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.670	0.507	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.970	0.863	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.018	30.080	1.166	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.670	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.970	0.850	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.182	0.018	9.470	0.950	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.363	0.007	6.580	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	8.670	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.950	0.018	28.790	1.255	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.363	0.007	6.580	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	8.670	0.839	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.157	0.018	9.060	1.049	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	7.510	0.516	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.678	0.010	9.700	0.869	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.958	0.018	29.440	1.232	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	7.510	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.678	0.010	9.700	0.853	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.168	0.018	9.270	1.020	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	6.220	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	8.270	0.820	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.948	0.018	27.910	1.198	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	6.220	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	8.270	0.806	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.155	0.018	8.790	1.002	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	10.820	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.733	0.010	13.390	0.840	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.990	0.018	31.950	1.048	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	10.820	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.733	0.010	13.390	0.833	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.206	0.018	10.060	0.825	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.450	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.840	0.880	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.977	0.018	30.750	1.161	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.450	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.840	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.190	0.018	9.680	0.938	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.410	0.509	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.710	0.010	11.800	0.871	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.977	0.018	30.700	1.148	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.410	0.506	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.710	0.010	11.800	0.859	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.190	0.018	9.660	0.927	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	10.350	0.492	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.729	0.010	12.850	0.867	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.985	0.018	31.540	1.107	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	10.350	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.729	0.010	12.850	0.855	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.200	0.018	9.930	0.877	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	9.020	0.519	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.360	0.884	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.972	0.018	30.630	1.195	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.376	0.007	9.020	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	11.360	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.184	0.018	9.640	0.969	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.680	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.980	0.865	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.018	30.100	1.170	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.680	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.697	0.010	10.980	0.852	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.182	0.018	9.470	0.953	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	7.280	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.675	0.010	9.440	0.873	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.956	0.018	29.410	1.256	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	7.280	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.675	0.010	9.440	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.165	0.018	9.260	1.043	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.385	0.007	11.630	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	14.300	0.877	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.997	0.018	32.680	1.063	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.385	0.007	11.630	0.493	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.750	0.010	14.300	0.870	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.215	0.018	10.290	0.833	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.870	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	11.190	0.854	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.972	0.018	30.210	1.145	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	8.870	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	11.190	0.842	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.184	0.018	9.510	0.929	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	10.120	0.505	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	12.600	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.984	0.018	31.330	1.114	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	10.120	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.721	0.010	12.600	0.859	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.198	0.018	9.860	0.893	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	10.890	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	13.460	0.855	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.990	0.018	32.010	1.065	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.379	0.007	10.890	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	13.460	0.847	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.207	0.018	10.080	0.839	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.390	0.007	11.900	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	14.610	0.915	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.999	0.018	32.940	1.101	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.390	0.007	11.900	0.512	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	14.610	0.907	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.217	0.018	10.370	0.862	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.368	0.007	7.620	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.810	0.876	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.959	0.018	29.600	1.242	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.368	0.007	7.620	0.515	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.810	0.860	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.169	0.018	9.320	1.027	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.000	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.705	0.010	11.340	0.876	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.972	0.018	30.490	1.178	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.000	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.705	0.010	11.340	0.862	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.185	0.018	9.600	0.956	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.280	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	13.910	0.863	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.994	0.018	32.360	1.060	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.280	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	13.910	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.018	10.190	0.832	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	9.810	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	12.240	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.980	0.018	31.050	1.116	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.377	0.007	9.810	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.719	0.010	12.240	0.844	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.194	0.018	9.780	0.889	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.480	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.709	0.010	11.880	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.978	0.018	30.760	1.122	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.480	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.709	0.010	11.880	0.846	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.191	0.018	9.680	0.905	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.380	0.007	11.080	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.739	0.010	13.680	0.859	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.992	0.018	32.180	1.063	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.380	0.007	11.080	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.739	0.010	13.680	0.852	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.209	0.018	10.130	0.836	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.140	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.705	0.010	11.490	0.859	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.975	0.018	30.450	1.141	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.140	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.705	0.010	11.490	0.847	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.187	0.018	9.580	0.924	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.970	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	11.300	0.847	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.973	0.018	30.300	1.130	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.970	0.494	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.700	0.010	11.300	0.837	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.186	0.018	9.540	0.916	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.378	0.007	10.680	0.481	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.731	0.010	13.220	0.848	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.989	0.018	31.820	1.065	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.378	0.007	10.680	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.731	0.010	13.220	0.840	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.204	0.018	10.020	0.840	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	8.040	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	10.270	0.868	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.964	0.018	29.620	1.200	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.365	0.007	8.040	0.509	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	10.270	0.854	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.175	0.018	9.320	0.987	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.391	0.007	12.020	0.518	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	14.750	0.921	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.000	0.018	33.050	1.102	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.391	0.007	12.020	0.514	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.760	0.010	14.750	0.912	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.218	0.018	10.400	0.863	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.372	0.007	9.580	0.506	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.990	0.866	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.979	0.018	30.850	1.133	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.372	0.007	9.580	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	11.990	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.192	0.018	9.710	0.914	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	8.320	0.524	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	10.590	0.887	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.965	0.018	30.270	1.236	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	8.320	0.519	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	10.590	0.870	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.176	0.018	9.530	1.013	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	10.040	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.717	0.010	12.510	0.838	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.983	0.018	31.240	1.074	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	10.040	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.717	0.010	12.510	0.832	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.198	0.018	9.830	0.860	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.342	0.007	6.960	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.656	0.010	9.120	0.812	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.956	0.018	28.580	1.157	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.342	0.007	6.960	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.656	0.010	9.120	0.802	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.164	0.018	9.000	0.961	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.920	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.717	0.010	12.370	0.864	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.982	0.018	31.150	1.116	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	9.920	0.501	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.717	0.010	12.370	0.855	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.196	0.018	9.800	0.896	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.362	0.007	5.550	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	7.520	0.834	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.941	0.018	27.740	1.258	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.362	0.007	5.550	0.498	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	7.520	0.816	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.147	0.018	8.730	1.059	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.670	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	12.090	0.855	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.980	0.018	30.920	1.113	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.370	0.007	9.670	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.712	0.010	12.090	0.846	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.194	0.018	9.730	0.895	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.670	0.517	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.860	0.873	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.960	0.018	29.550	1.231	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.366	0.007	7.670	0.513	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.860	0.857	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.169	0.018	9.300	1.018	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.383	0.007	10.680	0.497	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	13.230	0.878	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.988	0.018	31.840	1.107	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.383	0.007	10.680	0.493	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.735	0.010	13.230	0.867	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.204	0.018	10.020	0.875	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.340	0.508	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.691	0.010	10.600	0.862	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.967	0.018	29.880	1.182	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.340	0.504	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.691	0.010	10.600	0.849	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.178	0.018	9.400	0.967	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.550	0.525	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.740	0.883	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.958	0.018	29.680	1.261	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	7.550	0.520	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	9.740	0.865	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.168	0.018	9.340	1.045	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.900	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.350	0.842	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.981	0.018	31.140	1.089	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.374	0.007	9.900	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.718	0.010	12.350	0.831	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.196	0.018	9.800	0.867	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.290	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	13.910	0.867	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.994	0.018	32.370	1.065	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.382	0.007	11.290	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.743	0.010	13.910	0.860	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.018	10.190	0.836	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	5.610	0.510	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	7.590	0.849	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.943	0.018	28.320	1.298	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.373	0.007	5.610	0.507	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	7.590	0.830	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.149	0.018	8.920	1.095	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-35. On-Road Vehicle Emission Factors – 2015 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.640	0.503	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	10.940	0.856	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.970	0.018	30.010	1.155	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.367	0.007	8.640	0.500	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.696	0.010	10.940	0.844	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.182	0.018	9.450	0.941	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.371	0.007	10.210	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.700	0.843	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.985	0.018	31.390	1.074	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.371	0.007	10.210	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.720	0.010	12.700	0.837	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.200	0.018	9.880	0.859	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	9.370	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	11.750	0.852	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.977	0.018	30.650	1.121	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.369	0.007	9.370	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.707	0.010	11.750	0.842	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.190	0.018	9.650	0.905	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.384	0.007	11.310	0.499	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	13.940	0.882	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.994	0.018	32.400	1.084	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.384	0.007	11.310	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.745	0.010	13.940	0.874	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.018	10.200	0.852	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	11.190	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	13.800	0.857	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.993	0.018	32.280	1.056	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.659	0.350	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.375	0.012	1.734	0.601	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	11.190	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.741	0.010	13.800	0.850	0.025	0.011	550.200	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.210	0.018	10.160	0.829	0.046	0.028	986.800	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.137	0.003	0.748	0.111	0.045	0.030	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.383	0.006	0.614	0.345	0.053	0.038	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.331	0.012	0.705	0.301	0.086	0.060	1245.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.430	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	9.460	0.823	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.842	0.018	29.360	1.155	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.430	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	9.460	0.808	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.026	0.018	9.240	0.958	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	14.360	0.496	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	16.990	0.887	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.018	35.150	0.960	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.381	0.007	14.360	0.495	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.757	0.010	16.990	0.886	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.094	0.018	11.060	0.730	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	7.770	0.488	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	9.820	0.832	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.845	0.018	29.660	1.156	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	7.770	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	9.820	0.817	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.029	0.018	9.330	0.955	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.920	0.489	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.644	0.010	9.980	0.835	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.846	0.018	29.820	1.156	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.920	0.485	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.644	0.010	9.980	0.819	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.030	0.018	9.380	0.954	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	7.670	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	9.690	0.805	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.845	0.018	29.160	1.107	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	7.670	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.635	0.010	9.690	0.794	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.030	0.018	9.170	0.915	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	10.360	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	12.610	0.789	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.867	0.018	31.560	0.988	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	10.360	0.445	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.679	0.010	12.610	0.782	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.056	0.018	9.930	0.783	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.760	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.950	0.817	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.862	0.018	31.020	1.049	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.760	0.471	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.950	0.808	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.050	0.018	9.760	0.844	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	8.480	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	10.570	0.814	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.852	0.018	29.920	1.093	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	8.480	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	10.570	0.802	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.038	0.018	9.410	0.893	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.335	0.007	6.410	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.620	0.010	8.370	0.808	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.834	0.018	28.630	1.178	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.335	0.007	6.410	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.620	0.010	8.370	0.792	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.016	0.018	9.010	0.987	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.330	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	9.350	0.821	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.841	0.018	29.280	1.156	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.337	0.007	7.330	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	9.350	0.806	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.025	0.018	9.210	0.960	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	6.060	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	7.980	0.775	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.832	0.018	27.760	1.125	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	6.060	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	7.980	0.762	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.014	0.018	8.730	0.944	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	10.610	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.683	0.010	12.880	0.791	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.869	0.018	31.780	0.981	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	10.610	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.683	0.010	12.880	0.785	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.059	0.018	10.000	0.776	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	9.250	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.400	0.830	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.018	30.590	1.088	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	9.250	0.479	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.400	0.818	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.045	0.018	9.620	0.881	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.220	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	11.360	0.821	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.018	30.540	1.075	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.220	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.663	0.010	11.360	0.810	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.045	0.018	9.610	0.871	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.140	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	12.360	0.816	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.865	0.018	31.370	1.037	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.140	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.680	0.010	12.360	0.805	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.054	0.018	9.870	0.825	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	8.820	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	10.950	0.833	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.853	0.018	30.460	1.119	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.346	0.007	8.820	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	10.950	0.819	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.040	0.018	9.580	0.911	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.490	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	10.570	0.816	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.852	0.018	29.940	1.096	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.490	0.473	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	10.570	0.804	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.038	0.018	9.420	0.896	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.090	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.631	0.010	9.100	0.824	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.839	0.018	29.260	1.177	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.090	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.631	0.010	9.100	0.808	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.022	0.018	9.200	0.981	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.410	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.699	0.010	13.750	0.825	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.875	0.018	32.500	0.996	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.410	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.699	0.010	13.750	0.818	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.066	0.018	10.230	0.782	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.670	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	10.770	0.805	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.853	0.018	30.050	1.073	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	8.670	0.467	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	10.770	0.794	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.040	0.018	9.460	0.874	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.920	0.474	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	12.120	0.818	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.863	0.018	31.160	1.044	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.920	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.672	0.010	12.120	0.810	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.052	0.018	9.800	0.839	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.349	0.007	10.670	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.950	0.805	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.869	0.018	31.840	0.998	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.349	0.007	10.670	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.950	0.797	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.059	0.018	10.020	0.789	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.359	0.007	11.670	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	14.040	0.860	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.877	0.018	32.760	1.030	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.359	0.007	11.670	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.706	0.010	14.040	0.851	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.068	0.018	10.310	0.810	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.440	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.460	0.827	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.842	0.018	29.440	1.164	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.339	0.007	7.440	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.460	0.812	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.026	0.018	9.260	0.966	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	8.800	0.482	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	10.920	0.826	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.854	0.018	30.330	1.104	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	8.800	0.478	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	10.920	0.812	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.040	0.018	9.540	0.899	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.351	0.007	11.060	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	13.370	0.812	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.872	0.018	32.190	0.993	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.351	0.007	11.060	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.692	0.010	13.370	0.806	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.063	0.018	10.130	0.782	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	9.600	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.780	0.806	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.861	0.018	30.890	1.045	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.347	0.007	9.600	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	11.780	0.795	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.018	9.720	0.836	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.290	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.662	0.010	11.440	0.807	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.858	0.018	30.590	1.052	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.290	0.467	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.662	0.010	11.440	0.798	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.046	0.018	9.630	0.851	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.860	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.689	0.010	13.160	0.809	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.871	0.018	32.010	0.996	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.860	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.689	0.010	13.160	0.802	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.061	0.018	10.070	0.786	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	8.940	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	11.060	0.810	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.855	0.018	30.290	1.069	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	8.940	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.658	0.010	11.060	0.799	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.042	0.018	9.530	0.868	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.780	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	10.890	0.799	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.854	0.018	30.140	1.060	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.780	0.464	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	10.890	0.790	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.041	0.018	9.480	0.862	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	10.470	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	12.720	0.798	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.868	0.018	31.650	0.997	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.348	0.007	10.470	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.682	0.010	12.720	0.791	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.057	0.018	9.960	0.790	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.336	0.007	7.860	0.480	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.640	0.010	9.900	0.819	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.846	0.018	29.460	1.124	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.336	0.007	7.860	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.640	0.010	9.900	0.807	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.031	0.018	9.270	0.928	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	11.790	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.708	0.010	14.180	0.865	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.878	0.018	32.880	1.032	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.360	0.007	11.790	0.483	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.708	0.010	14.180	0.857	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.069	0.018	10.340	0.810	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.380	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.540	0.817	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.859	0.018	30.680	1.062	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.380	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.540	0.807	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.047	0.018	9.650	0.859	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	8.130	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.649	0.010	10.210	0.837	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.847	0.018	30.110	1.158	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.345	0.007	8.130	0.486	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.649	0.010	10.210	0.821	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.033	0.018	9.470	0.952	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.840	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.668	0.010	12.040	0.791	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.863	0.018	31.070	1.007	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.840	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.668	0.010	12.040	0.785	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.051	0.018	9.780	0.809	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	6.810	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	8.800	0.768	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.839	0.018	28.430	1.087	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	6.810	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	8.800	0.758	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.022	0.018	8.940	0.906	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.720	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.669	0.010	11.910	0.814	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.862	0.018	30.980	1.046	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.343	0.007	9.720	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.669	0.010	11.910	0.806	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.050	0.018	9.750	0.842	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.334	0.007	5.390	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	7.270	0.788	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.826	0.018	27.590	1.181	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.334	0.007	5.390	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	7.270	0.771	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.007	0.018	8.680	0.998	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.470	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.640	0.806	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.860	0.018	30.760	1.043	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	9.470	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.664	0.010	11.640	0.798	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.048	0.018	9.680	0.842	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	7.480	0.484	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.510	0.824	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.842	0.018	29.400	1.154	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	7.480	0.481	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.510	0.809	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.026	0.018	9.250	0.957	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	10.470	0.466	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.720	0.826	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.867	0.018	31.670	1.037	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	10.470	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.685	0.010	12.720	0.816	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.057	0.018	9.960	0.822	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.150	0.476	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	10.220	0.814	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.849	0.018	29.720	1.108	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.150	0.473	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	10.220	0.801	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.034	0.018	9.350	0.909	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.370	0.491	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.390	0.833	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.841	0.018	29.520	1.182	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	7.370	0.487	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.636	0.010	9.390	0.817	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.025	0.018	9.290	0.982	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.700	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.890	0.793	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.862	0.018	30.970	1.021	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	9.700	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.670	0.010	11.890	0.783	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.050	0.018	9.740	0.815	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	11.070	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	13.380	0.816	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.872	0.018	32.200	0.997	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.352	0.007	11.070	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.693	0.010	13.380	0.809	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.063	0.018	10.130	0.786	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	5.440	0.477	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	7.330	0.802	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.828	0.018	28.170	1.219	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.344	0.007	5.440	0.475	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	7.330	0.784	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.009	0.018	8.860	1.031	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-36. On-Road Vehicle Emission Factors – 2016 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.450	0.472	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.649	0.010	10.540	0.807	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.852	0.018	29.850	1.083	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.338	0.007	8.450	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.649	0.010	10.540	0.796	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.037	0.018	9.390	0.885	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	10.010	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	12.220	0.795	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.864	0.018	31.220	1.007	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.341	0.007	10.010	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	12.220	0.789	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.053	0.018	9.820	0.807	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.170	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	11.310	0.804	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.857	0.018	30.490	1.051	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.340	0.007	9.170	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.660	0.010	11.310	0.795	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.045	0.018	9.590	0.851	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.090	0.468	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.400	0.830	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.872	0.018	32.220	1.015	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.354	0.007	11.090	0.465	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.694	0.010	13.400	0.822	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.063	0.018	10.140	0.801	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.970	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	13.270	0.807	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.872	0.018	32.110	0.989	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.614	0.320	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.076	0.012	1.544	0.583	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.350	0.007	10.970	0.454	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.690	0.010	13.270	0.800	0.025	0.011	550.600	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	1.062	0.018	10.100	0.779	0.044	0.027	986.100	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.108	0.003	0.715	0.097	0.041	0.026	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.342	0.006	0.579	0.316	0.049	0.034	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	2.038	0.012	0.628	0.291	0.079	0.053	1245.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.280	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.200	0.781	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.734	0.018	29.200	1.072	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.280	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.200	0.767	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.895	0.018	9.180	0.891	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.353	0.007	14.150	0.470	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.714	0.010	16.490	0.844	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.783	0.018	34.960	0.892	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.353	0.007	14.150	0.469	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.714	0.010	16.490	0.843	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.954	0.018	11.000	0.680	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	7.620	0.460	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	9.550	0.789	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.737	0.018	29.490	1.072	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	7.620	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	9.550	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.018	9.280	0.888	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.317	0.007	7.760	0.461	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	9.700	0.792	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.738	0.018	29.650	1.072	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.317	0.007	7.760	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	9.700	0.778	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.899	0.018	9.330	0.886	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.307	0.007	7.520	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.430	0.764	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.737	0.018	29.000	1.028	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.307	0.007	7.520	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.600	0.010	9.430	0.753	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.898	0.018	9.120	0.851	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	10.190	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	12.250	0.750	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.756	0.018	31.380	0.918	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	10.190	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.641	0.010	12.250	0.743	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.921	0.018	9.870	0.729	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.590	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.610	0.777	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.752	0.018	30.850	0.974	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.590	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.610	0.768	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.916	0.018	9.700	0.786	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.330	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	10.270	0.773	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.743	0.018	29.750	1.014	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.330	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	10.270	0.762	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.905	0.018	9.360	0.830	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	6.260	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	8.140	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.727	0.018	28.480	1.094	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	6.260	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	8.140	0.752	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.886	0.018	8.960	0.919	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.180	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	9.090	0.778	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.734	0.018	29.120	1.072	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.180	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.598	0.010	9.090	0.765	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.894	0.018	9.160	0.892	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	5.930	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	7.770	0.735	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.726	0.018	27.610	1.046	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	5.930	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	7.770	0.724	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.884	0.018	8.680	0.880	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	10.440	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	12.510	0.752	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.758	0.018	31.600	0.912	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	10.440	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.645	0.010	12.510	0.746	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.924	0.018	9.940	0.722	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.080	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.070	0.788	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.748	0.018	30.420	1.010	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.080	0.452	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.070	0.777	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.912	0.018	9.570	0.820	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.050	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	11.040	0.780	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.748	0.018	30.370	0.998	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.050	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	11.040	0.769	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.911	0.018	9.550	0.810	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	9.960	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	12.010	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.754	0.018	31.200	0.962	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	9.960	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	12.010	0.765	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.919	0.018	9.810	0.767	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	8.660	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.622	0.010	10.640	0.791	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.744	0.018	30.300	1.038	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.321	0.007	8.660	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.622	0.010	10.640	0.777	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.018	9.530	0.847	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.330	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	10.280	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.743	0.018	29.770	1.017	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.330	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.615	0.010	10.280	0.763	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.905	0.018	9.360	0.833	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	6.940	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	8.850	0.781	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.732	0.018	29.100	1.093	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	6.940	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	8.850	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.892	0.018	9.150	0.912	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.328	0.007	11.230	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	13.350	0.784	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.763	0.018	32.330	0.924	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.328	0.007	11.230	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.659	0.010	13.350	0.778	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.930	0.018	10.170	0.728	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.520	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	10.470	0.765	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.744	0.018	29.890	0.997	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	8.520	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	10.470	0.754	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.018	9.400	0.813	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.750	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.780	0.778	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.753	0.018	30.990	0.969	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.750	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.780	0.770	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.918	0.018	9.750	0.781	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.323	0.007	10.500	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	12.580	0.765	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.758	0.018	31.670	0.927	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.323	0.007	10.500	0.428	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	12.580	0.758	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.924	0.018	9.960	0.734	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	11.480	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	13.640	0.817	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.765	0.018	32.580	0.956	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.332	0.007	11.480	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.666	0.010	13.640	0.809	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.932	0.018	10.250	0.752	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	7.280	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.200	0.784	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.734	0.018	29.280	1.080	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	7.280	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.200	0.770	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.895	0.018	9.210	0.898	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	8.640	0.455	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	10.610	0.784	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.745	0.018	30.160	1.025	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	8.640	0.451	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	10.610	0.772	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.907	0.018	9.490	0.836	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	12.990	0.772	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.761	0.018	32.020	0.922	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.653	0.010	12.990	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.927	0.018	10.070	0.728	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	9.440	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	11.450	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.751	0.018	30.720	0.969	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	9.440	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.633	0.010	11.450	0.755	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.915	0.018	9.660	0.777	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.130	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.625	0.010	11.120	0.767	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.749	0.018	30.430	0.977	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.130	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.625	0.010	11.120	0.758	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.912	0.018	9.570	0.792	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.690	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	12.780	0.769	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.760	0.018	31.840	0.925	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.690	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.650	0.010	12.780	0.762	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.926	0.018	10.010	0.731	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	8.780	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	10.750	0.769	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.746	0.018	30.120	0.993	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	8.780	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.621	0.010	10.750	0.759	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.909	0.018	9.470	0.808	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.620	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	10.580	0.759	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.745	0.018	29.970	0.984	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.620	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.617	0.010	10.580	0.750	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.908	0.018	9.430	0.802	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	10.290	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.644	0.010	12.360	0.759	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.757	0.018	31.480	0.926	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.322	0.007	10.290	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.644	0.010	12.360	0.752	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.922	0.018	9.900	0.735	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.710	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	9.630	0.778	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.738	0.018	29.300	1.043	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.312	0.007	7.710	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	9.630	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.899	0.018	9.210	0.863	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.333	0.007	11.600	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.668	0.010	13.770	0.822	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.766	0.018	32.690	0.957	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.333	0.007	11.600	0.456	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.668	0.010	13.770	0.814	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.933	0.018	10.280	0.753	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.220	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.220	0.776	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.749	0.018	30.510	0.986	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.220	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.220	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.913	0.018	9.600	0.799	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	7.970	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	9.920	0.794	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.739	0.018	29.940	1.074	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	7.970	0.458	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	9.920	0.779	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.901	0.018	9.420	0.885	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	9.680	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.631	0.010	11.700	0.752	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.753	0.018	30.900	0.936	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	9.680	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.631	0.010	11.700	0.746	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.917	0.018	9.720	0.753	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	6.670	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	8.560	0.729	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.732	0.018	28.270	1.011	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	6.670	0.428	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	8.560	0.720	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.891	0.018	8.890	0.844	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.550	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.570	0.774	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.752	0.018	30.810	0.971	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.318	0.007	9.550	0.444	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.570	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.916	0.018	9.690	0.784	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	5.250	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	7.080	0.747	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.721	0.018	27.440	1.098	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.311	0.007	5.250	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.575	0.010	7.080	0.731	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.878	0.018	8.630	0.930	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.310	0.443	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.310	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.750	0.018	30.590	0.969	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.310	0.441	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.627	0.010	11.310	0.758	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.914	0.018	9.620	0.783	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.330	0.457	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.250	0.781	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.735	0.018	29.230	1.071	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	7.330	0.453	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.250	0.768	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.895	0.018	9.190	0.890	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.326	0.007	10.290	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	12.360	0.785	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.757	0.018	31.500	0.962	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.326	0.007	10.290	0.437	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.647	0.010	12.360	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.922	0.018	9.910	0.764	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.000	0.449	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.610	0.010	9.930	0.772	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.740	0.018	29.550	1.028	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.314	0.007	8.000	0.446	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.610	0.010	9.930	0.760	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.902	0.018	9.290	0.845	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	7.210	0.463	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.130	0.790	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.734	0.018	29.360	1.097	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	7.210	0.459	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	9.130	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.894	0.018	9.230	0.913	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.540	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.550	0.753	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.752	0.018	30.800	0.947	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.319	0.007	9.540	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.632	0.010	11.550	0.744	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.916	0.018	9.690	0.758	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.654	0.010	13.000	0.775	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.761	0.018	32.020	0.926	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.325	0.007	10.890	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.654	0.010	13.000	0.769	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.927	0.018	10.070	0.731	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	5.290	0.450	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	7.140	0.759	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.722	0.018	28.020	1.132	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.320	0.007	5.290	0.448	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	7.140	0.743	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.880	0.018	8.810	0.961	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-37. On-Road Vehicle Emission Factors – 2017 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.300	0.445	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	10.240	0.766	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.743	0.018	29.690	1.005	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.313	0.007	8.300	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.613	0.010	10.240	0.756	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.905	0.018	9.340	0.823	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.840	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.870	0.756	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.754	0.018	31.050	0.935	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.316	0.007	9.840	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.634	0.010	11.870	0.750	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.919	0.018	9.760	0.752	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.010	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.623	0.010	10.990	0.764	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.748	0.018	30.320	0.976	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.315	0.007	9.010	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.623	0.010	10.990	0.755	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.911	0.018	9.540	0.792	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.327	0.007	10.910	0.442	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.020	0.788	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.761	0.018	32.050	0.942	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.327	0.007	10.910	0.439	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.655	0.010	13.020	0.781	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.927	0.018	10.080	0.745	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.800	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	12.890	0.767	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.760	0.018	31.930	0.918	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.600	0.305	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.811	0.012	1.384	0.569	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.324	0.007	10.800	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.651	0.010	12.890	0.761	0.025	0.011	550.700	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.927	0.018	10.040	0.725	0.042	0.026	985.400	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.088	0.003	0.692	0.087	0.038	0.023	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.317	0.006	0.565	0.302	0.047	0.032	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.778	0.012	0.563	0.284	0.073	0.048	1244.700	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.150	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	8.880	0.738	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.018	29.110	1.029	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.150	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	8.880	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.018	9.150	0.859	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.329	0.007	13.950	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	15.880	0.797	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.698	0.018	34.860	0.852	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.329	0.007	13.950	0.447	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.671	0.010	15.880	0.795	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.850	0.018	10.960	0.652	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	7.490	0.437	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	9.220	0.746	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.656	0.018	29.410	1.029	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	7.490	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	9.220	0.733	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.800	0.018	9.240	0.856	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.630	0.438	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	9.360	0.748	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.018	29.570	1.029	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.630	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.573	0.010	9.360	0.735	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.801	0.018	9.290	0.854	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	7.400	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	9.100	0.722	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.657	0.018	28.910	0.987	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	7.400	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	9.100	0.713	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.800	0.018	9.090	0.821	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	10.040	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.603	0.010	11.810	0.709	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.674	0.018	31.290	0.879	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	10.040	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.603	0.010	11.810	0.703	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.821	0.018	9.840	0.701	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.450	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.200	0.734	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.670	0.018	30.750	0.933	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.450	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.200	0.727	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.816	0.018	9.670	0.756	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.190	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.910	0.731	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.662	0.018	29.670	0.973	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.190	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.910	0.720	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.806	0.018	9.330	0.800	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	6.140	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.552	0.010	7.870	0.724	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.648	0.018	28.390	1.052	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	6.140	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.552	0.010	7.870	0.711	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.789	0.018	8.930	0.887	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	7.060	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	8.780	0.736	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.018	29.030	1.030	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	7.060	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	8.780	0.723	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.796	0.018	9.130	0.861	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	5.820	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	7.510	0.696	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.647	0.018	27.530	1.006	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	5.820	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	7.510	0.685	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.788	0.018	8.650	0.849	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	10.290	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	12.060	0.711	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.675	0.018	31.510	0.873	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	10.290	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.606	0.010	12.060	0.705	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.823	0.018	9.910	0.694	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.940	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.680	0.745	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.666	0.018	30.330	0.968	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.940	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.680	0.734	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.812	0.018	9.530	0.789	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	8.910	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	10.650	0.737	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.666	0.018	30.280	0.957	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	8.910	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.589	0.010	10.650	0.727	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.812	0.018	9.520	0.780	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	9.810	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.603	0.010	11.580	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.672	0.018	31.100	0.922	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	9.810	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.603	0.010	11.580	0.723	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.819	0.018	9.780	0.738	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	8.520	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.260	0.747	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.663	0.018	30.210	0.996	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	8.520	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.260	0.735	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.808	0.018	9.500	0.816	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.190	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.920	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.662	0.018	29.680	0.976	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.190	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	9.920	0.722	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.806	0.018	9.330	0.803	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	6.820	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	8.550	0.739	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.018	29.010	1.050	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	6.820	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	8.550	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.795	0.018	9.120	0.880	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	11.060	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.620	0.010	12.870	0.741	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.680	0.018	32.230	0.884	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	11.060	0.416	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.620	0.010	12.870	0.735	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.829	0.018	10.130	0.700	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.380	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	10.100	0.723	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.663	0.018	29.800	0.956	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.380	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	10.100	0.714	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.808	0.018	9.370	0.783	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.600	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.360	0.735	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.671	0.018	30.900	0.929	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.600	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.597	0.010	11.360	0.728	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.817	0.018	9.710	0.752	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.340	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	12.130	0.723	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.676	0.018	31.570	0.887	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.340	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	12.130	0.716	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.823	0.018	9.930	0.706	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	11.310	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	13.140	0.771	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.681	0.018	32.480	0.914	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	11.310	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.626	0.010	13.140	0.764	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.830	0.018	10.210	0.723	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	7.160	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.890	0.741	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.018	29.190	1.037	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	7.160	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.890	0.728	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.018	9.180	0.866	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.500	0.432	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	10.240	0.741	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.663	0.018	30.070	0.983	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.298	0.007	8.500	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	10.240	0.729	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.808	0.018	9.450	0.805	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.520	0.729	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.678	0.018	31.920	0.882	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.520	0.724	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.826	0.018	10.030	0.700	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	9.290	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.040	0.723	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.669	0.018	30.630	0.929	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	9.290	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.040	0.713	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.815	0.018	9.630	0.748	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.980	0.422	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	10.720	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.667	0.018	30.330	0.936	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.980	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	10.720	0.717	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.813	0.018	9.540	0.762	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.530	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.611	0.010	12.320	0.726	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.677	0.018	31.740	0.885	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.301	0.007	10.530	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.611	0.010	12.320	0.720	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.825	0.018	9.980	0.703	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.640	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	10.370	0.727	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.665	0.018	30.030	0.952	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	8.640	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.584	0.010	10.370	0.718	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.810	0.018	9.440	0.778	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.490	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	10.210	0.718	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.664	0.018	29.880	0.944	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.490	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	10.210	0.710	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.809	0.018	9.390	0.773	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	10.140	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	11.910	0.717	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.674	0.018	31.380	0.887	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.300	0.007	10.140	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.605	0.010	11.910	0.710	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.822	0.018	9.870	0.707	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	7.580	0.430	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	9.290	0.735	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.658	0.018	29.210	1.001	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	7.580	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	9.290	0.724	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.801	0.018	9.180	0.832	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.310	0.007	11.430	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	13.270	0.776	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.682	0.018	32.600	0.915	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.310	0.007	11.430	0.433	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.628	0.010	13.270	0.769	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.831	0.018	10.250	0.724	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.080	0.426	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.820	0.733	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.667	0.018	30.420	0.945	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.080	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.820	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.813	0.018	9.560	0.769	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	7.830	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	9.580	0.750	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.659	0.018	29.850	1.031	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	7.830	0.435	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	9.580	0.736	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.802	0.018	9.380	0.853	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	9.530	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.593	0.010	11.280	0.711	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.671	0.018	30.810	0.897	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	9.530	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.593	0.010	11.280	0.706	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.817	0.018	9.690	0.725	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	6.560	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	8.270	0.690	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.652	0.018	28.190	0.972	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	6.560	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	8.270	0.682	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.794	0.018	8.860	0.815	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.410	0.425	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	11.160	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.670	0.018	30.720	0.931	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.296	0.007	9.410	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.594	0.010	11.160	0.724	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.816	0.018	9.660	0.755	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	5.140	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	6.840	0.706	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.642	0.018	27.360	1.056	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.290	0.007	5.140	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	6.840	0.692	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.782	0.018	8.600	0.898	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.170	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.910	0.724	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.668	0.018	30.500	0.928	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.170	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	10.910	0.717	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.814	0.018	9.590	0.754	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.200	0.434	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	8.930	0.739	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.655	0.018	29.150	1.028	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.200	0.431	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	8.930	0.726	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.798	0.018	9.160	0.858	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.304	0.007	10.140	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	11.920	0.741	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.674	0.018	31.400	0.921	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.304	0.007	10.140	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.608	0.010	11.920	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.821	0.018	9.870	0.735	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.860	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	9.580	0.730	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.659	0.018	29.470	0.986	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	7.860	0.424	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	9.580	0.719	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.803	0.018	9.260	0.815	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.080	0.440	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.820	0.746	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.654	0.018	29.270	1.053	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	7.080	0.436	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.566	0.010	8.820	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.797	0.018	9.200	0.881	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	9.390	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.140	0.712	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.669	0.018	30.710	0.907	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.297	0.007	9.390	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.595	0.010	11.140	0.704	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.816	0.018	9.650	0.730	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.530	0.732	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.678	0.018	31.930	0.886	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.303	0.007	10.730	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.614	0.010	12.530	0.726	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.826	0.018	10.040	0.703	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	5.180	0.427	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	6.900	0.717	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.018	27.930	1.089	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.299	0.007	5.180	0.425	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	6.900	0.702	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.784	0.018	8.780	0.928	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-38. On-Road Vehicle Emission Factors – 2018 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.160	0.423	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	9.880	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.662	0.018	29.600	0.964	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	8.160	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	9.880	0.715	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.806	0.018	9.310	0.793	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.690	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.450	0.715	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.672	0.018	30.960	0.896	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.294	0.007	9.690	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.596	0.010	11.450	0.710	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.818	0.018	9.730	0.724	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.870	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.610	0.722	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.666	0.018	30.230	0.936	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.293	0.007	8.870	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	10.610	0.714	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.812	0.018	9.500	0.763	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	10.750	0.420	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	12.550	0.745	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.678	0.018	31.950	0.902	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.305	0.007	10.750	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.616	0.010	12.550	0.738	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.826	0.018	10.040	0.716	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	10.640	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.612	0.010	12.430	0.725	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.677	0.018	31.830	0.879	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.554	0.012	1.237	0.551	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.302	0.007	10.640	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.612	0.010	12.430	0.719	0.025	0.011	550.900	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.825	0.018	10.010	0.697	0.041	0.024	985.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.072	0.003	0.675	0.080	0.036	0.022	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.280	0.006	0.526	0.270	0.041	0.026	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.525	0.012	0.503	0.274	0.065	0.040	1244.600	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	7.050	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.680	0.706	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.018	28.980	0.958	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	7.050	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.680	0.694	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.018	9.110	0.801	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	13.790	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	15.450	0.767	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.609	0.018	34.700	0.794	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.309	0.007	13.790	0.429	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.642	0.010	15.450	0.765	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.742	0.018	10.900	0.609	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.380	0.418	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.010	0.713	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.573	0.018	29.270	0.957	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.380	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.010	0.701	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.018	9.200	0.797	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	7.520	0.419	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	9.150	0.716	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.574	0.018	29.430	0.957	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	7.520	0.416	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	9.150	0.703	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.018	9.250	0.795	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	7.300	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.890	0.691	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.574	0.018	28.780	0.919	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	7.300	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	8.890	0.682	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.699	0.018	9.050	0.765	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.920	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	11.520	0.680	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.589	0.018	31.150	0.819	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.920	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	11.520	0.674	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.717	0.018	9.790	0.654	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.330	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.920	0.704	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.585	0.018	30.610	0.869	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.330	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.920	0.697	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.713	0.018	9.620	0.705	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.090	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.680	0.700	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.578	0.018	29.530	0.906	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.090	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.680	0.690	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.704	0.018	9.280	0.746	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	6.050	0.410	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.530	0.010	7.700	0.692	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.566	0.018	28.260	0.979	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	6.050	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.530	0.010	7.700	0.680	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.690	0.018	8.880	0.828	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	6.950	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	8.590	0.704	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.571	0.018	28.900	0.958	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	6.950	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.540	0.010	8.590	0.692	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.018	9.080	0.802	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.730	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.518	0.010	7.350	0.665	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.565	0.018	27.400	0.938	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.730	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.518	0.010	7.350	0.655	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.688	0.018	8.610	0.794	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	10.170	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	11.760	0.682	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.590	0.018	31.360	0.813	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	10.170	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.580	0.010	11.760	0.677	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.719	0.018	9.860	0.648	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	8.830	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.420	0.713	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.582	0.018	30.190	0.901	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	8.830	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.420	0.704	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.709	0.018	9.490	0.735	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.800	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	10.390	0.706	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.582	0.018	30.140	0.891	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.800	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	10.390	0.697	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.709	0.018	9.470	0.727	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	9.690	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	11.290	0.702	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.587	0.018	30.960	0.857	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	9.690	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.578	0.010	11.290	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.715	0.018	9.730	0.687	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	8.400	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.020	0.716	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.579	0.018	30.070	0.926	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	8.400	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.020	0.704	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.706	0.018	9.450	0.760	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.090	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.680	0.701	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.578	0.018	29.550	0.908	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.090	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	9.680	0.691	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.704	0.018	9.290	0.748	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	6.720	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	8.360	0.706	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.570	0.018	28.880	0.977	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	6.720	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	8.360	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.694	0.018	9.070	0.820	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.930	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.593	0.010	12.540	0.711	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.594	0.018	32.080	0.824	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.930	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.593	0.010	12.540	0.706	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.724	0.018	10.080	0.652	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.270	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	9.860	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.579	0.018	29.660	0.890	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.270	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	9.860	0.684	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.706	0.018	9.320	0.730	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.490	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	11.080	0.705	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.586	0.018	30.750	0.865	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.490	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	11.080	0.698	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.714	0.018	9.670	0.701	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	10.220	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.820	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.590	0.018	31.430	0.826	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	10.220	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.820	0.687	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.719	0.018	9.880	0.658	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	11.180	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.599	0.010	12.800	0.740	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.595	0.018	32.340	0.851	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.291	0.007	11.180	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.599	0.010	12.800	0.733	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.725	0.018	10.160	0.673	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.050	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.690	0.709	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.571	0.018	29.060	0.965	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	7.050	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.690	0.696	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.018	9.130	0.807	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	8.390	0.414	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.560	0.010	9.990	0.710	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.579	0.018	29.930	0.914	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.281	0.007	8.390	0.411	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.560	0.010	9.990	0.699	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.706	0.018	9.410	0.750	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	12.200	0.700	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.592	0.018	31.770	0.822	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	12.200	0.695	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.721	0.018	9.990	0.652	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	9.170	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.770	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.584	0.018	30.490	0.864	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	9.170	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.770	0.684	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.712	0.018	9.580	0.696	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.870	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	10.460	0.695	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.018	30.200	0.872	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.870	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.563	0.010	10.460	0.688	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.710	0.018	9.490	0.711	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.410	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	12.010	0.697	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.591	0.018	31.600	0.824	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.410	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	12.010	0.691	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.720	0.018	9.930	0.656	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.530	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.560	0.010	10.120	0.697	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.581	0.018	29.890	0.887	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	8.530	0.404	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.560	0.010	10.120	0.688	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.707	0.018	9.390	0.726	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.380	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	9.970	0.688	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.580	0.018	29.750	0.879	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.380	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	9.970	0.680	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.706	0.018	9.350	0.721	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	10.020	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	11.620	0.688	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.589	0.018	31.240	0.826	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	10.020	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.579	0.010	11.620	0.682	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.718	0.018	9.820	0.659	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	7.480	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.080	0.703	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.574	0.018	29.070	0.932	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	7.480	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.080	0.693	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.700	0.018	9.140	0.775	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	11.300	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	12.930	0.744	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.596	0.018	32.450	0.852	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.292	0.007	11.300	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.601	0.010	12.930	0.738	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.726	0.018	10.200	0.674	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.960	0.408	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.550	0.703	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.583	0.018	30.280	0.880	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	8.960	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.550	0.695	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.710	0.018	9.520	0.717	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	7.720	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	9.360	0.718	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.575	0.018	29.710	0.958	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.282	0.007	7.720	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	9.360	0.704	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.701	0.018	9.340	0.794	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	9.420	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.000	0.682	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.586	0.018	30.670	0.836	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	9.420	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.568	0.010	11.000	0.678	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.714	0.018	9.640	0.677	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.256	0.007	6.470	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.522	0.010	8.080	0.660	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.569	0.018	28.060	0.907	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.256	0.007	6.470	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.522	0.010	8.080	0.653	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.694	0.018	8.820	0.762	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.290	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	10.880	0.702	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.585	0.018	30.580	0.867	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.279	0.007	9.290	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	10.880	0.695	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.713	0.018	9.610	0.704	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	5.050	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.520	0.010	6.710	0.674	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.561	0.018	27.230	0.985	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	5.050	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.520	0.010	6.710	0.661	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.683	0.018	8.560	0.839	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.060	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.650	0.694	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.584	0.018	30.360	0.865	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.060	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	10.650	0.688	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.711	0.018	9.540	0.704	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.100	0.415	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.730	0.706	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.572	0.018	29.010	0.957	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.100	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.542	0.010	8.730	0.694	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.697	0.018	9.120	0.799	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.286	0.007	10.010	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.620	0.710	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.589	0.018	31.260	0.857	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.286	0.007	10.010	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.582	0.010	11.620	0.702	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.717	0.018	9.820	0.685	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.760	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	9.360	0.699	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.576	0.018	29.330	0.918	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	7.760	0.406	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	9.360	0.689	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.702	0.018	9.220	0.759	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	6.980	0.421	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.620	0.713	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.571	0.018	29.140	0.979	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	6.980	0.417	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.543	0.010	8.620	0.700	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.696	0.018	9.160	0.820	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.270	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.870	0.682	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.585	0.018	30.570	0.845	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.280	0.007	9.270	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	10.870	0.675	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.712	0.018	9.610	0.680	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	12.210	0.703	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.592	0.018	31.780	0.825	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.285	0.007	10.600	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.588	0.010	12.210	0.697	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.721	0.018	9.990	0.655	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	5.080	0.409	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	6.770	0.685	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.562	0.018	27.810	1.015	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.283	0.007	5.080	0.407	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	6.770	0.671	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.685	0.018	8.740	0.867	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-39. On-Road Vehicle Emission Factors – 2019 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.060	0.405	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	9.650	0.694	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.578	0.018	29.460	0.898	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.275	0.007	8.060	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	9.650	0.685	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.704	0.018	9.260	0.739	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.580	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	11.170	0.686	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.587	0.018	30.810	0.836	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	9.580	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.571	0.010	11.170	0.681	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.715	0.018	9.680	0.675	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.760	0.403	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.350	0.692	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.582	0.018	30.090	0.872	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.276	0.007	8.760	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.561	0.010	10.350	0.685	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.709	0.018	9.460	0.712	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.620	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	12.230	0.714	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.592	0.018	31.810	0.840	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.287	0.007	10.620	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.590	0.010	12.230	0.708	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.721	0.018	10.000	0.667	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.510	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.110	0.695	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.592	0.018	31.690	0.818	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.373	0.012	1.123	0.541	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.284	0.007	10.510	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.586	0.010	12.110	0.690	0.025	0.011	551.100	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.721	0.018	9.960	0.650	0.040	0.023	984.600	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.063	0.003	0.666	0.075	0.035	0.020	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.257	0.006	0.508	0.253	0.039	0.024	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.347	0.012	0.457	0.269	0.061	0.037	1244.300	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ALABAMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	6.970	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.510	0.657	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.018	28.920	0.888	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	6.970	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.510	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.621	0.018	9.090	0.741	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ALASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	13.680	0.413	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	15.140	0.733	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.544	0.018	34.620	0.745	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.295	0.007	13.680	0.412	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.624	0.010	15.140	0.732	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.662	0.018	10.880	0.570	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARIZONA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.265	0.007	7.310	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.532	0.010	8.840	0.665	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.512	0.018	29.210	0.887	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.265	0.007	7.310	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.532	0.010	8.840	0.654	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.623	0.018	9.180	0.738	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
ARKANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	7.440	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.534	0.010	8.970	0.668	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.512	0.018	29.370	0.887	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	7.440	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.534	0.010	8.970	0.657	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.624	0.018	9.230	0.737	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
CALIFORNIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.258	0.007	7.220	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.720	0.645	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.512	0.018	28.720	0.853	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.258	0.007	7.220	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.527	0.010	8.720	0.637	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.624	0.018	9.030	0.709	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
COLORADO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.840	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	11.290	0.644	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.525	0.018	31.080	0.766	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.840	0.366	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	11.290	0.639	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.640	0.018	9.770	0.611	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
CONNECTICUT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.250	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.710	0.663	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.522	0.018	30.550	0.810	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.250	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.710	0.657	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.636	0.018	9.600	0.656	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
DELAWARE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.490	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.516	0.018	29.470	0.842	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.490	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.628	0.018	9.260	0.692	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
FLORIDA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.980	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.516	0.010	7.550	0.642	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.505	0.018	28.200	0.907	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	5.980	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.516	0.010	7.550	0.631	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.615	0.018	8.860	0.766	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
GEORGIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	6.880	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.526	0.010	8.420	0.655	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.018	28.840	0.889	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	6.880	0.392	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.526	0.010	8.420	0.645	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.621	0.018	9.060	0.743	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
HAWAII	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.249	0.007	5.670	0.377	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.505	0.010	7.210	0.617	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.504	0.018	27.340	0.870	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.249	0.007	5.670	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.505	0.010	7.210	0.608	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.614	0.018	8.590	0.735	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IDAHO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	10.080	0.369	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	11.530	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.526	0.018	31.300	0.761	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	10.080	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.565	0.010	11.530	0.642	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.641	0.018	9.840	0.606	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
ILLINOIS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	8.740	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.220	0.671	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.520	0.018	30.130	0.838	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	8.740	0.394	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.220	0.662	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.633	0.018	9.470	0.683	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
INDIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.720	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	10.190	0.664	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.519	0.018	30.070	0.830	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.720	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.549	0.010	10.190	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.633	0.018	9.450	0.676	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
IOWA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	9.600	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	11.070	0.665	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.524	0.018	30.900	0.802	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	9.600	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.562	0.010	11.070	0.657	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.638	0.018	9.710	0.642	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
KANSAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	8.320	0.399	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.820	0.671	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.517	0.018	30.000	0.861	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	8.320	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	9.820	0.661	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.630	0.018	9.430	0.705	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
KENTUCKY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.490	0.657	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.516	0.018	29.490	0.844	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.010	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.539	0.010	9.490	0.648	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.628	0.018	9.270	0.694	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
LOUISIANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.640	0.397	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.525	0.010	8.200	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.508	0.018	28.810	0.905	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.640	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.525	0.010	8.200	0.645	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.619	0.018	9.060	0.759	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MAINE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	10.840	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	12.290	0.675	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.530	0.018	32.010	0.771	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.274	0.007	10.840	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.577	0.010	12.290	0.671	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.646	0.018	10.060	0.610	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MARYLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.190	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.670	0.650	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.517	0.018	29.600	0.829	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.190	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.670	0.642	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.629	0.018	9.300	0.679	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MASSACHUSETTS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.400	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.860	0.665	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.523	0.018	30.690	0.807	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.400	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.556	0.010	10.860	0.659	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.637	0.018	9.640	0.652	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MICHIGAN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.130	0.375	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	11.590	0.658	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.527	0.018	31.360	0.773	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.130	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	11.590	0.652	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.641	0.018	9.860	0.615	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MINNESOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	11.090	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	12.550	0.703	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.531	0.018	32.270	0.796	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.277	0.007	11.090	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.583	0.010	12.550	0.697	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.647	0.018	10.140	0.629	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MISSISSIPPI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.980	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.520	0.660	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.018	29.000	0.895	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	6.980	0.395	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.520	0.649	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.621	0.018	9.110	0.747	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
MISSOURI	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	8.310	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.800	0.666	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.517	0.018	29.870	0.850	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.268	0.007	8.310	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.800	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.630	0.018	9.390	0.697	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
MONTANA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.510	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.960	0.665	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.018	31.700	0.769	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.510	0.377	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.960	0.660	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.018	9.960	0.610	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEBRASKA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.090	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.560	0.655	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.521	0.018	30.420	0.807	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.090	0.371	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.560	0.646	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.635	0.018	9.560	0.650	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEVADA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.790	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.548	0.010	10.260	0.654	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.520	0.018	30.130	0.813	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.790	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.548	0.010	10.260	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.633	0.018	9.470	0.661	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NEW HAMPSHIRE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.320	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	11.770	0.661	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.018	31.530	0.771	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.270	0.007	10.320	0.375	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.569	0.010	11.770	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.642	0.018	9.910	0.613	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW JERSEY	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.450	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.930	0.655	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.518	0.018	29.830	0.825	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.450	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.545	0.010	9.930	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.631	0.018	9.370	0.674	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW MEXICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	8.300	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.770	0.646	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.517	0.018	29.680	0.819	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	8.300	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.541	0.010	9.770	0.639	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.630	0.018	9.330	0.670	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NEW YORK	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.930	0.372	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	11.390	0.652	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.526	0.018	31.170	0.773	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	9.930	0.370	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.564	0.010	11.390	0.646	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.640	0.018	9.800	0.616	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
NORTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	7.400	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.531	0.010	8.900	0.656	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.018	29.010	0.865	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.261	0.007	7.400	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.531	0.010	8.900	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.624	0.018	9.120	0.718	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
NORTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	11.200	0.400	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	12.670	0.707	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.532	0.018	32.380	0.797	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.278	0.007	11.200	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.585	0.010	12.670	0.701	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.648	0.018	10.180	0.630	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OHIO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.880	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.350	0.661	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.520	0.018	30.220	0.820	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	8.880	0.389	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.350	0.654	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.018	9.500	0.667	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
OKLAHOMA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	7.640	0.402	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.538	0.010	9.180	0.670	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.513	0.018	29.650	0.889	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.269	0.007	7.640	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.538	0.010	9.180	0.659	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.625	0.018	9.320	0.735	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
OREGON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	9.340	0.379	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	10.790	0.643	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.523	0.018	30.600	0.780	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	9.340	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.553	0.010	10.790	0.639	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.637	0.018	9.620	0.630	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PACIFIC ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.244	0.007	6.410	0.374	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.508	0.010	7.930	0.615	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.508	0.018	28.000	0.842	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.244	0.007	6.410	0.373	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.508	0.010	7.930	0.608	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.619	0.018	8.800	0.707	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PENNSYLVANIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.210	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.670	0.661	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.522	0.018	30.510	0.808	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	9.210	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.670	0.655	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.636	0.018	9.590	0.655	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
PUERTO RICO	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	4.980	0.382	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.507	0.010	6.580	0.623	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.501	0.018	27.170	0.911	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	4.980	0.381	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.507	0.010	6.580	0.612	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.610	0.018	8.540	0.776	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
RHODE ISLAND	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.970	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.440	0.654	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.521	0.018	30.290	0.806	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	8.970	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.550	0.010	10.440	0.648	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.634	0.018	9.520	0.655	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH CAROLINA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.020	0.396	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.560	0.658	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.018	28.950	0.887	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.020	0.393	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.560	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.621	0.018	9.100	0.740	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
SOUTH DAKOTA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	9.920	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	11.390	0.673	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.525	0.018	31.190	0.801	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	9.920	0.380	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.567	0.010	11.390	0.666	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.640	0.018	9.800	0.640	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
TENNESSEE	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.680	0.391	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.535	0.010	9.180	0.654	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.514	0.018	29.270	0.853	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	7.680	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.535	0.010	9.180	0.645	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.626	0.018	9.200	0.704	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
TEXAS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	6.900	0.401	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.460	0.664	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.510	0.018	29.080	0.908	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.266	0.007	6.900	0.398	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.528	0.010	8.460	0.652	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.621	0.018	9.140	0.759	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
UTAH	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.190	0.368	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.650	0.645	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.522	0.018	30.500	0.790	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.267	0.007	9.190	0.366	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.554	0.010	10.650	0.638	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.636	0.018	9.590	0.635	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VERMONT	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	10.520	0.379	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.970	0.667	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.018	31.710	0.773	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.272	0.007	10.520	0.378	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.572	0.010	11.970	0.662	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.018	9.970	0.613	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
VIRGIN ISLANDS	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	5.010	0.390	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.514	0.010	6.640	0.631	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.502	0.018	27.750	0.938	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	5.010	0.388	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.514	0.010	6.640	0.619	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.611	0.018	8.720	0.801	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-40. On-Road Vehicle Emission Factors - 2020 GOV (cont.)

State	Altitude	Fuel Type	Vehicle Type		Emission Factors (g/mi)							
					Criteria Pollutants and Ozone Precursors							
					NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	7.980	0.387	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.538	0.010	9.460	0.651	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.516	0.018	29.400	0.835	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.262	0.007	7.980	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.538	0.010	9.460	0.643	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.628	0.018	9.240	0.686	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WASHINGTON	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	9.490	0.381	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.940	0.647	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.524	0.018	30.750	0.780	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.264	0.007	9.490	0.380	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.555	0.010	10.940	0.643	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.638	0.018	9.660	0.629	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WEST VIRGINIA	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	8.680	0.386	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	10.150	0.651	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.519	0.018	30.030	0.812	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.263	0.007	8.680	0.384	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.546	0.010	10.150	0.644	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.633	0.018	9.440	0.662	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WISCONSIN	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	10.530	0.385	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	11.980	0.678	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.018	31.740	0.786	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.273	0.007	10.530	0.383	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.574	0.010	11.980	0.672	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.644	0.018	9.970	0.624	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
WYOMING	HIGH	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.430	0.376	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	11.870	0.660	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.528	0.018	31.620	0.766	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.211	0.012	1.024	0.532	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000
	LOW	Gasoline	LDGV	Light-Duty Vehicles (Passenger Cars)	0.271	0.007	10.430	0.374	0.025	0.011	368.000	0.102
		Gasoline	LDGT	Light-Duty Trucks (0-8,500 lbs)	0.570	0.010	11.870	0.655	0.025	0.011	551.000	0.102
		Gasoline	HDGV	Heavy-Duty Vehicles (8,501+ lbs)	0.643	0.018	9.940	0.608	0.039	0.023	984.200	0.045
		Diesel	LDDV	Light-Duty Vehicles (Passenger Cars)	0.056	0.003	0.658	0.071	0.033	0.019	314.100	0.007
		Diesel	LDDT	Light-Duty Trucks (0-8,500 lbs)	0.236	0.006	0.486	0.236	0.038	0.023	598.600	0.007
		Diesel	HDDV	Heavy-Duty Vehicles (8,501+ lbs)	1.189	0.012	0.416	0.264	0.059	0.034	1244.200	0.027
		NA	MC	Motorcycles	0.000	0.000	0.000	0.000	0.021	0.014	0.000	0.000

Table 5-41. OCONUS On-Road Composite Vehicle Emission Factors - POV

Year	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
2013	HIGH	All Vehicles	0.599	0.008	11.670	0.830	0.026	0.012	428.710	0.097
	LOW	All Vehicles	0.618	0.008	10.971	0.789	0.026	0.012	420.621	0.097
2014	HIGH	All Vehicles	0.556	0.008	11.322	0.783	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.574	0.008	10.627	0.742	0.026	0.012	420.729	0.097
2015	HIGH	All Vehicles	0.518	0.008	11.043	0.742	0.026	0.012	428.820	0.097
	LOW	All Vehicles	0.536	0.008	10.349	0.702	0.026	0.012	420.729	0.097
2016	HIGH	All Vehicles	0.483	0.008	10.770	0.706	0.026	0.012	428.950	0.097
	LOW	All Vehicles	0.501	0.008	10.077	0.666	0.026	0.012	420.857	0.097
2017	HIGH	All Vehicles	0.454	0.008	10.559	0.675	0.026	0.012	428.960	0.097
	LOW	All Vehicles	0.472	0.008	9.868	0.636	0.026	0.012	420.866	0.097
2018	HIGH	All Vehicles	0.427	0.008	10.337	0.647	0.026	0.012	429.030	0.097
	LOW	All Vehicles	0.445	0.008	9.646	0.608	0.026	0.012	420.935	0.097
2019	HIGH	All Vehicles	0.408	0.008	10.178	0.625	0.026	0.012	429.090	0.097
	LOW	All Vehicles	0.425	0.008	9.489	0.586	0.026	0.012	420.994	0.097
2020	HIGH	All Vehicles	0.394	0.008	10.057	0.599	0.025	0.012	429.080	0.097
	LOW	All Vehicles	0.412	0.008	9.369	0.561	0.025	0.012	420.984	0.097

Table 5-42. OCONUS On-Road Composite Vehicle Emission Factors - GOV

Year	Altitude	Vehicle Type	Emission Factors (g/mi)							
			Criteria Pollutants and Ozone Precursors							
			NO_X	SO_X	CO	VOC	PM_{10}	$PM_{2.5}$	CO_2	NH_3
2013	HIGH	All Vehicles	1.557	0.011	11.150	0.899	0.054	0.036	792.420	0.074
	LOW	All Vehicles	1.567	0.011	8.731	0.768	0.054	0.036	792.420	0.074
2014	HIGH	All Vehicles	1.368	0.011	10.718	0.844	0.049	0.031	792.370	0.074
	LOW	All Vehicles	1.376	0.011	8.405	0.721	0.049	0.031	762.469	0.074
2015	HIGH	All Vehicles	1.217	0.011	10.374	0.799	0.045	0.027	792.190	0.074
	LOW	All Vehicles	1.224	0.011	8.117	0.683	0.045	0.027	777.243	0.074
2016	HIGH	All Vehicles	1.089	0.011	10.044	0.758	0.043	0.025	792.230	0.074
	LOW	All Vehicles	1.095	0.011	7.833	0.646	0.043	0.025	777.282	0.074
2017	HIGH	All Vehicles	0.979	0.011	9.787	0.722	0.041	0.024	792.140	0.074
	LOW	All Vehicles	0.984	0.011	7.618	0.614	0.041	0.024	777.194	0.074
2018	HIGH	All Vehicles	0.872	0.011	9.512	0.687	0.038	0.021	792.140	0.074
	LOW	All Vehicles	0.877	0.011	7.372	0.583	0.038	0.021	777.194	0.074
2019	HIGH	All Vehicles	0.796	0.011	9.310	0.660	0.037	0.020	792.170	0.074
	LOW	All Vehicles	0.800	0.011	7.202	0.559	0.037	0.020	777.223	0.074
2020	HIGH	All Vehicles	0.733	0.011	9.156	0.627	0.036	0.019	792.080	0.074
	LOW	All Vehicles	0.737	0.011	7.070	0.528	0.036	0.019	777.135	0.074

Table 5-43. On Road Vehicle Speciated VOC Weight Fractions

VOC	HAP	LDGV[1]	LDDV[2]	LDGT[1]	LDDT[2]	HDGV[1]	HDDV[2]	MC[3]
Acetylene		4.05%	8.02%	3.61%	8.52%	2.90%	---	---
Acetaldehyde	X	0.29%	---	1.64%	---	---	---	---
Acrolein	X	0.24%	---	0.40%	---	---	---	---
Alpha-pinene		0.06%	---	0.08%	---	---	---	---
Benzaldehyde		0.29%	---	1.19%	---	---	---	---
Benzene	X	5.89%	2.23%	5.61%	2.91%	1.91%	---	3.99%
Beta-pinene		0.03%	---	0.02%	---	---	---	---
1,3-Butadiene	X	0.57%	1.08%	0.62%	1.44%	---	---	---
Butane		0.37%	0.46%	0.41%	0.32%	24.42%	---	0.65%
1-Butene		2.22%	1.68%	2.47%	2.01%	1.21%	---	2.32%
cis-2-Butene		0.14%	0.61%	0.14%	0.77%	0.73%	---	0.48%
trans-2-Butene		0.35%	2.25%	0.30%	0.24%	0.97%	---	0.29%
Butylbenzene		---	---	---	---	0.23%	---	---
o-tert-Butyltoluene		---	---	---	0.19%	---	1.09%	---
tert-Butyl-m-Xylene		---	---	---	---	---	0.74%	---
Butyraldehyde		0.04%	---	0.42%	---	---	---	---
C6 olefin		---	2.80%	---	2.23%	---	---	---
Crotonaldehyde		0.02%	---	0.06%	---	---	---	---
Cyclohexane		0.50%	---	0.32%	---	---	1.72%	0.19%
Cyclohexene		0.07%	---	0.04%	---	1.72%	0.32%	---
Cyclopentadiene		---	0.53%	---	0.24%	---	---	---
Cyclopentane		0.22%	0.57%	0.20%	0.44%	0.52%	1.09%	1.09%
Cyclopentene		0.12%	0.53%	0.12%	0.39%	0.32%	0.51%	0.31%
Cyclopentylcyclopentane		---	---	---	---	0.50%	---	---
Decane		0.25%	1.30%	0.17%	1.65%	0.12%	1.39%	---
Diethylbenzene		---	0.31%	---	0.39%	---	1.46%	---
1,2-Diethylbenzene		0.09%	0.15%	0.05%	---	0.33%	---	---
1,3-Diethylbenzene		0.29%	---	0.30%	---	0.25%	---	---
1,4-Diethylbenzene		0.12%	---	0.07%	---	---	---	---
Dimethyl Ethylbenzene		---	0.23%	---	0.29%	---	2.30%	---
2,2-Dimethylbutane		0.55%	---	0.49%	---	0.24%	1.13%	1.70%
2,3-Dimethylbutane		0.88%	0.69%	0.87%	0.53%	1.07%	0.61%	1.78%
3,3-Dimethyl-1-butene		---	0.53%	---	---	---	---	---
1,1-Dimethylcyclohexane		0.06%	---	0.06%	---	---	---	---
cis-1,2-Dimethylcyclohexane		---	---	---	---	---	0.32%	---
trans-1,2-Dimethylcyclohexane		---	0.15%	---	0.39%	---	1.50%	---
cis-1,3-Dimethylcyclohexane		---	---	---	---	---	2.07%	---
Cis-1,4-Dimethylcyclohexane		---	---	---	---	0.09%	0.23%	---
cis-1,3-Dimethylcyclopentane		---	---	---	0.68%	---	0.72%	---
Dimethylheptane		0.08%	0.88%	0.08%	1.11%	0.09%	---	---
2,5-Dimethylheptane		---	0.15%	---	0.19%	---	---	---
2,6-Dimethylheptane		---	0.23%	---	0.58%	---	---	---
2,3-Dimethylheptane		---	---	---	---	---	0.65%	---
2,5-Dimethylheptane		0.19%	---	0.18%	---	0.14%	---	---
2,6-Dimethylheptane		---	---	---	---	---	---	---
3,3-Dimethylheptane		0.05%	---	0.04%	---	---	---	---
3,5-Dimethylheptane		---	---	---	---	---	2.18%	---
4,4-Dimethylheptane		---	0.08%	---	---	---	---	---
2,3-Dimethylhexane		0.29%	---	0.36%	---	---	0.38%	---
2,4-Dimethylhexane		0.58%	0.46%	0.68%	0.23%	0.46%	0.25%	---
2,5-Dimethylhexane		0.39%	---	0.45%	---	---	0.21%	---
3,3-Dimethylhexane		---	---	---	---	---	0.11%	---
Dimethyloctane		0.08%	0.31%	0.05%	0.39%	0.08%	---	---
2,2-Dimethyloctane		---	---	---	---	---	0.43%	---
2,3-Dimethyloctane		---	---	---	---	0.57%	---	---
2,4-Dimethyloctane		---	0.15%	---	0.19%	---	2.56%	---
2,4-Dimethylpentane		0.85%	0.08%	0.90%	---	0.70%	0.22%	2.29%
2,2-Dimethylpentane		---	0.08%	---	---	---	---	---
2,3-Dimethylpentane		1.25%	0.15%	1.32%	0.44%	---	1.36%	0.95%
3,3-Dimethylpentane		---	---	---	---	---	0.59%	---
2,2-Dimethylpropane		---	0.33%	---	0.68%	---	---	---
Dipente		0.42%	---	0.33%	---	---	---	---
Dodecane		0.48%	0.50%	0.22%	0.61%	---	3.01%	---
Ethene		---	28.13%	---	30.07%	---	---	---
Ethyl tert-butyl ether		---	---	---	0.39%	---	2.98%	---
Ethylbenzene	X	2.56%	0.38%	2.28%	0.48%	0.73%	1.29%	1.99%
Ethylcyclohexane		---	---	---	---	---	7.69%	---
Ethylene		7.39%	---	6.59%	---	4.74%	---	---
3-Ethylhexane		---	0.15%	---	0.29%	---	0.70%	---
cis-1-Ethyl-2-Methylcyclopentane		---	0.15%	---	---	---	---	---
3-Ethylpentane		0.31%	---	0.27%	---	---	---	---
3-Ethyltoluene		2.02%	---	1.71%	---	0.17%	---	---
Formaldehyde	X	1.06%	---	3.37%	---	---	---	---
Glyoxal		0.03%	---	0.01%	---	---	---	---
Heptane		1.11%	0.08%	1.06%	0.19%	0.79%	0.77%	2.19%
1-Heptene		0.16%	---	0.08%	---	---	---	---
cis-2-Heptene		---	0.15%	---	---	---	---	---
trans-2-Heptene		---	0.15%	---	---	---	---	---
Trans-3-Heptene		0.03%	---	0.04%	---	---	---	---
Hexaldehyde		0.09%	---	0.11%	---	---	---	---
Hexane	X	1.51%	---	1.83%	0.19%	1.67%	2.40%	1.42%
1-Hexene		0.16%	0.94%	0.16%	0.83%	0.30%	1.77%	---
cis-2-Hexene		0.08%	0.23%	0.08%	---	0.12%	---	0.06%
trans-2-Hexene		0.14%	0.46%	0.14%	---	---	---	0.10%
cis-3-Hexene		0.02%	---	0.02%	---	---	---	---
Hexyne		---	---	---	---	0.02%	---	---
Indan		0.24%	---	0.17%	---	0.35%	---	---
Isohexane		---	---	2.66%	---	3.06%	---	---
Isopropylcyclohexane		0.04%	---	0.02%	---	---	---	---
Methylbenzaldehyde		0.02%	---	0.17%	---	---	---	---
2-Methyl-1,3-Butadiene		---	0.54%	---	0.58%	0.11%	---	---
2-Methylbutane		0.27%	0.31%	0.24%	0.39%	12.02%	---	14.59%

Table 5-43. On Road Vehicle Speciated VOC Weight Fractions (Cont.)

VOC	HAP	LDGV[1]	LDDV[2]	LDGT[1]	LDDT[2]	HDGV[1]	HDDV[2]	MC[3]
2-Methyl-1-Butene		1.71%	4.20%	1.53%	2.27%	---	---	---
2-Methyl-2-Butene		0.32%	0.23%	0.39%	---	0.12%	---	1.08%
3-Methyl-1-Butene		6.54%	---	5.86%	---	0.15%	---	0.14%
Methyl-tert-Butyl Ether	X	0.02%	---	0.05%	---	---	---	---
Methylcyclohexane		0.44%	0.28%	0.40%	0.43%	0.28%	1.62%	0.43%
Methylcyclooctane		---	---	---	---	0.36%	---	---
Methylcyclopentane		1.10%	0.08%	1.04%	0.10%	1.21%	0.44%	1.83%
1-Methylcyclopentene		---	0.23%	---	---	0.03%	---	---
2-Methyldecane		---	---	---	---	0.69%	---	---
Methylethylbenzene	X	0.19%	0.53%	0.15%	0.68%	---	2.39%	0.40%
1-Methyl-2-Ethylbenzene		0.75%	---	0.62%	---	---	---	---
cis-1-Methyl-3-Ethylcyclopentane		---	1.22%	---	0.74%	---	---	---
1-Methyl-4-Ethylbenzene		0.92%	---	0.78%	---	---	---	---
Methyl ethyl ketone		0.05%	---	0.07%	---	---	---	---
2-Methylheptane		0.67%	0.15%	0.53%	---	0.28%	0.44%	1.61%
3-Methylheptane		0.75%	---	0.69%	---	0.38%	0.44%	1.67%
4-Methylheptane		0.28%	0.08%	0.28%	---	0.27%	---	---
2-Methylhexane		1.39%	---	1.34%	---	---	0.52%	3.18%
3-Methylhexane		1.54%	0.61%	1.38%	---	---	1.72%	2.57%
3-Methyl-1-Hexene		---	---	---	0.58%	---	---	---
4-Methyl-1-Hexene		0.03%	---	0.03%	---	---	---	---
1-Methyl-2-Isopropylbenzene		0.03%	---	0.02%	---	---	---	---
1-Methyl-3-isopropylbenzene		0.09%	---	0.06%	---	---	---	---
1-Methyl-4-Isopropylbenzene		0.02%	---	0.02%	---	---	---	---
2-Methyloctane		0.38%	0.15%	0.23%	---	0.04%	0.92%	---
3-Methyloctane		0.34%	0.08%	0.29%	---	0.34%	1.81%	---
4-Methyloctane		---	---	---	---	0.42%	---	---
2-Methylpentane		2.68%	0.28%	---	0.32%	---	3.80%	5.81%
3-Methylpentane		1.85%	0.53%	1.80%	1.21%	1.68%	1.20%	3.48%
3-Methyl-cis-2-Pentene		0.09%	---	0.09%	---	---	---	---
2-Methyl-1-Pentene		0.11%	1.30%	0.11%	0.74%	---	---	0.22%
2-Methyl-2-Pentene		0.10%	0.08%	0.08%	---	0.37%	---	---
3-Methyl-trans-2-Pentene		0.10%	---	0.08%	---	---	0.23%	---
4-Methyl-1-Pentene		---	0.79%	---	0.90%	---	---	---
4-Methyl-trans-2-Pentene		---	---	---	---	---	2.62%	---
2-Methylpropane		0.30%	0.15%	0.31%	0.19%	3.74%	---	0.20%
2-Methyl-2-Propenal		0.04%	---	0.17%	---	---	---	---
2-Methylpropene		---	2.29%	---	2.01%	---	---	---
(1-methylpropyl)benzene		0.06%	---	0.04%	---	0.05%	---	---
(2-methylpropyl)benzene		0.06%	---	0.05%	---	---	---	---
1-Methyl-3-propylbenzene		0.16%	---	0.11%	---	0.17%	---	---
Methylpyrene		---	---	---	---	---	1.11%	---
Methylfluoranthene		---	---	---	---	---	---	---
Methylpyrene		---	---	---	---	---	---	---
Naphthalene	X	0.07%	---	0.03%	---	---	---	---

VOC	HAP	LDGV[1]	LDDV[2]	LDGT[1]	LDDT[2]	HDGV[1]	HDDV[2]	MC[3]
Nonanal		0.53%	---	0.29%	---	---	---	---
Nonane		0.33%	0.64%	0.24%	0.77%	0.12%	0.98%	0.56%
Nonene		---	0.73%	---	0.92%	---	---	---
1-Nonene		0.11%	0.69%	0.10%	0.29%	---	1.22%	---
trans-2-Nonene		---	---	---	---	0.19%	---	---
Octanal		0.03%	---	0.02%	---	---	---	---
Octane		0.60%	0.20%	0.51%	0.45%	0.26%	1.55%	0.89%
1-Octene		0.03%	---	0.05%	---	---	---	---
Pentane		0.06%	1.91%	0.08%	1.52%	5.29%	---	8.14%
1-Pentene		0.37%	2.98%	0.38%	3.23%	0.45%	---	0.27%
cis-2-Pentene		0.20%	0.15%	0.20%	---	1.06%	---	0.35%
trans-2-Pentene		0.39%	1.30%	0.37%	0.97%	0.89%	---	0.58%
Pentylbenzene		---	---	---	---	---	1.62%	---
Pentyne		---	---	---	---	0.21%	---	---
trans-1-Phenylbutene		---	---	---	---	0.25%	---	---
4-Phenyl-1-Butene		---	---	---	---	0.28%	---	---
1,2-Propadiene		---	---	---	---	0.12%	---	---
Propane		0.24%	0.31%	0.23%	3.00%	---	---	---
Propene		4.23%	9.08%	4.56%	8.79%	1.71%	---	1.11%
Propionaldehyde	X	0.04%	---	0.11%	---	---	---	---
Propylbenzene		0.59%	0.20%	0.49%	0.29%	0.34%	0.51%	0.65%
Propylcyclopentane		---	---	---	---	---	---	---
Propyltoluene		---	---	---	---	---	3.37%	---
Propyne		---	0.38%	---	0.10%	0.26%	---	---
Styrene	X	0.13%	0.84%	0.10%	---	---	2.04%	0.23%
Tetramethylbenzene		0.26%	0.27%	0.18%	0.42%	---	14.53%	---
1,2,3,4-Tetramethylbenzene		0.18%	---	0.09%	---	---	---	---
1,2,4,5-Tetramethylbenzene		0.20%	---	0.13%	---	---	---	---
Toluene	X	11.19%	1.62%	10.57%	2.06%	3.25%	---	12.52%
Trimethylbenzene		3.28%	0.31%	2.55%	0.39%	1.57%	4.27%	1.43%
1,2,3-Trimethylbenzene		0.34%	0.23%	0.30%	---	0.28%	---	---
1,3,5-Trimethylbenzene		0.89%	---	0.78%	0.39%	1.32%	---	1.99%
2,2,3-Trimethylbutane		0.03%	---	0.03%	---	---	0.23%	---
1,2,3-Trimethylcylcopentane		---	0.61%	---	---	---	---	---
2,2,5-Trimethylhexane		0.38%	0.15%	0.43%	---	0.26%	0.46%	---
2,3,5-Trimethylhexane		---	0.15%	---	0.19%	0.09%	---	---
2,2,4-Trimethylpentane	X	2.25%	0.94%	4.04%	0.77%	1.63%	0.24%	1.45%
2,3,3-Trimethylpentane		---	---	---	0.10%	0.46%	---	---
2,3,4-Trimethylpentane		0.67%	0.46%	0.92%	0.24%	0.28%	0.33%	0.71%
2,4,4-Trimethyl-1-pentene		0.02%	0.08%	0.04%	---	1.88%	---	---
2,4,4-Trimethyl-2-pentene		---	0.31%	---	---	---	---	---
Undecane		0.13%	1.11%	0.09%	1.40%	0.15%	2.64%	---
1-Undecene		---	---	---	---	0.15%	---	---
Valeraldehyde		0.01%	---	0.01%	---	---	---	---
Xylenes (Mixed Isomers)	X	9.50%	1.90%	8.20%	2.08%	3.02%	---	10.11%

1. SOURCE: Data provided by the EPA's SPECIATE database version 4.4.
2. SOURCE: *Diesel Unregulated Emissions Characterization*. CRC Report No. E-75-2, Coordinating Research Council, Inc., July 2010.
3. SOURCE: *Air Pollutant Emission Factors from New and In-Use Motorcycles*. Atmospheric Environment, April 2000.

"X" Indicates compound is a HAP

"---" Indicates No data available

Figure 5-2. Data Collection Form for Government Owned Vehicles (GOV's)

Installation Name:				**Inventory Year:**
Responsible Organization (Name and Office Symbol):				
POC (Name, Phone #, and e-mail):				
Vehicle Category: **(Select from appropriate category listed below the table)[1]**				
Vehicle Identification Number (VIN)[2]	**Vehicle Description[3]**	**Bldg. Number[4]**	**Model Year**	**Miles Driven During Inventory Period (mi/yr)[5]**
		Average Model Year		
		Total Miles Driven on Installation During Inventory Period		

1. Vehicle Categories are listed in Table 5-9 as the Air Force classification for on-road vehicles.
2. If the VIN is unavailable, please provide some other unique identifier for the vehicle.
3. Sedan, hatchback, station wagon, etc.
4. The primary location the vehicle was assigned to during the inventory period.
5. Only include the miles driven on the installation – if unknown, provide best estimate to the nearest 100 miles.

Figure 5-3. Example Data Collection Form for Privately Owned Vehicles (POVs)

Installation Name:	**Inventory Year:**
Responsible Organization (Name and Office Symbol):	
POC (Name, Phone #, and e-mail):	
Question	**Response**
Can you provide a listing of all registered vehicles on base? (Y/N)? If so, be sure to include all specific information (make/model, year, etc.) about the vehicles.	
What is the estimated average number of registered POVs at the installation during the inventory period?	
What is the estimated percentage of registered vehicles which actually travel on the installation during a typical weekday (Monday - Friday)	
What is the estimated percentage of registered vehicles which actually travel on the installation during a typical weekend day (Saturday and Sunday)	
What is the estimated distance the average POV travels on base during a typical weekday?	___ mi/day
What is the estimated distance the average POV travels on base during a typical weekend day?	___ mi/day
What is the estimated number of non-registered POVs which travel on base during a typical weekday?	
What is the estimated number of non-registered POVs which travel on base during a typical weekend day?	
What is the estimated average model year of all POVs driven on base during the inventory year? (NOTE: This is not required if the average model years are listed below for each vehicle category)	

Using registration information, provide an estimate of the percentage of registered POVs which fall under each of the 12 vehicle categories listed below. If possible, please provide the estimated model year for each vehicle category.

Vehicle Category	Category Description	Estimated % of Registered Vehicles	Average Model Year
LDGV	Light-Duty Gasoline Vehicles - All gasoline-powered passenger cars		
LDDV	Light-Duty Diesel Vehicles - All diesel powered-passenger cars		
LDGT	Light-Duty Gasoline Trucks - All smaller gasoline-powered trucks (0 - 8,500lbs GVWR)		
LDDT	Light-Duty Diesel Trucks - All smaller diesel-powered trucks (0 - 8,500lbs GVWR)		
HDGV	Heavy-Duty Gasoline Vehicles - All larger gasoline-powered vehicles (>8,500lbs)		
HDDV	Heavy-Duty Diesel Vehicles - All larger diesel-powered vehicles (>10,000lbs GVWR)		
MC	Motorcycles - All motorcycles (assumed to be gasoline-powered)		

5.6 References

CCAR 2007, "California Climate Action Registry General Reporting Protocol Version 2.2," California Climate Action Registry (CCAR), 2007

DoD 2006, "Effect of Biodiesel on Diesel Engine Nitrogen Oxide and Other Regulated Emissions (Project Number WP-0308)," Department of Defense Department of Defense Environmental Security Technology Certification Program, May 2006

USDoE 2002, "Clean Alternative Fuels: Compressed Natural Gas," Energy Efficiency and Renewable Energy, Alternative Fuel Data Center, U.S. Department of Energy (USDoE), 2002

USEPA, Mobile 6, MOBILE6 Vehicle Emission Modeling Software, United States Environmental Protection Agency

USEPA 1998, "Emission Facts: Idling Vehicle Emissions (EPA420-F-98-014)," U.S. Environmental Protection Agency, April 1998

USEPA 2001a, "Certification and Fuel Economy Information System," U.S. Environmental Protection Agency, Office of Transportation Air Quality, March 2001

USEPA 2001b, "Fleet Characterization Data for MOBILE6: Development and Use of Age Distributions, Average Annual Mileage Accumulation Rates, and Projected Vehicle Counts for Use in MOBILE6 (EPA420-R-01-047)," U.S. Environmental Protection Agency, September 2001

USEPA 2002a, "Clean Alternative Fuels: Ethanol (EPA 420-F-00-035)," U.S. Environmental Protection Agency, Office of Transportation and Air Quality, March 2002

USEPA 2002b, "A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions (EPA 420-P-02-001)," U.S. Environmental Protection Agency, October 2002

USEPA 2002c, "Clean Alternative Fuels: Compressed Natural Gas (EPA 420- F-00-033)," U.S. Environmental Protection Agency, March 2002

USAF 2003a, "Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations (IERA/RSEQ, IERA-RS-BR-SR-2001-0010)," United States Air Force. January 2003 (Revised December 2003)

USEPA 2003b, "Users Guide to MOBILE6.1 and MOBILE6.2 Mobile Source Emission Factor Model (EPA 420-R-03-010)," U.S. Environmental Protection Agency, August 2003

USEPA 2006a, "E85 and Flex Fuel Vehicles (EPA 420-F-06-047)," United States Environmental Protection Agency, Office of Transportation Air Quality, October 2006.

USEPA 2006b, "Biodiesel (EPA 420-F- 06-044)," U.S. Environmental Protection Agency, Office of Transportation Air Quality, October 2006.

USEPA 2006c, "Compilation of Air Pollutant Emission Factors -Volume I (AP-42, Volume I), 5th Edition, Chapter 13.2.1, Miscellaneous Sources - Paved Roads," U.S. Environmental Protection Agency, November 2006

USEPA 2006d, " Compilation of Air Pollutant Emission Factors – Volume I: Stationary Point and Area Sources (AP-42), Section 13.2.2, "Unpaved Roads," U.S. Environmental Protection Agency, November 2006

USEPA 2007, "Guidance on the Use of Models and Other Analyses for Demonstrating Attainment of Air Quality Goals for Ozone, PM2.5, and Regional Haze (EPA454/B-07-002)," U.S. Environmental Protection Agency, April 2007

USAF 2009, "Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations," United States Air Force, December 2009

USEPA 2011, " Compilation of Air Pollutant Emission Factors – Volume I: Stationary Point and Area Sources (AP-42), Section 13.2.1, "Paved Roads," U.S. Environmental Protection Agency, January 2011

6 FUEL DISPENSING (FDSP, FLD) – EXCLUDES ON-ROAD VEHICLE REFUELING

- *Fugitive Source*

Air Force policy considers the dispensing of fuel into on-road vehicles a mobile source of emissions. However, if the regulator insists this category be included as a stationary source, subtract those emissions from the Mobile AEI and add them to the stationary AEI to avoid duplicate reporting. This is accomplished by manually calculating emissions generated from on-road vehicle refueling using the procedures given in this section, then subtracting those values from the emissions generated by on-road vehicles covered in the previous section

6.1 Introduction

Fuel dispensing refers to the refueling of non-road engines and equipment, aircraft, and fuel trucks. **Note that the emissions from the refueling of on-road engines are not addressed here since those emissions are accounted for in the emission factors generated by the MOBILE6 model**. Emissions from fuel dispensing are the result of vapors displaced as fuel is added to the vehicle fuel tank. The amount of vapor released to the atmosphere is a function of the gas and fuel tank temperatures, the vapor pressure of the fuel, the dispensing rate, and the presence of vapor emission control devices. **The vapor that is emitted into the atmosphere is composed of both VOCs and HAPs and is considered fugitive in nature**.

Minor fuel spills are an inevitable consequence of fuel dispensing. Typically, these spills are individually insignificant though may collectively result in a substantial release of VOC and HAP emissions. **Emissions from significant spills, which are those spills that are reported to the Environmental or CEV office, are not addressed here but described in the "Fuel Spills" section of the Transitory Guide. Emissions of less significant spills, which are not individually reported, but considered an inevitable consequence of dispensing fuel, are estimated in the "Fuel Transfer" section of the Stationary Guide.** The vapor emissions of concern from fuel dispensing operations are described by the simple control volume given in Figure 6-1.

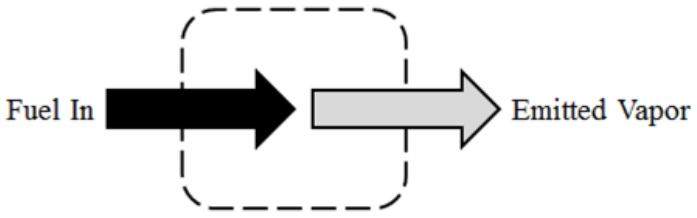

Figure 6-1. Simple Fuel Dispensing Control Volume

There are several challenges to calculating evaporative emissions from fuel transfer activities. These challenges include the fact that there are several different fuels used on base, each with different vapor pressures, and there are multiple destinations for fuels on base which may make it more difficult to gather data or determine what emissions are classified as mobile or stationary. In an effort to simplify how each base should calculate fuel transfer emissions, a diagram of the typical transfer methods and destinations of fuel on base is provided in Figure 6-2.

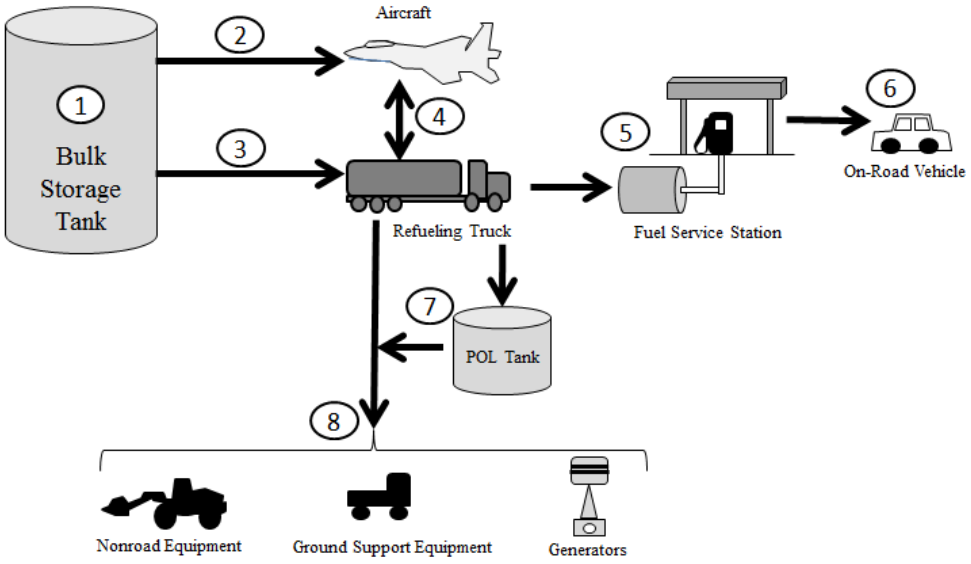

Figure 6-2. Typical On-Base Fuel Transfer Activities and Destinations.

Figure 6-2 shows the typical fuel transfer stages a fuel may go through at an Air Force installation. The fuel is *loaded by* and *loaded into* several pieces of equipment, each of which results in some form of emissions. Depending on the classification (mobile vs. stationary) of these pieces of equipment, determines if the emissions are regarded as mobile or stationary. At any point on this figure, there may be significant fuel spills that result in emissions as the fuel evaporates. These are uncommon occurrences and the emissions are addressed in the Transitory Guide. The stages listed in Figure 6-2 may be described as follows:

1. This point in the figure describes emissions from the evaporation of fuel in a storage tank which are known as "breathing losses." These emissions are regarded as **stationary** and are calculated using the EPA's TANKS modeling program as described in the "Storage Tanks" section of the Stationary Guide.
2. This point in the figure describes the loading of fuel **from a stationary source** (storage tank via a hydrant system) **into a mobile source** (aircraft). The **stationary emissions** are the "working losses" from the storage tank. These emissions are calculated by the EPA's TANKS modeling program as described in the "Storage Tanks" section of the Stationary Guide. The **mobile emissions** from aircraft refueling are generated from the **displaced**

vapor in the aircraft fuel tanks. The mobile emissions should be reported in the mobile AEI and is calculated as described later in this chapter.

3. This point in the figure describes the loading of fuel **from a stationary source** (Storage tank) **into a mobile source** (refueling truck). The **stationary emissions** are the "working losses" from the storage tank. These emissions are calculated by the EPA's TANKS modeling program as described in the "Storage Tanks" section of the Stationary Guide. The **mobile emissions** from loading fuel into refueling trucks are generated from the **displaced vapor** in the truck. The mobile emissions should be reported in the mobile AEI and is calculated as described later in this chapter.
4. This point in the figure describes the fueling and defueling of aircraft via a refueling truck. Both pieces of equipment are **mobile** and all emissions generated from these activities (which come from **displaced vapors** in the refueling truck or aircraft fuel tanks) should be reported in the mobile AEI and calculated as described later in this chapter.
5. This point in the figure describes the loading of fuel **from a mobile source** (refueling truck) **into a stationary source** (storage tank) at a fuel dispensing location. Likely, the **only mobile emissions** from the fueling of the tank via the refueling truck are from any **significant fuel spills**. These emissions are addressed in the Transitory Guide. The **stationary emissions** include **breathing and working losses** from the storage tanks. These emissions are calculated by the EPA's TANKS modeling program as described in the "Storage Tanks" section of the Stationary Guide.
6. This point in the figure describes the loading of fuel **from a stationary source** (fuel dispensing facility) **into a mobile source** (vehicle). The **stationary emissions** are the result of the evaporation of **spilled fuel** and are calculated in the "Fuel Transfer" section of the Stationary Guide. The mobile emissions are generated from the **displaced vapor** in the vehicle fuel tanks. The displaced vapor emissions should be included in a Mobile AEI and are **already accounted for in the emission factors given in the "On-Road Vehicles" section of this document.**
7. This point in the figure describes the loading of fuel **from a mobile source** (refueling truck) **into a stationary source** (storage tank). Likely, the **only mobile emissions** from the fueling of the tank via the refueling truck are from any **significant fuel spills**. These emissions are addressed in the Transitory Guide. The **stationary emissions** include the **breathing and working losses** from smaller storage tanks on base. Provided that these tanks have a diameter of at least 3 feet and minimum length of 5 feet, these emissions are calculated by the EPA's TANKS modeling program as described in the "Storage Tanks" section of the Stationary Guide.
8. This point in the figure describes the loading of fuel **from either a stationary** (storage tank) **or mobile source** (refueling truck) **into a stationary** (stationary ICOM) **or mobile source** (non-road equipment – NRDE or Ground Support Equipment – GSE). The **mobile/stationary emissions from the fuel loading outlet** (refueling truck or storage tank) at this point are likely to only be the result of any **significant fuel spills**. These

emissions are addressed in the Transitory Guide. The **mobile/stationary emissions from the fuel loading inlet** (NRDE, GSE, and stationary ICOM) are generated from the **displaced vapor** in the fuel tanks. Emissions are similarly calculated for each as described below and in the Stationary Guide. Care should be taken to ensure that emissions are reported in the correct mobile or stationary AEI to avoid duplicate reporting.

6.2 Emission Factors

Section 5.2 of AP-42 describes both the emissions from the loading of fuel into fuel trucks and the evaporative emissions from the fueling of a gasoline vehicle. Since fueling gas vehicles is covered under the MOBILE6 model, the emission factors for vehicle refueling are not provided here, but may be found in table 5.2-7 of AP-42. For non-road engines and fuel trucks, the most appropriate method for calculating emissions from fuel dispensing is to calculate the loading loss. The loading loss is the primary source of evaporative emissions from the loading of fuel. These losses are the result of organic vapors within a fuel tank which are displaced to the atmosphere as the tank is loaded with fuel. To calculate these losses, which is described in the next section, the saturation factor, the vapor pressure of the fuel, the molecular weight of the vapors, and the temperature of the bulk liquid must be known.

The saturation factor refers to the ratio of the saturated value of the expelled vapor to the unsaturated value. These values vary based on the method of fuel loading. A tank that is filled with only one fuel, or fuels with similar characteristics, is said to be practicing "dedicated normal service." When loading vapors are returned back to the loading terminal after the fuel is unloaded to a storage tank, it is known as "dedicated vapor balance". Section 5.2 of AP-42 provides the saturation factors which are given in Table 6-1.

Table 6-1. Fuel Loading Saturation Factors

Loading Method	Loading Parameters	S Factor
Submerged Loading	Clean Tank	0.50
	Dedicated Normal Service	0.60
	Dedicated Vapor Balance Service	1.00
Splash Loading	Clean Tank	1.45
	Dedicated Normal Service	1.45
	Dedicated Vapor Balance Service	1.00

SOURCE: U.S. EPA. "Transportation and Marketing of Petroleum Liquids." *Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources*. Fifth Edition. 1995. Section 5.2.

The vapor emissions resulting from fuel transfer is a function of the vapor pressure of the fuel. The vapor pressure is indicative of the evaporation rate of a liquid. The vapor pressures for each fuel and their respective vapor molecular weights are provided in Table 6-2.

Table 6-2. Vapor Pressures for Various Fuels

Petroleum Liquid	Vapor Molecular Weight (lb/lb-Mol)	True Vapor Pressure (psia)						
		40°F	50°F	60°F	70°F	80°F	90°F	100°F
Crude Oil RVP 5[1]	50	1.80	2.30	2.80	3.40	4.00	4.80	5.70
Gas RVP 6	69	1.90	2.37	2.93	3.60	4.38	5.29	6.35
Gas RVP 7	68	2.30	2.90	3.50	4.30	5.20	6.20	7.40
Gas RVP 7.8	68	2.59	3.21	3.94	4.79	5.79	6.96	8.30
Gas RVP 8	68	2.67	3.30	4.04	4.92	5.94	7.13	8.50
Gas RVP 8.3	68	2.79	3.44	4.22	5.13	6.19	7.42	8.83
Gas RVP 9	67	3.06	3.77	4.61	5.59	6.74	8.06	9.58
Gas RVP 10	66	3.40	4.20	5.20	6.20	7.40	8.80	10.50
Gas RVP 11	65	3.87	4.75	5.77	6.96	8.34	9.92	11.74
Gas RVP 11.5	65	4.09	5.00	6.07	7.31	8.75	10.41	12.29
Gas RVP 12	64	4.29	5.24	6.36	7.65	9.15	10.86	12.82
Gas RVP 13	62	4.70	5.70	6.90	8.30	9.90	11.70	13.80
Gas RVP 13.5	62	4.93	6.01	7.26	8.71	10.38	12.29	14.46
Gas RVP 15	60	5.58	6.77	8.16	9.77	11.61	13.71	16.09
Diesel	130	3.10E-03	4.50E-03	6.50E-03	9.00E-03	1.20E-02	1.60E-02	2.20E-02
JP-8/Jet A[2]	130	1.58E-02	2.19E-02	3.01E-02	4.08E-02	5.48E-02	7.27E-02	9.54E-02

SOURCE (unless otherwise stated): Data taken from TANKS version 4.0.9d.

1. SOURCE: U.S. EPA. "Organic Liquid Storage Tanks." *Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources*. Fifth Edition. 1997. Section 7.1.
2. SOURCE: USAF, Environmental Analysis Division. *JP-8 Volatility Study, IERA-RS-BR-SR-2001-0002*. San Antonio, 2001. Vapor pressures calculated using the composite data calculation, an average flash point temperature of 118.238°F, and atmospheric pressure of 760mmHg. Flash point temperature the average provided by Defense Energy Support Center. "Petroleum Quality Information System." Defense Logistics Agency, 1996.

Emissions from fuel dispensing may be controlled using a variety of techniques. However, the overall control efficiency is dependent on the capture efficiency of the system. Typical capture efficiencies are provided in Table 6-3. Additionally, the control efficiencies of several control techniques are provided in Table 6-4.

Table 6-3. Typical Fuel Truck Capture Efficiencies

Fuel Truck Capture System	Capture Efficiency (%)
Untested	70.0
EPA standards (NSPS subpart XX) leak test	98.7
MACT-level annual leak test	99.2
Trucks with installed blower system	100.0(1)

SOURCE (Unless otherwise stated): U.S. EPA. "Transportation and Marketing of Petroleum Liquids." *Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources*. Fifth Edition. 1995. Section 5.2.

1. SOURCE: TCEQ. "Tank Truck Loading of Crude Oil or Condensate." 2013. 14 December 2013. <http://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/oilgas/tank-truck-load.pdf>.

Table 6-4. Typical Fuel Transfer Control Efficiencies

Control Techniques		Control Efficiency (%)
Flares[1]	Compounds ≤ 3 Carbon atoms	99.0
	Other Organic Compounds	98.0
Thermal Oxidizers[2]		99.0
Carbon Systems[3]		98.0
Vapor Recovery Units		100.0

SOURCE: TCEQ. "Tank Truck Loading of Crude Oil or Condensate." 2013. 14 December 2013. <http://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/oilgas/tank-truck-load.pdf>.

1. Flares must meet 40 CFR 60.18 requirements of minimum heating value of waste gas and a maximum flare tip velocity.
2. Must be designed for the variability of the waste gas stream and basic monitoring which consists of a temperature monitor that indicates the device is achieving a satisfactory minimum temperature.
3. Must have an alarm system that will prevent break through.

Alternatively, emission factors for the loading of fuel trucks have been developed for several fuels likely to be distributed on base. These emission factors are based on an assumed temperature of 60°F and may be used as an alternative to calculating the loading loss. Table 5.2-5 of AP-42 provides these emission factors, which have been reproduced here in Table 6-5.

Table 6-5. VOC Emission Factors for Fuel Dispensing/Loading

Loading Method	Loading Parameters	Emission Factors (lb/10^3 gal)		
		Gasoline[1]	Diesel/No. 2 Fuel Oil	JP-8/Jet A
Submerged Loading	Dedicated Normal Service	5	0.014	0.016
	Vapor Balance Service	8	---	---
Splash Loading	Dedicated Normal Service	12	0.03	0.04
	Vapor Balance Service	8	---	---

SOURCE: U.S. EPA. "Transportation and Marketing of Petroleum Liquids." *Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources*. Fifth Edition. 1995. Section 5.2.

1. Gasoline has an RVP of 10 psia

"---" Indicates No data available

6.3 Emission Calculations

Emissions of concern from fuel dispensing operations are VOCs and HAPs. The volume of VOCs and HAPs emitted are directly related to the amount of VOC and HAP constituents within the fuel. Calculations of emissions of VOCs and HAPs from fuel dispensing are outlined below.

6.3.1 VOC Emissions Calculations (Preferred Method)

The preferred method for calculating VOC emissions from the dispensing of fuel is to use the fuel vapor pressure, saturation factor, temperature, and total throughput to estimate the loading loss as follows:

$$\mathbf{E}(VOC) = \mathbf{Q} \times \frac{\mathbf{1}}{\mathbf{1000}} \times \mathbf{12.46} \times \frac{\boldsymbol{S} \times \boldsymbol{P} \times \boldsymbol{M}}{\boldsymbol{T}} \times \left\{\mathbf{1} - \left[\left(\frac{\boldsymbol{Cap}}{\mathbf{100}}\right) \times \left(\frac{\boldsymbol{CE}}{\mathbf{100}}\right)\right]\right\}$$

Equation 6-1

Where,

E(VOC) = Annual emissions of VOCs (lb/yr).
Q = Annual quantity of fuel transferred into the tanks (gal/yr).
1000 = Factor converting gallons to 10^3 gallons (gal/10^3 gal)
12.46 = Equation constant (°R lb-mol/psia 10^3 gal).
S = Saturation factor. This is provided in Table 6-1.
P = True vapor pressure of fuel (psia). This is provided in Table 6-2.
M = Vapor molecular weight of the fuel (lb/lb-mol). This is provided in Table 6-2.
T = Temperature of bulk liquid loaded (°R).
Cap = Capture efficiency of the loading terminal (%). This is provided in Table 6-3.
CE = Efficiency of the control device (%). This is provided in Table 6-4.
100 = Factor for converting a percent to a fraction (%).

A detailed control volume outlining the emissions from fuel dispensing is provided in Figure 6-3.

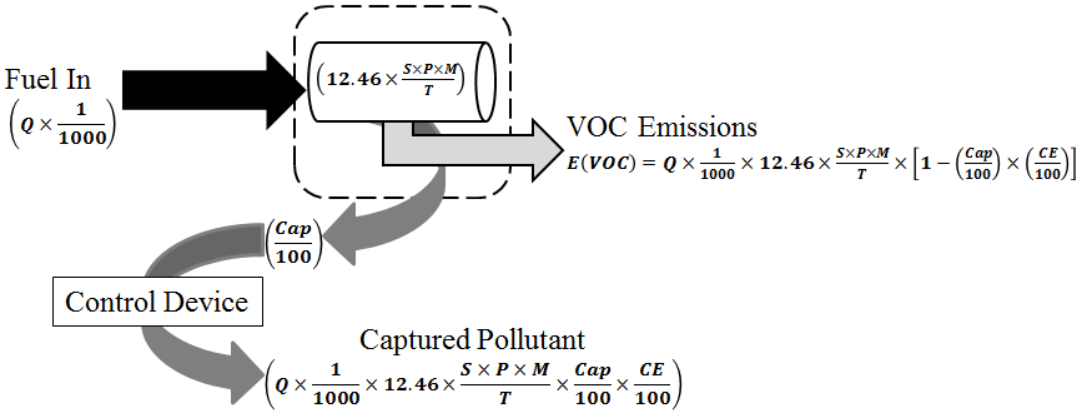

Figure 6-3. Fuel Dispensing Control Volume – Loading Losses Method

6.3.2 VOC Emissions Calculations (Emission Factor Method)

Using the emission factor method, the appropriate emission factor, selected from Table 6-5, and the total quantity of fuel transferred are used to calculate emissions as follows:

$$\mathbf{E(VOC) = Q \times \frac{1}{1000} \times EF(VOC) \times \left\{1 - \left[\left(\frac{Cap}{100}\right) \times \left(\frac{CE}{100}\right)\right]\right\}}$$

Equation 6-2

Where,

EF(VOC) = VOC emission factor as provided in Table 6-5 (lb/10^3 gal)

A detailed control volume is provided in Figure 6-4.

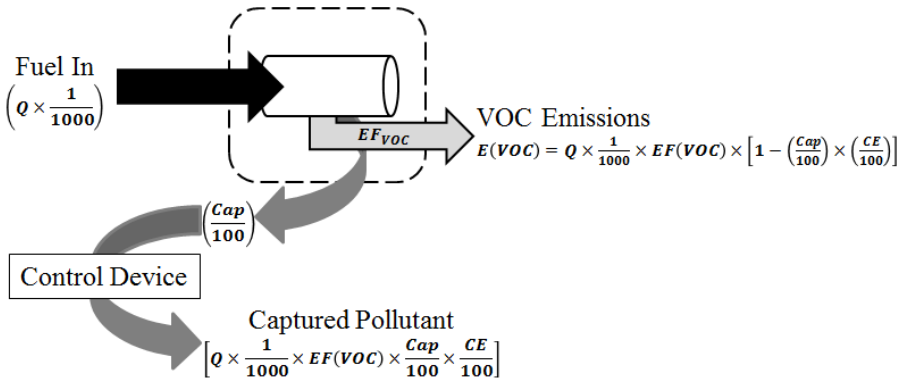

Figure 6-4. Fuel Dispensing Control Volume – Emission Factor Method

6.3.3 HAP Emissions Calculation

The amount of HAPs released into the environment from fuel dispensing may be estimated using the total VOCs emitted, as calculated above, and the weight percent of HAPs in the fuel itself. The typical weight percent of HAPs found in common fuels is provided in Table 6-6.

Using the total VOCs and weight percent HAP in the fuel, the total HAP emissions from fuel dispensing is calculated using Equation 6-3.

$$\mathbf{E}(\boldsymbol{HAP}) = \mathbf{E}(\boldsymbol{VOC}) \times \frac{\mathbf{WP}(\boldsymbol{HAP})}{\mathbf{100}}$$

Equation 6-3

Where,

E(HAP) = HAP emissions from fuel dispensing (lb/yr)
WP(HAP) = Weight Percent HAP in the fuel (%)

Table 6-6. Weight Percent of HAPs in Fuels Commonly Used at Air Force Installations

Compound	Typical Wt. %		
	In Diesel	In Gasoline	In JP-8/Jet A[1]
Anthracene	2.82E-03[2]	---	---
Benzene	8.00E-04	1.80E+00	3.38E-02
1,3-Butadiene	---	2.00E-04[2]	---
Cumene (Isopropylbenzene)	---	5.00E-01	1.81E-01
Dibenzofuran	1.64E-02[2]	---	---
Ethylbenzene	1.30E-02	1.40E+00	1.59E-01
Fluorene	2.94E-02[2]	---	3.44E-03
Hexane	1.00E-04	1.00E+00	---
Isooctane (2,2,4-Trimethyl Pentane)	---	4.00E+00	1.23E-03
Naphthalene	3.39E-01[2]	1.74E-01[2]	2.68E-01
Phenanthrene	3.22E-02[2]	---	---
Phenylbenzene (1,1'-biphenyl)	---	---	6.78E-02
Pyrene	3.62E-02[2]	---	1.00E-05
Toluene	3.20E-02	7.00E+00	2.19E-01
Xylenes (mixed isomers)	2.90E-01	7.00E+00	1.19E-02

SOURCE (Unless otherwise stated): Data taken from EPA's TANKS program version 4.09D.
1. SOURCE: USAF, Environmental Research Division. "JP-8 Composition and Variability, Report # AL/EQ-TR-1996-0006." 1996. An average density of 6.67lb/gal was used for unit conversion.
2. SOURCE: Values from the EPA's SPECIATE database version 4.4.

"---" Indicates No Data Available

6.4 Information Resources

Information regarding the annual fuel throughput may be collected from the fuel service station supervisor. The supervisor may also be able to provide specific information regarding the fuel vapor pressure and HAP constituent data. If this information is unavailable, contact the fuel supplier to gather this data for more precise emissions calculations.

6.5 Example Problems

6.5.1 Problem 1 – Preferred Method

A total of 150,000 gal of gas and 85,000 gal of diesel were dispensed from a POL tank into non-road equipment during the previous year. Assume the gasoline used had an average RVP of 10 and the average temperature at the installation is 60°F. Calculate the total VOCs and Xylene emissions.

Step 1 – Convert the temperature to the correct units. The temperature was given in terms of °F; however, in order to calculate the emission factors needed, the temperature must be converted to the correct units as follows:

$$T(°R) = T(°\text{F}) + 460.67$$

$$\boldsymbol{T(°R) = 60 + 460.67 = 520.67°R}$$

Step 2 – Record the vapor pressures and vapor molecular weights. These values are needed for emission factor calculations and are given in Table 6-2. For RVP 10 gasoline, the molecular weight and vapor pressure at 60°F are given as **66 lb/lb-mol and 5.20 psia,** respectively. Similarly, for diesel, the vapor molecular weight and vapor pressure at 60°F are given as **130 lb/lb-mol and 6.50E-03 psia** respectively.

Step 3 – Select and record the saturation factor. The saturation factor is a function of the load method employed. Knowing that this fuel was loaded into non-road equipment from a POL tank, it may be assumed that the fuel was splash loaded without vapor balance. This gives a saturation factor of **1.45**.

Step 4 – Calculate emissions. Using the data from the previous steps and Equation 6-1, the total VOCs are calculated as follows:

$$\text{E}(VOC) = \text{Q} \times \frac{1}{1000} \times 12.46 \times \frac{S \times P \times M}{T} \times \left\{1 - \left[\left(\frac{Cap}{100}\right) \times \left(\frac{CE}{100}\right)\right]\right\}$$

For Gasoline:

$$\mathrm{E}(VOC) = 150{,}000\,\frac{\cancel{gal}}{yr} \times \frac{1}{1000}\left(\frac{10^3\mathrm{gal}}{\cancel{gal}}\right) \times 12.46\left(\frac{^\circ R\ lb{-}mol}{psia\ 10^3 gal}\right) \times \frac{1.45{\times}5.20(psia){\times}66\left(\frac{lb}{lb{-}mol}\right)}{520.67^\circ R}\left\{1 - \left[\left(\frac{0\%}{100\%}\right) \times \left(\frac{0\%}{100\%}\right)\right]\right\}$$

$$\mathrm{E}(VOC) = 150\left(\frac{\cancel{10^3}\mathrm{gal}}{yr}\right) \times 12.46\left(\frac{^\circ R\ lb{-}mol}{psia\ \cancel{10^3 gal}}\right) \times \frac{1.45{\times}4.04(psia){\times}68\left(\frac{lb}{lb{-}mol}\right)}{520.67^\circ R}\{1\}$$

$$\mathbf{E}(\boldsymbol{VOC}) = 1869\left(\frac{\cancel{^\circ R\ lb{-}mol}}{\cancel{psia}\ \mathrm{yr}}\right) \times 0.765\left(\frac{\cancel{psia}\ lb}{\cancel{^\circ R\ lb{-}mol}}\right) = \mathbf{1429.8}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

For Diesel:

$$\mathrm{E}(VOC) = 85{,}000\,\frac{\cancel{gal}}{yr} \times \frac{1}{1000}\left(\frac{10^3\mathrm{gal}}{\cancel{gal}}\right) \times 12.46\left(\frac{^\circ R\ lb{-}mol}{psia\ 10^3 gal}\right) \times \frac{1.45{\times}0.0065(psia){\times}130\left(\frac{lb}{lb{-}mol}\right)}{520.67^\circ R}\left\{1 - \left[\left(\frac{0\%}{100\%}\right) \times \left(\frac{0\%}{100\%}\right)\right]\right\}$$

$$\mathrm{E}(VOC) = 85\left(\frac{\cancel{10^3}\mathrm{gal}}{yr}\right) \times 12.46\left(\frac{^\circ R\ lb{-}mol}{psia\ \cancel{10^3 gal}}\right) \times \frac{1.45{\times}0.0065(psia){\times}130\left(\frac{lb}{lb{-}mol}\right)}{520.67^\circ R}\{1\}$$

$$\mathbf{E}(\boldsymbol{VOC}) = 1059.1\left(\frac{\cancel{^\circ R\ lb{-}mol}}{\cancel{psia}\ \mathrm{yr}}\right) \times 0.002\left(\frac{\cancel{psia}\ lb}{\cancel{^\circ R\ lb{-}mol}}\right) = \mathbf{2.12}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 5 – Record Xylene weight percent. Table 6-6 states that the weight percent xylene in gasoline and diesel fuel is **7% and 0.29%,** respectively.

Step 6 – Calculate Xylene emissions. Using the VOC emissions for gasoline and diesel fuel calculated in Step 4 and the weight percent xylene in each fuel as recorded in Step 5, the total xylene emissions are calculated using Equation 6-3 as shown:

$$\mathrm{E}(HAP) = \mathrm{E}(VOC) \times \frac{\mathrm{WP}(HAP)}{100}$$

For Gasoline:

$$\mathrm{E}(Xylene) = 1429.8\,\frac{lb}{yr} \times \frac{7\%}{100\%}$$

$$\mathbf{E}(\boldsymbol{Xylene}) = 1429.8\,\frac{lb}{yr} \times 0.07 = \mathbf{100.086}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

For Diesel:

$$\mathrm{E}(Xylene) = 2.12\,\frac{lb}{yr} \times \frac{0.29\%}{100\%}$$

$$\mathbf{E}(\boldsymbol{Xylene}) = 2.12\,\frac{lb}{yr} \times 0.0029 = \mathbf{0.006}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}$$

Step 7 – Calculate total VOC emissions. The total VOC emissions from fuel dispensing are the sum of evaporative emissions from each fuel calculated in Step 4:

$$\mathrm{E}(VOC) = \sum_{i=1}^{n} [E(VOC_i) + \cdots + E(VOC_n)]$$

$$\mathrm{E}(VOC) = \left(1429.8\,\frac{lb}{yr} + 2.12\,\frac{lb}{yr}\right)$$

$$\boxed{\mathbf{E}(\boldsymbol{VOC}) = \mathbf{1431.9}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

Step 8 – Calculate total Xylene emissions. The total xylene emissions from fuel dispensing are the sum of evaporative emissions from each fuel calculated in Step 6:

$$\mathrm{E}(HAP) = \sum_{i=1}^{n} [E(HAP_i) + \cdots + E(HAP_n)]$$

$$\mathrm{E}(Xylene) = \left(100.086\,\frac{lb}{yr} + 0.006\,\frac{lb}{yr}\right)$$

$$\boxed{\mathbf{E}(\boldsymbol{Xylene}) = \mathbf{100.1}\,\frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

6.5.2 Problem 2 – Emission Factor Method

Using the same throughput for gasoline and diesel as given in Problem 1, recalculate the VOC emissions using the emission factor method.

Step 1 – Select and record appropriate emission factors. Again, since the fuel was loaded into non-road equipment, the loading method is assumed to be splash loading without vapor balance. The emission factors for gasoline and diesel are **12 and 0.03 lb/10^3 gal** respectively.

Step 2 – Calculate VOC emissions. Using Equation 6-2 and the emission factors as recorded in Step 1, the total VOCs emitted are calculated as follows:

$$\mathrm{E}(VOC) = \mathrm{Q} \times \frac{1}{1000} \times \mathrm{EF}(VOC) \times \left\{1 - \left[\left(\frac{Cap}{100}\right) \times \left(\frac{CE}{100}\right)\right]\right\}$$

For Gasoline:

$$\mathrm{E}(VOC) = 150{,}000 \frac{\cancel{gal}}{yr} \times \frac{1}{1000}\left(\frac{10^3 gal}{\cancel{gal}}\right) \times 12 \frac{lb}{10^3 gal} \times \left\{1 - \left[\left(\frac{0\%}{100\%}\right) \times \left(\frac{0\%}{100\%}\right)\right]\right\}$$

$$\mathbf{E}(\boldsymbol{VOC}) = 150 \frac{\cancel{10^3 gal}}{yr} \times 12 \frac{lb}{\cancel{10^3 gal}} \times \{1\} = \mathbf{1800} \frac{\boldsymbol{gal}}{\boldsymbol{yr}}$$

For Diesel:

$$\mathrm{E}(VOC) = 85{,}000 \frac{\cancel{gal}}{yr} \times \frac{1}{1000}\left(\frac{10^3 gal}{\cancel{gal}}\right) \times 0.03 \frac{lb}{10^3 gal} \times \left\{1 - \left[\left(\frac{0\%}{100\%}\right) \times \left(\frac{0\%}{100\%}\right)\right]\right\}$$

$$\mathbf{E}(\boldsymbol{VOC}) = 85 \frac{\cancel{10^3 gal}}{yr} \times 0.03 \frac{lb}{\cancel{10^3 gal}} \times \{1\} = \mathbf{2.55} \frac{\boldsymbol{gal}}{\boldsymbol{yr}}$$

Step 3 – Sum the VOC emissions. Adding the calculated emissions from Step 2, the total VOCs, as determined by the emission factor method is calculated as follows:

$$\mathrm{E}(VOC) = \sum_{i=1}^{n} [E(VOC_i) + \cdots + E(VOC_n)]$$

$$\mathrm{E}(VOC) = \left(1800 \frac{lb}{yr} + 2.55 \frac{lb}{yr}\right)$$

$$\boxed{\mathbf{E}(\boldsymbol{VOC}) = \mathbf{1802.55} \frac{\boldsymbol{lb}}{\boldsymbol{yr}}}$$

6.6 References

MacDonald , Hatch Mott MacDonald. "http://www.hatchmott.com/sites/dev.hatchmott.com /files/brochures/Aviation_Fueling_09_w.pdf."

Mayfield 1996, "JP-8 Composition and Variability," Armstrong Laboratory, Environics Directorate, Environmental Research Division, May 1996

SWRI 2001, "JP-8 Volatility Study," Southwest Research Institute (SWRI), March 2001

TCEQ, "http://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/oilgas/tank-truck-load.pdf," Texas Commission on Environmental Quality

USAF 2009, "Air Emissions Factor Guide to Air Force Stationary Sources," United States Air Force, December 2009

USEPA 2006, Section 7.1-"Organic Liquid Storage Tanks," Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources, Fifth Edition, U.S. Environmental Protection Agency, November 2006

USEPA 2008, Section 5.2-"Transportation and Marketing of Petroleum Liquids," Compilation of Air Pollutant Emission Factors - Volume I: Stationary Point and Area Sources, Fifth Edition, U.S. Environmental Protection Agency, June 2008