

2023 SmartWay Online Truck Tool: Short Form

For fleets with 20 or fewer trucks,
one class, using diesel or gasoline fuel, with no
brokered freight

Technical Documentation

**U.S. Version 1.0
(Data Year 2022)**

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Transportation and Climate Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

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1.0 Overview

This document provides detailed information on the data sources, calculation methods, and assumptions used within the 2023 SmartWay Online Truck Tool – Short Form (referred to as the Short Form Tool in this document), version 1.0. The Short Form Tool utilizes up-to-date emission factors, in combination with detailed vehicle activity data, to estimate emissions and associated performance metrics. The primary purpose of the Short Form Tool is to help fleets with 20 or fewer trucks (of a single truck class and using only diesel or gasoline fuel) easily input their fleet information, calculate pollutant emissions, and track their emissions performance over time.

The Short Form Tool allows users to evaluate their fleet's performance in terms of different mass-based metrics for CO₂, NO_x, PM (PM₁₀ and PM_{2.5}), and black carbon (BC) including grams per mile and grams per average payload ton-mile. The Short Form Tool is restricted to fleets of 20 or fewer diesel or gasoline powered trucks of a single weight class (e.g., 6, 8b). Please use the all-carrier version of the tool, available through the SmartWay Partner Portal, to enter data for larger fleets and/or fleets using alternative fuels such as natural gas, LPG, and electricity.

The Short Form Tool also collects information on fleet operations and truck body types, allowing accurate assignment of Partner fleets to their appropriate SmartWay Category (e.g., Truckload Dry Van, Dray, Mixed, etc.).

2.0 Data Inputs and Sources

The Short Form Tool user provides vehicle characteristic, operational, and activity data needed for emissions performance estimation (see Section 3 for more information). The Short Form Tool calculates emissions by multiplying fleet activity data with EPA-approved emission rate factors that are stored in look-up tables.

The Short Form Tool contains different types of emission rate factors for different pollutants. CO₂ factors are expressed in grams of CO₂ per gallon of fuel.¹ NO_x, PM, and BC factors are expressed in grams of pollutant per mile traveled for running emissions, and in grams per hour for idle emissions. The CO₂ factors are independent of the truck types, classes, and operational practices in a fleet. NO_x, PM and BC factors, however, vary depending upon truck class and engine model year/emission certification standard.

PM and BC emissions will also vary with the application of PM control retrofits. However, SmartWay partners must use the online – all carrier version of the tool to account for these effects.

2.1 CO₂ FACTORS

The CO₂ factors used in the Short Form Tool are based on fuel consumption. These factors and their sources and are summarized below in Table 1.

Table 1. CO₂ Factors by Fuel Type*

	g/gal	Source ²
Gasoline	8,887	(i)
Ethanol	5,764	(ii)
Diesel	10,180	(iii)

* 100% combustion (oxidation) assumed

Today's gasoline contains 10 percent ethanol, or E10. The CO₂ factors for E10 are based on a volumetric weighting of the gasoline and ethanol factors (8,575 g/gal).

2.2 NO_x, PM AND BC FACTORS

The Short Form Tool contains NO_x, PM₁₀, PM_{2.5} and BC³ emission factors for running operation (i.e. gram per mile factors) derived from EPA's MOVES_{3.1} model for diesel and E10⁴ for all heavy truck classes (2b – 8b)

¹ At this time other greenhouse gases such as methane (CH₄) and nitrous oxide (N₂O) are not included in the current Short Form Tool.

² i) Final Rule on Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards (75 FR 25324, May 7, 2010). The gasoline factor used in this rule was sourced from the California Air Resources Board and is based on measurement of carbon from a gasoline test fuel (indolene).

ii) Final Rule on Mandatory Reporting of Greenhouse Gases (70 FR 56260, October 30, 2009). Full source documentation is available on pp. 31-32 in the Technical Support Document, *Petroleum Products and Natural Gas Liquids: Definitions, Emission Factors, Methods and Assumptions*, available at <https://www.epa.gov/sites/production/files/2015-07/documents/subpartmmproductdefinitions.pdf>. Accessed 12-20-22.

iii) Fuel economy calculations in 40 C.F.R 600.113 available at http://edocket.access.gpo.gov/cfr_2004/julqtr/pdf/40cfr600.113-93.pdf. Accessed 12-20-22.

³ Black carbon factors are assumed to equal the elemental carbon gram per mile factors output by the MOVES model.

⁴ All gasoline consumption in the United States and Canada is now assumed to consist of E10. References to "gasoline" in the Tool and the associated

under national default temperature and fuel conditions, for model years 1992 onward, for the 2022 calendar year.⁵ See Section 2.3 for a detailed discussion of how the MOVES gram per mile emission factors were developed for each SmartWay Category for use in the Tool.

Short-duration (less than 60 minutes) idle emission factors for NO_x, PM and BC were developed separately by model year, truck class, and fuel type (diesel and gasoline). MOVES3.1 provides short duration idle in terms of grams and hours of off-network idle operation.

MOVES3.1 also provides emission factors for long-duration idle for long-haul diesel trucks. These factors are only applied for Class 8b trucks.⁶ Short-duration factors are applied for all truck class types. The idle factors used in the Tool are presented in Appendix B.

The Short Form Tool also calculates the NO_x, PM and BC emissions associated with transportation refrigeration (reefer) units. The MOVES3.1 emissions model was used to develop emission rates for these units for the 2022 calendar year, following these steps:

-  A national average model run was performed for the Industrial sector, including gasoline and diesel fueled equipment;
-  The A/C refrigeration (reefer) unit standard classification codes (SCCs) were extracted from the output files – 2265003060 (gasoline) and 2270003060 (diesel);
-  Grams per day outputs for weekdays and weekends for each of the 12 months were converted to grams per year by aggregating emissions over day types to arrive at an average day value, multiplying by the number of days in each month, and summing over month. This resulted in annual grams of emissions (of NO_x and PM_{2.5}) and grams of fuel consumed (in terms of brake specific fuel consumption or BSFC), for each fuel type;
-  BSFC was converted from grams to gallons fuel using the MOVES energy density values of 2,819 g/gal and 3,167 g/gal for gasoline and diesel, respectively.
-  Grams/gallon emission factors were then calculated for each pollutant by dividing the annual grams of emissions of NO_x and PM_{2.5} by the annual gallons of fuel consumed for gasoline and diesel.

Black carbon emissions associated with reefer activity were scaled from PM_{2.5} reefer emissions, applying conversion factors for nonroad equipment from the Commission for Environmental Cooperation (0.349 for diesel engines and 0.122 for gasoline engines).⁷

documentation refer to E10.

⁵ Emission factors for model years prior to 1992 are assumed to equal the 1992 values, since 30 year old engines are assumed to be fully deteriorated by the MOVES model.

⁶ NO_x factors for long-term extended idling are higher than short-duration factors for late model engines, since engine operation temperatures and loads at idle are generally not high enough to activate late-model emission controls such as selective catalytic reduction and exhaust gas recirculation.

⁷ Commission for Environmental Cooperation (CEC), 2015, North American Black Carbon Emissions Estimation Guidelines: Methods for Estimating Black Carbon Emissions. Prepared for the CEC by Eastern Research Group, Inc. Final Report, May 2015.

Table 2 provides the fuel factors used in the latest Short Form Tool.

Table 2. Weighted Average Reefer Fuel Factors (g/gallon)

Fuel	NO _x	PM _{2.5}	BC
Diesel	45.857	0.651	0.227
Gasoline	17.523	0.916	0.112

The above rates are multiplied by the gallons of reefer fuel entered by the user to estimate mass emissions for the above pollutants. CO₂ emissions associated with reefer fuel use are included in the total CO₂ estimate.

The next section describes the process followed to select and adjust the running emission factors from MOVES3.1 for use in the Short Form Tool.

2.3 DERIVATION OF RUNNING EMISSION FACTORS BY SMARTWAY CATEGORY

The Short Form Tool requires MOVES running emission rates that are more aggregated than those used in the SmartWay Online Tool for all carriers (the "all carrier" Tool). The all-carrier Tool uses rates broken out by truck class (2b through 8b), model year, roadway type (highway, urban), hours of short-term and long-term idle (i.e., extended idle, hoteling), and mode of urban operation (deceleration, 0-25 mph, 25-50 mph, > 50 mph). The Short Form Tool does not require users to provide detail on roadway type or mode of operation, and only requires total hours of idling (not split by short or long term). For consistency with the all-carrier Tool, the MOVES-based gram per mile emission rates were generated for the Short Form Tool by aggregating the all-carrier Tool rates across roadway type⁸ and mode of operation using the equation below, which applied to all pollutants except CO₂. As shown, the resulting emissions rates are broken down by SmartWay Truck Category, truck weight class, and model year.

$$\text{Small Carrier } EF_{\text{Category, Class, MY}} = A_{\text{Category}} \times EF_{\text{Urban}<25, \text{Class, MY}} + B_{\text{Category}} \times EF_{\text{Urban } 25-50, \text{Class, MY}} \\ + C_{\text{Category}} \times EF_{\text{Urban}>50, \text{Class, MY}} + D_{\text{Category}} \times EF_{\text{Highway, Class, MY}}$$

Where:

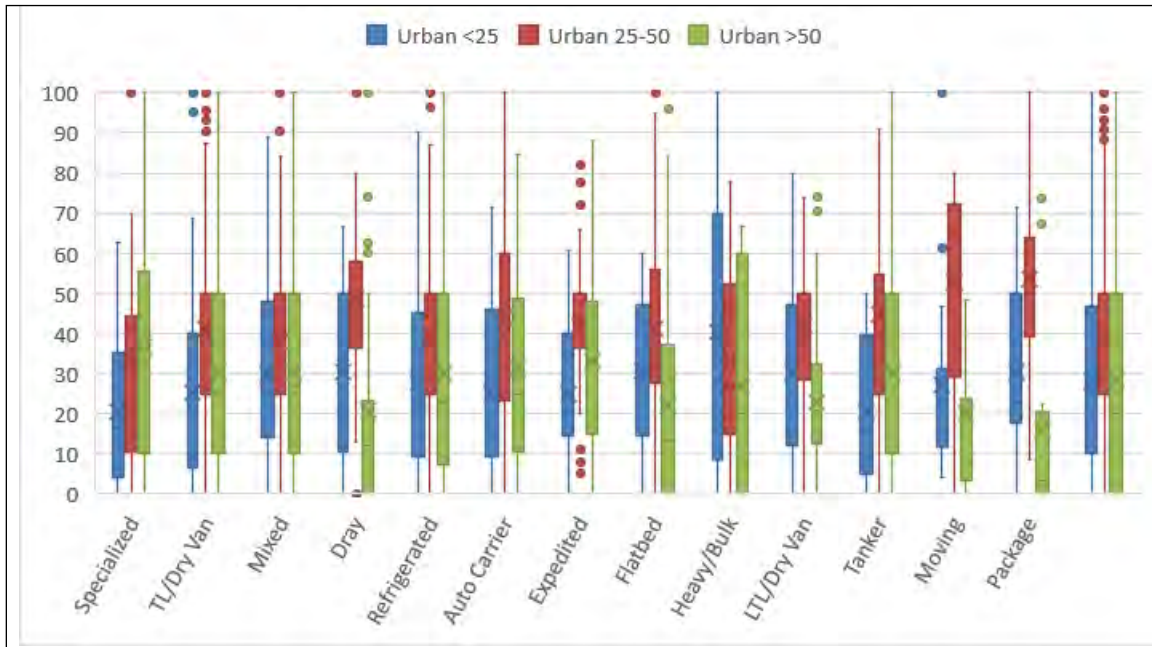
A_{Category} = weighting factor (mile fraction) for Urban operation <25 mph by SmartWay category
B_{Category} = weighting factor (mile fraction) for Urban operation 25-50 mph by SmartWay category
C_{Category} = weighting factor (mile fraction) for Urban operation >50 mph by SmartWay category
D_{Category} = weighting factor (mile fraction) for Highway operation, by SmartWay category
EF_{Operation, Class, MY} = SmartWay tool emission factor for operation (urban operation <25 mph etc.) by weight class and model year

The weighting factors for this aggregation were developed from operational data provided by SmartWay partners from the 2018 calendar year. The partner database was queried for each SmartWay Category to extract fuel type and weight class, total annual miles and the distribution of miles by mode of operation. This resulted in 12,357 data points, nearly half of which used the SmartWay operation mode distribution defaults.

⁸ Please refer to the Technical Documentation for the all-carrier Truck Tool for further details.

Records using default mode distributions were excluded, leaving a sample of 6,858 records for analysis. A check for outliers was performed on these data by looking at the relative (normalized) distribution of miles travelled within the three urban modes of operation only. A box plot showing the distribution of normalized percent operation values in each urban operating mode, by SmartWay category, is shown below.

Figure 1. Percent Operation by Urban Mode (Normalized)



The bottom and top of the boxes are the 25th and 75th percentiles respectively, which define the inter-quartile range (IQR). The median and mean are shown within the boxes as horizontal lines and "X's", respectively. The ends of the whiskers denote the sample range without outliers, which are shown as individual points. Outliers are defined as points that fall outside the 75th percentile + (1.5 × IQR), or 25th percentile - (1.5 × IQR). These outliers were removed from the sample used to calculate operational weighting factors. Since time-in-mode is not independent, for any given outlier point the entire record was removed from the sample including other modes of operation. Though there are only a few dozen outlier points shown in the chart, each point may represent several records, as some partners entered the same percent operation value for all weight classes in a given truck category. The total number of records removed is shown in the table below, by truck category.

Table 3. Outliers Removed by SmartWay Category

SmartWay Category	Total Records	Outliers Removed
Auto Carrier	124	0
Dray	239	56
Expedited	258	33

SmartWay Category	Total Records	Outliers Removed
Flatbed	358	17
Heavy/Bulk	53	0
LTL/Dry Van	522	24
Mixed	1490	73
Moving	106	3
Package	74	2
Refrigerated	1270	95
Specialized	194	51
Tanker	172	0
TL / Dry Van	1,998	26

Weighting factors were developed by summing total VMT by SmartWay Category and mode of operation over the remaining records and dividing by total VMT for each Category. The resulting weighting factors are shown in the table below.

Table 4. Operation Mode Weighting Factors by SmartWay Category

SmartWay Category	A Urban < 25 mph	B Urban 25-50 mph	C Urban > 50 mph	D Highway
Auto Carrier	0.08	0.14	0.10	0.68
Dray	0.17	0.18	0.11	0.55
Expedited	0.07	0.09	0.09	0.75
Flatbed	0.07	0.09	0.09	0.75
Heavy/Bulk	0.24	0.08	0.05	0.62
LTL/Dry Van	0.14	0.15	0.08	0.63
Mixed	0.10	0.11	0.13	0.66
Moving	0.09	0.14	0.13	0.64
Package	0.69	0.13	0.05	0.14
Refrigerated	0.07	0.09	0.16	0.67
Specialized	0.51	0.03	0.05	0.41
Tanker	0.15	0.08	0.11	0.66
TL/Dry Van	0.09	0.10	0.10	0.71

By and large the weights for highway operation vary as expected for the truck categories. For example, package delivery trucks travel only 14 percent of total miles on highways, while expedited shippers travel 75 percent. Specialized truck weights were unusual with only 41 percent of miles on highway; an investigation revealed a small number of high mileage fleets with 25 percent of highway operation dominated this result.

The Short Form Tool multiplies the all-carrier Tool's short-term idle emission rates to the idle hours provided by carriers for truck classes 2b through 8a, since the MOVES long-duration idle rates apply only to Class 8b combination long-haul diesel trucks. For Class 8b trucks, a composite idle rate is estimated based on a weighting of short- and long-duration idle hours supplied by fleets using the all-carrier Tool. All-Carrier Tool data from Class 8b trucks indicate that 56 percent of idle hours are long-duration, and 44 percent are short-duration. This weighting was used to develop the composite idle emission factors for Class 8b diesels for use in the Short Form Tool.

3.0 Emission and Activity Estimation

The emission rates and weighting factors discussed in Section 2 are combined with activity data provided by Partners to calculate mass emissions at the fleet and/or partner level for CO₂, NO_x, PM, and BC as described below.

3.1 CO₂

Mass emissions of CO₂ are calculated within the Short Form Tool utilizing emission factors expressed in *grams per gallon of fuel*, as discussed above. Reefer fuel is aggregated with vehicle fuel inputs in the Tool, with the reefer fuel type assumed to be the same as the vehicle fuel type.

3.2 NO_x, PM AND BC

Unlike CO₂ emissions which only vary with fuel type, NO_x, PM and BC emission rates also vary depending upon engine model year, vehicle class, and operation mode (running or idle). For this reason, EPA developed lookup tables for use in the Short Form Tool with emission factors corresponding to user-supplied inputs regarding their fleet activity. The NO_x, PM and BC emission rates expressed in *grams per mile* were combined with total miles entries to estimate mass emissions. Emissions are calculated at the fuel type/truck class/model year level, following these steps:

1. Multiply total miles per truck per year by the corresponding gram per mile value. (See Appendix A for g/mile values for each SmartWay Category and fuel type (gas and diesel), by truck class group/model year group.) Then divide values by 1.10231×10^6 to obtain short tons.
2. For Class 8b trucks, split reported idle hours into short and long duration components using the average ratios discussed above (44 percent short, 56 percent long). Then multiply the short and long duration idle hours per truck per year by the corresponding short and long duration gram per hour values. Idle factors are split by fuel type, truck class and model year. Convert to short tons.
3. For non-Class 8b trucks, multiply the idle hours entered by the partner by the short duration emission factors, as there are no long duration factors for these trucks. Convert to short tons.
4. If a body type of "Reefer" has been specified for a given fuel type/truck class, calculate NO_x and PM emissions for reefers by multiplying the total gallons entered for reefer fuel⁹ by the corresponding gram per gallon reefer engine emission factors (see Table 2 above). Convert to short tons.
5. Add tons for steps 1 through 4 to obtain total per truck emissions. Sum across fuel types if needed for the fleet total.

⁹ If a partner does not have an estimate for their reefer fuel use, they may use a default value based on the average ratio of reefer to engine fuel consumption for SmartWay reefer partners (11%).

Finally, note that the PM factors output by the MOVES model for use in the Short Form Tool are expressed in terms of $PM_{2.5}$. The MOVES3.1 model assumes a fixed ratio of $PM_{10} / PM_{2.5}$ for a given fuel type, as summarized below:

 Gasoline – 1.1304

 Diesel – 1.087

These factors are applied directly to the $PM_{2.5}$ emission factors to obtain mass emission and performance metrics for PM_{10} within the Short Form Tool.

3.3 DATA VALIDATION

The Short Form Tool has a number of standard range and value checks that must be passed before Partners can submit their data to EPA. Many of these checks simply confirm the presence of required data (e.g., total gallons for each fuel type). There is also an implicit validation check on all numeric fields because the system will not accept any non-numeric characters (including minus signs) within these fields. Partners will not be able to finalize their fleet files until all associated errors have been resolved.

Rigorous validation checks of key data inputs are needed to ensure the overall quality of the performance metrics calculated by the Short Form Tool. Validation checks serve three purposes to this end. First, unusually high or low values can be identified and flagged for the user's attention before finalizing inputs. For example, a user may misplace a decimal, inadvertently add an extra zero, or utilize the wrong units (e.g. reporting pounds instead of tons for payload) upon data entry. By comparing these data entries to reliable industry averages and distributions, these values can be flagged allowing users to quickly correct such errors.

Second, under certain circumstances Partners may operate their fleets under atypical conditions, resulting in extreme (outlier) data values. For example, permitted heavy-haul operations may routinely exceed industry-average payload values by 10 or more tons. By flagging such data entries Partners have the opportunity to provide additional information regarding their unique operating conditions through use of the Tool's comment fields.

Finally, independent criteria can be established to ensure that data inputs are never allowed to exceed certain physically constrained absolute limits. For example, a truck cannot exceed roughly 500,000 miles per year, even with dual drivers and minimal maintenance time, simply due to the available hours per year and highway speed limits. Data values above these absolute maximum levels are not allowed by the Short Form Tool, and users are required to modify the associated inputs before proceeding.

The following presents the validation ranges used in the Short Form Tool. Validation ranges are of three types:

1. "Orange" values indicating that the input or derived performance value is notably lower/higher than the expected value. Partners may enter an explanation backing up such entries, but this is not mandatory.
2. "Red" values indicating that the input or derived performance value differs greatly from the expected value. In this case the partner must enter text explaining why this value is accurate. Once entered, the value will change from "Red" to "Orange" on the data entry screen.
3. "Absolute errors" exceed values deemed physically possible and must be changed to be accepted by the tool.

Validation ranges for the short form Tool are based on the corresponding values in the all-carrier Tool for the following parameters.

-  Distance per truck per year
-  Miles per gallon
-  Fraction of reefer to engine fuel use (Reefers only)
-  Payload
-  Idle hours per day
-  Service days per year

The following table summarizes the validation range values currently used in the Short Form Tool. These values may be updated in the future to be specific to small truck fleets (based on tool inputs).

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
Mi/Yr per truck	2b	Expedited	0	9,698	16,183	63,029	90,800	500,000
Mi/Yr per truck	2b	Mixed	0	2,046	7,741	53,432	71,391	500,000
Mi/Yr per truck	2b	Package	0	5,247	11,565	47,936	65,500	500,000
Mi/Yr per truck	2b	Truckload	0	6,799	18,007	52,984	58,368	500,000
Mi/Yr per truck	3	Mixed	0	0	5,000	45,712	53,814	500,000
Mi/Yr per truck	4	Mixed	0	1,402	6,556	40,071	51,362	500,000
Mi/Yr per truck	5	Mixed	0	306	3,470	40,000	49,485	500,000
Mi/Yr per truck	6	LTL	0	9,631	11,696	49,080	60,950	500,000
Mi/Yr per truck	6	Mixed	0	2,036	10,931	51,916	67,014	500,000
Mi/Yr per truck	6	Moving	0	3,000	8,000	68,107	79,506	500,000
Mi/Yr per truck	6	Package	0	5,921	9,073	65,000	72,065	500,000
Mi/Yr per truck	6	Truckload	0	8,632	14,133	56,713	68,836	500,000

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
Mi/Yr per truck	7	LTL	0	12,488	15,654	54,122	72,666	500,000
Mi/Yr per truck	7	Mixed	0	0	5,000	67,560	78,694	500,000
Mi/Yr per truck	7	Truckload	0	2,326	10,312	57,249	79,650	500,000
Mi/Yr per truck	8a	LTL	0	10,558	15,625	68,215	88,352	500,000
Mi/Yr per truck	8a	Mixed	0	6,271	13,039	85,890	102,000	500,000
Mi/Yr per truck	8a	Reefer	0	15,505	26,162	70,000	79,308	500,000
Mi/Yr per truck	8a	Truckload	0	10,069	13,877	97,567	128,406	500,000
Mi/Yr per truck	8b	Auto Carrier	0	43,112	51,769	103,710	112,367	500,000
Mi/Yr per truck	8b	Dray	0	6,985	18,413	86,984	98,413	500,000
Mi/Yr per truck	8b	Expedited	0	23,226	27,112	92,857	140,232	500,000
Mi/Yr per truck	8b	Flatbed	0	36,935	47,495	110,856	121,416	500,000
Mi/Yr per truck	8b	Heavy/Bulk	0	44,171	48,663	101,118	108,168	500,000
Mi/Yr per truck	8b	LTL	0	13,983	27,504	108,634	122,156	500,000
Mi/Yr per truck	8b	Mixed	0	12,029	27,477	120,168	135,616	500,000
Mi/Yr per truck	8b	Reefer	0	36,939	52,743	147,566	163,370	500,000
Mi/Yr per truck	8b	Specialty	0	20,765	39,854	105,338	117,433	500,000
Mi/Yr per truck	8b	Truckload	0	29,853	44,672	133,586	148,405	500,000
Mi/Yr per truck	8b	Tanker	0	36,503	47,076	110,517	121,090	500,000
Idle hrs/day	2b	Mixed	0	0	1	4	6	24
Idle hrs/day	2b	Package	0	0	1	6	10	24
Idle hrs/day	2b	Specialty	0	0	1	6	10	24
Idle hrs/day	3	Mixed	0	0	1	4	6	24
Idle hrs/day	3	Package	0	0	1	6	10	24
Idle hrs/day	3	Specialty	0	0	1	6	10	24
Idle hrs/day	4	Mixed	0	0	1	4	6	24
Idle hrs/day	4	Package	0	0	1	6	10	24
Idle hrs/day	4	Specialty	0	0	1	6	10	24
Idle hrs/day	5	Mixed	0	0	1	4	6	24
Idle hrs/day	5	Package	0	0	1	6	10	24
Idle hrs/day	5	Specialty	0	0	1	6	10	24
Idle hrs/day	6	Mixed	0	0	1	4	6	24
Idle hrs/day	6	Package	0	0	1	6	10	24
Idle hrs/day	6	Specialty	0	0	1	6	10	24
Idle hrs/day	7	Mixed	0	0	1	4	6	24
Idle hrs/day	7	Package	0	0	1	6	10	24
Idle hrs/day	7	Specialty	0	0	1	6	10	24
Idle hrs/day	8a	Mixed	0	0	1	4	6	24
Idle hrs/day	8a	Package	0	0	1	6	10	24

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
Idle hrs/day	8a	Specialty	0	0	1	6	10	24
Idle hrs/day	8b	LTL	0	0	1	5	8	24
Idle hrs/day	8b	Mixed	0	0	1	24	24	24
Idle hrs/day	8b	Package	0	0	1	5	8	24
service days /yr	2b	Expedited	0	96	171	320	350	365
service days /yr	2b	Mixed	0	96	171	320	350	365
service days /yr	2b	Package	0	142	200	315	372	365
service days /yr	2b	Truckload	0	96	171	320	350	365
service days /yr	3	Mixed	0	96	171	320	350	365
service days /yr	4	Mixed	0	96	171	320	350	365
service days /yr	5	Mixed	0	96	171	320	350	365
service days /yr	6	LTL	0	96	171	320	350	365
service days /yr	6	Mixed	0	96	171	320	350	365
service days /yr	6	Moving	0	96	171	320	350	365
service days /yr	6	Package	0	142	200	315	372	365
service days /yr	6	Truckload	0	96	171	320	350	365
service days /yr	7	LTL	0	96	171	320	350	365
service days /yr	7	Mixed	0	96	171	320	350	365
service days /yr	7	Truckload	0	96	171	320	350	365
service days /yr	8a	LTL	0	96	171	320	350	365
service days /yr	8a	Mixed	0	96	171	320	350	365
service days /yr	8a	Reefer	0	96	171	320	350	365
service days /yr	8a	Truckload	0	96	171	320	350	365
service days /yr	8b	Auto Carrier	0	157	213	325	350	365
service days /yr	8b	Dray	0	157	213	325	350	365
service days /yr	8b	Expedited	0	157	213	325	350	365
service days /yr	8b	Flatbed	0	157	213	325	350	365
service days /yr	8b	Heavy/Bulk	0	157	213	325	350	365
service days /yr	8b	LTL	0	135	193	309	350	365
service days /yr	8b	Mixed	0	157	213	325	350	365
service days /yr	8b	Reefer	0	157	213	325	350	365
service days /yr	8b	Specialty	0	157	213	325	350	365
service days /yr	8b	Truckload	0	157	213	325	350	365
service days /yr	8b	Tanker	0	157	213	325	350	365
payload	2b	Auto Carrier	0	0	0	1	2	6
payload	2b	Dray	0	0	0	1	2	6
payload	2b	Expedited	0	0	0	1	2	6
payload	2b	Flatbed	0	0	1	2	3	6

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
payload	2b	Heavy/Bulk	0	0	1	2	3	6
payload	2b	LTL	0	0	0	1	1	6
payload	2b	Mixed	0	0	0	1	2	6
payload	2b	Moving	0	0	0	1	2	6
payload	2b	Package	0	0	0	1	1	6
payload	2b	Reefer	0	0	0	1	2	6
payload	2b	Specialty	0	0	0	1	2	6
payload	2b	Truckload	0	0	0	1	2	6
payload	2b	Tanker	0	0	0	1	2	6
payload	3	Auto Carrier	0	0	0	2	3	9
payload	3	Dray	0	0	1	2	3	9
payload	3	Expedited	0	0	0	2	3	9
payload	3	Flatbed	0	0	0	2	3	9
payload	3	Heavy/Bulk	0	0	1	2	3	9
payload	3	LTL	0	0	1	2	2	9
payload	3	Mixed	0	0	0	2	3	9
payload	3	Moving	0	0	0	2	3	9
payload	3	Package	0	0	1	2	2	9
payload	3	Reefer	0	0	1	2	3	9
payload	3	Specialty	0	0	0	2	3	9
payload	3	Truckload	0	0	1	2	3	9
payload	3	Tanker	0	0	0	2	3	9
payload	4	Auto Carrier	0	0	1	3	4	12
payload	4	Dray	0	0	1	3	4	12
payload	4	Expedited	0	0	1	3	4	12
payload	4	Flatbed	0	0	1	4	6	12
payload	4	Heavy/Bulk	0	0	1	4	6	12
payload	4	LTL	0	0	1	2	3	12
payload	4	Mixed	0	0	1	3	4	12
payload	4	Moving	0	0	1	2	3	12
payload	4	Package	0	0	1	2	3	12
payload	4	Reefer	0	0	1	3	4	12
payload	4	Specialty	0	0	1	2	3	12
payload	4	Truckload	0	0	1	3	4	12
payload	4	Tanker	0	0	1	3	4	12
payload	5	Auto Carrier	0	1	2	4	5	16
payload	5	Dray	0	1	2	4	5	16
payload	5	Expedited	0	1	2	4	5	16

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
payload	5	Flatbed	0	1	2	4	5	16
payload	5	Heavy/Bulk	0	1	2	4	5	16
payload	5	LTL	0	1	2	3	3	16
payload	5	Mixed	0	1	2	4	5	16
payload	5	Moving	0	1	2	4	5	16
payload	5	Package	0	1	2	3	3	16
payload	5	Reefer	0	1	2	4	5	16
payload	5	Specialty	0	1	2	4	5	16
payload	5	Truckload	0	1	2	4	5	16
payload	5	Tanker	0	1	2	4	5	16
payload	6	Auto Carrier	0	1	2	7	8	21
payload	6	Dray	0	1	3	6	7	21
payload	6	Expedited	0	1	2	7	8	21
payload	6	Flatbed	0	1	3	6	8	21
payload	6	Heavy/Bulk	0	1	3	7	8	21
payload	6	LTL	0	1	3	4	4	21
payload	6	Mixed	0	1	2	7	8	21
payload	6	Moving	0	1	3	6	7	21
payload	6	Package	0	1	3	4	4	21
payload	6	Reefer	0	1	3	7	8	21
payload	6	Specialty	0	1	3	6	7	21
payload	6	Truckload	0	1	3	6	7	21
payload	6	Tanker	0	1	2	7	8	21
payload	7	Auto Carrier	0	4	5	7	8	60
payload	7	Dray	0	2	4	7	9	60
payload	7	Expedited	0	2	4	8	9	60
payload	7	Flatbed	0	4	6	8	9	24
payload	7	Heavy/Bulk	0	6	7	8	9	60
payload	7	LTL	0	1	4	6	6	60
payload	7	Mixed	0	2	4	8	9	60
payload	7	Moving	0	2	4	7	8	60
payload	7	Package	0	1	4	6	6	60
payload	7	Reefer	0	2	5	7	9	60
payload	7	Specialty	0	2	4	7	8	60
payload	7	Truckload	0	2	4	7	9	60
payload	7	Tanker	0	6	7	8	9	60
payload	8a	Auto Carrier	0	8	13	23	29	111
payload	8a	Dray	0	3	4	17	22	60

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
payload	8a	Expedited	0	3	4	18	29	111
payload	8a	Flatbed	0	10	11	16	22	72
payload	8a	Heavy/Bulk	0	10	13	23	29	111
payload	8a	LTL	0	3	4	12	13	60
payload	8a	Mixed	0	3	4	18	29	111
payload	8a	Moving	0	4	8	17	20	111
payload	8a	Package	0	3	4	12	13	60
payload	8a	Reefer	0	4	6	14	18	83
payload	8a	Specialty	0	4	8	17	20	111
payload	8a	Truckload	0	3	4	17	22	60
payload	8a	Tanker	0	6	7	18	23	72
payload	8b	Auto Carrier	0	8	13	23	29	111
payload	8b	Dray	0	11	14	22	26	150
payload	8b	Expedited	0	7	11	36	44	150
payload	8b	Flatbed	0	14	18	27	31	100
payload	8b	Heavy/Bulk	0	15	22	36	44	150
payload	8b	LTL	0	7	12	18	20	150
payload	8b	Mixed	0	7	11	36	44	150
payload	8b	Moving	0	7	11	17	20	111
payload	8b	Package	0	7	12	18	20	150
payload	8b	Reefer	0	14	17	23	26	83
payload	8b	Specialty	0	5	11	17	20	111
payload	8b	Truckload	0	11	14	22	26	150
payload	8b	Tanker	0	19	22	28	31	104
% reefer fuel	All		0	0	0	19	26	50
MPG - Diesel	2b	All	0	5	8	21	23	38
MPG - Diesel	3	All	0	4	6	14	14	29
MPG - Diesel	4	All	0	6	7	12	13	24
MPG - Diesel	5	All	0	4	6	12	15	21
MPG - Diesel	6	All	0	5	6	11	12	17
MPG - Diesel	7	All	0	5	6	11	11	16
MPG - Diesel	8a	All	0	4	5	9	10	12
MPG - Diesel	8b	Auto Carrier	0	4	5	6	6	9
MPG - Diesel	8b	Dray	0	5	5	7	7	11
MPG - Diesel	8b	Expedited	0	6	6	7	7	10
MPG - Diesel	8b	Flatbed	0	4	5	7	7	11

Table 5. Short Form Tool Validation Ranges by Parameter

Data Element	Truck Class	SmartWay Category	Absolute Minimum	Low Red	Low Orange	High Orange	High Red	Absolute Max
MPG - Diesel	8b	Heavy/Bulk	0	3	4	6	6	10
MPG - Diesel	8b	LTL	0	6	6	7	8	12
MPG - Diesel	8b	Mixed	0	5	5	8	8	12
MPG - Diesel	8b	Package	0	6	6	7	8	12
MPG - Diesel	8b	Reefer	0	5	6	8	9	12
MPG - Diesel	8b	Specialty	0	3	4	6	7	10
MPG - Diesel	8b	Truckload	0	5	5	8	8	12
MPG - Diesel	8b	Tanker	0	4	4	7	7	11
MPG - Gasoline	2b	All	0	4	6	16	18	30
MPG - Gasoline	3	All	0	3	5	11	11	23
MPG - Gasoline	4	All	0	5	6	10	10	19
MPG - Gasoline	5	All	0	4	5	10	12	17
MPG - Gasoline	6	All	0	4	5	9	9	13
MPG - Gasoline	7	All	0	4	4	8	9	13
MPG - Gasoline	8a	All	0	3	4	7	8	10
MPG - Gasoline	8b	Auto Carrier	0	3	4	4	5	7
MPG - Gasoline	8b	Dray	0	4	4	5	6	8
MPG - Gasoline	8b	Expedited	0	5	5	6	6	8
MPG - Gasoline	8b	Flatbed	0	3	4	6	6	9
MPG - Gasoline	8b	Heavy/Bulk	0	2	3	5	5	8
MPG - Gasoline	8b	LTL	0	4	5	6	6	9
MPG - Gasoline	8b	Mixed	0	4	4	6	6	9
MPG - Gasoline	8b	Package	0	4	5	6	6	9
MPG - Gasoline	8b	Reefer	0	4	4	7	7	9
MPG - Gasoline	8b	Specialty	0	2	3	5	5	8
MPG - Gasoline	8b	Truckload	0	4	4	6	6	10
MPG - Gasoline	8b	Tanker	0	3	3	5	6	9

4.0 Performance Metrics

The Short Form Tool allows the user to calculate their emissions performance using different metrics. Available performance metrics include:

-  Grams per mile
-  Grams per Payload Ton-Mile

The following calculations are performed for these metrics:

$$\text{g/mile: } \sum E / M$$

where

E = Emissions, M = Miles Driven

$$\text{g/avg payload ton-mile: } \sum E / (M \times AP)$$

where

E = Emissions, M = Miles Driven, AP = Average Payload

For both calculations:

-  Emissions = grams of pollutant
-  Miles Driven = Total Miles

Summations are performed for the different metrics. Each of the metrics is automatically aggregated across model years (for NO_x, PM and BC) for reporting purposes. Additional aggregation may be reported across fuel types as specified by the user.

Appendix A: NO_x, PM & BC Emission Factors (g/mi) 2022 Calendar Year - MOVES3.1 Basis

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NO _x g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NO _x g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	Pre-1992	2b	5.10900	0.03707	0.00543	8.12999	0.28296	0.21834
1	Pre-1992	3	5.68089	0.10260	0.01504	11.15739	0.41324	0.32368
1	Pre-1992	4	5.77722	0.10786	0.01581	14.88021	0.58471	0.46239
1	Pre-1992	5	5.69195	0.10325	0.01513	15.44811	0.56418	0.44603
1	Pre-1992	6	5.23589	0.07800	0.01143	15.77802	0.57894	0.45779
1	Pre-1992	7	5.23589	0.07800	0.01143	16.47716	0.61253	0.48454
1	Pre-1992	8a	5.24414	0.07797	0.01143	25.10111	0.86171	0.68310
1	Pre-1992	8b	5.24414	0.07797	0.01143	30.60094	1.01808	0.80780
1	1992	2b	5.10900	0.03707	0.00543	8.12999	0.28296	0.21834
1	1992	3	5.68089	0.10260	0.01504	11.15739	0.41324	0.32368
1	1992	4	5.77722	0.10786	0.01581	14.88021	0.58471	0.46239
1	1992	5	5.69195	0.10325	0.01513	15.44811	0.56418	0.44603
1	1992	6	5.23589	0.07800	0.01143	15.77802	0.57894	0.45779
1	1992	7	5.23589	0.07800	0.01143	16.47716	0.61253	0.48454
1	1992	8a	5.24414	0.07797	0.01143	25.10111	0.86171	0.68310
1	1992	8b	5.24414	0.07797	0.01143	30.60094	1.01808	0.80780
1	1993	2b	5.10900	0.03707	0.00543	8.12999	0.28296	0.21834
1	1993	3	5.68089	0.10260	0.01504	11.15739	0.41324	0.32368
1	1993	4	5.77722	0.10786	0.01581	14.88021	0.58471	0.46239
1	1993	5	5.69195	0.10325	0.01513	15.44811	0.56418	0.44603
1	1993	6	5.23589	0.07800	0.01143	15.77802	0.57894	0.45779
1	1993	7	5.23589	0.07800	0.01143	16.47716	0.61253	0.48454
1	1993	8a	5.24414	0.07797	0.01143	25.10111	0.86171	0.68310
1	1993	8b	5.24414	0.07797	0.01143	30.60094	1.01808	0.80780
1	1994	2b	4.43107	0.03666	0.00537	7.20923	0.53658	0.41782
1	1994	3	5.84071	0.06695	0.00981	9.41580	0.64943	0.50868
1	1994	4	5.88539	0.06727	0.00986	13.65784	0.81686	0.64492
1	1994	5	5.88291	0.06723	0.00985	16.96148	0.90978	0.71879

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	1994	6	5.21053	0.06265	0.00918	17.27951	0.89920	0.71044
1	1994	7	5.21053	0.06265	0.00918	20.55817	0.90617	0.71630
1	1994	8a	7.82583	0.08663	0.01270	29.19174	0.96933	0.76740
1	1994	8b	7.82583	0.08663	0.01270	31.09280	0.98690	0.78168
1	1995	2b	4.53281	0.05279	0.00774	7.41313	0.52956	0.41292
1	1995	3	5.74470	0.14846	0.02176	13.04488	0.76747	0.60480
1	1995	4	5.85026	0.15617	0.02289	15.00391	0.82783	0.65343
1	1995	5	5.82451	0.15440	0.02263	17.46934	0.89675	0.70850
1	1995	6	5.20732	0.10864	0.01592	17.97253	0.87758	0.69338
1	1995	7	5.20732	0.10864	0.01592	20.20331	0.89777	0.70959
1	1995	8a	7.66668	0.23078	0.03382	28.88491	0.96804	0.76630
1	1995	8b	7.66668	0.23078	0.03382	30.87472	0.98476	0.77994
1	1996	2b	3.65175	0.03626	0.00531	7.42853	0.50732	0.39596
1	1996	3	5.81661	0.11321	0.01659	14.58781	0.82402	0.65043
1	1996	4	5.87073	0.11665	0.01710	16.23826	0.85136	0.67247
1	1996	5	5.86767	0.11656	0.01708	17.33279	0.90131	0.71203
1	1996	6	5.26061	0.07711	0.01130	19.40576	0.89432	0.70677
1	1996	7	5.26061	0.07711	0.01130	20.44283	0.90532	0.71558
1	1996	8a	7.66669	0.18620	0.02729	28.84361	0.96853	0.76666
1	1996	8b	7.66669	0.18620	0.02729	30.97345	0.98818	0.78268
1	1997	2b	3.37701	0.02716	0.00398	5.97551	0.42836	0.33162
1	1997	3	5.74414	0.08844	0.01296	11.22817	0.67136	0.52743
1	1997	4	5.87652	0.09318	0.01366	14.02224	0.83598	0.66008
1	1997	5	5.84712	0.09220	0.01351	15.89981	0.90408	0.71423
1	1997	6	5.23374	0.07015	0.01028	15.86421	0.86276	0.68147
1	1997	7	5.23374	0.07015	0.01028	17.56253	0.87735	0.69316
1	1997	8a	8.88061	0.07170	0.01051	27.70993	0.95451	0.75541
1	1997	8b	8.88061	0.07170	0.01051	30.58140	0.98013	0.77623
1	1998	2b	3.02738	0.02408	0.00353	6.49595	0.31759	0.24533
1	1998	3	3.85761	0.09671	0.01417	13.55221	0.44362	0.34761
1	1998	4	3.88970	0.10692	0.01567	14.38780	0.45876	0.35991
1	1998	5	3.84639	0.09504	0.01393	15.09708	0.43404	0.34012
1	1998	6	3.77524	0.07111	0.01042	14.71980	0.44898	0.35207

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	1998	7	3.77524	0.07111	0.01042	15.61274	0.45006	0.35295
1	1998	8a	4.31105	0.17108	0.02507	25.28010	0.61353	0.48412
1	1998	8b	4.31105	0.17108	0.02507	28.56297	0.66444	0.52526
1	1999	2b	2.34071	0.02971	0.00435	5.99762	0.31725	0.24508
1	1999	3	3.84663	0.09554	0.01400	9.09753	0.41025	0.32084
1	1999	4	3.99299	0.09816	0.01439	9.74542	0.43021	0.33714
1	1999	5	4.02283	0.09680	0.01419	9.78371	0.43115	0.33789
1	1999	6	4.02486	0.09683	0.01419	9.87573	0.43018	0.33708
1	1999	7	3.72130	0.09292	0.01362	10.39074	0.44173	0.34632
1	1999	8a	3.74490	0.10003	0.01466	18.71134	0.61507	0.48528
1	1999	8b	3.74490	0.10003	0.01466	21.32666	0.67050	0.53010
1	2000	2b	2.08825	0.02656	0.00389	6.14235	0.32190	0.24885
1	2000	3	3.90972	0.08576	0.01257	9.13777	0.41235	0.32262
1	2000	4	4.09061	0.07663	0.01123	9.64721	0.42771	0.33514
1	2000	5	4.13760	0.07425	0.01088	9.72295	0.42954	0.33658
1	2000	6	4.14055	0.07411	0.01086	9.87027	0.43315	0.33944
1	2000	7	3.78366	0.09213	0.01350	11.10971	0.45690	0.35847
1	2000	8a	3.78366	0.09213	0.01350	17.30991	0.58357	0.46001
1	2000	8b	3.78366	0.09213	0.01350	21.15392	0.66669	0.52702
1	2001	2b	0.70380	0.01889	0.00277	5.83945	0.31294	0.24159
1	2001	3	1.61407	0.06475	0.00949	8.88878	0.40291	0.31507
1	2001	4	1.67654	0.06374	0.00934	9.31616	0.41595	0.32578
1	2001	5	1.69946	0.06336	0.00929	9.35437	0.41689	0.32652
1	2001	6	1.70103	0.06334	0.00929	10.11221	0.43385	0.34007
1	2001	7	1.58527	0.06522	0.00956	9.96660	0.43082	0.33764
1	2001	8a	1.58527	0.06522	0.00956	18.19916	0.60128	0.47425
1	2001	8b	1.58527	0.06522	0.00956	20.98371	0.66230	0.52349
1	2002	2b	0.67115	0.01648	0.00242	5.90792	0.31498	0.24324
1	2002	3	1.64042	0.05065	0.00743	8.68540	0.39646	0.30981
1	2002	4	1.72367	0.04579	0.00671	9.30028	0.41496	0.32500
1	2002	5	1.74789	0.04438	0.00651	9.30028	0.41496	0.32500
1	2002	6	1.74945	0.04428	0.00649	9.64410	0.42504	0.33299
1	2002	7	1.59031	0.05357	0.00785	10.21158	0.43481	0.34086

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2002	8a	1.59031	0.05357	0.00785	15.76054	0.54941	0.43251
1	2002	8b	1.59031	0.05357	0.00785	20.63292	0.65414	0.51692
1	2003	2b	0.58500	0.01677	0.00246	4.22174	0.26624	0.20556
1	2003	3	1.62154	0.05360	0.00786	5.85552	0.34387	0.26873
1	2003	4	1.69259	0.05215	0.00765	6.22828	0.36207	0.28358
1	2003	5	1.71409	0.05171	0.00758	6.22828	0.36207	0.28358
1	2003	6	1.71550	0.05168	0.00758	6.63523	0.37624	0.29481
1	2003	7	1.58088	0.05443	0.00798	6.79648	0.38835	0.30455
1	2003	8a	1.58099	0.05443	0.00798	8.79695	0.50808	0.40029
1	2003	8b	1.58099	0.05443	0.00798	10.21444	0.59764	0.47238
1	2004	2b	0.48667	0.00795	0.00115	4.19730	0.26435	0.20412
1	2004	3	1.64003	0.03183	0.00467	5.90769	0.34431	0.26908
1	2004	4	1.73691	0.03038	0.00445	6.30518	0.36342	0.28464
1	2004	5	1.76459	0.02997	0.00439	6.30518	0.36342	0.28464
1	2004	6	1.76637	0.02994	0.00439	6.70035	0.38022	0.29797
1	2004	7	1.58041	0.03273	0.00480	6.85178	0.39074	0.30643
1	2004	8a	1.58041	0.03273	0.00480	8.77471	0.50563	0.39835
1	2004	8b	1.58041	0.03273	0.00480	10.21831	0.59834	0.47294
1	2005	2b	0.39457	0.00677	0.00097	4.09400	0.25838	0.19941
1	2005	3	1.62584	0.03116	0.00457	5.77591	0.33783	0.26385
1	2005	4	1.68116	0.03025	0.00444	6.27579	0.36204	0.28355
1	2005	5	1.70537	0.02985	0.00438	6.27579	0.36204	0.28355
1	2005	6	1.70713	0.02983	0.00437	6.60395	0.37755	0.29587
1	2005	7	1.60460	0.03150	0.00462	6.88228	0.39419	0.30922
1	2005	8a	1.60477	0.03150	0.00462	9.00227	0.51937	0.40942
1	2005	8b	1.60477	0.03150	0.00462	10.27721	0.60159	0.47557
1	2006	2b	0.43664	0.00769	0.00111	4.15118	0.26242	0.20254
1	2006	3	1.62539	0.03287	0.00482	5.72731	0.33568	0.26212
1	2006	4	1.69643	0.03155	0.00462	6.19145	0.35772	0.28012
1	2006	5	1.72314	0.03105	0.00455	6.19145	0.35772	0.28012
1	2006	6	1.72499	0.03101	0.00455	6.44836	0.37072	0.29045
1	2006	7	1.59359	0.03346	0.00491	6.74295	0.38763	0.30401
1	2006	8a	1.59380	0.03346	0.00491	8.89282	0.51371	0.40489

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2006	8b	1.59380	0.03346	0.00491	10.25736	0.60088	0.47499
1	2007	2b	0.37412	0.00681	0.00098	2.24321	0.01141	0.00134
1	2007	3	1.63107	0.03271	0.00480	3.45760	0.01546	0.00181
1	2007	4	1.69322	0.03139	0.00460	3.71295	0.01634	0.00191
1	2007	5	1.71811	0.03084	0.00452	3.71295	0.01634	0.00191
1	2007	6	1.71992	0.03080	0.00452	3.87308	0.01684	0.00197
1	2007	7	1.60556	0.03325	0.00487	4.27870	0.01817	0.00212
1	2007	8a	1.60680	0.03326	0.00488	6.25388	0.02491	0.00291
1	2007	8b	1.60680	0.03326	0.00488	7.19223	0.02831	0.00331
1	2008	2b	0.29315	0.00761	0.00112	2.18799	0.01123	0.00132
1	2008	3	1.10462	0.03222	0.00472	3.08922	0.01414	0.00165
1	2008	4	1.06225	0.03169	0.00465	3.28585	0.01479	0.00173
1	2008	5	1.03966	0.03140	0.00460	3.28585	0.01479	0.00173
1	2008	6	1.03789	0.03137	0.00460	3.41418	0.01520	0.00178
1	2008	7	1.11821	0.03240	0.00475	3.54324	0.01562	0.00183
1	2008	8a	1.11805	0.03240	0.00475	5.03438	0.02060	0.00241
1	2008	8b	1.11805	0.03240	0.00475	6.83405	0.02696	0.00315
1	2009	2b	0.17455	0.00608	0.00094	2.15877	0.01098	0.00130
1	2009	3	0.65729	0.02439	0.00358	3.59791	0.01597	0.00187
1	2009	4	0.65547	0.02428	0.00356	3.81879	0.01676	0.00196
1	2009	5	0.65443	0.02422	0.00355	3.81879	0.01676	0.00196
1	2009	6	0.65434	0.02421	0.00355	3.89762	0.01701	0.00199
1	2009	7	0.65784	0.02442	0.00358	4.35146	0.01848	0.00216
1	2009	8a	0.65785	0.02442	0.00358	6.26823	0.02495	0.00291
1	2009	8b	0.65785	0.02442	0.00358	7.15528	0.02814	0.00329
1	2010	2b	0.06921	0.00337	0.00060	0.94650	0.00761	0.00092
1	2010	3	0.10873	0.01183	0.00173	1.91695	0.01468	0.00172
1	2010	4	0.10875	0.01183	0.00173	2.08916	0.01589	0.00186
1	2010	5	0.10877	0.01183	0.00173	2.08916	0.01589	0.00186
1	2010	6	0.10877	0.01183	0.00173	2.16713	0.01647	0.00193
1	2010	7	0.10873	0.01183	0.00173	2.49378	0.01497	0.00175
1	2010	8a	0.10873	0.01183	0.00173	3.95917	0.01000	0.00117
1	2010	8b	0.10873	0.01183	0.00173	4.67379	0.00704	0.00082

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2011	2b	0.07169	0.00387	0.00073	1.04840	0.00759	0.00092
1	2011	3	0.11651	0.01160	0.00170	1.64551	0.01303	0.00153
1	2011	4	0.13043	0.01118	0.00164	1.75020	0.01397	0.00163
1	2011	5	0.13738	0.01098	0.00161	1.75020	0.01397	0.00163
1	2011	6	0.13790	0.01096	0.00161	1.81459	0.01429	0.00167
1	2011	7	0.11177	0.01174	0.00172	1.97898	0.01353	0.00158
1	2011	8a	0.11177	0.01174	0.00172	3.09011	0.01013	0.00118
1	2011	8b	0.11177	0.01174	0.00172	3.91866	0.00708	0.00083
1	2012	2b	0.07351	0.00417	0.00080	0.98482	0.00768	0.00095
1	2012	3	0.11810	0.01145	0.00168	1.64363	0.01355	0.00159
1	2012	4	0.12363	0.01130	0.00166	1.73693	0.01437	0.00168
1	2012	5	0.12680	0.01121	0.00164	1.73693	0.01437	0.00168
1	2012	6	0.12705	0.01120	0.00164	1.77871	0.01442	0.00169
1	2012	7	0.11643	0.01150	0.00169	2.01354	0.01351	0.00158
1	2012	8a	0.11643	0.01150	0.00169	3.18139	0.00961	0.00112
1	2012	8b	0.11643	0.01150	0.00169	3.83172	0.00699	0.00082
1	2013	2b	0.07025	0.00355	0.00080	1.17727	0.00758	0.00096
1	2013	3	0.12447	0.01049	0.00154	1.74478	0.01365	0.00161
1	2013	4	0.13431	0.01023	0.00150	1.82754	0.01454	0.00170
1	2013	5	0.13912	0.01010	0.00148	1.82754	0.01454	0.00170
1	2013	6	0.13951	0.01009	0.00148	1.86423	0.01462	0.00171
1	2013	7	0.12121	0.01057	0.00155	2.04356	0.01332	0.00156
1	2013	8a	0.12159	0.01057	0.00155	2.77920	0.00867	0.00101
1	2013	8b	0.12159	0.01057	0.00155	3.11328	0.00625	0.00073
1	2014	2b	0.06145	0.00324	0.00086	0.54228	0.00229	0.00044
1	2014	3	0.12478	0.01014	0.00148	1.17216	0.00409	0.00050
1	2014	4	0.12854	0.01006	0.00147	1.24858	0.00431	0.00050
1	2014	5	0.13072	0.01002	0.00147	1.24858	0.00431	0.00050
1	2014	6	0.13090	0.01001	0.00147	1.27757	0.00437	0.00051
1	2014	7	0.12366	0.01016	0.00149	1.43785	0.00434	0.00051
1	2014	8a	0.12366	0.01016	0.00149	2.23263	0.00431	0.00050
1	2014	8b	0.12366	0.01016	0.00149	2.69501	0.00409	0.00048
1	2015	2b	0.06106	0.00327	0.00099	0.43329	0.00225	0.00050

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2015	3	0.12467	0.01014	0.00149	1.05637	0.00404	0.00050
1	2015	4	0.12811	0.01007	0.00147	1.14995	0.00431	0.00050
1	2015	5	0.13012	0.01003	0.00147	1.14995	0.00431	0.00050
1	2015	6	0.13028	0.01002	0.00147	1.18053	0.00437	0.00051
1	2015	7	0.12365	0.01016	0.00149	1.35785	0.00433	0.00051
1	2015	8a	0.12365	0.01016	0.00149	2.21868	0.00431	0.00050
1	2015	8b	0.12365	0.01016	0.00149	2.70970	0.00410	0.00048
1	2016	2b	0.05547	0.00303	0.00097	0.41280	0.00215	0.00048
1	2016	3	0.12456	0.01014	0.00149	1.00735	0.00399	0.00050
1	2016	4	0.12767	0.01008	0.00148	1.10976	0.00431	0.00050
1	2016	5	0.12950	0.01004	0.00147	1.10976	0.00431	0.00050
1	2016	6	0.12965	0.01004	0.00147	1.13540	0.00436	0.00051
1	2016	7	0.12364	0.01016	0.00149	1.27556	0.00434	0.00051
1	2016	8a	0.12364	0.01016	0.00149	2.06879	0.00433	0.00051
1	2016	8b	0.12364	0.01016	0.00149	2.61109	0.00413	0.00048
1	2017	2b	0.04644	0.00291	0.00103	0.39685	0.00210	0.00051
1	2017	3	0.12442	0.01014	0.00149	0.96152	0.00397	0.00051
1	2017	4	0.12711	0.01009	0.00148	1.06447	0.00431	0.00050
1	2017	5	0.12872	0.01005	0.00147	1.06447	0.00431	0.00050
1	2017	6	0.12885	0.01005	0.00147	1.08477	0.00435	0.00051
1	2017	7	0.12363	0.01016	0.00149	1.19398	0.00433	0.00051
1	2017	8a	0.12363	0.01016	0.00149	1.85077	0.00435	0.00051
1	2017	8b	0.12363	0.01016	0.00149	2.33366	0.00415	0.00048
1	2018	2b	0.03696	0.00288	0.00103	0.27739	0.00203	0.00051
1	2018	3	0.09210	0.01006	0.00147	0.87546	0.00383	0.00049
1	2018	4	0.10107	0.00987	0.00145	0.98349	0.00415	0.00049
1	2018	5	0.10576	0.00977	0.00143	0.98349	0.00415	0.00049
1	2018	6	0.10612	0.00977	0.00143	1.03285	0.00426	0.00050
1	2018	7	0.08915	0.01012	0.00148	1.13059	0.00422	0.00049
1	2018	8a	0.08915	0.01012	0.00148	1.79903	0.00425	0.00050
1	2018	8b	0.08915	0.01012	0.00148	2.27062	0.00408	0.00048
1	2019	2b	0.03317	0.00280	0.00102	0.24120	0.00196	0.00050
1	2019	3	0.08774	0.01007	0.00147	0.84527	0.00379	0.00049

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2019	4	0.09659	0.00989	0.00145	0.96451	0.00415	0.00049
1	2019	5	0.10127	0.00980	0.00143	0.96451	0.00415	0.00049
1	2019	6	0.10163	0.00979	0.00143	1.01254	0.00425	0.00050
1	2019	7	0.08487	0.01012	0.00148	1.11342	0.00421	0.00049
1	2019	8a	0.08487	0.01012	0.00148	1.79306	0.00425	0.00050
1	2019	8b	0.08487	0.01012	0.00148	2.26951	0.00408	0.00048
1	2020	2b	0.02381	0.00162	0.00059	0.15430	0.00115	0.00029
1	2020	3	0.08342	0.00609	0.00089	0.58202	0.00245	0.00031
1	2020	4	0.09221	0.00601	0.00088	0.67598	0.00273	0.00032
1	2020	5	0.09691	0.00596	0.00087	0.67598	0.00273	0.00032
1	2020	6	0.09727	0.00596	0.00087	0.70950	0.00280	0.00033
1	2020	7	0.08059	0.00612	0.00090	0.78018	0.00279	0.00033
1	2020	8a	0.08059	0.00612	0.00090	1.27441	0.00289	0.00034
1	2020	8b	0.08059	0.00612	0.00090	1.63806	0.00283	0.00033
1	2021	2b	0.02031	0.00140	0.00048	0.13702	0.00107	0.00025
1	2021	3	0.07836	0.00606	0.00089	0.56427	0.00240	0.00030
1	2021	4	0.08667	0.00596	0.00087	0.66358	0.00271	0.00032
1	2021	5	0.09112	0.00591	0.00087	0.66358	0.00271	0.00032
1	2021	6	0.09147	0.00591	0.00087	0.69568	0.00277	0.00032
1	2021	7	0.07569	0.00609	0.00089	0.75924	0.00275	0.00032
1	2021	8a	0.07569	0.00609	0.00089	1.22496	0.00282	0.00033
1	2021	8b	0.07569	0.00609	0.00089	1.58123	0.00273	0.00032
1	2022	2b	0.01716	0.00141	0.00049	0.12164	0.00106	0.00025
1	2022	3	0.07417	0.00606	0.00089	0.55358	0.00240	0.00030
1	2022	4	0.08277	0.00597	0.00087	0.65373	0.00271	0.00032
1	2022	5	0.08737	0.00591	0.00087	0.65373	0.00271	0.00032
1	2022	6	0.08773	0.00591	0.00087	0.68616	0.00277	0.00032
1	2022	7	0.07142	0.00609	0.00089	0.75262	0.00275	0.00032
1	2022	8a	0.07142	0.00609	0.00089	1.22760	0.00281	0.00033
1	2022	8b	0.07142	0.00609	0.00089	1.58262	0.00273	0.00032
1	2023	2b	0.01469	0.00140	0.00049	0.11931	0.00106	0.00025
1	2023	3	0.07413	0.00606	0.00089	0.55073	0.00239	0.00030
1	2023	4	0.08261	0.00597	0.00088	0.65373	0.00271	0.00032

Table A-1. SmartWay Category – Auto Carrier

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
1	2023	5	0.08717	0.00592	0.00087	0.65373	0.00271	0.00032
1	2023	6	0.08752	0.00591	0.00087	0.68549	0.00277	0.00032
1	2023	7	0.07142	0.00609	0.00089	0.74981	0.00275	0.00032
1	2023	8a	0.07142	0.00609	0.00089	1.21980	0.00281	0.00033
1	2023	8b	0.07142	0.00609	0.00089	1.58059	0.00273	0.00032
1	2024	2b	0.01469	0.00140	0.00049	0.11931	0.00106	0.00025
1	2024	3	0.07413	0.00606	0.00089	0.55073	0.00239	0.00030
1	2024	4	0.08261	0.00597	0.00088	0.65373	0.00271	0.00032
1	2024	5	0.08717	0.00592	0.00087	0.65373	0.00271	0.00032
1	2024	6	0.08752	0.00591	0.00087	0.68549	0.00277	0.00032
1	2024	7	0.07142	0.00609	0.00089	0.74981	0.00275	0.00032
1	2024	8a	0.07142	0.00609	0.00089	1.21980	0.00281	0.00033
1	2024	8b	0.07142	0.00609	0.00089	1.58059	0.00273	0.00032

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	Pre-1992	2b	5.25674	0.04144	0.00607	8.64687	0.30124	0.23209
2	Pre-1992	3	5.82913	0.11595	0.01699	11.96982	0.44714	0.34980
2	Pre-1992	4	5.92492	0.12219	0.01791	16.06558	0.63793	0.50382
2	Pre-1992	5	5.84010	0.11671	0.01711	16.67715	0.62212	0.49116
2	Pre-1992	6	5.38701	0.08677	0.01272	16.97345	0.63564	0.50195
2	Pre-1992	7	5.38701	0.08677	0.01272	17.55955	0.66517	0.52550
2	Pre-1992	8a	5.39546	0.08674	0.01271	25.64709	0.90426	0.71618
2	Pre-1992	8b	5.39546	0.08674	0.01271	31.20997	1.06706	0.84614
2	1992	2b	5.25674	0.04144	0.00607	8.64687	0.30124	0.23209
2	1992	3	5.82913	0.11595	0.01699	11.96982	0.44714	0.34980
2	1992	4	5.92492	0.12219	0.01791	16.06558	0.63793	0.50382
2	1992	5	5.84010	0.11671	0.01711	16.67715	0.62212	0.49116
2	1992	6	5.38701	0.08677	0.01272	16.97345	0.63564	0.50195
2	1992	7	5.38701	0.08677	0.01272	17.55955	0.66517	0.52550
2	1992	8a	5.39546	0.08674	0.01271	25.64709	0.90426	0.71618
2	1992	8b	5.39546	0.08674	0.01271	31.20997	1.06706	0.84614
2	1993	2b	5.25674	0.04144	0.00607	8.64687	0.30124	0.23209
2	1993	3	5.82913	0.11595	0.01699	11.96982	0.44714	0.34980
2	1993	4	5.92492	0.12219	0.01791	16.06558	0.63793	0.50382
2	1993	5	5.84010	0.11671	0.01711	16.67715	0.62212	0.49116
2	1993	6	5.38701	0.08677	0.01272	16.97345	0.63564	0.50195
2	1993	7	5.38701	0.08677	0.01272	17.55955	0.66517	0.52550
2	1993	8a	5.39546	0.08674	0.01271	25.64709	0.90426	0.71618
2	1993	8b	5.39546	0.08674	0.01271	31.20997	1.06706	0.84614
2	1994	2b	4.54108	0.03483	0.00510	7.70736	0.62463	0.48574
2	1994	3	5.98737	0.06469	0.00948	10.08833	0.74878	0.58543
2	1994	4	6.03287	0.06504	0.00953	14.73477	0.93183	0.73450
2	1994	5	6.03005	0.06501	0.00953	18.27918	1.04191	0.82196
2	1994	6	5.34789	0.05985	0.00877	18.49005	1.02520	0.80879
2	1994	7	5.34789	0.05985	0.00877	21.38401	1.01636	0.80227
2	1994	8a	8.14663	0.08522	0.01249	29.77020	1.04875	0.82945
2	1994	8b	8.14663	0.08522	0.01249	31.73449	1.06048	0.83925
2	1995	2b	4.64864	0.05322	0.00780	7.92563	0.61645	0.47991

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	1995	3	5.88985	0.15327	0.02246	14.07639	0.88007	0.69242
2	1995	4	5.99711	0.16171	0.02370	16.10930	0.94463	0.74443
2	1995	5	5.97079	0.15977	0.02342	18.73872	1.02368	0.80760
2	1995	6	5.34464	0.10969	0.01608	19.05674	0.99345	0.78378
2	1995	7	5.34464	0.10969	0.01608	21.13216	1.00811	0.79568
2	1995	8a	7.95085	0.24117	0.03535	29.47784	1.04939	0.82985
2	1995	8b	7.95085	0.24117	0.03535	31.51470	1.05915	0.83813
2	1996	2b	3.72168	0.03924	0.00575	7.93675	0.58866	0.45854
2	1996	3	5.96422	0.12604	0.01847	15.77633	0.94189	0.74229
2	1996	4	6.01844	0.12999	0.01905	17.39183	0.96777	0.76326
2	1996	5	6.01510	0.12990	0.01904	18.57303	1.02842	0.81125
2	1996	6	5.40878	0.08444	0.01238	20.33709	1.00850	0.79584
2	1996	7	5.40878	0.08444	0.01238	21.39030	1.01638	0.80223
2	1996	8a	7.95085	0.20491	0.03003	29.43238	1.05031	0.83052
2	1996	8b	7.95085	0.20491	0.03003	31.61319	1.06259	0.84089
2	1997	2b	3.36973	0.02680	0.00393	6.33662	0.49917	0.38608
2	1997	3	5.89106	0.08910	0.01306	11.96644	0.76812	0.60249
2	1997	4	6.02389	0.09408	0.01379	15.15642	0.95596	0.75360
2	1997	5	5.99434	0.09305	0.01364	17.08296	1.03262	0.81453
2	1997	6	5.37879	0.06991	0.01025	16.93112	0.98100	0.77366
2	1997	7	5.37879	0.06991	0.01025	18.50194	0.99192	0.78248
2	1997	8a	9.17621	0.06867	0.01007	28.24269	1.03870	0.82112
2	1997	8b	9.17621	0.06867	0.01007	31.19942	1.05489	0.83469
2	1998	2b	3.00320	0.02428	0.00356	6.98999	0.34012	0.26135
2	1998	3	3.90354	0.09960	0.01460	14.55848	0.48398	0.37810
2	1998	4	3.93300	0.11070	0.01623	15.46814	0.50145	0.39231
2	1998	5	3.89192	0.09777	0.01433	16.11790	0.47019	0.36729
2	1998	6	3.82745	0.07174	0.01051	15.77358	0.48896	0.38230
2	1998	7	3.82745	0.07174	0.01051	16.59563	0.48774	0.38137
2	1998	8a	4.37161	0.18130	0.02657	25.64212	0.65721	0.51769
2	1998	8b	4.37161	0.18130	0.02657	28.93213	0.71292	0.56287
2	1999	2b	2.32928	0.03121	0.00457	6.46746	0.33946	0.26082
2	1999	3	3.90136	0.10237	0.01500	9.77026	0.44524	0.34700

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	1999	4	4.06209	0.10542	0.01545	10.46920	0.46820	0.36575
2	1999	5	4.09529	0.10397	0.01524	10.50664	0.46922	0.36655
2	1999	6	4.09752	0.10400	0.01524	10.56554	0.46626	0.36418
2	1999	7	3.76380	0.09935	0.01456	11.06178	0.47858	0.37404
2	1999	8a	3.78793	0.10717	0.01571	19.04670	0.65815	0.51834
2	1999	8b	3.78793	0.10717	0.01571	21.73340	0.71936	0.56802
2	2000	2b	2.07876	0.02652	0.00389	6.62115	0.34461	0.26500
2	2000	3	3.97605	0.08605	0.01261	9.81737	0.44717	0.34866
2	2000	4	4.17631	0.07704	0.01129	10.36144	0.46468	0.36294
2	2000	5	4.22830	0.07470	0.01095	10.43528	0.46665	0.36448
2	2000	6	4.23157	0.07456	0.01093	10.58135	0.46987	0.36706
2	2000	7	3.83643	0.09232	0.01353	11.70947	0.49308	0.38570
2	2000	8a	3.83643	0.09232	0.01353	17.63764	0.62361	0.49058
2	2000	8b	3.83643	0.09232	0.01353	21.54043	0.71464	0.56421
2	2001	2b	0.70700	0.01966	0.00288	6.30009	0.33451	0.25680
2	2001	3	1.63577	0.06544	0.00959	9.53422	0.43606	0.33977
2	2001	4	1.70529	0.06422	0.00941	9.99577	0.45099	0.35203
2	2001	5	1.73078	0.06377	0.00935	10.03319	0.45201	0.35283
2	2001	6	1.73253	0.06374	0.00934	10.74801	0.46895	0.36639
2	2001	7	1.60372	0.06600	0.00968	10.62819	0.46642	0.36436
2	2001	8a	1.60372	0.06600	0.00968	18.49300	0.64188	0.50531
2	2001	8b	1.60372	0.06600	0.00968	21.36084	0.70963	0.56017
2	2002	2b	0.67396	0.01699	0.00249	6.37206	0.33678	0.25865
2	2002	3	1.66557	0.05220	0.00765	9.31541	0.42878	0.33383
2	2002	4	1.75824	0.04731	0.00694	9.97635	0.44993	0.35118
2	2002	5	1.78518	0.04589	0.00673	9.97635	0.44993	0.35118
2	2002	6	1.78692	0.04580	0.00671	10.33282	0.46070	0.35975
2	2002	7	1.60977	0.05514	0.00808	10.83109	0.46969	0.36701
2	2002	8a	1.60977	0.05514	0.00808	16.07944	0.58665	0.46072
2	2002	8b	1.60977	0.05514	0.00808	20.98873	0.70030	0.55263
2	2003	2b	0.58839	0.01752	0.00257	4.46191	0.28468	0.21859
2	2003	3	1.64380	0.05628	0.00825	6.22421	0.37209	0.28970
2	2003	4	1.72273	0.05470	0.00802	6.63004	0.39282	0.30663

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2003	5	1.74662	0.05422	0.00795	6.63004	0.39282	0.30663
2	2003	6	1.74817	0.05419	0.00794	7.09479	0.40816	0.31879
2	2003	7	1.59860	0.05718	0.00838	7.21189	0.41919	0.32769
2	2003	8a	1.59871	0.05717	0.00838	9.14816	0.54189	0.42598
2	2003	8b	1.59871	0.05717	0.00838	10.64133	0.64022	0.50537
2	2004	2b	0.48969	0.00820	0.00118	4.43698	0.28264	0.21705
2	2004	3	1.66474	0.03270	0.00479	6.29068	0.37244	0.28999
2	2004	4	1.77303	0.03096	0.00454	6.72548	0.39415	0.30767
2	2004	5	1.80396	0.03046	0.00447	6.72548	0.39415	0.30767
2	2004	6	1.80595	0.03043	0.00446	7.17633	0.41272	0.32241
2	2004	7	1.59806	0.03377	0.00495	7.28429	0.42195	0.32987
2	2004	8a	1.59806	0.03377	0.00495	9.13078	0.53899	0.42368
2	2004	8b	1.59806	0.03377	0.00495	10.64629	0.64097	0.50597
2	2005	2b	0.39792	0.00699	0.00101	4.32648	0.27617	0.21196
2	2005	3	1.65034	0.03196	0.00469	6.14332	0.36509	0.28406
2	2005	4	1.71196	0.03089	0.00453	6.68848	0.39252	0.30637
2	2005	5	1.73894	0.03041	0.00446	6.68848	0.39252	0.30637
2	2005	6	1.74090	0.03038	0.00445	7.06161	0.40976	0.32007
2	2005	7	1.62668	0.03237	0.00475	7.29241	0.42492	0.33228
2	2005	8a	1.62685	0.03237	0.00475	9.35609	0.55341	0.43535
2	2005	8b	1.62685	0.03237	0.00475	10.71029	0.64468	0.50897
2	2006	2b	0.44091	0.00797	0.00115	4.38643	0.28050	0.21529
2	2006	3	1.64917	0.03396	0.00498	6.08065	0.36261	0.28206
2	2006	4	1.72837	0.03237	0.00474	6.58438	0.38762	0.30248
2	2006	5	1.75815	0.03177	0.00466	6.58438	0.38762	0.30248
2	2006	6	1.76021	0.03172	0.00465	6.87674	0.40212	0.31401
2	2006	7	1.61371	0.03467	0.00508	7.12857	0.41765	0.32650
2	2006	8a	1.61392	0.03467	0.00508	9.23355	0.54717	0.43034
2	2006	8b	1.61392	0.03467	0.00508	10.68705	0.64384	0.50829
2	2007	2b	0.37776	0.00705	0.00101	2.43870	0.01212	0.00142
2	2007	3	1.65603	0.03378	0.00495	3.75273	0.01672	0.00195
2	2007	4	1.72524	0.03221	0.00472	4.03235	0.01774	0.00207
2	2007	5	1.75299	0.03156	0.00463	4.03235	0.01774	0.00207

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2007	6	1.75501	0.03151	0.00462	4.20191	0.01829	0.00214
2	2007	7	1.62762	0.03443	0.00505	4.57385	0.01955	0.00228
2	2007	8a	1.62892	0.03444	0.00505	6.55129	0.02654	0.00310
2	2007	8b	1.62892	0.03444	0.00505	7.56734	0.03033	0.00354
2	2008	2b	0.29488	0.00787	0.00115	2.37834	0.01190	0.00140
2	2008	3	1.11076	0.03321	0.00487	3.34516	0.01520	0.00178
2	2008	4	1.06941	0.03257	0.00477	3.55844	0.01594	0.00186
2	2008	5	1.04737	0.03223	0.00472	3.55844	0.01594	0.00186
2	2008	6	1.04565	0.03220	0.00472	3.69657	0.01640	0.00192
2	2008	7	1.12402	0.03341	0.00490	3.81084	0.01679	0.00196
2	2008	8a	1.12387	0.03341	0.00490	5.26913	0.02184	0.00255
2	2008	8b	1.12387	0.03341	0.00490	7.16995	0.02879	0.00336
2	2009	2b	0.17450	0.00629	0.00097	2.34539	0.01166	0.00138
2	2009	3	0.65689	0.02512	0.00368	3.90674	0.01733	0.00203
2	2009	4	0.65590	0.02498	0.00366	4.14934	0.01823	0.00213
2	2009	5	0.65530	0.02490	0.00365	4.14934	0.01823	0.00213
2	2009	6	0.65526	0.02490	0.00365	4.22978	0.01849	0.00216
2	2009	7	0.65718	0.02516	0.00369	4.65245	0.01991	0.00233
2	2009	8a	0.65721	0.02516	0.00369	6.57334	0.02661	0.00311
2	2009	8b	0.65721	0.02516	0.00369	7.53115	0.03016	0.00352
2	2010	2b	0.06987	0.00346	0.00061	1.07022	0.00817	0.00099
2	2010	3	0.11309	0.01240	0.00182	2.20292	0.01651	0.00194
2	2010	4	0.11311	0.01240	0.00182	2.40525	0.01795	0.00210
2	2010	5	0.11312	0.01240	0.00182	2.40525	0.01795	0.00210
2	2010	6	0.11313	0.01240	0.00182	2.49203	0.01867	0.00218
2	2010	7	0.11309	0.01240	0.00182	2.81184	0.01708	0.00200
2	2010	8a	0.11309	0.01240	0.00182	4.39025	0.01154	0.00135
2	2010	8b	0.11309	0.01240	0.00182	5.23550	0.00789	0.00092
2	2011	2b	0.07275	0.00399	0.00075	1.17678	0.00811	0.00099
2	2011	3	0.12090	0.01218	0.00179	1.87835	0.01442	0.00169
2	2011	4	0.13468	0.01179	0.00173	2.00214	0.01551	0.00181
2	2011	5	0.14156	0.01159	0.00170	2.00214	0.01551	0.00181
2	2011	6	0.14208	0.01157	0.00170	2.07795	0.01592	0.00186

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2011	7	0.11620	0.01232	0.00181	2.23983	0.01512	0.00177
2	2011	8a	0.11620	0.01232	0.00181	3.44737	0.01153	0.00135
2	2011	8b	0.11620	0.01232	0.00181	4.44341	0.00793	0.00093
2	2012	2b	0.07483	0.00431	0.00082	1.11016	0.00823	0.00102
2	2012	3	0.12262	0.01204	0.00176	1.88464	0.01505	0.00177
2	2012	4	0.12808	0.01189	0.00174	1.99504	0.01601	0.00187
2	2012	5	0.13122	0.01181	0.00173	1.99504	0.01601	0.00187
2	2012	6	0.13146	0.01180	0.00173	2.04212	0.01608	0.00188
2	2012	7	0.12097	0.01208	0.00177	2.27913	0.01516	0.00177
2	2012	8a	0.12097	0.01208	0.00177	3.56887	0.01096	0.00128
2	2012	8b	0.12097	0.01208	0.00177	4.36027	0.00781	0.00091
2	2013	2b	0.07107	0.00365	0.00082	1.31368	0.00814	0.00103
2	2013	3	0.12907	0.01104	0.00162	1.99320	0.01533	0.00180
2	2013	4	0.13875	0.01079	0.00158	2.09291	0.01638	0.00191
2	2013	5	0.14348	0.01066	0.00156	2.09291	0.01638	0.00191
2	2013	6	0.14387	0.01065	0.00156	2.13613	0.01651	0.00193
2	2013	7	0.12587	0.01112	0.00163	2.31948	0.01515	0.00177
2	2013	8a	0.12622	0.01112	0.00163	3.15352	0.00998	0.00117
2	2013	8b	0.12622	0.01112	0.00163	3.57020	0.00700	0.00082
2	2014	2b	0.06201	0.00332	0.00088	0.62303	0.00239	0.00046
2	2014	3	0.12951	0.01068	0.00156	1.40113	0.00451	0.00055
2	2014	4	0.13320	0.01061	0.00155	1.49571	0.00476	0.00056
2	2014	5	0.13534	0.01056	0.00155	1.49571	0.00476	0.00056
2	2014	6	0.13551	0.01056	0.00155	1.52948	0.00483	0.00056
2	2014	7	0.12841	0.01070	0.00157	1.69096	0.00478	0.00056
2	2014	8a	0.12841	0.01070	0.00157	2.56948	0.00472	0.00055
2	2014	8b	0.12841	0.01070	0.00157	3.13535	0.00447	0.00052
2	2015	2b	0.06164	0.00336	0.00102	0.50227	0.00234	0.00051
2	2015	3	0.12940	0.01068	0.00156	1.27724	0.00445	0.00055
2	2015	4	0.13277	0.01061	0.00155	1.39377	0.00476	0.00056
2	2015	5	0.13475	0.01057	0.00155	1.39377	0.00476	0.00056
2	2015	6	0.13491	0.01057	0.00155	1.42899	0.00482	0.00056
2	2015	7	0.12840	0.01070	0.00157	1.60713	0.00478	0.00056

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2015	8a	0.12840	0.01070	0.00157	2.55449	0.00473	0.00055
2	2015	8b	0.12840	0.01070	0.00157	3.15164	0.00448	0.00052
2	2016	2b	0.05601	0.00311	0.00099	0.47799	0.00223	0.00050
2	2016	3	0.12929	0.01068	0.00156	1.21971	0.00439	0.00055
2	2016	4	0.13234	0.01062	0.00156	1.34759	0.00476	0.00056
2	2016	5	0.13414	0.01059	0.00155	1.34759	0.00476	0.00056
2	2016	6	0.13428	0.01058	0.00155	1.37726	0.00482	0.00056
2	2016	7	0.12838	0.01070	0.00157	1.51793	0.00478	0.00056
2	2016	8a	0.12838	0.01070	0.00157	2.38457	0.00475	0.00056
2	2016	8b	0.12838	0.01070	0.00157	3.03953	0.00451	0.00053
2	2017	2b	0.04697	0.00299	0.00105	0.45999	0.00218	0.00053
2	2017	3	0.12915	0.01068	0.00156	1.16518	0.00436	0.00055
2	2017	4	0.13180	0.01063	0.00156	1.29387	0.00476	0.00056
2	2017	5	0.13337	0.01060	0.00155	1.29387	0.00476	0.00056
2	2017	6	0.13350	0.01060	0.00155	1.31746	0.00481	0.00056
2	2017	7	0.12838	0.01070	0.00157	1.42768	0.00478	0.00056
2	2017	8a	0.12838	0.01070	0.00157	2.14801	0.00477	0.00056
2	2017	8b	0.12838	0.01070	0.00157	2.73421	0.00453	0.00053
2	2018	2b	0.03747	0.00296	0.00105	0.32449	0.00210	0.00052
2	2018	3	0.09578	0.01060	0.00155	1.06618	0.00420	0.00053
2	2018	4	0.10473	0.01042	0.00153	1.20034	0.00458	0.00054
2	2018	5	0.10941	0.01032	0.00151	1.20034	0.00458	0.00054
2	2018	6	0.10977	0.01032	0.00151	1.25983	0.00471	0.00055
2	2018	7	0.09285	0.01066	0.00156	1.35662	0.00465	0.00054
2	2018	8a	0.09285	0.01066	0.00156	2.09380	0.00466	0.00054
2	2018	8b	0.09285	0.01066	0.00156	2.66676	0.00446	0.00052
2	2019	2b	0.03363	0.00288	0.00104	0.28247	0.00203	0.00051
2	2019	3	0.09125	0.01061	0.00155	1.03074	0.00416	0.00053
2	2019	4	0.10010	0.01043	0.00153	1.17865	0.00458	0.00054
2	2019	5	0.10477	0.01034	0.00151	1.17865	0.00458	0.00054
2	2019	6	0.10513	0.01034	0.00151	1.23630	0.00470	0.00055
2	2019	7	0.08838	0.01066	0.00156	1.33655	0.00465	0.00054
2	2019	8a	0.08838	0.01066	0.00156	2.08648	0.00466	0.00054

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2019	8b	0.08838	0.01066	0.00156	2.66536	0.00446	0.00052
2	2020	2b	0.02418	0.00167	0.00060	0.18080	0.00119	0.00030
2	2020	3	0.08675	0.00642	0.00094	0.71080	0.00269	0.00034
2	2020	4	0.09556	0.00634	0.00093	0.82737	0.00302	0.00035
2	2020	5	0.10026	0.00630	0.00093	0.82737	0.00302	0.00035
2	2020	6	0.10062	0.00630	0.00092	0.86753	0.00310	0.00036
2	2020	7	0.08391	0.00645	0.00095	0.93781	0.00308	0.00036
2	2020	8a	0.08391	0.00645	0.00095	1.48221	0.00317	0.00037
2	2020	8b	0.08391	0.00645	0.00095	1.92316	0.00310	0.00036
2	2021	2b	0.02063	0.00145	0.00049	0.16085	0.00111	0.00026
2	2021	3	0.08155	0.00639	0.00094	0.69013	0.00264	0.00033
2	2021	4	0.08993	0.00630	0.00092	0.81331	0.00300	0.00035
2	2021	5	0.09441	0.00625	0.00092	0.81331	0.00300	0.00035
2	2021	6	0.09475	0.00625	0.00092	0.85194	0.00307	0.00036
2	2021	7	0.07886	0.00642	0.00094	0.91539	0.00304	0.00036
2	2021	8a	0.07886	0.00642	0.00094	1.43089	0.00309	0.00036
2	2021	8b	0.07886	0.00642	0.00094	1.86523	0.00299	0.00035
2	2022	2b	0.01743	0.00146	0.00050	0.14332	0.00111	0.00026
2	2022	3	0.07718	0.00639	0.00094	0.67802	0.00264	0.00033
2	2022	4	0.08585	0.00630	0.00092	0.80216	0.00300	0.00035
2	2022	5	0.09050	0.00625	0.00092	0.80216	0.00300	0.00035
2	2022	6	0.09086	0.00625	0.00092	0.84109	0.00307	0.00036
2	2022	7	0.07440	0.00642	0.00094	0.90756	0.00304	0.00036
2	2022	8a	0.07440	0.00642	0.00094	1.43382	0.00309	0.00036
2	2022	8b	0.07440	0.00642	0.00094	1.86702	0.00299	0.00035
2	2023	2b	0.01494	0.00144	0.00050	0.14067	0.00110	0.00026
2	2023	3	0.07714	0.00639	0.00094	0.67453	0.00263	0.00033
2	2023	4	0.08570	0.00630	0.00092	0.80216	0.00300	0.00035
2	2023	5	0.09029	0.00625	0.00092	0.80216	0.00300	0.00035
2	2023	6	0.09065	0.00625	0.00092	0.84031	0.00307	0.00036
2	2023	7	0.07440	0.00642	0.00094	0.90457	0.00304	0.00036
2	2023	8a	0.07440	0.00642	0.00094	1.42467	0.00309	0.00036
2	2023	8b	0.07440	0.00642	0.00094	1.86443	0.00299	0.00035

Table A-2. SmartWay Category - Dray

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
2	2024	2b	0.01494	0.00144	0.00050	0.14067	0.00110	0.00026
2	2024	3	0.07714	0.00639	0.00094	0.67453	0.00263	0.00033
2	2024	4	0.08570	0.00630	0.00092	0.80216	0.00300	0.00035
2	2024	5	0.09029	0.00625	0.00092	0.80216	0.00300	0.00035
2	2024	6	0.09065	0.00625	0.00092	0.84031	0.00307	0.00036
2	2024	7	0.07440	0.00642	0.00094	0.90457	0.00304	0.00036
2	2024	8a	0.07440	0.00642	0.00094	1.42467	0.00309	0.00036
2	2024	8b	0.07440	0.00642	0.00094	1.86443	0.00299	0.00035

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	Pre-1992	2b	4.90209	0.03620	0.00531	7.78602	0.27013	0.20877
3	Pre-1992	3	5.52730	0.10165	0.01490	10.69065	0.39510	0.30983
3	Pre-1992	4	5.62161	0.10675	0.01565	14.19892	0.55653	0.44046
3	Pre-1992	5	5.53814	0.10227	0.01499	14.72633	0.53631	0.42435
3	Pre-1992	6	5.09141	0.07778	0.01140	15.06722	0.55091	0.43598
3	Pre-1992	7	5.09141	0.07778	0.01140	15.81920	0.58491	0.46306
3	Pre-1992	8a	5.09933	0.07774	0.01139	24.51834	0.82937	0.65782
3	Pre-1992	8b	5.09933	0.07774	0.01139	29.76449	0.97302	0.77237
3	1992	2b	4.90209	0.03620	0.00531	7.78602	0.27013	0.20877
3	1992	3	5.52730	0.10165	0.01490	10.69065	0.39510	0.30983
3	1992	4	5.62161	0.10675	0.01565	14.19892	0.55653	0.44046
3	1992	5	5.53814	0.10227	0.01499	14.72633	0.53631	0.42435
3	1992	6	5.09141	0.07778	0.01140	15.06722	0.55091	0.43598
3	1992	7	5.09141	0.07778	0.01140	15.81920	0.58491	0.46306
3	1992	8a	5.09933	0.07774	0.01139	24.51834	0.82937	0.65782
3	1992	8b	5.09933	0.07774	0.01139	29.76449	0.97302	0.77237
3	1993	2b	4.90209	0.03620	0.00531	7.78602	0.27013	0.20877
3	1993	3	5.52730	0.10165	0.01490	10.69065	0.39510	0.30983
3	1993	4	5.62161	0.10675	0.01565	14.19892	0.55653	0.44046
3	1993	5	5.53814	0.10227	0.01499	14.72633	0.53631	0.42435
3	1993	6	5.09141	0.07778	0.01140	15.06722	0.55091	0.43598
3	1993	7	5.09141	0.07778	0.01140	15.81920	0.58491	0.46306
3	1993	8a	5.09933	0.07774	0.01139	24.51834	0.82937	0.65782
3	1993	8b	5.09933	0.07774	0.01139	29.76449	0.97302	0.77237
3	1994	2b	4.26617	0.03657	0.00536	6.88046	0.49983	0.38954
3	1994	3	5.68414	0.06573	0.00963	9.02899	0.61029	0.47859
3	1994	4	5.72735	0.06600	0.00967	13.06496	0.77424	0.61184
3	1994	5	5.72518	0.06596	0.00967	16.14903	0.86009	0.68011
3	1994	6	5.07287	0.06208	0.00910	16.51837	0.85018	0.67229
3	1994	7	5.07287	0.06208	0.00910	19.93999	0.85637	0.67750
3	1994	8a	7.51710	0.08410	0.01233	28.42393	0.90830	0.71958
3	1994	8b	7.51710	0.08410	0.01233	30.21297	0.92177	0.73055
3	1995	2b	4.37340	0.05214	0.00764	7.07698	0.49342	0.38513

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	1995	3	5.59130	0.14637	0.02145	12.46146	0.72439	0.57141
3	1995	4	5.69340	0.15369	0.02253	14.35424	0.78181	0.61769
3	1995	5	5.66865	0.15202	0.02228	16.67156	0.84646	0.66934
3	1995	6	5.07075	0.10849	0.01590	17.26254	0.82821	0.65494
3	1995	7	5.07075	0.10849	0.01590	19.52682	0.84685	0.66990
3	1995	8a	7.37432	0.21833	0.03200	28.12158	0.90680	0.71832
3	1995	8b	7.37432	0.21833	0.03200	30.00589	0.91999	0.72910
3	1996	2b	3.54365	0.03371	0.00494	7.11685	0.47421	0.37059
3	1996	3	5.66016	0.10549	0.01546	13.91139	0.77764	0.61440
3	1996	4	5.71293	0.10862	0.01592	15.54750	0.80346	0.63519
3	1996	5	5.71016	0.10855	0.01591	16.56044	0.85140	0.67318
3	1996	6	5.11686	0.07255	0.01063	18.77174	0.84429	0.66780
3	1996	7	5.11686	0.07255	0.01063	19.75640	0.85374	0.67537
3	1996	8a	7.37433	0.16571	0.02429	28.09330	0.90750	0.71886
3	1996	8b	7.37433	0.16571	0.02429	30.10905	0.92334	0.73178
3	1997	2b	3.29398	0.02649	0.00388	5.71961	0.39867	0.30883
3	1997	3	5.58960	0.08601	0.01261	10.81773	0.63463	0.49907
3	1997	4	5.71881	0.09050	0.01326	13.39479	0.79113	0.62524
3	1997	5	5.69015	0.08958	0.01313	15.19681	0.85640	0.67716
3	1997	6	5.09155	0.06871	0.01007	15.22734	0.81609	0.64518
3	1997	7	5.09155	0.06871	0.01007	16.95811	0.82945	0.65589
3	1997	8a	8.58873	0.07027	0.01030	27.03810	0.89531	0.70908
3	1997	8b	8.58873	0.07027	0.01030	29.74768	0.91551	0.72551
3	1998	2b	2.95196	0.02322	0.00340	6.18208	0.30363	0.23535
3	1998	3	3.73030	0.09295	0.01362	12.95002	0.42040	0.33005
3	1998	4	3.76026	0.10235	0.01500	13.73033	0.43400	0.34111
3	1998	5	3.71969	0.09153	0.01342	14.45689	0.41344	0.32461
3	1998	6	3.65339	0.06942	0.01017	14.06889	0.42589	0.33460
3	1998	7	3.65339	0.06942	0.01017	14.98123	0.42803	0.33631
3	1998	8a	4.15857	0.15731	0.02306	24.73916	0.58052	0.45860
3	1998	8b	4.15857	0.15731	0.02306	27.89348	0.62536	0.49480
3	1999	2b	2.28085	0.02789	0.00409	5.69909	0.30350	0.23528
3	1999	3	3.72099	0.09065	0.01329	8.76017	0.39140	0.30678

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	1999	4	3.86214	0.09301	0.01363	9.38618	0.40973	0.32174
3	1999	5	3.89106	0.09192	0.01347	9.42328	0.41056	0.32239
3	1999	6	3.89302	0.09195	0.01348	9.51712	0.41025	0.32211
3	1999	7	3.60017	0.08832	0.01294	10.03379	0.42089	0.33062
3	1999	8a	3.62250	0.09424	0.01381	18.35773	0.58221	0.45989
3	1999	8b	3.62250	0.09424	0.01381	20.85710	0.63096	0.49927
3	2000	2b	2.03393	0.02551	0.00374	5.84296	0.30800	0.23893
3	2000	3	3.78174	0.08342	0.01223	8.79182	0.39346	0.30851
3	2000	4	3.95620	0.07450	0.01092	9.28315	0.40752	0.31995
3	2000	5	4.00152	0.07218	0.01058	9.35665	0.40912	0.32121
3	2000	6	4.00437	0.07203	0.01056	9.49147	0.41240	0.32382
3	2000	7	3.66020	0.08963	0.01314	10.77835	0.43576	0.34253
3	2000	8a	3.66020	0.08963	0.01314	16.99381	0.55410	0.43734
3	2000	8b	3.66020	0.08963	0.01314	20.70262	0.62799	0.49686
3	2001	2b	0.68200	0.01739	0.00255	5.54115	0.29941	0.23197
3	2001	3	1.56158	0.06132	0.00899	8.56797	0.38541	0.30207
3	2001	4	1.62177	0.06056	0.00888	8.98325	0.39758	0.31204
3	2001	5	1.64386	0.06028	0.00884	9.02023	0.39840	0.31269
3	2001	6	1.64537	0.06026	0.00883	9.78319	0.41447	0.32552
3	2001	7	1.53384	0.06167	0.00904	9.62288	0.41117	0.32288
3	2001	8a	1.53384	0.06167	0.00904	17.88352	0.57066	0.45065
3	2001	8b	1.53384	0.06167	0.00904	20.54167	0.62418	0.49380
3	2002	2b	0.65042	0.01579	0.00231	5.61028	0.30140	0.23358
3	2002	3	1.58691	0.04912	0.00720	8.37305	0.37949	0.29725
3	2002	4	1.66711	0.04442	0.00651	8.97221	0.39677	0.31140
3	2002	5	1.69045	0.04305	0.00631	8.97221	0.39677	0.31140
3	2002	6	1.69195	0.04297	0.00630	9.29044	0.40556	0.31838
3	2002	7	1.53864	0.05195	0.00762	9.89382	0.41567	0.32650
3	2002	8a	1.53864	0.05195	0.00762	15.49018	0.52345	0.41270
3	2002	8b	1.53864	0.05195	0.00762	20.21528	0.61726	0.48823
3	2003	2b	0.56649	0.01566	0.00230	3.99845	0.25478	0.19741
3	2003	3	1.56864	0.05135	0.00753	5.62954	0.32912	0.25780
3	2003	4	1.63716	0.05002	0.00733	5.99559	0.34610	0.27164

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2003	5	1.65790	0.04962	0.00727	5.99559	0.34610	0.27164
3	2003	6	1.65926	0.04959	0.00727	6.37543	0.35876	0.28168
3	2003	7	1.52943	0.05211	0.00764	6.55728	0.37126	0.29171
3	2003	8a	1.52954	0.05210	0.00764	8.56058	0.48374	0.38165
3	2003	8b	1.52954	0.05210	0.00764	9.91942	0.56337	0.44570
3	2004	2b	0.47152	0.00761	0.00110	3.97530	0.25296	0.19603
3	2004	3	1.58650	0.03110	0.00456	5.67619	0.32946	0.25807
3	2004	4	1.67978	0.02984	0.00437	6.06456	0.34726	0.27255
3	2004	5	1.70645	0.02948	0.00432	6.06456	0.34726	0.27255
3	2004	6	1.70816	0.02946	0.00432	6.43353	0.36221	0.28442
3	2004	7	1.52910	0.03187	0.00467	6.60521	0.37326	0.29329
3	2004	8a	1.52910	0.03187	0.00467	8.53883	0.48174	0.38005
3	2004	8b	1.52910	0.03187	0.00467	9.92302	0.56401	0.44621
3	2005	2b	0.38150	0.00645	0.00093	3.87559	0.24723	0.19149
3	2005	3	1.57311	0.03047	0.00447	5.54990	0.32348	0.25325
3	2005	4	1.62628	0.02967	0.00435	6.03871	0.34611	0.27163
3	2005	5	1.64956	0.02933	0.00430	6.03871	0.34611	0.27163
3	2005	6	1.65126	0.02930	0.00430	6.34560	0.35990	0.28259
3	2005	7	1.55269	0.03077	0.00451	6.64593	0.37695	0.29626
3	2005	8a	1.55285	0.03077	0.00451	8.76529	0.49445	0.39029
3	2005	8b	1.55285	0.03077	0.00451	9.97789	0.56677	0.44844
3	2006	2b	0.42180	0.00732	0.00105	3.92949	0.25111	0.19451
3	2006	3	1.57223	0.03200	0.00469	5.50617	0.32169	0.25181
3	2006	4	1.64068	0.03085	0.00452	5.96283	0.34238	0.26868
3	2006	5	1.66642	0.03042	0.00446	5.96283	0.34238	0.26868
3	2006	6	1.66820	0.03039	0.00445	6.20296	0.35392	0.27785
3	2006	7	1.54160	0.03251	0.00477	6.51750	0.37117	0.29167
3	2006	8a	1.54180	0.03251	0.00477	8.66270	0.48945	0.38629
3	2006	8b	1.54180	0.03251	0.00477	9.96003	0.56619	0.44797
3	2007	2b	0.36137	0.00648	0.00093	2.11171	0.01097	0.00129
3	2007	3	1.57762	0.03185	0.00467	3.30667	0.01477	0.00173
3	2007	4	1.63749	0.03070	0.00450	3.55283	0.01557	0.00182
3	2007	5	1.66148	0.03021	0.00443	3.55283	0.01557	0.00182

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2007	6	1.66322	0.03018	0.00442	3.70560	0.01603	0.00187
3	2007	7	1.55305	0.03232	0.00474	4.12677	0.01736	0.00203
3	2007	8a	1.55422	0.03233	0.00474	6.06966	0.02366	0.00276
3	2007	8b	1.55422	0.03233	0.00474	6.94914	0.02666	0.00311
3	2008	2b	0.28400	0.00726	0.00107	2.05922	0.01080	0.00127
3	2008	3	1.07419	0.03142	0.00461	2.96268	0.01362	0.00159
3	2008	4	1.03274	0.03094	0.00454	3.15648	0.01423	0.00166
3	2008	5	1.01063	0.03069	0.00450	3.15648	0.01423	0.00166
3	2008	6	1.00890	0.03067	0.00450	3.27769	0.01460	0.00171
3	2008	7	1.08748	0.03157	0.00463	3.41418	0.01503	0.00176
3	2008	8a	1.08733	0.03157	0.00463	4.90440	0.01978	0.00231
3	2008	8b	1.08733	0.03157	0.00463	6.62002	0.02549	0.00298
3	2009	2b	0.17002	0.00580	0.00089	2.03690	0.01055	0.00125
3	2009	3	0.64651	0.02378	0.00349	3.44139	0.01522	0.00178
3	2009	4	0.64428	0.02370	0.00347	3.65238	0.01594	0.00186
3	2009	5	0.64303	0.02364	0.00347	3.65238	0.01594	0.00186
3	2009	6	0.64293	0.02364	0.00347	3.72916	0.01617	0.00189
3	2009	7	0.64718	0.02381	0.00349	4.19639	0.01764	0.00206
3	2009	8a	0.64717	0.02381	0.00349	6.08001	0.02368	0.00277
3	2009	8b	0.64717	0.02381	0.00349	6.91200	0.02649	0.00310
3	2010	2b	0.06699	0.00324	0.00057	0.87350	0.00724	0.00088
3	2010	3	0.10485	0.01147	0.00168	1.80008	0.01426	0.00167
3	2010	4	0.10487	0.01147	0.00168	1.96093	0.01546	0.00181
3	2010	5	0.10488	0.01147	0.00168	1.96093	0.01546	0.00181
3	2010	6	0.10488	0.01147	0.00168	2.03559	0.01602	0.00187
3	2010	7	0.10484	0.01147	0.00168	2.36956	0.01450	0.00169
3	2010	8a	0.10484	0.01147	0.00168	3.79378	0.00957	0.00112
3	2010	8b	0.10484	0.01147	0.00168	4.45260	0.00679	0.00079
3	2011	2b	0.06928	0.00371	0.00070	0.96745	0.00722	0.00088
3	2011	3	0.11255	0.01123	0.00165	1.54804	0.01267	0.00149
3	2011	4	0.12643	0.01082	0.00159	1.64807	0.01360	0.00159
3	2011	5	0.13336	0.01061	0.00156	1.64807	0.01360	0.00159
3	2011	6	0.13388	0.01060	0.00155	1.70849	0.01391	0.00163

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2011	7	0.10782	0.01137	0.00167	1.87682	0.01314	0.00154
3	2011	8a	0.10782	0.01137	0.00167	2.95989	0.00973	0.00114
3	2011	8b	0.10782	0.01137	0.00167	3.72420	0.00683	0.00080
3	2012	2b	0.07102	0.00400	0.00076	0.90969	0.00732	0.00091
3	2012	3	0.11407	0.01109	0.00163	1.54457	0.01318	0.00155
3	2012	4	0.11958	0.01093	0.00160	1.63280	0.01399	0.00163
3	2012	5	0.12275	0.01085	0.00159	1.63280	0.01399	0.00163
3	2012	6	0.12300	0.01084	0.00159	1.67287	0.01403	0.00164
3	2012	7	0.11240	0.01113	0.00163	1.91077	0.01310	0.00153
3	2012	8a	0.11240	0.01113	0.00163	3.04007	0.00922	0.00108
3	2012	8b	0.11240	0.01113	0.00163	3.63543	0.00675	0.00079
3	2013	2b	0.06799	0.00340	0.00077	1.08982	0.00722	0.00091
3	2013	3	0.12035	0.01015	0.00149	1.63886	0.01327	0.00156
3	2013	4	0.13019	0.00989	0.00145	1.71759	0.01415	0.00165
3	2013	5	0.13500	0.00976	0.00143	1.71759	0.01415	0.00165
3	2013	6	0.13538	0.00975	0.00143	1.75216	0.01423	0.00166
3	2013	7	0.11708	0.01023	0.00150	1.93343	0.01289	0.00151
3	2013	8a	0.11747	0.01023	0.00150	2.63861	0.00832	0.00097
3	2013	8b	0.11747	0.01023	0.00150	2.94253	0.00603	0.00070
3	2014	2b	0.05963	0.00312	0.00083	0.50229	0.00220	0.00043
3	2014	3	0.12061	0.00981	0.00144	1.09013	0.00393	0.00048
3	2014	4	0.12437	0.00973	0.00143	1.15988	0.00413	0.00048
3	2014	5	0.12655	0.00969	0.00142	1.15988	0.00413	0.00048
3	2014	6	0.12673	0.00968	0.00142	1.18743	0.00419	0.00049
3	2014	7	0.11949	0.00983	0.00144	1.35031	0.00416	0.00049
3	2014	8a	0.11949	0.00983	0.00144	2.12186	0.00414	0.00048
3	2014	8b	0.11949	0.00983	0.00144	2.54598	0.00394	0.00046
3	2015	2b	0.05923	0.00315	0.00095	0.40001	0.00216	0.00047
3	2015	3	0.12050	0.00981	0.00144	0.97951	0.00388	0.00048
3	2015	4	0.12394	0.00974	0.00143	1.06454	0.00413	0.00048
3	2015	5	0.12595	0.00970	0.00142	1.06454	0.00413	0.00048
3	2015	6	0.12612	0.00969	0.00142	1.09373	0.00419	0.00049
3	2015	7	0.11947	0.00983	0.00144	1.27391	0.00416	0.00049

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2015	8a	0.11947	0.00983	0.00144	2.10983	0.00415	0.00048
3	2015	8b	0.11947	0.00983	0.00144	2.56054	0.00395	0.00046
3	2016	2b	0.05380	0.00292	0.00093	0.38042	0.00207	0.00046
3	2016	3	0.12039	0.00981	0.00144	0.93331	0.00383	0.00048
3	2016	4	0.12350	0.00975	0.00143	1.02632	0.00413	0.00048
3	2016	5	0.12533	0.00971	0.00142	1.02632	0.00413	0.00048
3	2016	6	0.12548	0.00971	0.00142	1.05075	0.00418	0.00049
3	2016	7	0.11946	0.00983	0.00144	1.19325	0.00416	0.00049
3	2016	8a	0.11946	0.00983	0.00144	1.96668	0.00417	0.00049
3	2016	8b	0.11946	0.00983	0.00144	2.46666	0.00397	0.00046
3	2017	2b	0.04506	0.00281	0.00099	0.36507	0.00201	0.00049
3	2017	3	0.12025	0.00981	0.00144	0.89002	0.00381	0.00048
3	2017	4	0.12295	0.00976	0.00143	0.98348	0.00413	0.00048
3	2017	5	0.12455	0.00972	0.00142	0.98348	0.00413	0.00048
3	2017	6	0.12468	0.00972	0.00142	1.00277	0.00417	0.00049
3	2017	7	0.11946	0.00983	0.00144	1.11359	0.00416	0.00049
3	2017	8a	0.11946	0.00983	0.00144	1.75336	0.00418	0.00049
3	2017	8b	0.11946	0.00983	0.00144	2.19784	0.00399	0.00047
3	2018	2b	0.03585	0.00277	0.00099	0.25557	0.00195	0.00048
3	2018	3	0.08892	0.00973	0.00143	0.80966	0.00368	0.00047
3	2018	4	0.09781	0.00955	0.00140	0.90731	0.00398	0.00047
3	2018	5	0.10245	0.00945	0.00138	0.90731	0.00398	0.00047
3	2018	6	0.10281	0.00944	0.00138	0.95336	0.00408	0.00048
3	2018	7	0.08600	0.00980	0.00144	1.05327	0.00405	0.00047
3	2018	8a	0.08600	0.00980	0.00144	1.70168	0.00409	0.00048
3	2018	8b	0.08600	0.00980	0.00144	2.13568	0.00393	0.00046
3	2019	2b	0.03219	0.00270	0.00097	0.22235	0.00188	0.00048
3	2019	3	0.08472	0.00974	0.00143	0.78168	0.00364	0.00047
3	2019	4	0.09348	0.00956	0.00140	0.88936	0.00398	0.00047
3	2019	5	0.09811	0.00947	0.00139	0.88936	0.00398	0.00047
3	2019	6	0.09846	0.00946	0.00139	0.93425	0.00408	0.00048
3	2019	7	0.08188	0.00979	0.00144	1.03722	0.00404	0.00047
3	2019	8a	0.08188	0.00979	0.00144	1.69632	0.00409	0.00048

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2019	8b	0.08188	0.00979	0.00144	2.13470	0.00393	0.00046
3	2020	2b	0.02314	0.00156	0.00057	0.14218	0.00111	0.00028
3	2020	3	0.08056	0.00589	0.00086	0.53810	0.00235	0.00030
3	2020	4	0.08925	0.00581	0.00085	0.62290	0.00261	0.00031
3	2020	5	0.09389	0.00576	0.00084	0.62290	0.00261	0.00031
3	2020	6	0.09425	0.00576	0.00084	0.65423	0.00268	0.00031
3	2020	7	0.07777	0.00592	0.00087	0.72638	0.00267	0.00031
3	2020	8a	0.07777	0.00592	0.00087	1.20609	0.00278	0.00033
3	2020	8b	0.07777	0.00592	0.00087	1.54107	0.00273	0.00032
3	2021	2b	0.01976	0.00136	0.00046	0.12631	0.00102	0.00024
3	2021	3	0.07564	0.00586	0.00086	0.52156	0.00230	0.00029
3	2021	4	0.08383	0.00576	0.00084	0.61112	0.00259	0.00030
3	2021	5	0.08821	0.00571	0.00084	0.61112	0.00259	0.00030
3	2021	6	0.08855	0.00571	0.00084	0.64106	0.00265	0.00031
3	2021	7	0.07301	0.00589	0.00086	0.70581	0.00264	0.00031
3	2021	8a	0.07301	0.00589	0.00086	1.15661	0.00270	0.00032
3	2021	8b	0.07301	0.00589	0.00086	1.48369	0.00263	0.00031
3	2022	2b	0.01673	0.00137	0.00047	0.11227	0.00102	0.00024
3	2022	3	0.07161	0.00586	0.00086	0.51158	0.00230	0.00029
3	2022	4	0.08007	0.00577	0.00085	0.60182	0.00259	0.00030
3	2022	5	0.08460	0.00571	0.00084	0.60182	0.00259	0.00030
3	2022	6	0.08495	0.00571	0.00084	0.63209	0.00265	0.00031
3	2022	7	0.06891	0.00589	0.00086	0.69973	0.00264	0.00031
3	2022	8a	0.06891	0.00589	0.00086	1.15925	0.00270	0.00032
3	2022	8b	0.06891	0.00589	0.00086	1.48493	0.00262	0.00031
3	2023	2b	0.01434	0.00135	0.00047	0.11004	0.00102	0.00024
3	2023	3	0.07157	0.00586	0.00086	0.50899	0.00230	0.00029
3	2023	4	0.07992	0.00577	0.00085	0.60182	0.00259	0.00030
3	2023	5	0.08440	0.00572	0.00084	0.60182	0.00259	0.00030
3	2023	6	0.08475	0.00571	0.00084	0.63146	0.00265	0.00031
3	2023	7	0.06891	0.00589	0.00086	0.69695	0.00263	0.00031
3	2023	8a	0.06891	0.00589	0.00086	1.15192	0.00270	0.00032
3	2023	8b	0.06891	0.00589	0.00086	1.48313	0.00262	0.00031

Table A-3. SmartWay Category - Expedited

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
3	2024	2b	0.01434	0.00135	0.00047	0.11004	0.00102	0.00024
3	2024	3	0.07157	0.00586	0.00086	0.50899	0.00230	0.00029
3	2024	4	0.07992	0.00577	0.00085	0.60182	0.00259	0.00030
3	2024	5	0.08440	0.00572	0.00084	0.60182	0.00259	0.00030
3	2024	6	0.08475	0.00571	0.00084	0.63146	0.00265	0.00031
3	2024	7	0.06891	0.00589	0.00086	0.69695	0.00263	0.00031
3	2024	8a	0.06891	0.00589	0.00086	1.15192	0.00270	0.00032
3	2024	8b	0.06891	0.00589	0.00086	1.48313	0.00262	0.00031

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	Pre-1992	2b	4.90414	0.03618	0.00530	7.78672	0.27018	0.20880
4	Pre-1992	3	5.52861	0.10155	0.01488	10.69030	0.39509	0.30981
4	Pre-1992	4	5.62297	0.10665	0.01563	14.19817	0.55650	0.44043
4	Pre-1992	5	5.53945	0.10218	0.01498	14.72585	0.53623	0.42428
4	Pre-1992	6	5.09246	0.07771	0.01139	15.06687	0.55084	0.43592
4	Pre-1992	7	5.09246	0.07771	0.01139	15.81901	0.58487	0.46302
4	Pre-1992	8a	5.10038	0.07767	0.01138	24.52205	0.82947	0.65791
4	Pre-1992	8b	5.10038	0.07767	0.01138	29.77229	0.97327	0.77256
4	1992	2b	4.90414	0.03618	0.00530	7.78672	0.27018	0.20880
4	1992	3	5.52861	0.10155	0.01488	10.69030	0.39509	0.30981
4	1992	4	5.62297	0.10665	0.01563	14.19817	0.55650	0.44043
4	1992	5	5.53945	0.10218	0.01498	14.72585	0.53623	0.42428
4	1992	6	5.09246	0.07771	0.01139	15.06687	0.55084	0.43592
4	1992	7	5.09246	0.07771	0.01139	15.81901	0.58487	0.46302
4	1992	8a	5.10038	0.07767	0.01138	24.52205	0.82947	0.65791
4	1992	8b	5.10038	0.07767	0.01138	29.77229	0.97327	0.77256
4	1993	2b	4.90414	0.03618	0.00530	7.78672	0.27018	0.20880
4	1993	3	5.52861	0.10155	0.01488	10.69030	0.39509	0.30981
4	1993	4	5.62297	0.10665	0.01563	14.19817	0.55650	0.44043
4	1993	5	5.53945	0.10218	0.01498	14.72585	0.53623	0.42428
4	1993	6	5.09246	0.07771	0.01139	15.06687	0.55084	0.43592
4	1993	7	5.09246	0.07771	0.01139	15.81901	0.58487	0.46302
4	1993	8a	5.10038	0.07767	0.01138	24.52205	0.82947	0.65791
4	1993	8b	5.10038	0.07767	0.01138	29.77229	0.97327	0.77256
4	1994	2b	4.26791	0.03659	0.00536	6.88118	0.49962	0.38938
4	1994	3	5.68554	0.06579	0.00964	9.02882	0.61001	0.47837
4	1994	4	5.72877	0.06606	0.00968	13.06382	0.77387	0.61155
4	1994	5	5.72660	0.06603	0.00968	16.14919	0.85968	0.67978
4	1994	6	5.07396	0.06213	0.00911	16.51871	0.84981	0.67200
4	1994	7	5.07396	0.06213	0.00911	19.94157	0.85614	0.67732
4	1994	8a	7.51914	0.08418	0.01234	28.43076	0.90849	0.71973
4	1994	8b	7.51914	0.08418	0.01234	30.22125	0.92207	0.73079
4	1995	2b	4.37500	0.05215	0.00764	7.07768	0.49320	0.38497

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	1995	3	5.59265	0.14638	0.02145	12.46078	0.72404	0.57115
4	1995	4	5.69480	0.15371	0.02253	14.35380	0.78147	0.61742
4	1995	5	5.67004	0.15204	0.02228	16.67194	0.84610	0.66905
4	1995	6	5.07182	0.10849	0.01590	17.26325	0.82793	0.65471
4	1995	7	5.07182	0.10849	0.01590	19.52843	0.84663	0.66973
4	1995	8a	7.37641	0.21844	0.03202	28.12815	0.90697	0.71846
4	1995	8b	7.37641	0.21844	0.03202	30.01397	0.92027	0.72932
4	1996	2b	3.54485	0.03372	0.00494	7.11714	0.47400	0.37042
4	1996	3	5.66154	0.10550	0.01546	13.91060	0.77729	0.61413
4	1996	4	5.71434	0.10864	0.01592	15.54722	0.80315	0.63495
4	1996	5	5.71157	0.10857	0.01591	16.56071	0.85103	0.67289
4	1996	6	5.11794	0.07256	0.01064	18.77255	0.84403	0.66760
4	1996	7	5.11794	0.07256	0.01064	19.75801	0.85353	0.67520
4	1996	8a	7.37642	0.16585	0.02431	28.09970	0.90766	0.71899
4	1996	8b	7.37642	0.16585	0.02431	30.11710	0.92362	0.73201
4	1997	2b	3.29551	0.02650	0.00388	5.72046	0.39850	0.30870
4	1997	3	5.59096	0.08608	0.01262	10.81716	0.63433	0.49883
4	1997	4	5.72023	0.09057	0.01327	13.39368	0.79074	0.62494
4	1997	5	5.69155	0.08964	0.01314	15.19648	0.85599	0.67683
4	1997	6	5.09265	0.06876	0.01008	15.22703	0.81575	0.64492
4	1997	7	5.09265	0.06876	0.01008	16.95843	0.82916	0.65566
4	1997	8a	8.59070	0.07031	0.01031	27.04364	0.89543	0.70918
4	1997	8b	8.59070	0.07031	0.01031	29.75538	0.91578	0.72573
4	1998	2b	2.95353	0.02323	0.00341	6.18263	0.30366	0.23538
4	1998	3	3.73207	0.09300	0.01363	12.95007	0.42041	0.33006
4	1998	4	3.76209	0.10240	0.01501	13.73053	0.43401	0.34111
4	1998	5	3.72146	0.09158	0.01342	14.45740	0.41345	0.32462
4	1998	6	3.65502	0.06945	0.01018	14.06924	0.42591	0.33461
4	1998	7	3.65502	0.06945	0.01018	14.98195	0.42805	0.33632
4	1998	8a	4.16064	0.15744	0.02308	24.74462	0.58062	0.45868
4	1998	8b	4.16064	0.15744	0.02308	27.90143	0.62551	0.49491
4	1999	2b	2.28201	0.02790	0.00409	5.69964	0.30354	0.23531
4	1999	3	3.72266	0.09068	0.01329	8.75921	0.39139	0.30678

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	1999	4	3.86378	0.09304	0.01364	9.38505	0.40972	0.32173
4	1999	5	3.89269	0.09195	0.01348	9.42218	0.41055	0.32238
4	1999	6	3.89465	0.09197	0.01348	9.51636	0.41025	0.32211
4	1999	7	3.60187	0.08834	0.01295	10.03317	0.42089	0.33062
4	1999	8a	3.62421	0.09427	0.01382	18.36045	0.58231	0.45997
4	1999	8b	3.62421	0.09427	0.01382	20.86137	0.63111	0.49938
4	2000	2b	2.03498	0.02553	0.00374	5.84343	0.30803	0.23896
4	2000	3	3.78335	0.08347	0.01223	8.79097	0.39345	0.30850
4	2000	4	3.95776	0.07454	0.01093	9.28223	0.40751	0.31995
4	2000	5	4.00307	0.07222	0.01059	9.35578	0.40911	0.32121
4	2000	6	4.00592	0.07208	0.01056	9.49089	0.41240	0.32382
4	2000	7	3.66185	0.08968	0.01314	10.77798	0.43577	0.34254
4	2000	8a	3.66185	0.08968	0.01314	16.99591	0.55418	0.43741
4	2000	8b	3.66185	0.08968	0.01314	20.70674	0.62813	0.49698
4	2001	2b	0.68234	0.01741	0.00255	5.54179	0.29945	0.23200
4	2001	3	1.56229	0.06140	0.00900	8.56699	0.38540	0.30206
4	2001	4	1.62246	0.06064	0.00889	8.98210	0.39756	0.31202
4	2001	5	1.64454	0.06036	0.00885	9.01911	0.39838	0.31267
4	2001	6	1.64605	0.06034	0.00885	9.78243	0.41447	0.32552
4	2001	7	1.53456	0.06175	0.00905	9.62213	0.41117	0.32288
4	2001	8a	1.53456	0.06175	0.00905	17.88596	0.57075	0.45072
4	2001	8b	1.53456	0.06175	0.00905	20.54570	0.62432	0.49391
4	2002	2b	0.65075	0.01580	0.00232	5.61087	0.30144	0.23361
4	2002	3	1.58760	0.04913	0.00720	8.37208	0.37948	0.29724
4	2002	4	1.66778	0.04443	0.00651	8.97100	0.39675	0.31138
4	2002	5	1.69111	0.04307	0.00631	8.97100	0.39675	0.31138
4	2002	6	1.69262	0.04298	0.00630	9.28960	0.40555	0.31837
4	2002	7	1.53935	0.05196	0.00762	9.89300	0.41566	0.32649
4	2002	8a	1.53935	0.05196	0.00762	15.49148	0.52351	0.41275
4	2002	8b	1.53935	0.05196	0.00762	20.21907	0.61740	0.48834
4	2003	2b	0.56678	0.01567	0.00230	3.99987	0.25481	0.19743
4	2003	3	1.56935	0.05137	0.00753	5.62981	0.32911	0.25779
4	2003	4	1.63785	0.05004	0.00734	5.99566	0.34608	0.27163

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2003	5	1.65859	0.04964	0.00728	5.99566	0.34608	0.27163
4	2003	6	1.65994	0.04961	0.00727	6.37543	0.35876	0.28167
4	2003	7	1.53015	0.05213	0.00764	6.55733	0.37125	0.29171
4	2003	8a	1.53026	0.05213	0.00764	8.56116	0.48381	0.38170
4	2003	8b	1.53026	0.05213	0.00764	9.92033	0.56350	0.44580
4	2004	2b	0.47176	0.00761	0.00110	3.97670	0.25300	0.19605
4	2004	3	1.58720	0.03111	0.00456	5.67643	0.32945	0.25807
4	2004	4	1.68045	0.02985	0.00438	6.06460	0.34725	0.27254
4	2004	5	1.70711	0.02949	0.00432	6.06460	0.34725	0.27254
4	2004	6	1.70882	0.02947	0.00432	6.43349	0.36221	0.28442
4	2004	7	1.52983	0.03188	0.00467	6.60523	0.37326	0.29329
4	2004	8a	1.52983	0.03188	0.00467	8.53936	0.48180	0.38010
4	2004	8b	1.52983	0.03188	0.00467	9.92392	0.56414	0.44631
4	2005	2b	0.38170	0.00645	0.00093	3.87700	0.24727	0.19152
4	2005	3	1.57380	0.03047	0.00447	5.55019	0.32347	0.25324
4	2005	4	1.62695	0.02968	0.00435	6.03876	0.34609	0.27162
4	2005	5	1.65023	0.02933	0.00430	6.03876	0.34609	0.27162
4	2005	6	1.65192	0.02931	0.00430	6.34558	0.35989	0.28259
4	2005	7	1.55339	0.03078	0.00451	6.64598	0.37695	0.29626
4	2005	8a	1.55355	0.03078	0.00451	8.76586	0.49452	0.39034
4	2005	8b	1.55355	0.03078	0.00451	9.97882	0.56691	0.44854
4	2006	2b	0.42201	0.00732	0.00105	3.93093	0.25114	0.19453
4	2006	3	1.57293	0.03201	0.00469	5.50650	0.32168	0.25180
4	2006	4	1.64136	0.03086	0.00452	5.96293	0.34236	0.26866
4	2006	5	1.66709	0.03042	0.00446	5.96293	0.34236	0.26866
4	2006	6	1.66887	0.03039	0.00446	6.20300	0.35391	0.27784
4	2006	7	1.54231	0.03252	0.00477	6.51760	0.37116	0.29166
4	2006	8a	1.54251	0.03252	0.00477	8.66328	0.48952	0.38634
4	2006	8b	1.54251	0.03252	0.00477	9.96095	0.56632	0.44807
4	2007	2b	0.36155	0.00648	0.00093	2.11203	0.01098	0.00129
4	2007	3	1.57832	0.03186	0.00467	3.30637	0.01477	0.00173
4	2007	4	1.63817	0.03070	0.00450	3.55244	0.01557	0.00182
4	2007	5	1.66215	0.03022	0.00443	3.55244	0.01557	0.00182

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2007	6	1.66389	0.03019	0.00443	3.70526	0.01603	0.00187
4	2007	7	1.55375	0.03233	0.00474	4.12645	0.01737	0.00203
4	2007	8a	1.55493	0.03234	0.00474	6.06984	0.02367	0.00276
4	2007	8b	1.55493	0.03234	0.00474	6.94961	0.02667	0.00312
4	2008	2b	0.28415	0.00726	0.00107	2.05954	0.01080	0.00127
4	2008	3	1.07466	0.03143	0.00461	2.96230	0.01362	0.00159
4	2008	4	1.03318	0.03095	0.00454	3.15597	0.01423	0.00166
4	2008	5	1.01106	0.03070	0.00450	3.15597	0.01423	0.00166
4	2008	6	1.00933	0.03068	0.00450	3.27722	0.01460	0.00171
4	2008	7	1.08796	0.03158	0.00463	3.41371	0.01503	0.00176
4	2008	8a	1.08780	0.03158	0.00463	4.90423	0.01978	0.00231
4	2008	8b	1.08780	0.03158	0.00463	6.62035	0.02550	0.00298
4	2009	2b	0.17010	0.00580	0.00089	2.03714	0.01055	0.00125
4	2009	3	0.64668	0.02379	0.00349	3.44104	0.01522	0.00178
4	2009	4	0.64446	0.02370	0.00347	3.65200	0.01594	0.00186
4	2009	5	0.64321	0.02365	0.00347	3.65200	0.01594	0.00186
4	2009	6	0.64311	0.02365	0.00347	3.72879	0.01617	0.00189
4	2009	7	0.64736	0.02382	0.00349	4.19607	0.01764	0.00206
4	2009	8a	0.64734	0.02382	0.00349	6.08019	0.02368	0.00277
4	2009	8b	0.64734	0.02382	0.00349	6.91247	0.02650	0.00310
4	2010	2b	0.06702	0.00324	0.00057	0.87353	0.00724	0.00088
4	2010	3	0.10487	0.01147	0.00168	1.79932	0.01426	0.00167
4	2010	4	0.10489	0.01147	0.00168	1.96007	0.01545	0.00181
4	2010	5	0.10490	0.01147	0.00168	1.96007	0.01545	0.00181
4	2010	6	0.10490	0.01147	0.00168	2.03471	0.01601	0.00187
4	2010	7	0.10486	0.01147	0.00168	2.36859	0.01448	0.00169
4	2010	8a	0.10486	0.01147	0.00168	3.79235	0.00956	0.00112
4	2010	8b	0.10486	0.01147	0.00168	4.45085	0.00679	0.00079
4	2011	2b	0.06931	0.00371	0.00070	0.96756	0.00722	0.00088
4	2011	3	0.11257	0.01123	0.00165	1.54744	0.01266	0.00149
4	2011	4	0.12645	0.01082	0.00159	1.64738	0.01360	0.00159
4	2011	5	0.13338	0.01061	0.00156	1.64738	0.01360	0.00159
4	2011	6	0.13391	0.01060	0.00155	1.70775	0.01390	0.00163

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2011	7	0.10784	0.01137	0.00167	1.87603	0.01313	0.00153
4	2011	8a	0.10784	0.01137	0.00167	2.95858	0.00972	0.00114
4	2011	8b	0.10784	0.01137	0.00167	3.72233	0.00683	0.00080
4	2012	2b	0.07105	0.00400	0.00076	0.90974	0.00732	0.00091
4	2012	3	0.11409	0.01109	0.00163	1.54393	0.01317	0.00155
4	2012	4	0.11961	0.01093	0.00160	1.63207	0.01398	0.00163
4	2012	5	0.12277	0.01085	0.00159	1.63207	0.01398	0.00163
4	2012	6	0.12302	0.01084	0.00159	1.67212	0.01402	0.00164
4	2012	7	0.11242	0.01113	0.00163	1.90993	0.01309	0.00153
4	2012	8a	0.11242	0.01113	0.00163	3.03865	0.00922	0.00108
4	2012	8b	0.11242	0.01113	0.00163	3.63356	0.00675	0.00079
4	2013	2b	0.06802	0.00340	0.00077	1.08997	0.00722	0.00091
4	2013	3	0.12037	0.01015	0.00149	1.63826	0.01327	0.00156
4	2013	4	0.13022	0.00989	0.00145	1.71689	0.01414	0.00165
4	2013	5	0.13502	0.00976	0.00143	1.71689	0.01414	0.00165
4	2013	6	0.13541	0.00975	0.00143	1.75143	0.01422	0.00166
4	2013	7	0.11711	0.01023	0.00150	1.93262	0.01289	0.00151
4	2013	8a	0.11749	0.01023	0.00150	2.63731	0.00831	0.00097
4	2013	8b	0.11749	0.01023	0.00150	2.94092	0.00603	0.00070
4	2014	2b	0.05966	0.00312	0.00083	0.50219	0.00220	0.00043
4	2014	3	0.12063	0.00981	0.00144	1.08931	0.00393	0.00048
4	2014	4	0.12439	0.00973	0.00143	1.15900	0.00413	0.00048
4	2014	5	0.12658	0.00969	0.00142	1.15900	0.00413	0.00048
4	2014	6	0.12675	0.00968	0.00142	1.18653	0.00419	0.00049
4	2014	7	0.11951	0.00983	0.00144	1.34933	0.00416	0.00049
4	2014	8a	0.11951	0.00983	0.00144	2.12043	0.00414	0.00048
4	2014	8b	0.11951	0.00983	0.00144	2.54418	0.00394	0.00046
4	2015	2b	0.05926	0.00315	0.00095	0.39990	0.00216	0.00047
4	2015	3	0.12052	0.00981	0.00144	0.97868	0.00388	0.00048
4	2015	4	0.12396	0.00974	0.00143	1.06363	0.00413	0.00048
4	2015	5	0.12598	0.00970	0.00142	1.06363	0.00413	0.00048
4	2015	6	0.12614	0.00969	0.00142	1.09279	0.00419	0.00049
4	2015	7	0.11950	0.00983	0.00144	1.27291	0.00416	0.00049

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2015	8a	0.11950	0.00983	0.00144	2.10838	0.00414	0.00048
4	2015	8b	0.11950	0.00983	0.00144	2.55873	0.00395	0.00046
4	2016	2b	0.05383	0.00292	0.00093	0.38033	0.00207	0.00047
4	2016	3	0.12041	0.00981	0.00144	0.93251	0.00383	0.00048
4	2016	4	0.12352	0.00975	0.00143	1.02543	0.00413	0.00048
4	2016	5	0.12536	0.00971	0.00142	1.02543	0.00413	0.00048
4	2016	6	0.12550	0.00971	0.00142	1.04984	0.00418	0.00049
4	2016	7	0.11949	0.00983	0.00144	1.19228	0.00416	0.00049
4	2016	8a	0.11949	0.00983	0.00144	1.96530	0.00416	0.00049
4	2016	8b	0.11949	0.00983	0.00144	2.46490	0.00397	0.00046
4	2017	2b	0.04508	0.00281	0.00099	0.36500	0.00201	0.00049
4	2017	3	0.12027	0.00981	0.00144	0.88925	0.00381	0.00048
4	2017	4	0.12297	0.00976	0.00143	0.98263	0.00413	0.00048
4	2017	5	0.12457	0.00972	0.00142	0.98263	0.00413	0.00048
4	2017	6	0.12470	0.00972	0.00142	1.00190	0.00417	0.00049
4	2017	7	0.11948	0.00983	0.00144	1.11268	0.00416	0.00049
4	2017	8a	0.11948	0.00983	0.00144	1.75208	0.00418	0.00049
4	2017	8b	0.11948	0.00983	0.00144	2.19620	0.00399	0.00047
4	2018	2b	0.03586	0.00278	0.00099	0.25549	0.00195	0.00048
4	2018	3	0.08893	0.00973	0.00143	0.80893	0.00368	0.00047
4	2018	4	0.09783	0.00955	0.00140	0.90650	0.00398	0.00047
4	2018	5	0.10247	0.00945	0.00138	0.90650	0.00398	0.00047
4	2018	6	0.10283	0.00944	0.00138	0.95250	0.00408	0.00048
4	2018	7	0.08602	0.00980	0.00144	1.05238	0.00404	0.00047
4	2018	8a	0.08602	0.00980	0.00144	1.70042	0.00409	0.00048
4	2018	8b	0.08602	0.00980	0.00144	2.13408	0.00393	0.00046
4	2019	2b	0.03220	0.00270	0.00098	0.22227	0.00188	0.00048
4	2019	3	0.08474	0.00974	0.00143	0.78096	0.00364	0.00047
4	2019	4	0.09349	0.00956	0.00140	0.88856	0.00398	0.00047
4	2019	5	0.09812	0.00947	0.00139	0.88856	0.00398	0.00047
4	2019	6	0.09848	0.00946	0.00139	0.93340	0.00408	0.00048
4	2019	7	0.08190	0.00980	0.00144	1.03634	0.00404	0.00047
4	2019	8a	0.08190	0.00980	0.00144	1.69507	0.00409	0.00048

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2019	8b	0.08190	0.00980	0.00144	2.13310	0.00393	0.00046
4	2020	2b	0.02315	0.00156	0.00057	0.14213	0.00111	0.00028
4	2020	3	0.08058	0.00589	0.00086	0.53760	0.00235	0.00030
4	2020	4	0.08927	0.00581	0.00085	0.62233	0.00261	0.00031
4	2020	5	0.09391	0.00576	0.00084	0.62233	0.00261	0.00031
4	2020	6	0.09427	0.00576	0.00084	0.65364	0.00268	0.00031
4	2020	7	0.07778	0.00592	0.00087	0.72576	0.00267	0.00031
4	2020	8a	0.07778	0.00592	0.00087	1.20520	0.00278	0.00033
4	2020	8b	0.07778	0.00592	0.00087	1.53991	0.00273	0.00032
4	2021	2b	0.01977	0.00136	0.00046	0.12626	0.00103	0.00024
4	2021	3	0.07566	0.00586	0.00086	0.52107	0.00230	0.00029
4	2021	4	0.08384	0.00576	0.00084	0.61056	0.00259	0.00030
4	2021	5	0.08822	0.00571	0.00084	0.61056	0.00259	0.00030
4	2021	6	0.08856	0.00571	0.00084	0.64047	0.00265	0.00031
4	2021	7	0.07303	0.00589	0.00086	0.70519	0.00264	0.00031
4	2021	8a	0.07303	0.00589	0.00086	1.15575	0.00270	0.00032
4	2021	8b	0.07303	0.00589	0.00086	1.48256	0.00262	0.00031
4	2022	2b	0.01674	0.00137	0.00047	0.11222	0.00102	0.00024
4	2022	3	0.07163	0.00586	0.00086	0.51109	0.00230	0.00029
4	2022	4	0.08008	0.00577	0.00085	0.60126	0.00259	0.00030
4	2022	5	0.08462	0.00571	0.00084	0.60126	0.00259	0.00030
4	2022	6	0.08497	0.00571	0.00084	0.63151	0.00265	0.00031
4	2022	7	0.06892	0.00589	0.00086	0.69912	0.00264	0.00031
4	2022	8a	0.06892	0.00589	0.00086	1.15838	0.00270	0.00032
4	2022	8b	0.06892	0.00589	0.00086	1.48380	0.00262	0.00031
4	2023	2b	0.01434	0.00135	0.00047	0.10999	0.00102	0.00024
4	2023	3	0.07159	0.00586	0.00086	0.50850	0.00230	0.00029
4	2023	4	0.07993	0.00577	0.00085	0.60126	0.00259	0.00030
4	2023	5	0.08442	0.00572	0.00084	0.60126	0.00259	0.00030
4	2023	6	0.08476	0.00571	0.00084	0.63087	0.00265	0.00031
4	2023	7	0.06892	0.00589	0.00086	0.69633	0.00263	0.00031
4	2023	8a	0.06892	0.00589	0.00086	1.15105	0.00270	0.00032
4	2023	8b	0.06892	0.00589	0.00086	1.48199	0.00262	0.00031

Table A-4. SmartWay Category - Flatbed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
4	2024	2b	0.01434	0.00135	0.00047	0.10999	0.00102	0.00024
4	2024	3	0.07159	0.00586	0.00086	0.50850	0.00230	0.00029
4	2024	4	0.07993	0.00577	0.00085	0.60126	0.00259	0.00030
4	2024	5	0.08442	0.00572	0.00084	0.60126	0.00259	0.00030
4	2024	6	0.08476	0.00571	0.00084	0.63087	0.00265	0.00031
4	2024	7	0.06892	0.00589	0.00086	0.69633	0.00263	0.00031
4	2024	8a	0.06892	0.00589	0.00086	1.15105	0.00270	0.00032
4	2024	8b	0.06892	0.00589	0.00086	1.48199	0.00262	0.00031

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	Pre-1992	2b	4.73730	0.04437	0.00650	8.22310	0.28203	0.21797
5	Pre-1992	3	5.47173	0.13046	0.01912	11.61288	0.43264	0.33912
5	Pre-1992	4	5.55607	0.13743	0.02014	15.59175	0.61740	0.48792
5	Pre-1992	5	5.48137	0.13131	0.01925	16.12550	0.60962	0.48158
5	Pre-1992	6	5.08238	0.09787	0.01434	16.40969	0.62094	0.49063
5	Pre-1992	7	5.08238	0.09787	0.01434	17.01973	0.64638	0.51097
5	Pre-1992	8a	5.09007	0.09780	0.01433	24.54410	0.85805	0.67993
5	Pre-1992	8b	5.09007	0.09780	0.01433	29.19911	0.98769	0.78357
5	1992	2b	4.73730	0.04437	0.00650	8.22310	0.28203	0.21797
5	1992	3	5.47173	0.13046	0.01912	11.61288	0.43264	0.33912
5	1992	4	5.55607	0.13743	0.02014	15.59175	0.61740	0.48792
5	1992	5	5.48137	0.13131	0.01925	16.12550	0.60962	0.48158
5	1992	6	5.08238	0.09787	0.01434	16.40969	0.62094	0.49063
5	1992	7	5.08238	0.09787	0.01434	17.01973	0.64638	0.51097
5	1992	8a	5.09007	0.09780	0.01433	24.54410	0.85805	0.67993
5	1992	8b	5.09007	0.09780	0.01433	29.19911	0.98769	0.78357
5	1993	2b	4.73730	0.04437	0.00650	8.22310	0.28203	0.21797
5	1993	3	5.47173	0.13046	0.01912	11.61288	0.43264	0.33912
5	1993	4	5.55607	0.13743	0.02014	15.59175	0.61740	0.48792
5	1993	5	5.48137	0.13131	0.01925	16.12550	0.60962	0.48158
5	1993	6	5.08238	0.09787	0.01434	16.40969	0.62094	0.49063
5	1993	7	5.08238	0.09787	0.01434	17.01973	0.64638	0.51097
5	1993	8a	5.09007	0.09780	0.01433	24.54410	0.85805	0.67993
5	1993	8b	5.09007	0.09780	0.01433	29.19911	0.98769	0.78357
5	1994	2b	4.10800	0.03026	0.00444	7.28974	0.62484	0.48618
5	1994	3	5.61107	0.05239	0.00768	9.76946	0.75762	0.59284
5	1994	4	5.65158	0.05258	0.00771	14.40379	0.95239	0.75103
5	1994	5	5.64918	0.05255	0.00770	17.54054	1.06248	0.83853
5	1994	6	5.04103	0.04988	0.00731	17.76867	1.03998	0.82079
5	1994	7	5.04103	0.04988	0.00731	20.59378	1.00837	0.79630
5	1994	8a	7.53697	0.06927	0.01015	27.98240	0.96541	0.76400
5	1994	8b	7.53697	0.06927	0.01015	29.60328	0.95654	0.75749
5	1995	2b	4.24320	0.05063	0.00742	7.50640	0.61716	0.48078

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	1995	3	5.52557	0.14796	0.02169	13.67294	0.89536	0.70487
5	1995	4	5.62018	0.15567	0.02282	15.61208	0.95667	0.75430
5	1995	5	5.59703	0.15394	0.02256	17.97912	1.03557	0.81733
5	1995	6	5.04429	0.10798	0.01583	18.32258	0.99400	0.78456
5	1995	7	5.04429	0.10798	0.01583	20.28341	0.99670	0.78702
5	1995	8a	7.34811	0.21081	0.03090	27.73622	0.96793	0.76588
5	1995	8b	7.34811	0.21081	0.03090	29.42592	0.95740	0.75811
5	1996	2b	3.42637	0.03485	0.00511	7.60760	0.59197	0.46152
5	1996	3	5.59090	0.11632	0.01705	15.31334	0.95407	0.75226
5	1996	4	5.63888	0.11988	0.01757	16.83441	0.97350	0.76812
5	1996	5	5.63602	0.11985	0.01757	17.85207	1.04174	0.82212
5	1996	6	5.09901	0.07860	0.01152	19.65991	1.00488	0.79334
5	1996	7	5.09901	0.07860	0.01152	20.53236	1.00376	0.79264
5	1996	8a	7.34811	0.16465	0.02413	27.73133	0.97004	0.76752
5	1996	8b	7.34811	0.16465	0.02413	29.53310	0.96065	0.76071
5	1997	2b	3.04389	0.02330	0.00341	5.96479	0.49881	0.38598
5	1997	3	5.52514	0.07581	0.01111	11.69532	0.78218	0.61395
5	1997	4	5.64371	0.07976	0.01169	14.78879	0.97598	0.76972
5	1997	5	5.61728	0.07894	0.01157	16.52219	1.05506	0.83258
5	1997	6	5.06802	0.06061	0.00888	16.42708	0.99313	0.78357
5	1997	7	5.06802	0.06061	0.00888	17.92583	0.99550	0.78565
5	1997	8a	8.59512	0.06014	0.00881	26.75425	0.96744	0.76522
5	1997	8b	8.59512	0.06014	0.00881	29.20466	0.95413	0.75543
5	1998	2b	2.67950	0.02143	0.00314	6.61275	0.32018	0.24695
5	1998	3	3.49815	0.08809	0.01291	14.01428	0.46109	0.36088
5	1998	4	3.51665	0.09732	0.01426	14.85261	0.47713	0.37386
5	1998	5	3.48826	0.08682	0.01272	15.46672	0.44898	0.35134
5	1998	6	3.44958	0.06506	0.00954	15.13781	0.46578	0.36477
5	1998	7	3.44958	0.06506	0.00954	15.91638	0.46462	0.36390
5	1998	8a	3.89401	0.14819	0.02172	24.27117	0.61115	0.48194
5	1998	8b	3.89401	0.14819	0.02172	27.02573	0.65485	0.51749
5	1999	2b	2.08508	0.02715	0.00398	6.10452	0.31968	0.24655
5	1999	3	3.51282	0.09350	0.01370	9.62176	0.42917	0.33518

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	1999	4	3.67279	0.09555	0.01400	10.33254	0.45158	0.35335
5	1999	5	3.70682	0.09462	0.01387	10.36406	0.45234	0.35395
5	1999	6	3.70904	0.09464	0.01387	10.36476	0.44793	0.35047
5	1999	7	3.37618	0.09147	0.01341	10.83992	0.45883	0.35921
5	1999	8a	3.39639	0.09656	0.01415	18.28180	0.61199	0.48253
5	1999	8b	3.39639	0.09656	0.01415	20.60437	0.66048	0.52198
5	2000	2b	1.85851	0.02267	0.00332	6.26972	0.32509	0.25094
5	2000	3	3.59395	0.07582	0.01111	9.64477	0.43045	0.33630
5	2000	4	3.79518	0.06762	0.00991	10.18420	0.44709	0.34979
5	2000	5	3.84743	0.06549	0.00960	10.24640	0.44854	0.35094
5	2000	6	3.85072	0.06535	0.00958	10.33278	0.44952	0.35178
5	2000	7	3.45368	0.08153	0.01195	11.47197	0.47171	0.36959
5	2000	8a	3.45368	0.08153	0.01195	17.01146	0.58362	0.45968
5	2000	8b	3.45368	0.08153	0.01195	20.45218	0.65715	0.51928
5	2001	2b	0.63102	0.01528	0.00224	5.92246	0.31440	0.24230
5	2001	3	1.47197	0.04866	0.00713	9.40516	0.42172	0.32928
5	2001	4	1.54209	0.04799	0.00703	9.88510	0.43682	0.34157
5	2001	5	1.56781	0.04774	0.00700	9.91656	0.43757	0.34216
5	2001	6	1.56957	0.04772	0.00700	10.57772	0.45144	0.35331
5	2001	7	1.43965	0.04898	0.00718	10.44201	0.44879	0.35118
5	2001	8a	1.43965	0.04898	0.00718	17.81087	0.59941	0.47242
5	2001	8b	1.43965	0.04898	0.00718	20.29479	0.65315	0.51605
5	2002	2b	0.60138	0.01532	0.00225	6.00311	0.31692	0.24433
5	2002	3	1.50243	0.04872	0.00714	9.19177	0.41490	0.32374
5	2002	4	1.59594	0.04420	0.00648	9.88015	0.43634	0.34117
5	2002	5	1.62313	0.04289	0.00629	9.88015	0.43634	0.34117
5	2002	6	1.62488	0.04280	0.00627	10.14975	0.44333	0.34679
5	2002	7	1.44613	0.05144	0.00754	10.68032	0.45287	0.35446
5	2002	8a	1.44613	0.05144	0.00754	15.62822	0.55371	0.43544
5	2002	8b	1.44613	0.05144	0.00754	19.98737	0.64614	0.51036
5	2003	2b	0.52483	0.01469	0.00215	4.02939	0.26796	0.20654
5	2003	3	1.47916	0.04967	0.00728	5.97262	0.36030	0.28115
5	2003	4	1.55891	0.04821	0.00707	6.40407	0.38112	0.29801

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2003	5	1.58304	0.04777	0.00700	6.40407	0.38112	0.29801
5	2003	6	1.58461	0.04774	0.00700	6.85602	0.39264	0.30719
5	2003	7	1.43350	0.05050	0.00740	6.98386	0.40404	0.31637
5	2003	8a	1.43361	0.05050	0.00740	8.83795	0.50996	0.40140
5	2003	8b	1.43361	0.05050	0.00740	10.22249	0.58951	0.46576
5	2004	2b	0.43797	0.00731	0.00106	4.00819	0.26600	0.20505
5	2004	3	1.50093	0.03049	0.00447	6.03969	0.36003	0.28095
5	2004	4	1.61064	0.02895	0.00424	6.49773	0.38158	0.29837
5	2004	5	1.64199	0.02851	0.00418	6.49773	0.38158	0.29837
5	2004	6	1.64400	0.02848	0.00418	6.93659	0.39615	0.30999
5	2004	7	1.43338	0.03144	0.00461	7.05484	0.40590	0.31784
5	2004	8a	1.43338	0.03144	0.00461	8.82943	0.50771	0.39961
5	2004	8b	1.43338	0.03144	0.00461	10.22811	0.59014	0.46627
5	2005	2b	0.35447	0.00614	0.00088	3.89979	0.25967	0.20006
5	2005	3	1.48928	0.02984	0.00438	5.88889	0.35305	0.27534
5	2005	4	1.55109	0.02890	0.00424	6.46227	0.38034	0.29739
5	2005	5	1.57816	0.02849	0.00418	6.46227	0.38034	0.29739
5	2005	6	1.58013	0.02846	0.00417	6.82563	0.39413	0.30838
5	2005	7	1.46555	0.03021	0.00443	7.06740	0.40924	0.32054
5	2005	8a	1.46572	0.03021	0.00443	9.04675	0.52008	0.40962
5	2005	8b	1.46572	0.03021	0.00443	10.28442	0.59292	0.46853
5	2006	2b	0.39225	0.00700	0.00101	3.95231	0.26375	0.20321
5	2006	3	1.48564	0.03153	0.00462	5.82306	0.35133	0.27393
5	2006	4	1.56573	0.03015	0.00442	6.35929	0.37670	0.29448
5	2006	5	1.59585	0.02963	0.00434	6.35929	0.37670	0.29448
5	2006	6	1.59794	0.02959	0.00434	6.64408	0.38836	0.30378
5	2006	7	1.44978	0.03215	0.00471	6.90648	0.40367	0.31608
5	2006	8a	1.44999	0.03215	0.00471	8.92998	0.51518	0.40567
5	2006	8b	1.44999	0.03215	0.00471	10.26354	0.59236	0.46807
5	2007	2b	0.33590	0.00617	0.00089	2.26757	0.01146	0.00134
5	2007	3	1.49302	0.03137	0.00460	3.66506	0.01612	0.00188
5	2007	4	1.56287	0.03001	0.00440	3.94965	0.01709	0.00200
5	2007	5	1.59096	0.02944	0.00432	3.94965	0.01709	0.00200

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2007	6	1.59299	0.02940	0.00431	4.10482	0.01754	0.00205
5	2007	7	1.46434	0.03193	0.00468	4.48664	0.01876	0.00219
5	2007	8a	1.46556	0.03194	0.00468	6.35487	0.02480	0.00290
5	2007	8b	1.46556	0.03194	0.00468	7.26946	0.02787	0.00326
5	2008	2b	0.26346	0.00694	0.00102	2.20994	0.01127	0.00132
5	2008	3	1.00715	0.03092	0.00453	3.29359	0.01487	0.00174
5	2008	4	0.97046	0.03036	0.00445	3.52483	0.01564	0.00183
5	2008	5	0.95090	0.03006	0.00441	3.52483	0.01564	0.00183
5	2008	6	0.94937	0.03004	0.00440	3.64984	0.01601	0.00187
5	2008	7	1.01891	0.03110	0.00456	3.77077	0.01640	0.00192
5	2008	8a	1.01878	0.03110	0.00456	5.18108	0.02090	0.00244
5	2008	8b	1.01878	0.03110	0.00456	6.92167	0.02665	0.00311
5	2009	2b	0.15743	0.00555	0.00085	2.19490	0.01105	0.00131
5	2009	3	0.61867	0.02341	0.00343	3.81932	0.01667	0.00195
5	2009	4	0.61715	0.02328	0.00341	4.06037	0.01752	0.00205
5	2009	5	0.61627	0.02321	0.00340	4.06037	0.01752	0.00205
5	2009	6	0.61620	0.02321	0.00340	4.13542	0.01774	0.00207
5	2009	7	0.61913	0.02344	0.00344	4.56330	0.01908	0.00223
5	2009	8a	0.61913	0.02344	0.00344	6.37331	0.02485	0.00290
5	2009	8b	0.61913	0.02344	0.00344	7.23332	0.02771	0.00324
5	2010	2b	0.06266	0.00311	0.00055	0.99936	0.00765	0.00093
5	2010	3	0.10613	0.01198	0.00176	2.21849	0.01759	0.00206
5	2010	4	0.10615	0.01198	0.00176	2.42612	0.01926	0.00225
5	2010	5	0.10617	0.01199	0.00176	2.42612	0.01926	0.00225
5	2010	6	0.10617	0.01199	0.00176	2.51442	0.02010	0.00235
5	2010	7	0.10613	0.01198	0.00176	2.85525	0.01832	0.00214
5	2010	8a	0.10613	0.01198	0.00176	4.47246	0.01218	0.00142
5	2010	8b	0.10613	0.01198	0.00176	5.31870	0.00822	0.00096
5	2011	2b	0.06550	0.00361	0.00068	1.08459	0.00751	0.00091
5	2011	3	0.11373	0.01178	0.00173	1.88468	0.01506	0.00176
5	2011	4	0.12723	0.01142	0.00167	2.02110	0.01634	0.00191
5	2011	5	0.13396	0.01124	0.00165	2.02110	0.01634	0.00191
5	2011	6	0.13447	0.01123	0.00165	2.10018	0.01683	0.00197

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2011	7	0.10913	0.01191	0.00175	2.27534	0.01594	0.00186
5	2011	8a	0.10913	0.01191	0.00175	3.54333	0.01205	0.00141
5	2011	8b	0.10913	0.01191	0.00175	4.57019	0.00824	0.00096
5	2012	2b	0.06763	0.00392	0.00074	1.03418	0.00771	0.00095
5	2012	3	0.11538	0.01165	0.00171	1.89768	0.01582	0.00185
5	2012	4	0.12073	0.01151	0.00169	2.01610	0.01693	0.00198
5	2012	5	0.12380	0.01144	0.00168	2.01610	0.01693	0.00198
5	2012	6	0.12404	0.01143	0.00168	2.06546	0.01703	0.00199
5	2012	7	0.11376	0.01169	0.00171	2.32074	0.01601	0.00187
5	2012	8a	0.11376	0.01169	0.00171	3.67267	0.01147	0.00134
5	2012	8b	0.11376	0.01169	0.00171	4.48689	0.00813	0.00095
5	2013	2b	0.06398	0.00328	0.00074	1.20970	0.00765	0.00096
5	2013	3	0.12165	0.01069	0.00157	1.99369	0.01630	0.00191
5	2013	4	0.13114	0.01046	0.00153	2.10521	0.01754	0.00205
5	2013	5	0.13578	0.01034	0.00152	2.10521	0.01754	0.00205
5	2013	6	0.13615	0.01034	0.00151	2.15117	0.01771	0.00207
5	2013	7	0.11851	0.01077	0.00158	2.35116	0.01620	0.00189
5	2013	8a	0.11886	0.01076	0.00158	3.23865	0.01053	0.00123
5	2013	8b	0.11886	0.01076	0.00158	3.67778	0.00730	0.00085
5	2014	2b	0.05618	0.00304	0.00079	0.60393	0.00222	0.00042
5	2014	3	0.12210	0.01034	0.00152	1.45873	0.00449	0.00054
5	2014	4	0.12571	0.01028	0.00151	1.55782	0.00475	0.00056
5	2014	5	0.12780	0.01024	0.00150	1.55782	0.00475	0.00056
5	2014	6	0.12797	0.01024	0.00150	1.59404	0.00482	0.00056
5	2014	7	0.12102	0.01036	0.00152	1.76924	0.00478	0.00056
5	2014	8a	0.12102	0.01036	0.00152	2.70200	0.00472	0.00055
5	2014	8b	0.12102	0.01036	0.00152	3.29169	0.00449	0.00052
5	2015	2b	0.05579	0.00306	0.00091	0.48955	0.00216	0.00046
5	2015	3	0.12199	0.01035	0.00152	1.34158	0.00442	0.00054
5	2015	4	0.12529	0.01029	0.00151	1.46347	0.00475	0.00056
5	2015	5	0.12723	0.01025	0.00150	1.46347	0.00475	0.00056
5	2015	6	0.12738	0.01025	0.00150	1.50108	0.00482	0.00056
5	2015	7	0.12101	0.01036	0.00152	1.69346	0.00478	0.00056

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2015	8a	0.12101	0.01036	0.00152	2.69313	0.00473	0.00055
5	2015	8b	0.12101	0.01036	0.00152	3.31012	0.00449	0.00053
5	2016	2b	0.05071	0.00283	0.00088	0.46275	0.00205	0.00045
5	2016	3	0.12188	0.01035	0.00152	1.28146	0.00437	0.00054
5	2016	4	0.12487	0.01029	0.00151	1.41568	0.00475	0.00056
5	2016	5	0.12663	0.01026	0.00150	1.41568	0.00475	0.00056
5	2016	6	0.12677	0.01026	0.00150	1.44741	0.00481	0.00056
5	2016	7	0.12100	0.01036	0.00152	1.59940	0.00478	0.00056
5	2016	8a	0.12100	0.01036	0.00152	2.51624	0.00475	0.00056
5	2016	8b	0.12100	0.01036	0.00152	3.19439	0.00452	0.00053
5	2017	2b	0.04274	0.00273	0.00094	0.44386	0.00199	0.00047
5	2017	3	0.12175	0.01035	0.00152	1.22305	0.00434	0.00054
5	2017	4	0.12434	0.01030	0.00151	1.35823	0.00475	0.00056
5	2017	5	0.12588	0.01027	0.00150	1.35823	0.00475	0.00056
5	2017	6	0.12600	0.01027	0.00150	1.38348	0.00480	0.00056
5	2017	7	0.12099	0.01036	0.00152	1.50283	0.00477	0.00056
5	2017	8a	0.12099	0.01036	0.00152	2.26747	0.00477	0.00056
5	2017	8b	0.12099	0.01036	0.00152	2.87723	0.00454	0.00053
5	2018	2b	0.03412	0.00272	0.00094	0.31893	0.00193	0.00047
5	2018	3	0.09022	0.01027	0.00150	1.12448	0.00419	0.00053
5	2018	4	0.09888	0.01011	0.00148	1.26261	0.00457	0.00053
5	2018	5	0.10340	0.01002	0.00147	1.26261	0.00457	0.00053
5	2018	6	0.10375	0.01001	0.00147	1.32613	0.00471	0.00055
5	2018	7	0.08738	0.01033	0.00151	1.43087	0.00465	0.00054
5	2018	8a	0.08738	0.01033	0.00151	2.20941	0.00467	0.00055
5	2018	8b	0.08738	0.01033	0.00151	2.80544	0.00448	0.00052
5	2019	2b	0.03074	0.00267	0.00093	0.27855	0.00186	0.00046
5	2019	3	0.08598	0.01028	0.00151	1.08881	0.00414	0.00052
5	2019	4	0.09452	0.01012	0.00148	1.24047	0.00457	0.00053
5	2019	5	0.09904	0.01004	0.00147	1.24047	0.00457	0.00053
5	2019	6	0.09938	0.01003	0.00147	1.30199	0.00470	0.00055
5	2019	7	0.08321	0.01033	0.00151	1.41042	0.00465	0.00054
5	2019	8a	0.08321	0.01033	0.00151	2.20226	0.00467	0.00055

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2019	8b	0.08321	0.01033	0.00151	2.80408	0.00448	0.00052
5	2020	2b	0.02233	0.00155	0.00054	0.17820	0.00109	0.00027
5	2020	3	0.08177	0.00622	0.00091	0.75184	0.00268	0.00034
5	2020	4	0.09026	0.00615	0.00090	0.87123	0.00301	0.00035
5	2020	5	0.09479	0.00611	0.00090	0.87123	0.00301	0.00035
5	2020	6	0.09515	0.00611	0.00090	0.91404	0.00310	0.00036
5	2020	7	0.07904	0.00625	0.00092	0.99006	0.00308	0.00036
5	2020	8a	0.07904	0.00625	0.00092	1.56503	0.00317	0.00037
5	2020	8b	0.07904	0.00625	0.00092	2.02350	0.00311	0.00036
5	2021	2b	0.01911	0.00136	0.00044	0.15914	0.00102	0.00023
5	2021	3	0.07683	0.00619	0.00091	0.73102	0.00263	0.00033
5	2021	4	0.08488	0.00610	0.00090	0.85688	0.00299	0.00035
5	2021	5	0.08918	0.00606	0.00089	0.85688	0.00299	0.00035
5	2021	6	0.08951	0.00606	0.00089	0.89801	0.00307	0.00036
5	2021	7	0.07425	0.00621	0.00091	0.96655	0.00304	0.00036
5	2021	8a	0.07425	0.00621	0.00091	1.51005	0.00309	0.00036
5	2021	8b	0.07425	0.00621	0.00091	1.96101	0.00300	0.00035
5	2022	2b	0.01626	0.00137	0.00045	0.14304	0.00102	0.00023
5	2022	3	0.07276	0.00619	0.00091	0.71924	0.00263	0.00033
5	2022	4	0.08107	0.00611	0.00090	0.84568	0.00299	0.00035
5	2022	5	0.08553	0.00606	0.00089	0.84568	0.00299	0.00035
5	2022	6	0.08588	0.00606	0.00089	0.88711	0.00306	0.00036
5	2022	7	0.07009	0.00621	0.00091	0.95888	0.00304	0.00036
5	2022	8a	0.07009	0.00621	0.00091	1.51349	0.00309	0.00036
5	2022	8b	0.07009	0.00621	0.00091	1.96289	0.00300	0.00035
5	2023	2b	0.01407	0.00135	0.00045	0.14031	0.00101	0.00023
5	2023	3	0.07272	0.00619	0.00091	0.71568	0.00262	0.00033
5	2023	4	0.08092	0.00611	0.00090	0.84568	0.00299	0.00035
5	2023	5	0.08533	0.00606	0.00089	0.84568	0.00299	0.00035
5	2023	6	0.08568	0.00606	0.00089	0.88628	0.00306	0.00036
5	2023	7	0.07009	0.00621	0.00091	0.95567	0.00304	0.00036
5	2023	8a	0.07009	0.00621	0.00091	1.50391	0.00309	0.00036
5	2023	8b	0.07009	0.00621	0.00091	1.96024	0.00300	0.00035

Table A-5. SmartWay Category – Heavy-Bulk

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
5	2024	2b	0.01407	0.00135	0.00045	0.14031	0.00101	0.00023
5	2024	3	0.07272	0.00619	0.00091	0.71568	0.00262	0.00033
5	2024	4	0.08092	0.00611	0.00090	0.84568	0.00299	0.00035
5	2024	5	0.08533	0.00606	0.00089	0.84568	0.00299	0.00035
5	2024	6	0.08568	0.00606	0.00089	0.88628	0.00306	0.00036
5	2024	7	0.07009	0.00621	0.00091	0.95567	0.00304	0.00036
5	2024	8a	0.07009	0.00621	0.00091	1.50391	0.00309	0.00036
5	2024	8b	0.07009	0.00621	0.00091	1.96024	0.00300	0.00035

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	Pre-1992	2b	5.10186	0.03965	0.00581	8.34979	0.28921	0.22311
6	Pre-1992	3	5.68749	0.11116	0.01629	11.57378	0.42871	0.33570
6	Pre-1992	4	5.78013	0.11698	0.01715	15.51701	0.60989	0.48203
6	Pre-1992	5	5.69810	0.11187	0.01640	16.09603	0.59312	0.46862
6	Pre-1992	6	5.25982	0.08393	0.01230	16.40561	0.60697	0.47966
6	Pre-1992	7	5.25982	0.08393	0.01230	17.05045	0.63798	0.50439
6	Pre-1992	8a	5.26810	0.08390	0.01230	25.28351	0.87933	0.69681
6	Pre-1992	8b	5.26810	0.08390	0.01230	30.62500	1.03487	0.82093
6	1992	2b	5.10186	0.03965	0.00581	8.34979	0.28921	0.22311
6	1992	3	5.68749	0.11116	0.01629	11.57378	0.42871	0.33570
6	1992	4	5.78013	0.11698	0.01715	15.51701	0.60989	0.48203
6	1992	5	5.69810	0.11187	0.01640	16.09603	0.59312	0.46862
6	1992	6	5.25982	0.08393	0.01230	16.40561	0.60697	0.47966
6	1992	7	5.25982	0.08393	0.01230	17.05045	0.63798	0.50439
6	1992	8a	5.26810	0.08390	0.01230	25.28351	0.87933	0.69681
6	1992	8b	5.26810	0.08390	0.01230	30.62500	1.03487	0.82093
6	1993	2b	5.10186	0.03965	0.00581	8.34979	0.28921	0.22311
6	1993	3	5.68749	0.11116	0.01629	11.57378	0.42871	0.33570
6	1993	4	5.78013	0.11698	0.01715	15.51701	0.60989	0.48203
6	1993	5	5.69810	0.11187	0.01640	16.09603	0.59312	0.46862
6	1993	6	5.25982	0.08393	0.01230	16.40561	0.60697	0.47966
6	1993	7	5.25982	0.08393	0.01230	17.05045	0.63798	0.50439
6	1993	8a	5.26810	0.08390	0.01230	25.28351	0.87933	0.69681
6	1993	8b	5.26810	0.08390	0.01230	30.62500	1.03487	0.82093
6	1994	2b	4.41474	0.03426	0.00502	7.41104	0.58337	0.45397
6	1994	3	5.84074	0.06169	0.00904	9.74688	0.70376	0.55077
6	1994	4	5.88461	0.06198	0.00908	14.25553	0.88176	0.69561
6	1994	5	5.88192	0.06194	0.00908	17.62786	0.98365	0.77659
6	1994	6	5.22407	0.05785	0.00848	17.88914	0.96928	0.76526
6	1994	7	5.22407	0.05785	0.00848	20.95000	0.96576	0.76289
6	1994	8a	7.90254	0.08111	0.01189	29.24668	1.00504	0.79533
6	1994	8b	7.90254	0.08111	0.01189	31.10812	1.01737	0.80554
6	1995	2b	4.52383	0.05217	0.00765	7.62378	0.57582	0.44866

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	1995	3	5.74722	0.14788	0.02167	13.58932	0.83022	0.65375
6	1995	4	5.85033	0.15567	0.02282	15.58682	0.89272	0.70410
6	1995	5	5.82502	0.15388	0.02255	18.10609	0.96698	0.76345
6	1995	6	5.22311	0.10769	0.01578	18.50991	0.94092	0.74290
6	1995	7	5.22311	0.10769	0.01578	20.63842	0.95705	0.75593
6	1995	8a	7.72650	0.23070	0.03381	28.95895	1.00496	0.79517
6	1995	8b	7.72650	0.23070	0.03381	30.89865	1.01589	0.80431
6	1996	2b	3.63436	0.03726	0.00546	7.65574	0.55110	0.42974
6	1996	3	5.81812	0.11785	0.01727	15.22298	0.88942	0.70151
6	1996	4	5.87060	0.12147	0.01780	16.84344	0.91544	0.72256
6	1996	5	5.86739	0.12138	0.01779	17.95651	0.97178	0.76716
6	1996	6	5.28065	0.07983	0.01170	19.87755	0.95641	0.75531
6	1996	7	5.28065	0.07983	0.01170	20.88564	0.96482	0.76210
6	1996	8a	7.72651	0.19178	0.02811	28.92223	1.00581	0.79580
6	1996	8b	7.72651	0.19178	0.02811	30.99562	1.01931	0.80705
6	1997	2b	3.31150	0.02615	0.00383	6.10762	0.46588	0.36052
6	1997	3	5.74722	0.08409	0.01232	11.61724	0.72539	0.56946
6	1997	4	5.87590	0.08858	0.01298	14.64491	0.90344	0.71279
6	1997	5	5.84725	0.08765	0.01285	16.51845	0.97637	0.77076
6	1997	6	5.25108	0.06678	0.00979	16.42776	0.92855	0.73288
6	1997	7	5.25108	0.06678	0.00979	18.04769	0.94039	0.74241
6	1997	8a	8.95133	0.06921	0.01014	27.80079	0.99401	0.78628
6	1997	8b	8.95133	0.06921	0.01014	30.60972	1.01158	0.80083
6	1998	2b	2.95333	0.02368	0.00347	6.69919	0.32462	0.25028
6	1998	3	3.80692	0.09529	0.01397	14.04402	0.46121	0.36095
6	1998	4	3.83607	0.10551	0.01546	14.91421	0.47760	0.37425
6	1998	5	3.79583	0.09358	0.01372	15.58225	0.44903	0.35141
6	1998	6	3.73180	0.06964	0.01021	15.22700	0.46621	0.36513
6	1998	7	3.73180	0.06964	0.01021	16.07209	0.46595	0.36497
6	1998	8a	4.25445	0.17144	0.02513	25.25688	0.63216	0.49846
6	1998	8b	4.25445	0.17144	0.02513	28.41681	0.68477	0.54105
6	1999	2b	2.28864	0.02992	0.00439	6.18841	0.32408	0.24986
6	1999	3	3.80236	0.09699	0.01422	9.45371	0.42574	0.33249

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	1999	4	3.95460	0.09935	0.01456	10.13679	0.44756	0.35026
6	1999	5	3.98598	0.09790	0.01435	10.17348	0.44852	0.35102
6	1999	6	3.98810	0.09792	0.01435	10.23156	0.44589	0.34892
6	1999	7	3.67207	0.09458	0.01386	10.73360	0.45791	0.35854
6	1999	8a	3.69523	0.10182	0.01492	18.76287	0.63349	0.49944
6	1999	8b	3.69523	0.10182	0.01492	21.33101	0.69101	0.54603
6	2000	2b	2.04170	0.02588	0.00379	6.34031	0.32906	0.25390
6	2000	3	3.87154	0.08322	0.01220	9.49198	0.42755	0.33404
6	2000	4	4.06064	0.07421	0.01088	10.02277	0.44417	0.34756
6	2000	5	4.10976	0.07188	0.01053	10.09525	0.44603	0.34902
6	2000	6	4.11284	0.07173	0.01051	10.22619	0.44883	0.35127
6	2000	7	3.73973	0.08949	0.01312	11.41188	0.47264	0.37036
6	2000	8a	3.73973	0.08949	0.01312	17.38737	0.60073	0.47314
6	2000	8b	3.73973	0.08949	0.01312	21.15680	0.68684	0.54266
6	2001	2b	0.69175	0.01850	0.00271	6.02213	0.31932	0.24600
6	2001	3	1.59482	0.05989	0.00878	9.23412	0.41755	0.32604
6	2001	4	1.66035	0.05881	0.00862	9.68740	0.43185	0.33775
6	2001	5	1.68439	0.05842	0.00856	9.72403	0.43280	0.33850
6	2001	6	1.68604	0.05839	0.00856	10.44678	0.44930	0.35170
6	2001	7	1.56462	0.06038	0.00885	10.31141	0.44656	0.34950
6	2001	8a	1.56462	0.06038	0.00885	18.24631	0.61869	0.48760
6	2001	8b	1.56462	0.06038	0.00885	20.98668	0.68221	0.53894
6	2002	2b	0.65952	0.01650	0.00242	6.09439	0.32154	0.24780
6	2002	3	1.62276	0.05075	0.00744	9.02263	0.41066	0.32043
6	2002	4	1.71009	0.04586	0.00672	9.67312	0.43093	0.33702
6	2002	5	1.73549	0.04444	0.00651	9.67312	0.43093	0.33702
6	2002	6	1.73712	0.04435	0.00650	10.00299	0.44065	0.34475
6	2002	7	1.57018	0.05369	0.00787	10.54233	0.45034	0.35255
6	2002	8a	1.57018	0.05369	0.00787	15.87307	0.56566	0.44486
6	2002	8b	1.57018	0.05369	0.00787	20.63936	0.67364	0.53203
6	2003	2b	0.57527	0.01671	0.00245	4.28126	0.27181	0.20943
6	2003	3	1.60239	0.05280	0.00774	6.01229	0.35637	0.27808
6	2003	4	1.67688	0.05124	0.00751	6.40691	0.37621	0.29424

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2003	5	1.69942	0.05076	0.00744	6.40691	0.37621	0.29424
6	2003	6	1.70089	0.05073	0.00744	6.84142	0.39030	0.30541
6	2003	7	1.55975	0.05369	0.00787	6.98239	0.40218	0.31497
6	2003	8a	1.55986	0.05369	0.00787	8.93691	0.52283	0.41153
6	2003	8b	1.55986	0.05369	0.00787	10.37132	0.61559	0.48631
6	2004	2b	0.47884	0.00791	0.00114	4.25710	0.26986	0.20795
6	2004	3	1.62205	0.03154	0.00462	6.07169	0.35659	0.27826
6	2004	4	1.72395	0.02994	0.00439	6.49285	0.37732	0.29511
6	2004	5	1.75307	0.02949	0.00432	6.49285	0.37732	0.29511
6	2004	6	1.75494	0.02946	0.00432	6.91492	0.39442	0.30868
6	2004	7	1.55931	0.03253	0.00477	7.04623	0.40457	0.31686
6	2004	8a	1.55931	0.03253	0.00477	8.91864	0.52014	0.40940
6	2004	8b	1.55931	0.03253	0.00477	10.37587	0.61629	0.48687
6	2005	2b	0.38842	0.00673	0.00097	4.15032	0.26366	0.20306
6	2005	3	1.60829	0.03085	0.00452	5.93117	0.34966	0.27268
6	2005	4	1.66628	0.02987	0.00438	6.45979	0.37589	0.29396
6	2005	5	1.69166	0.02944	0.00432	6.45979	0.37589	0.29396
6	2005	6	1.69351	0.02941	0.00431	6.80981	0.39180	0.30661
6	2005	7	1.58602	0.03123	0.00458	7.06620	0.40795	0.31959
6	2005	8a	1.58619	0.03123	0.00458	9.14337	0.53415	0.42071
6	2005	8b	1.58619	0.03123	0.00458	10.43581	0.61970	0.48963
6	2006	2b	0.43002	0.00766	0.00110	4.20783	0.26779	0.20625
6	2006	3	1.60711	0.03263	0.00478	5.87480	0.34745	0.27090
6	2006	4	1.68172	0.03119	0.00457	6.36531	0.37146	0.29045
6	2006	5	1.70976	0.03065	0.00449	6.36531	0.37146	0.29045
6	2006	6	1.71171	0.03061	0.00449	6.63956	0.38485	0.30110
6	2006	7	1.57371	0.03328	0.00488	6.91460	0.40128	0.31429
6	2006	8a	1.57392	0.03328	0.00488	9.02828	0.52834	0.41605
6	2006	8b	1.57392	0.03328	0.00488	10.41470	0.61896	0.48902
6	2007	2b	0.36842	0.00678	0.00097	2.32194	0.01162	0.00136
6	2007	3	1.61341	0.03247	0.00476	3.60475	0.01601	0.00187
6	2007	4	1.67862	0.03105	0.00455	3.87450	0.01697	0.00198
6	2007	5	1.70476	0.03045	0.00446	3.87450	0.01697	0.00198

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2007	6	1.70665	0.03041	0.00446	4.03630	0.01748	0.00204
6	2007	7	1.58664	0.03305	0.00484	4.42773	0.01879	0.00220
6	2007	8a	1.58791	0.03306	0.00485	6.38746	0.02561	0.00299
6	2007	8b	1.58791	0.03306	0.00485	7.34718	0.02916	0.00341
6	2008	2b	0.28832	0.00758	0.00111	2.26475	0.01143	0.00134
6	2008	3	1.08906	0.03198	0.00469	3.22483	0.01462	0.00171
6	2008	4	1.04794	0.03140	0.00460	3.43470	0.01533	0.00179
6	2008	5	1.02601	0.03109	0.00456	3.43470	0.01533	0.00179
6	2008	6	1.02430	0.03107	0.00455	3.56504	0.01576	0.00184
6	2008	7	1.10225	0.03216	0.00472	3.68832	0.01617	0.00189
6	2008	8a	1.10210	0.03216	0.00472	5.15613	0.02116	0.00247
6	2008	8b	1.10210	0.03216	0.00472	6.97827	0.02774	0.00324
6	2009	2b	0.17137	0.00605	0.00093	2.23595	0.01119	0.00132
6	2009	3	0.65122	0.02421	0.00355	3.75227	0.01658	0.00194
6	2009	4	0.64960	0.02408	0.00353	3.98501	0.01742	0.00204
6	2009	5	0.64866	0.02401	0.00352	3.98501	0.01742	0.00204
6	2009	6	0.64859	0.02401	0.00352	4.06362	0.01768	0.00207
6	2009	7	0.65171	0.02425	0.00355	4.50351	0.01913	0.00223
6	2009	8a	0.65172	0.02425	0.00355	6.40491	0.02566	0.00300
6	2009	8b	0.65172	0.02425	0.00355	7.31046	0.02899	0.00339
6	2010	2b	0.06827	0.00336	0.00060	1.00287	0.00780	0.00095
6	2010	3	0.11009	0.01208	0.00177	2.07403	0.01574	0.00185
6	2010	4	0.11011	0.01209	0.00177	2.26349	0.01710	0.00200
6	2010	5	0.11013	0.01209	0.00177	2.26349	0.01710	0.00200
6	2010	6	0.11013	0.01209	0.00177	2.34647	0.01777	0.00208
6	2010	7	0.11009	0.01208	0.00177	2.67521	0.01620	0.00189
6	2010	8a	0.11009	0.01208	0.00177	4.21465	0.01086	0.00127
6	2010	8b	0.11009	0.01208	0.00177	5.00115	0.00752	0.00088
6	2011	2b	0.07095	0.00387	0.00073	1.10382	0.00775	0.00094
6	2011	3	0.11787	0.01186	0.00174	1.77323	0.01382	0.00162
6	2011	4	0.13168	0.01146	0.00168	1.89046	0.01486	0.00174
6	2011	5	0.13858	0.01126	0.00165	1.89046	0.01486	0.00174
6	2011	6	0.13910	0.01125	0.00165	1.96162	0.01523	0.00178

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2011	7	0.11315	0.01200	0.00176	2.12818	0.01444	0.00169
6	2011	8a	0.11315	0.01200	0.00176	3.30790	0.01090	0.00127
6	2011	8b	0.11315	0.01200	0.00176	4.23501	0.00756	0.00088
6	2012	2b	0.07292	0.00418	0.00080	1.04125	0.00787	0.00097
6	2012	3	0.11951	0.01172	0.00172	1.77685	0.01441	0.00169
6	2012	4	0.12499	0.01157	0.00170	1.88084	0.01532	0.00179
6	2012	5	0.12814	0.01149	0.00168	1.88084	0.01532	0.00179
6	2012	6	0.12839	0.01148	0.00168	1.92602	0.01538	0.00180
6	2012	7	0.11785	0.01176	0.00172	2.16679	0.01445	0.00169
6	2012	8a	0.11785	0.01176	0.00172	3.41756	0.01036	0.00121
6	2012	8b	0.11785	0.01176	0.00172	4.15038	0.00746	0.00087
6	2013	2b	0.06942	0.00354	0.00080	1.23477	0.00777	0.00098
6	2013	3	0.12590	0.01074	0.00157	1.88027	0.01463	0.00172
6	2013	4	0.13564	0.01049	0.00154	1.97437	0.01562	0.00183
6	2013	5	0.14040	0.01036	0.00152	1.97437	0.01562	0.00183
6	2013	6	0.14079	0.01035	0.00152	2.01525	0.01573	0.00184
6	2013	7	0.12267	0.01082	0.00159	2.20110	0.01438	0.00168
6	2013	8a	0.12304	0.01082	0.00158	3.00461	0.00941	0.00110
6	2013	8b	0.12304	0.01082	0.00158	3.38928	0.00667	0.00078
6	2014	2b	0.06072	0.00324	0.00086	0.58343	0.00232	0.00045
6	2014	3	0.12627	0.01039	0.00152	1.30706	0.00429	0.00052
6	2014	4	0.12999	0.01031	0.00151	1.39441	0.00453	0.00053
6	2014	5	0.13214	0.01027	0.00150	1.39441	0.00453	0.00053
6	2014	6	0.13232	0.01027	0.00150	1.42653	0.00459	0.00054
6	2014	7	0.12516	0.01041	0.00152	1.59090	0.00455	0.00053
6	2014	8a	0.12516	0.01041	0.00152	2.44450	0.00452	0.00053
6	2014	8b	0.12516	0.01041	0.00152	2.96839	0.00430	0.00050
6	2015	2b	0.06034	0.00327	0.00099	0.46923	0.00227	0.00050
6	2015	3	0.12616	0.01039	0.00152	1.18825	0.00424	0.00053
6	2015	4	0.12956	0.01032	0.00151	1.29561	0.00453	0.00053
6	2015	5	0.13155	0.01028	0.00151	1.29561	0.00453	0.00053
6	2015	6	0.13171	0.01028	0.00151	1.32925	0.00459	0.00054
6	2015	7	0.12515	0.01041	0.00152	1.51060	0.00455	0.00053

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2015	8a	0.12515	0.01041	0.00152	2.43134	0.00452	0.00053
6	2015	8b	0.12515	0.01041	0.00152	2.98438	0.00430	0.00050
6	2016	2b	0.05482	0.00303	0.00096	0.44629	0.00216	0.00048
6	2016	3	0.12605	0.01039	0.00152	1.13431	0.00418	0.00052
6	2016	4	0.12912	0.01033	0.00151	1.25212	0.00453	0.00053
6	2016	5	0.13093	0.01029	0.00151	1.25212	0.00453	0.00053
6	2016	6	0.13108	0.01029	0.00151	1.28041	0.00458	0.00054
6	2016	7	0.12514	0.01041	0.00152	1.42369	0.00455	0.00053
6	2016	8a	0.12514	0.01041	0.00152	2.26918	0.00455	0.00053
6	2016	8b	0.12514	0.01041	0.00152	2.87784	0.00433	0.00051
6	2017	2b	0.04597	0.00291	0.00103	0.42910	0.00211	0.00051
6	2017	3	0.12591	0.01039	0.00152	1.08324	0.00416	0.00053
6	2017	4	0.12858	0.01034	0.00151	1.20180	0.00453	0.00053
6	2017	5	0.13016	0.01031	0.00151	1.20180	0.00453	0.00053
6	2017	6	0.13029	0.01030	0.00151	1.22427	0.00457	0.00053
6	2017	7	0.12513	0.01041	0.00152	1.33634	0.00455	0.00053
6	2017	8a	0.12513	0.01041	0.00152	2.03874	0.00456	0.00053
6	2017	8b	0.12513	0.01041	0.00152	2.58324	0.00435	0.00051
6	2018	2b	0.03664	0.00288	0.00103	0.30240	0.00204	0.00050
6	2018	3	0.09327	0.01031	0.00151	0.99010	0.00401	0.00051
6	2018	4	0.10220	0.01013	0.00148	1.11356	0.00436	0.00051
6	2018	5	0.10686	0.01003	0.00147	1.11356	0.00436	0.00051
6	2018	6	0.10722	0.01002	0.00147	1.16931	0.00448	0.00052
6	2018	7	0.09034	0.01037	0.00152	1.26857	0.00443	0.00052
6	2018	8a	0.09034	0.01037	0.00152	1.98487	0.00446	0.00052
6	2018	8b	0.09034	0.01037	0.00152	2.51673	0.00428	0.00050
6	2019	2b	0.03290	0.00281	0.00101	0.26325	0.00197	0.00050
6	2019	3	0.08886	0.01032	0.00151	0.95695	0.00397	0.00051
6	2019	4	0.09767	0.01014	0.00149	1.09303	0.00436	0.00051
6	2019	5	0.10233	0.01005	0.00147	1.09303	0.00436	0.00051
6	2019	6	0.10269	0.01005	0.00147	1.14713	0.00447	0.00052
6	2019	7	0.08600	0.01037	0.00152	1.24976	0.00443	0.00052
6	2019	8a	0.08600	0.01037	0.00152	1.97821	0.00446	0.00052

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2019	8b	0.08600	0.01037	0.00152	2.51548	0.00429	0.00050
6	2020	2b	0.02368	0.00163	0.00059	0.16844	0.00116	0.00029
6	2020	3	0.08448	0.00625	0.00092	0.65965	0.00256	0.00033
6	2020	4	0.09325	0.00617	0.00090	0.76687	0.00287	0.00034
6	2020	5	0.09793	0.00612	0.00090	0.76687	0.00287	0.00034
6	2020	6	0.09829	0.00612	0.00090	0.80458	0.00295	0.00034
6	2020	7	0.08166	0.00627	0.00092	0.87650	0.00293	0.00034
6	2020	8a	0.08166	0.00627	0.00092	1.40573	0.00304	0.00035
6	2020	8b	0.08166	0.00627	0.00092	1.81531	0.00298	0.00035
6	2021	2b	0.02021	0.00141	0.00048	0.14983	0.00107	0.00025
6	2021	3	0.07938	0.00621	0.00091	0.64025	0.00252	0.00032
6	2021	4	0.08769	0.00612	0.00090	0.75351	0.00285	0.00033
6	2021	5	0.09213	0.00607	0.00089	0.75351	0.00285	0.00033
6	2021	6	0.09248	0.00607	0.00089	0.78970	0.00292	0.00034
6	2021	7	0.07672	0.00624	0.00092	0.85450	0.00289	0.00034
6	2021	8a	0.07672	0.00624	0.00092	1.35436	0.00296	0.00035
6	2021	8b	0.07672	0.00624	0.00092	1.75673	0.00287	0.00034
6	2022	2b	0.01710	0.00142	0.00048	0.13348	0.00107	0.00025
6	2022	3	0.07514	0.00621	0.00091	0.62884	0.00252	0.00032
6	2022	4	0.08373	0.00612	0.00090	0.74295	0.00285	0.00033
6	2022	5	0.08834	0.00607	0.00089	0.74295	0.00285	0.00033
6	2022	6	0.08869	0.00607	0.00089	0.77946	0.00291	0.00034
6	2022	7	0.07238	0.00624	0.00092	0.84727	0.00289	0.00034
6	2022	8a	0.07238	0.00624	0.00092	1.35727	0.00296	0.00035
6	2022	8b	0.07238	0.00624	0.00092	1.75836	0.00287	0.00034
6	2023	2b	0.01467	0.00141	0.00049	0.13097	0.00106	0.00025
6	2023	3	0.07510	0.00621	0.00091	0.62562	0.00251	0.00032
6	2023	4	0.08357	0.00612	0.00090	0.74295	0.00285	0.00033
6	2023	5	0.08813	0.00607	0.00089	0.74295	0.00285	0.00033
6	2023	6	0.08849	0.00607	0.00089	0.77872	0.00291	0.00034
6	2023	7	0.07238	0.00624	0.00092	0.84431	0.00289	0.00034
6	2023	8a	0.07238	0.00624	0.00092	1.34865	0.00295	0.00035
6	2023	8b	0.07238	0.00624	0.00092	1.75601	0.00287	0.00034

Table A-6. SmartWay Category - LTL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NO _x g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NO _x g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
6	2024	2b	0.01467	0.00141	0.00049	0.13097	0.00106	0.00025
6	2024	3	0.07510	0.00621	0.00091	0.62562	0.00251	0.00032
6	2024	4	0.08357	0.00612	0.00090	0.74295	0.00285	0.00033
6	2024	5	0.08813	0.00607	0.00089	0.74295	0.00285	0.00033
6	2024	6	0.08849	0.00607	0.00089	0.77872	0.00291	0.00034
6	2024	7	0.07238	0.00624	0.00092	0.84431	0.00289	0.00034
6	2024	8a	0.07238	0.00624	0.00092	1.34865	0.00295	0.00035
6	2024	8b	0.07238	0.00624	0.00092	1.75601	0.00287	0.00034

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	Pre-1992	2b	5.06159	0.03819	0.00560	8.06217	0.28251	0.21799
7	Pre-1992	3	5.68801	0.10721	0.01571	11.02477	0.41341	0.32381
7	Pre-1992	4	5.78753	0.11280	0.01653	14.62958	0.58369	0.46153
7	Pre-1992	5	5.69947	0.10789	0.01581	15.18898	0.56435	0.44611
7	Pre-1992	6	5.22804	0.08104	0.01188	15.51785	0.57853	0.45741
7	Pre-1992	7	5.22804	0.08104	0.01188	16.21016	0.61084	0.48315
7	Pre-1992	8a	5.23609	0.08100	0.01187	24.79540	0.85097	0.67454
7	Pre-1992	8b	5.23609	0.08100	0.01187	30.32671	1.00070	0.79399
7	1992	2b	5.06159	0.03819	0.00560	8.06217	0.28251	0.21799
7	1992	3	5.68801	0.10721	0.01571	11.02477	0.41341	0.32381
7	1992	4	5.78753	0.11280	0.01653	14.62958	0.58369	0.46153
7	1992	5	5.69947	0.10789	0.01581	15.18898	0.56435	0.44611
7	1992	6	5.22804	0.08104	0.01188	15.51785	0.57853	0.45741
7	1992	7	5.22804	0.08104	0.01188	16.21016	0.61084	0.48315
7	1992	8a	5.23609	0.08100	0.01187	24.79540	0.85097	0.67454
7	1992	8b	5.23609	0.08100	0.01187	30.32671	1.00070	0.79399
7	1993	2b	5.06159	0.03819	0.00560	8.06217	0.28251	0.21799
7	1993	3	5.68801	0.10721	0.01571	11.02477	0.41341	0.32381
7	1993	4	5.78753	0.11280	0.01653	14.62958	0.58369	0.46153
7	1993	5	5.69947	0.10789	0.01581	15.18898	0.56435	0.44611
7	1993	6	5.22804	0.08104	0.01188	15.51785	0.57853	0.45741
7	1993	7	5.22804	0.08104	0.01188	16.21016	0.61084	0.48315
7	1993	8a	5.23609	0.08100	0.01187	24.79540	0.85097	0.67454
7	1993	8b	5.23609	0.08100	0.01187	30.32671	1.00070	0.79399
7	1994	2b	4.40078	0.03807	0.00558	7.16736	0.53984	0.42032
7	1994	3	5.85340	0.07146	0.01047	9.33172	0.65361	0.51190
7	1994	4	5.89882	0.07183	0.01053	13.43235	0.82182	0.64873
7	1994	5	5.89663	0.07180	0.01052	16.68030	0.91579	0.72343
7	1994	6	5.20974	0.06634	0.00972	17.00391	0.90317	0.71347
7	1994	7	5.20974	0.06634	0.00972	20.26778	0.90249	0.71331
7	1994	8a	7.75595	0.09112	0.01336	28.90927	0.94285	0.74644
7	1994	8b	7.75595	0.09112	0.01336	30.82550	0.95449	0.75603
7	1995	2b	4.50641	0.05373	0.00788	7.36739	0.53278	0.41538

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	1995	3	5.75478	0.15458	0.02266	12.85979	0.77187	0.60819
7	1995	4	5.86276	0.16281	0.02386	14.76973	0.83079	0.65567
7	1995	5	5.83669	0.16094	0.02359	17.18574	0.90007	0.71103
7	1995	6	5.20377	0.11203	0.01642	17.69981	0.87691	0.69276
7	1995	7	5.20377	0.11203	0.01642	19.91582	0.89326	0.70595
7	1995	8a	7.59209	0.22978	0.03368	28.59669	0.94217	0.74582
7	1995	8b	7.59209	0.22978	0.03368	30.60441	0.95297	0.75479
7	1996	2b	3.64113	0.03552	0.00521	7.38032	0.51050	0.39838
7	1996	3	5.82821	0.11433	0.01676	14.35304	0.82725	0.65289
7	1996	4	5.88365	0.11784	0.01727	15.98072	0.85239	0.67319
7	1996	5	5.88084	0.11777	0.01726	17.06335	0.90505	0.71489
7	1996	6	5.25639	0.07740	0.01134	19.11541	0.89222	0.70502
7	1996	7	5.25639	0.07740	0.01134	20.15704	0.90061	0.71177
7	1996	8a	7.59209	0.17622	0.02583	28.55908	0.94300	0.74645
7	1996	8b	7.59209	0.17622	0.02583	30.71282	0.95633	0.75747
7	1997	2b	3.36649	0.02750	0.00403	5.94621	0.43096	0.33362
7	1997	3	5.75441	0.09433	0.01383	11.10758	0.67537	0.53052
7	1997	4	5.88995	0.09958	0.01460	13.79331	0.84108	0.66401
7	1997	5	5.85995	0.09850	0.01444	15.64790	0.91010	0.71888
7	1997	6	5.23184	0.07411	0.01086	15.62162	0.86544	0.68348
7	1997	7	5.23184	0.07411	0.01086	17.30455	0.87728	0.69300
7	1997	8a	8.80499	0.06924	0.01015	27.42499	0.93152	0.73719
7	1997	8b	8.80499	0.06924	0.01015	30.31825	0.94859	0.75126
7	1998	2b	3.01625	0.02391	0.00350	6.46685	0.32112	0.24787
7	1998	3	3.84189	0.09869	0.01446	13.39801	0.44297	0.34701
7	1998	4	3.87201	0.10917	0.01600	14.20888	0.45734	0.35872
7	1998	5	3.83067	0.09721	0.01425	14.92319	0.43524	0.34094
7	1998	6	3.76435	0.07247	0.01062	14.54294	0.44860	0.35168
7	1998	7	3.76435	0.07247	0.01062	15.43764	0.44997	0.35278
7	1998	8a	4.29367	0.16697	0.02447	25.12390	0.60175	0.47479
7	1998	8b	4.29367	0.16697	0.02447	28.46336	0.64837	0.51255
7	1999	2b	2.33204	0.02910	0.00427	5.97472	0.32095	0.24775
7	1999	3	3.83590	0.09694	0.01421	9.03965	0.41117	0.32144

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	1999	4	3.98739	0.10039	0.01471	9.67293	0.43016	0.33701
7	1999	5	4.01854	0.09948	0.01458	9.71109	0.43103	0.33770
7	1999	6	4.02064	0.09952	0.01459	9.81546	0.43088	0.33752
7	1999	7	3.70624	0.09366	0.01373	10.32628	0.44145	0.34599
7	1999	8a	3.72968	0.09994	0.01465	18.64729	0.60290	0.47563
7	1999	8b	3.72968	0.09994	0.01465	21.30034	0.65403	0.51707
7	2000	2b	2.08052	0.02623	0.00384	6.11944	0.32557	0.25150
7	2000	3	3.90333	0.08765	0.01285	9.08242	0.41346	0.32337
7	2000	4	4.09144	0.07880	0.01155	9.58192	0.42807	0.33531
7	2000	5	4.14030	0.07649	0.01121	9.65736	0.42973	0.33663
7	2000	6	4.14337	0.07635	0.01119	9.81549	0.43374	0.33980
7	2000	7	3.77223	0.09382	0.01375	11.04181	0.45591	0.35760
7	2000	8a	3.77223	0.09382	0.01375	17.23920	0.57380	0.45225
7	2000	8b	3.77223	0.09382	0.01375	21.12367	0.65064	0.51432
7	2001	2b	0.69973	0.01869	0.00274	5.81700	0.31675	0.24433
7	2001	3	1.60907	0.07017	0.01029	8.83057	0.40438	0.31610
7	2001	4	1.67413	0.06931	0.01016	9.24747	0.41688	0.32640
7	2001	5	1.69799	0.06899	0.01011	9.28554	0.41774	0.32707
7	2001	6	1.69963	0.06897	0.01011	10.04617	0.43421	0.34024
7	2001	7	1.57909	0.07057	0.01035	9.90228	0.43108	0.33773
7	2001	8a	1.57909	0.07057	0.01035	18.13042	0.59025	0.46549
7	2001	8b	1.57909	0.07057	0.01035	20.95131	0.64653	0.51102
7	2002	2b	0.66720	0.01627	0.00239	5.88506	0.31877	0.24597
7	2002	3	1.63667	0.05078	0.00744	8.62949	0.39818	0.31102
7	2002	4	1.72338	0.04618	0.00677	9.22978	0.41589	0.32561
7	2002	5	1.74860	0.04484	0.00657	9.22978	0.41589	0.32561
7	2002	6	1.75023	0.04475	0.00656	9.58352	0.42589	0.33356
7	2002	7	1.58446	0.05355	0.00785	10.14228	0.43502	0.34091
7	2002	8a	1.58446	0.05355	0.00785	15.67585	0.54194	0.42655
7	2002	8b	1.58446	0.05355	0.00785	20.59445	0.63906	0.50498
7	2003	2b	0.58171	0.01649	0.00242	4.17719	0.26944	0.20786
7	2003	3	1.61667	0.05629	0.00825	5.83637	0.34526	0.26970
7	2003	4	1.69063	0.05503	0.00807	6.21270	0.36274	0.28402

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2003	5	1.71301	0.05465	0.00801	6.21270	0.36274	0.28402
7	2003	6	1.71447	0.05462	0.00801	6.62342	0.37677	0.29513
7	2003	7	1.57434	0.05702	0.00836	6.78013	0.38810	0.30425
7	2003	8a	1.57445	0.05701	0.00836	8.76506	0.50015	0.39398
7	2003	8b	1.57445	0.05701	0.00836	10.18972	0.58342	0.46113
7	2004	2b	0.48413	0.00794	0.00115	4.15330	0.26753	0.20642
7	2004	3	1.63612	0.03276	0.00480	5.89045	0.34583	0.27015
7	2004	4	1.73718	0.03139	0.00460	6.29160	0.36424	0.28519
7	2004	5	1.76606	0.03100	0.00454	6.29160	0.36424	0.28519
7	2004	6	1.76792	0.03097	0.00454	6.68955	0.38067	0.29823
7	2004	7	1.57391	0.03360	0.00493	6.83679	0.39052	0.30616
7	2004	8a	1.57391	0.03360	0.00493	8.74411	0.49807	0.39233
7	2004	8b	1.57391	0.03360	0.00493	10.19371	0.58411	0.46168
7	2005	2b	0.39247	0.00673	0.00097	4.04996	0.26153	0.20168
7	2005	3	1.62194	0.03207	0.00470	5.75745	0.33950	0.26504
7	2005	4	1.67954	0.03119	0.00457	6.26174	0.36289	0.28411
7	2005	5	1.70476	0.03080	0.00452	6.26174	0.36289	0.28411
7	2005	6	1.70659	0.03077	0.00451	6.59173	0.37795	0.29608
7	2005	7	1.59982	0.03241	0.00475	6.86513	0.39366	0.30870
7	2005	8a	1.59998	0.03241	0.00475	8.97169	0.51089	0.40267
7	2005	8b	1.59998	0.03241	0.00475	10.25318	0.58709	0.46409
7	2006	2b	0.43435	0.00766	0.00110	4.10624	0.26563	0.20485
7	2006	3	1.62103	0.03386	0.00496	5.70739	0.33744	0.26338
7	2006	4	1.69509	0.03257	0.00477	6.17628	0.35868	0.28077
7	2006	5	1.72294	0.03209	0.00470	6.17628	0.35868	0.28077
7	2006	6	1.72487	0.03205	0.00470	6.43442	0.37126	0.29077
7	2006	7	1.58788	0.03443	0.00505	6.72446	0.38727	0.30363
7	2006	8a	1.58808	0.03443	0.00505	8.86132	0.50553	0.39838
7	2006	8b	1.58808	0.03443	0.00505	10.23302	0.58643	0.46356
7	2007	2b	0.37214	0.00677	0.00097	2.22398	0.01153	0.00135
7	2007	3	1.62707	0.03371	0.00494	3.44545	0.01549	0.00181
7	2007	4	1.69182	0.03240	0.00475	3.70017	0.01633	0.00191
7	2007	5	1.71781	0.03186	0.00467	3.70017	0.01633	0.00191

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2007	6	1.71969	0.03182	0.00467	3.86198	0.01682	0.00197
7	2007	7	1.60049	0.03424	0.00502	4.26142	0.01809	0.00211
7	2007	8a	1.60169	0.03425	0.00502	6.22172	0.02443	0.00285
7	2007	8b	1.60169	0.03425	0.00502	7.16170	0.02761	0.00323
7	2008	2b	0.29167	0.00759	0.00111	2.16797	0.01135	0.00133
7	2008	3	1.09932	0.03315	0.00486	3.06973	0.01422	0.00166
7	2008	4	1.05765	0.03262	0.00478	3.26467	0.01485	0.00174
7	2008	5	1.03543	0.03233	0.00474	3.26467	0.01485	0.00174
7	2008	6	1.03370	0.03231	0.00474	3.39499	0.01525	0.00178
7	2008	7	1.11269	0.03331	0.00488	3.52138	0.01565	0.00183
7	2008	8a	1.11253	0.03331	0.00488	5.00063	0.02037	0.00238
7	2008	8b	1.11253	0.03331	0.00488	6.80161	0.02635	0.00308
7	2009	2b	0.17381	0.00606	0.00093	2.14201	0.01108	0.00131
7	2009	3	0.65212	0.02506	0.00367	3.58656	0.01597	0.00187
7	2009	4	0.65071	0.02497	0.00366	3.80641	0.01673	0.00195
7	2009	5	0.64991	0.02491	0.00365	3.80641	0.01673	0.00195
7	2009	6	0.64984	0.02491	0.00365	3.88531	0.01697	0.00198
7	2009	7	0.65255	0.02509	0.00368	4.33350	0.01837	0.00215
7	2009	8a	0.65255	0.02509	0.00368	6.23709	0.02447	0.00286
7	2009	8b	0.65255	0.02509	0.00368	7.12530	0.02744	0.00321
7	2010	2b	0.06879	0.00333	0.00059	0.93704	0.00764	0.00093
7	2010	3	0.10763	0.01175	0.00172	1.92134	0.01510	0.00177
7	2010	4	0.10765	0.01175	0.00172	2.09407	0.01637	0.00191
7	2010	5	0.10766	0.01175	0.00172	2.09407	0.01637	0.00191
7	2010	6	0.10766	0.01175	0.00172	2.17229	0.01700	0.00199
7	2010	7	0.10763	0.01175	0.00172	2.49431	0.01546	0.00181
7	2010	8a	0.10763	0.01175	0.00172	3.94581	0.01030	0.00120
7	2010	8b	0.10763	0.01175	0.00172	4.65854	0.00718	0.00084
7	2011	2b	0.07130	0.00383	0.00072	1.03669	0.00761	0.00093
7	2011	3	0.11537	0.01152	0.00169	1.64593	0.01331	0.00156
7	2011	4	0.12918	0.01112	0.00163	1.75170	0.01430	0.00167
7	2011	5	0.13608	0.01091	0.00160	1.75170	0.01430	0.00167
7	2011	6	0.13660	0.01090	0.00160	1.81634	0.01464	0.00171

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2011	7	0.11065	0.01166	0.00171	1.97822	0.01387	0.00162
7	2011	8a	0.11065	0.01166	0.00171	3.07762	0.01040	0.00122
7	2011	8b	0.11065	0.01166	0.00171	3.90234	0.00721	0.00084
7	2012	2b	0.07314	0.00413	0.00079	0.97479	0.00771	0.00095
7	2012	3	0.11696	0.01138	0.00167	1.64484	0.01387	0.00163
7	2012	4	0.12244	0.01123	0.00165	1.73877	0.01473	0.00172
7	2012	5	0.12559	0.01114	0.00163	1.73877	0.01473	0.00172
7	2012	6	0.12584	0.01113	0.00163	1.78039	0.01478	0.00173
7	2012	7	0.11529	0.01142	0.00168	2.01202	0.01386	0.00162
7	2012	8a	0.11529	0.01142	0.00168	3.16778	0.00986	0.00115
7	2012	8b	0.11529	0.01142	0.00168	3.81462	0.00712	0.00083
7	2013	2b	0.06984	0.00351	0.00079	1.16535	0.00761	0.00096
7	2013	3	0.12329	0.01042	0.00153	1.74383	0.01403	0.00165
7	2013	4	0.13305	0.01017	0.00149	1.82729	0.01497	0.00175
7	2013	5	0.13782	0.01004	0.00147	1.82729	0.01497	0.00175
7	2013	6	0.13820	0.01003	0.00147	1.86373	0.01507	0.00176
7	2013	7	0.12005	0.01051	0.00154	2.04016	0.01373	0.00161
7	2013	8a	0.12042	0.01050	0.00154	2.76523	0.00893	0.00104
7	2013	8b	0.12042	0.01050	0.00154	3.09588	0.00637	0.00074
7	2014	2b	0.06107	0.00320	0.00085	0.53920	0.00228	0.00044
7	2014	3	0.12363	0.01007	0.00148	1.17537	0.00416	0.00051
7	2014	4	0.12735	0.01000	0.00146	1.25137	0.00439	0.00051
7	2014	5	0.12951	0.00996	0.00146	1.25137	0.00439	0.00051
7	2014	6	0.12969	0.00995	0.00146	1.28022	0.00444	0.00052
7	2014	7	0.12251	0.01010	0.00148	1.43851	0.00441	0.00051
7	2014	8a	0.12251	0.01010	0.00148	2.22630	0.00434	0.00051
7	2014	8b	0.12251	0.01010	0.00148	2.68729	0.00411	0.00048
7	2015	2b	0.06069	0.00324	0.00098	0.43045	0.00224	0.00049
7	2015	3	0.12352	0.01007	0.00148	1.05949	0.00411	0.00051
7	2015	4	0.12693	0.01001	0.00147	1.15239	0.00439	0.00051
7	2015	5	0.12892	0.00997	0.00146	1.15239	0.00439	0.00051
7	2015	6	0.12908	0.00996	0.00146	1.18282	0.00444	0.00052
7	2015	7	0.12250	0.01010	0.00148	1.35803	0.00440	0.00051

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2015	8a	0.12250	0.01010	0.00148	2.21196	0.00435	0.00051
7	2015	8b	0.12250	0.01010	0.00148	2.70199	0.00412	0.00048
7	2016	2b	0.05513	0.00300	0.00095	0.40964	0.00214	0.00048
7	2016	3	0.12341	0.01008	0.00148	1.00982	0.00406	0.00051
7	2016	4	0.12649	0.01001	0.00147	1.11142	0.00439	0.00051
7	2016	5	0.12830	0.00998	0.00146	1.11142	0.00439	0.00051
7	2016	6	0.12845	0.00997	0.00146	1.13693	0.00443	0.00052
7	2016	7	0.12249	0.01009	0.00148	1.27542	0.00441	0.00051
7	2016	8a	0.12249	0.01009	0.00148	2.06203	0.00437	0.00051
7	2016	8b	0.12249	0.01009	0.00148	2.60299	0.00414	0.00048
7	2017	2b	0.04617	0.00288	0.00102	0.39354	0.00208	0.00051
7	2017	3	0.12327	0.01008	0.00148	0.96321	0.00403	0.00051
7	2017	4	0.12594	0.01002	0.00147	1.06526	0.00439	0.00051
7	2017	5	0.12753	0.00999	0.00146	1.06526	0.00439	0.00051
7	2017	6	0.12766	0.00999	0.00146	1.08541	0.00443	0.00052
7	2017	7	0.12248	0.01009	0.00148	1.19324	0.00441	0.00051
7	2017	8a	0.12248	0.01009	0.00148	1.84372	0.00439	0.00051
7	2017	8b	0.12248	0.01009	0.00148	2.32451	0.00416	0.00049
7	2018	2b	0.03676	0.00285	0.00102	0.27591	0.00201	0.00050
7	2018	3	0.09128	0.01000	0.00146	0.87755	0.00389	0.00050
7	2018	4	0.10018	0.00981	0.00144	0.98432	0.00422	0.00049
7	2018	5	0.10482	0.00972	0.00142	0.98432	0.00422	0.00049
7	2018	6	0.10518	0.00971	0.00142	1.03348	0.00433	0.00051
7	2018	7	0.08837	0.01006	0.00147	1.12994	0.00429	0.00050
7	2018	8a	0.08837	0.01006	0.00147	1.79201	0.00429	0.00050
7	2018	8b	0.08837	0.01006	0.00147	2.26206	0.00410	0.00048
7	2019	2b	0.03299	0.00277	0.00100	0.24005	0.00194	0.00049
7	2019	3	0.08697	0.01000	0.00147	0.84752	0.00385	0.00049
7	2019	4	0.09574	0.00983	0.00144	0.96532	0.00422	0.00049
7	2019	5	0.10038	0.00974	0.00143	0.96532	0.00422	0.00049
7	2019	6	0.10074	0.00973	0.00143	1.01315	0.00432	0.00051
7	2019	7	0.08413	0.01006	0.00147	1.11273	0.00428	0.00050
7	2019	8a	0.08413	0.01006	0.00147	1.78600	0.00429	0.00050

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2019	8b	0.08413	0.01006	0.00147	2.26094	0.00410	0.00048
7	2020	2b	0.02369	0.00160	0.00058	0.15356	0.00114	0.00029
7	2020	3	0.08269	0.00606	0.00089	0.58375	0.00249	0.00032
7	2020	4	0.09141	0.00597	0.00088	0.67656	0.00278	0.00032
7	2020	5	0.09606	0.00593	0.00087	0.67656	0.00278	0.00032
7	2020	6	0.09642	0.00593	0.00087	0.70994	0.00285	0.00033
7	2020	7	0.07989	0.00608	0.00089	0.77972	0.00283	0.00033
7	2020	8a	0.07989	0.00608	0.00089	1.26934	0.00292	0.00034
7	2020	8b	0.07989	0.00608	0.00089	1.63185	0.00285	0.00033
7	2021	2b	0.02021	0.00139	0.00048	0.13646	0.00106	0.00025
7	2021	3	0.07769	0.00602	0.00088	0.56608	0.00244	0.00031
7	2021	4	0.08593	0.00593	0.00087	0.66415	0.00276	0.00032
7	2021	5	0.09034	0.00588	0.00086	0.66415	0.00276	0.00032
7	2021	6	0.09068	0.00587	0.00086	0.69613	0.00282	0.00033
7	2021	7	0.07504	0.00605	0.00089	0.75890	0.00280	0.00033
7	2021	8a	0.07504	0.00605	0.00089	1.22039	0.00284	0.00033
7	2021	8b	0.07504	0.00605	0.00089	1.57571	0.00274	0.00032
7	2022	2b	0.01708	0.00140	0.00048	0.12133	0.00106	0.00025
7	2022	3	0.07354	0.00602	0.00088	0.55544	0.00244	0.00031
7	2022	4	0.08207	0.00593	0.00087	0.65428	0.00276	0.00032
7	2022	5	0.08664	0.00588	0.00086	0.65428	0.00276	0.00032
7	2022	6	0.08699	0.00588	0.00086	0.68659	0.00282	0.00033
7	2022	7	0.07081	0.00605	0.00089	0.75222	0.00280	0.00033
7	2022	8a	0.07081	0.00605	0.00089	1.22297	0.00284	0.00033
7	2022	8b	0.07081	0.00605	0.00089	1.57708	0.00274	0.00032
7	2023	2b	0.01463	0.00139	0.00048	0.11897	0.00105	0.00025
7	2023	3	0.07350	0.00602	0.00088	0.55261	0.00243	0.00031
7	2023	4	0.08191	0.00593	0.00087	0.65428	0.00276	0.00032
7	2023	5	0.08643	0.00588	0.00086	0.65428	0.00276	0.00032
7	2023	6	0.08678	0.00588	0.00086	0.68592	0.00282	0.00033
7	2023	7	0.07082	0.00605	0.00089	0.74944	0.00280	0.00033
7	2023	8a	0.07082	0.00605	0.00089	1.21521	0.00284	0.00033
7	2023	8b	0.07082	0.00605	0.00089	1.57506	0.00274	0.00032

Table A-7. SmartWay Category - Mixed

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
7	2024	2b	0.01463	0.00139	0.00048	0.11897	0.00105	0.00025
7	2024	3	0.07350	0.00602	0.00088	0.55261	0.00243	0.00031
7	2024	4	0.08191	0.00593	0.00087	0.65428	0.00276	0.00032
7	2024	5	0.08643	0.00588	0.00086	0.65428	0.00276	0.00032
7	2024	6	0.08678	0.00588	0.00086	0.68592	0.00282	0.00033
7	2024	7	0.07082	0.00605	0.00089	0.74944	0.00280	0.00033
7	2024	8a	0.07082	0.00605	0.00089	1.21521	0.00284	0.00033
7	2024	8b	0.07082	0.00605	0.00089	1.57506	0.00274	0.00032

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	Pre-1992	2b	5.19968	0.03769	0.00552	8.23478	0.28863	0.22254
8	Pre-1992	3	5.77232	0.10412	0.01526	11.24683	0.42025	0.32899
8	Pre-1992	4	5.87268	0.10955	0.01606	14.96797	0.59453	0.46998
8	Pre-1992	5	5.78386	0.10478	0.01536	15.55124	0.57371	0.45339
8	Pre-1992	6	5.30862	0.07870	0.01153	15.87882	0.58841	0.46511
8	Pre-1992	7	5.30862	0.07870	0.01153	16.55562	0.62155	0.49150
8	Pre-1992	8a	5.31693	0.07867	0.01153	25.20106	0.86950	0.68909
8	Pre-1992	8b	5.31693	0.07867	0.01153	30.90309	1.02916	0.81645
8	1992	2b	5.19968	0.03769	0.00552	8.23478	0.28863	0.22254
8	1992	3	5.77232	0.10412	0.01526	11.24683	0.42025	0.32899
8	1992	4	5.87268	0.10955	0.01606	14.96797	0.59453	0.46998
8	1992	5	5.78386	0.10478	0.01536	15.55124	0.57371	0.45339
8	1992	6	5.30862	0.07870	0.01153	15.87882	0.58841	0.46511
8	1992	7	5.30862	0.07870	0.01153	16.55562	0.62155	0.49150
8	1992	8a	5.31693	0.07867	0.01153	25.20106	0.86950	0.68909
8	1992	8b	5.31693	0.07867	0.01153	30.90309	1.02916	0.81645
8	1993	2b	5.19968	0.03769	0.00552	8.23478	0.28863	0.22254
8	1993	3	5.77232	0.10412	0.01526	11.24683	0.42025	0.32899
8	1993	4	5.87268	0.10955	0.01606	14.96797	0.59453	0.46998
8	1993	5	5.78386	0.10478	0.01536	15.55124	0.57371	0.45339
8	1993	6	5.30862	0.07870	0.01153	15.87882	0.58841	0.46511
8	1993	7	5.30862	0.07870	0.01153	16.55562	0.62155	0.49150
8	1993	8a	5.31693	0.07867	0.01153	25.20106	0.86950	0.68909
8	1993	8b	5.31693	0.07867	0.01153	30.90309	1.02916	0.81645
8	1994	2b	4.51052	0.03815	0.00559	7.32583	0.54912	0.42743
8	1994	3	5.93889	0.07171	0.01051	9.50951	0.66220	0.51842
8	1994	4	5.98508	0.07210	0.01057	13.71958	0.82971	0.65480
8	1994	5	5.98264	0.07206	0.01056	17.09862	0.92532	0.73079
8	1994	6	5.28618	0.06642	0.00973	17.40362	0.91392	0.72180
8	1994	7	5.28618	0.06642	0.00973	20.64037	0.91889	0.72610
8	1994	8a	7.94173	0.09220	0.01351	29.44209	0.97951	0.77526
8	1994	8b	7.94173	0.09220	0.01351	31.42632	0.99688	0.78940
8	1995	2b	4.60990	0.05390	0.00790	7.52950	0.54183	0.42230

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	1995	3	5.83883	0.15367	0.02252	13.13896	0.78072	0.61499
8	1995	4	5.94847	0.16192	0.02373	15.09621	0.84137	0.66385
8	1995	5	5.92185	0.16003	0.02346	17.60327	0.91176	0.72009
8	1995	6	5.28009	0.11109	0.01628	18.08552	0.89110	0.70381
8	1995	7	5.28009	0.11109	0.01628	20.31102	0.91068	0.71954
8	1995	8a	7.77402	0.23733	0.03479	29.12467	0.97845	0.77433
8	1995	8b	7.77402	0.23733	0.03479	31.19803	0.99477	0.78769
8	1996	2b	3.71122	0.03704	0.00543	7.52546	0.51839	0.40438
8	1996	3	5.91369	0.11731	0.01719	14.68319	0.83782	0.66106
8	1996	4	5.96980	0.12093	0.01772	16.33432	0.86494	0.68294
8	1996	5	5.96677	0.12084	0.01771	17.46404	0.91631	0.72361
8	1996	6	5.33612	0.07930	0.01162	19.47882	0.90760	0.71700
8	1996	7	5.33612	0.07930	0.01162	20.55558	0.91843	0.72568
8	1996	8a	7.77403	0.19039	0.02791	29.07717	0.97896	0.77470
8	1996	8b	7.77403	0.19039	0.02791	31.30074	0.99820	0.79043
8	1997	2b	3.43312	0.02800	0.00410	6.07405	0.43853	0.33941
8	1997	3	5.83892	0.09456	0.01386	11.29908	0.68270	0.53611
8	1997	4	5.97598	0.09983	0.01463	14.09599	0.84962	0.67058
8	1997	5	5.94560	0.09875	0.01447	16.00341	0.91882	0.72560
8	1997	6	5.31043	0.07425	0.01088	15.94823	0.87629	0.69189
8	1997	7	5.31043	0.07425	0.01088	17.63603	0.89048	0.70326
8	1997	8a	8.98453	0.07154	0.01049	27.89525	0.96498	0.76348
8	1997	8b	8.98453	0.07154	0.01049	30.88804	0.99015	0.78397
8	1998	2b	3.08067	0.02456	0.00360	6.61174	0.32626	0.25155
8	1998	3	3.93252	0.10046	0.01472	13.68871	0.45256	0.35428
8	1998	4	3.96525	0.11130	0.01631	14.53254	0.46781	0.36671
8	1998	5	3.92092	0.09877	0.01448	15.24449	0.44324	0.34698
8	1998	6	3.84841	0.07328	0.01074	14.86647	0.45809	0.35890
8	1998	7	3.84841	0.07328	0.01074	15.76030	0.45905	0.35968
8	1998	8a	4.40075	0.17632	0.02584	25.49777	0.62082	0.48962
8	1998	8b	4.40075	0.17632	0.02584	28.91864	0.67210	0.53112
8	1999	2b	2.38158	0.03032	0.00444	6.11137	0.32595	0.25132
8	1999	3	3.92227	0.09891	0.01450	9.17365	0.41814	0.32665

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	1999	4	4.07354	0.10227	0.01499	9.81682	0.43800	0.34293
8	1999	5	4.10440	0.10106	0.01481	9.85609	0.43896	0.34369
8	1999	6	4.10649	0.10110	0.01482	9.96265	0.43852	0.34328
8	1999	7	3.79273	0.09566	0.01402	10.47701	0.44985	0.35236
8	1999	8a	3.81706	0.10290	0.01508	18.86253	0.62207	0.49054
8	1999	8b	3.81706	0.10290	0.01508	21.57930	0.67814	0.53594
8	2000	2b	2.12526	0.02711	0.00397	6.25494	0.33059	0.25509
8	2000	3	3.98807	0.08889	0.01303	9.22089	0.42046	0.32861
8	2000	4	4.17537	0.07978	0.01169	9.72956	0.43581	0.34115
8	2000	5	4.22401	0.07741	0.01135	9.80715	0.43766	0.34261
8	2000	6	4.22707	0.07727	0.01132	9.97226	0.44188	0.34596
8	2000	7	3.85753	0.09524	0.01396	11.18836	0.46484	0.36438
8	2000	8a	3.85753	0.09524	0.01396	17.42935	0.59042	0.46513
8	2000	8b	3.85753	0.09524	0.01396	21.39389	0.67419	0.53276
8	2001	2b	0.71652	0.01972	0.00289	5.95519	0.32169	0.24786
8	2001	3	1.64551	0.07128	0.01045	8.95764	0.41057	0.32070
8	2001	4	1.71024	0.07022	0.01029	9.37942	0.42348	0.33135
8	2001	5	1.73399	0.06983	0.01024	9.41860	0.42444	0.33210
8	2001	6	1.73562	0.06981	0.01023	10.18329	0.44171	0.34589
8	2001	7	1.61567	0.07177	0.01052	10.04489	0.43870	0.34348
8	2001	8a	1.61567	0.07177	0.01052	18.32651	0.60793	0.47923
8	2001	8b	1.61567	0.07177	0.01052	21.21697	0.66970	0.52914
8	2002	2b	0.68324	0.01674	0.00245	6.02216	0.32370	0.24949
8	2002	3	1.67289	0.05159	0.00756	8.75269	0.40407	0.31539
8	2002	4	1.75915	0.04681	0.00686	9.35923	0.42237	0.33047
8	2002	5	1.78424	0.04541	0.00666	9.35923	0.42237	0.33047
8	2002	6	1.78586	0.04532	0.00664	9.72727	0.43322	0.33908
8	2002	7	1.62095	0.05447	0.00798	10.27498	0.44242	0.34648
8	2002	8a	1.62095	0.05447	0.00798	15.83676	0.55591	0.43732
8	2002	8b	1.62095	0.05447	0.00798	20.84749	0.66135	0.52241
8	2003	2b	0.59580	0.01725	0.00253	4.30844	0.27360	0.21083
8	2003	3	1.65329	0.05679	0.00833	5.93764	0.35039	0.27350
8	2003	4	1.72685	0.05541	0.00812	6.31153	0.36845	0.28830

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2003	5	1.74911	0.05499	0.00806	6.31153	0.36845	0.28830
8	2003	6	1.75056	0.05497	0.00806	6.73019	0.38342	0.30015
8	2003	7	1.61119	0.05758	0.00844	6.88133	0.39487	0.30937
8	2003	8a	1.61130	0.05757	0.00844	8.88082	0.51369	0.40445
8	2003	8b	1.61130	0.05757	0.00844	10.33275	0.60426	0.47743
8	2004	2b	0.49557	0.00815	0.00117	4.28354	0.27166	0.20936
8	2004	3	1.67248	0.03291	0.00482	5.99255	0.35102	0.27399
8	2004	4	1.77293	0.03143	0.00461	6.39220	0.37006	0.28955
8	2004	5	1.80163	0.03101	0.00455	6.39220	0.37006	0.28955
8	2004	6	1.80347	0.03098	0.00454	6.79807	0.38763	0.30349
8	2004	7	1.61065	0.03382	0.00496	6.93978	0.39750	0.31144
8	2004	8a	1.61065	0.03382	0.00496	8.85821	0.51128	0.40254
8	2004	8b	1.61065	0.03382	0.00496	10.33670	0.60498	0.47801
8	2005	2b	0.40217	0.00694	0.00100	4.17894	0.26558	0.20457
8	2005	3	1.65774	0.03220	0.00472	5.85884	0.34445	0.26869
8	2005	4	1.71512	0.03126	0.00458	6.36132	0.36859	0.28838
8	2005	5	1.74025	0.03085	0.00452	6.36132	0.36859	0.28838
8	2005	6	1.74207	0.03082	0.00452	6.69789	0.38472	0.30119
8	2005	7	1.63570	0.03256	0.00477	6.96544	0.40064	0.31398
8	2005	8a	1.63587	0.03256	0.00477	9.08706	0.52496	0.41357
8	2005	8b	1.63587	0.03256	0.00477	10.39804	0.60830	0.48070
8	2006	2b	0.44525	0.00789	0.00114	4.23737	0.26975	0.20779
8	2006	3	1.65741	0.03405	0.00499	5.80829	0.34216	0.26685
8	2006	4	1.73104	0.03268	0.00479	6.27371	0.36402	0.28476
8	2006	5	1.75873	0.03216	0.00471	6.27371	0.36402	0.28476
8	2006	6	1.76065	0.03212	0.00471	6.53710	0.37750	0.29547
8	2006	7	1.62445	0.03467	0.00508	6.82179	0.39377	0.30853
8	2006	8a	1.62465	0.03467	0.00508	8.97437	0.51915	0.40892
8	2006	8b	1.62465	0.03467	0.00508	10.37714	0.60755	0.48009
8	2007	2b	0.38151	0.00699	0.00100	2.28873	0.01170	0.00137
8	2007	3	1.66334	0.03390	0.00497	3.50316	0.01575	0.00184
8	2007	4	1.72775	0.03251	0.00477	3.76011	0.01663	0.00194
8	2007	5	1.75357	0.03194	0.00468	3.76011	0.01663	0.00194

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2007	6	1.75544	0.03190	0.00468	3.92516	0.01715	0.00200
8	2007	7	1.63690	0.03446	0.00505	4.32115	0.01845	0.00215
8	2007	8a	1.63815	0.03447	0.00505	6.30902	0.02516	0.00294
8	2007	8b	1.63815	0.03447	0.00505	7.27741	0.02862	0.00334
8	2008	2b	0.29857	0.00781	0.00115	2.23189	0.01150	0.00135
8	2008	3	1.12233	0.03333	0.00489	3.11871	0.01438	0.00168
8	2008	4	1.07959	0.03277	0.00480	3.31288	0.01502	0.00176
8	2008	5	1.05681	0.03247	0.00476	3.31288	0.01502	0.00176
8	2008	6	1.05503	0.03244	0.00476	3.44612	0.01545	0.00181
8	2008	7	1.13604	0.03351	0.00491	3.57053	0.01586	0.00185
8	2008	8a	1.13588	0.03351	0.00491	5.05999	0.02080	0.00243
8	2008	8b	1.13588	0.03351	0.00491	6.90374	0.02723	0.00318
8	2009	2b	0.17742	0.00624	0.00096	2.20066	0.01124	0.00133
8	2009	3	0.66161	0.02521	0.00370	3.64555	0.01626	0.00190
8	2009	4	0.66023	0.02510	0.00368	3.86875	0.01706	0.00199
8	2009	5	0.65944	0.02504	0.00367	3.86875	0.01706	0.00199
8	2009	6	0.65938	0.02503	0.00367	3.94886	0.01731	0.00202
8	2009	7	0.66203	0.02524	0.00370	4.39459	0.01875	0.00219
8	2009	8a	0.66203	0.02524	0.00370	6.32560	0.02521	0.00294
8	2009	8b	0.66203	0.02524	0.00370	7.24086	0.02845	0.00332
8	2010	2b	0.07044	0.00343	0.00061	0.96964	0.00779	0.00095
8	2010	3	0.10996	0.01193	0.00175	1.95112	0.01494	0.00175
8	2010	4	0.10998	0.01194	0.00175	2.12625	0.01617	0.00189
8	2010	5	0.10999	0.01194	0.00175	2.12625	0.01617	0.00189
8	2010	6	0.10999	0.01194	0.00175	2.20514	0.01677	0.00196
8	2010	7	0.10996	0.01193	0.00175	2.52416	0.01527	0.00178
8	2010	8a	0.10996	0.01193	0.00175	3.98753	0.01024	0.00120
8	2010	8b	0.10996	0.01193	0.00175	4.71665	0.00716	0.00084
8	2011	2b	0.07299	0.00393	0.00074	1.07492	0.00778	0.00095
8	2011	3	0.11776	0.01170	0.00172	1.67270	0.01324	0.00155
8	2011	4	0.13166	0.01129	0.00165	1.77790	0.01419	0.00166
8	2011	5	0.13859	0.01108	0.00162	1.77790	0.01419	0.00166
8	2011	6	0.13912	0.01106	0.00162	1.84318	0.01452	0.00170

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2011	7	0.11302	0.01185	0.00174	2.00321	0.01376	0.00161
8	2011	8a	0.11302	0.01185	0.00174	3.10738	0.01036	0.00121
8	2011	8b	0.11302	0.01185	0.00174	3.94797	0.00720	0.00084
8	2012	2b	0.07484	0.00424	0.00081	1.00881	0.00786	0.00097
8	2012	3	0.11938	0.01156	0.00169	1.67098	0.01377	0.00162
8	2012	4	0.12490	0.01140	0.00167	1.76516	0.01460	0.00171
8	2012	5	0.12806	0.01131	0.00166	1.76516	0.01460	0.00171
8	2012	6	0.12831	0.01131	0.00166	1.80705	0.01465	0.00171
8	2012	7	0.11771	0.01160	0.00170	2.03671	0.01375	0.00161
8	2012	8a	0.11771	0.01160	0.00170	3.20014	0.00982	0.00115
8	2012	8b	0.11771	0.01160	0.00170	3.86106	0.00711	0.00083
8	2013	2b	0.07149	0.00361	0.00082	1.20692	0.00776	0.00098
8	2013	3	0.12577	0.01059	0.00155	1.77419	0.01389	0.00163
8	2013	4	0.13558	0.01033	0.00151	1.85712	0.01479	0.00173
8	2013	5	0.14038	0.01019	0.00149	1.85712	0.01479	0.00173
8	2013	6	0.14076	0.01018	0.00149	1.89392	0.01488	0.00174
8	2013	7	0.12252	0.01067	0.00156	2.06881	0.01358	0.00159
8	2013	8a	0.12289	0.01067	0.00156	2.79977	0.00888	0.00104
8	2013	8b	0.12289	0.01067	0.00156	3.13747	0.00635	0.00074
8	2014	2b	0.06243	0.00328	0.00088	0.55394	0.00233	0.00045
8	2014	3	0.12611	0.01023	0.00150	1.19059	0.00419	0.00051
8	2014	4	0.12986	0.01015	0.00149	1.26808	0.00441	0.00052
8	2014	5	0.13203	0.01011	0.00148	1.26808	0.00441	0.00052
8	2014	6	0.13220	0.01011	0.00148	1.29709	0.00447	0.00052
8	2014	7	0.12499	0.01025	0.00150	1.45369	0.00443	0.00052
8	2014	8a	0.12499	0.01025	0.00150	2.24397	0.00438	0.00051
8	2014	8b	0.12499	0.01025	0.00150	2.71344	0.00415	0.00048
8	2015	2b	0.06205	0.00332	0.00101	0.44243	0.00229	0.00050
8	2015	3	0.12600	0.01023	0.00150	1.07246	0.00413	0.00051
8	2015	4	0.12943	0.01016	0.00149	1.16738	0.00441	0.00052
8	2015	5	0.13143	0.01012	0.00148	1.16738	0.00441	0.00052
8	2015	6	0.13159	0.01012	0.00148	1.19797	0.00447	0.00052
8	2015	7	0.12498	0.01025	0.00150	1.37138	0.00443	0.00052

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2015	8a	0.12498	0.01025	0.00150	2.22847	0.00438	0.00051
8	2015	8b	0.12498	0.01025	0.00150	2.72791	0.00415	0.00049
8	2016	2b	0.05636	0.00307	0.00098	0.42178	0.00219	0.00049
8	2016	3	0.12589	0.01023	0.00150	1.02253	0.00408	0.00051
8	2016	4	0.12899	0.01017	0.00149	1.12631	0.00441	0.00052
8	2016	5	0.13081	0.01013	0.00148	1.12631	0.00441	0.00052
8	2016	6	0.13096	0.01013	0.00148	1.15197	0.00446	0.00052
8	2016	7	0.12497	0.01025	0.00150	1.28901	0.00443	0.00052
8	2016	8a	0.12497	0.01025	0.00150	2.07749	0.00441	0.00052
8	2016	8b	0.12497	0.01025	0.00150	2.62813	0.00418	0.00049
8	2017	2b	0.04716	0.00296	0.00105	0.40567	0.00213	0.00052
8	2017	3	0.12575	0.01023	0.00150	0.97594	0.00406	0.00052
8	2017	4	0.12844	0.01018	0.00149	1.08021	0.00441	0.00052
8	2017	5	0.13003	0.01015	0.00149	1.08021	0.00441	0.00052
8	2017	6	0.13016	0.01014	0.00149	1.10050	0.00446	0.00052
8	2017	7	0.12496	0.01025	0.00150	1.20726	0.00443	0.00052
8	2017	8a	0.12496	0.01025	0.00150	1.85943	0.00442	0.00052
8	2017	8b	0.12496	0.01025	0.00150	2.34901	0.00420	0.00049
8	2018	2b	0.03755	0.00291	0.00105	0.28330	0.00206	0.00051
8	2018	3	0.09314	0.01015	0.00149	0.88846	0.00391	0.00050
8	2018	4	0.10213	0.00997	0.00146	0.99814	0.00425	0.00050
8	2018	5	0.10681	0.00987	0.00145	0.99814	0.00425	0.00050
8	2018	6	0.10718	0.00986	0.00144	1.04783	0.00435	0.00051
8	2018	7	0.09020	0.01022	0.00150	1.14316	0.00431	0.00050
8	2018	8a	0.09020	0.01022	0.00150	1.80815	0.00432	0.00051
8	2018	8b	0.09020	0.01022	0.00150	2.28662	0.00413	0.00048
8	2019	2b	0.03368	0.00284	0.00103	0.24628	0.00199	0.00051
8	2019	3	0.08874	0.01016	0.00149	0.85778	0.00388	0.00050
8	2019	4	0.09760	0.00998	0.00146	0.97891	0.00425	0.00050
8	2019	5	0.10228	0.00989	0.00145	0.97891	0.00425	0.00050
8	2019	6	0.10264	0.00988	0.00145	1.02724	0.00435	0.00051
8	2019	7	0.08586	0.01022	0.00150	1.12569	0.00431	0.00050
8	2019	8a	0.08586	0.01022	0.00150	1.80196	0.00433	0.00051

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2019	8b	0.08586	0.01022	0.00150	2.28547	0.00414	0.00048
8	2020	2b	0.02414	0.00164	0.00060	0.15757	0.00117	0.00030
8	2020	3	0.08436	0.00615	0.00090	0.59066	0.00250	0.00032
8	2020	4	0.09317	0.00607	0.00089	0.68614	0.00280	0.00033
8	2020	5	0.09788	0.00602	0.00088	0.68614	0.00280	0.00033
8	2020	6	0.09824	0.00602	0.00088	0.71986	0.00286	0.00033
8	2020	7	0.08153	0.00618	0.00091	0.78885	0.00285	0.00033
8	2020	8a	0.08153	0.00618	0.00091	1.28051	0.00294	0.00034
8	2020	8b	0.08153	0.00618	0.00091	1.64945	0.00287	0.00034
8	2021	2b	0.02058	0.00142	0.00049	0.13990	0.00109	0.00025
8	2021	3	0.07927	0.00612	0.00090	0.57264	0.00245	0.00031
8	2021	4	0.08761	0.00602	0.00088	0.67359	0.00277	0.00032
8	2021	5	0.09207	0.00597	0.00088	0.67359	0.00277	0.00032
8	2021	6	0.09242	0.00597	0.00088	0.70592	0.00284	0.00033
8	2021	7	0.07659	0.00615	0.00090	0.76801	0.00282	0.00033
8	2021	8a	0.07659	0.00615	0.00090	1.23184	0.00287	0.00033
8	2021	8b	0.07659	0.00615	0.00090	1.59377	0.00277	0.00032
8	2022	2b	0.01737	0.00143	0.00049	0.12413	0.00108	0.00025
8	2022	3	0.07502	0.00612	0.00090	0.56174	0.00245	0.00031
8	2022	4	0.08365	0.00602	0.00088	0.66358	0.00277	0.00032
8	2022	5	0.08828	0.00597	0.00088	0.66358	0.00277	0.00032
8	2022	6	0.08864	0.00597	0.00088	0.69624	0.00283	0.00033
8	2022	7	0.07226	0.00615	0.00090	0.76118	0.00281	0.00033
8	2022	8a	0.07226	0.00615	0.00090	1.23438	0.00286	0.00033
8	2022	8b	0.07226	0.00615	0.00090	1.59519	0.00277	0.00032
8	2023	2b	0.01485	0.00141	0.00049	0.12176	0.00108	0.00025
8	2023	3	0.07498	0.00612	0.00090	0.55884	0.00245	0.00031
8	2023	4	0.08350	0.00602	0.00088	0.66358	0.00277	0.00032
8	2023	5	0.08807	0.00597	0.00088	0.66358	0.00277	0.00032
8	2023	6	0.08843	0.00597	0.00088	0.69557	0.00283	0.00033
8	2023	7	0.07226	0.00615	0.00090	0.75841	0.00281	0.00033
8	2023	8a	0.07226	0.00615	0.00090	1.22653	0.00286	0.00033
8	2023	8b	0.07226	0.00615	0.00090	1.59310	0.00277	0.00032

Table A-8. SmartWay Category - Moving

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
8	2024	2b	0.01485	0.00141	0.00049	0.12176	0.00108	0.00025
8	2024	3	0.07498	0.00612	0.00090	0.55884	0.00245	0.00031
8	2024	4	0.08350	0.00602	0.00088	0.66358	0.00277	0.00032
8	2024	5	0.08807	0.00597	0.00088	0.66358	0.00277	0.00032
8	2024	6	0.08843	0.00597	0.00088	0.69557	0.00283	0.00033
8	2024	7	0.07226	0.00615	0.00090	0.75841	0.00281	0.00033
8	2024	8a	0.07226	0.00615	0.00090	1.22653	0.00286	0.00033
8	2024	8b	0.07226	0.00615	0.00090	1.59310	0.00277	0.00032

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	Pre-1992	2b	4.82585	0.06684	0.00980	9.98266	0.34135	0.26292
9	Pre-1992	3	5.75973	0.20542	0.03011	14.66833	0.56431	0.44109
9	Pre-1992	4	5.83251	0.21756	0.03189	20.05833	0.82548	0.64995
9	Pre-1992	5	5.76796	0.20690	0.03032	20.69718	0.84684	0.66649
9	Pre-1992	6	5.42526	0.14869	0.02179	20.82390	0.85023	0.66931
9	Pre-1992	7	5.42526	0.14869	0.02179	20.96641	0.85323	0.67196
9	Pre-1992	8a	5.43296	0.14856	0.02177	25.59569	0.98819	0.78066
9	Pre-1992	8b	5.43296	0.14856	0.02177	29.64123	1.10815	0.87729
9	1992	2b	4.82585	0.06684	0.00980	9.98266	0.34135	0.26292
9	1992	3	5.75973	0.20542	0.03011	14.66833	0.56431	0.44109
9	1992	4	5.83251	0.21756	0.03189	20.05833	0.82548	0.64995
9	1992	5	5.76796	0.20690	0.03032	20.69718	0.84684	0.66649
9	1992	6	5.42526	0.14869	0.02179	20.82390	0.85023	0.66931
9	1992	7	5.42526	0.14869	0.02179	20.96641	0.85323	0.67196
9	1992	8a	5.43296	0.14856	0.02177	25.59569	0.98819	0.78066
9	1992	8b	5.43296	0.14856	0.02177	29.64123	1.10815	0.87729
9	1993	2b	4.82585	0.06684	0.00980	9.98266	0.34135	0.26292
9	1993	3	5.75973	0.20542	0.03011	14.66833	0.56431	0.44109
9	1993	4	5.83251	0.21756	0.03189	20.05833	0.82548	0.64995
9	1993	5	5.76796	0.20690	0.03032	20.69718	0.84684	0.66649
9	1993	6	5.42526	0.14869	0.02179	20.82390	0.85023	0.66931
9	1993	7	5.42526	0.14869	0.02179	20.96641	0.85323	0.67196
9	1993	8a	5.43296	0.14856	0.02177	25.59569	0.98819	0.78066
9	1993	8b	5.43296	0.14856	0.02177	29.64123	1.10815	0.87729
9	1994	2b	4.13129	0.01880	0.00275	8.99195	1.00636	0.78075
9	1994	3	5.87722	0.03344	0.00490	12.29264	1.19701	0.93281
9	1994	4	5.91679	0.03367	0.00493	18.56209	1.47122	1.15574
9	1994	5	5.91356	0.03364	0.00493	22.29351	1.65586	1.30233
9	1994	6	5.32715	0.03038	0.00445	22.08108	1.59987	1.25825
9	1994	7	5.32715	0.03038	0.00445	23.17137	1.47248	1.15854
9	1994	8a	8.26613	0.05035	0.00738	28.50901	1.20699	0.95218
9	1994	8b	8.26613	0.05035	0.00738	30.07106	1.14854	0.90706
9	1995	2b	4.32159	0.05055	0.00741	9.26630	0.99418	0.77177

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	1995	3	5.79540	0.16750	0.02455	17.59059	1.39838	1.09679
9	1995	4	5.88642	0.17795	0.02608	19.72201	1.47355	1.15745
9	1995	5	5.86372	0.17565	0.02574	22.50157	1.59618	1.25540
9	1995	6	5.33484	0.11307	0.01657	22.08020	1.49305	1.17418
9	1995	7	5.33484	0.11307	0.01657	23.24835	1.45750	1.14670
9	1995	8a	7.92326	0.22471	0.03294	28.36717	1.22010	0.96233
9	1995	8b	7.92326	0.22471	0.03294	29.92649	1.15548	0.91242
9	1996	2b	3.42703	0.04280	0.00627	9.43692	0.94761	0.73557
9	1996	3	5.86339	0.16264	0.02384	19.81487	1.47589	1.15937
9	1996	4	5.90644	0.16806	0.02463	21.07642	1.48114	1.16440
9	1996	5	5.90308	0.16810	0.02464	22.29688	1.60481	1.26205
9	1996	6	5.42647	0.10454	0.01532	22.80408	1.49156	1.17325
9	1996	7	5.42647	0.10454	0.01532	23.56952	1.46632	1.15373
9	1996	8a	7.92324	0.19857	0.02910	28.38709	1.22543	0.96646
9	1996	8b	7.92324	0.19857	0.02910	30.04775	1.15856	0.91490
9	1997	2b	2.68181	0.01849	0.00271	7.13086	0.80509	0.62169
9	1997	3	5.80112	0.06940	0.01017	14.52467	1.21548	0.95062
9	1997	4	5.90953	0.07366	0.01080	19.15493	1.51591	1.19103
9	1997	5	5.88517	0.07278	0.01067	20.89199	1.63487	1.28551
9	1997	6	5.38262	0.05300	0.00777	20.35893	1.51610	1.19171
9	1997	7	5.38262	0.05300	0.00777	21.22674	1.49233	1.17331
9	1997	8a	9.24034	0.03697	0.00542	27.37980	1.24386	0.98048
9	1997	8b	9.24034	0.03697	0.00542	29.70885	1.15493	0.91179
9	1998	2b	2.24636	0.01937	0.00284	8.34598	0.39973	0.30333
9	1998	3	3.28273	0.09042	0.01325	17.70398	0.61170	0.47468
9	1998	4	3.27770	0.10182	0.01492	18.77393	0.63586	0.49423
9	1998	5	3.27286	0.08914	0.01306	19.09965	0.58438	0.45306
9	1998	6	3.29171	0.06205	0.00909	18.92600	0.61467	0.47728
9	1998	7	3.29171	0.06205	0.00909	19.35730	0.60387	0.46882
9	1998	8a	3.66870	0.15656	0.02295	24.36403	0.74562	0.58474
9	1998	8b	3.66870	0.15656	0.02295	26.65503	0.79520	0.62592
9	1999	2b	1.78751	0.02920	0.00428	7.75186	0.39813	0.30194
9	1999	3	3.35535	0.11502	0.01686	12.33250	0.56450	0.43647

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	1999	4	3.57988	0.11850	0.01737	13.26515	0.59866	0.46413
9	1999	5	3.63004	0.11798	0.01729	13.28704	0.59941	0.46473
9	1999	6	3.63317	0.11802	0.01730	13.09549	0.58555	0.45383
9	1999	7	3.16406	0.11179	0.01638	13.46612	0.59770	0.46363
9	1999	8a	3.18257	0.11669	0.01710	18.92331	0.74350	0.58289
9	1999	8b	3.18257	0.11669	0.01710	21.21668	0.80139	0.63088
9	2000	2b	1.59369	0.01846	0.00271	7.96707	0.40595	0.30826
9	2000	3	3.49572	0.06813	0.00999	12.36285	0.56450	0.43667
9	2000	4	3.78610	0.06148	0.00901	13.04018	0.58903	0.45655
9	2000	5	3.86144	0.05975	0.00876	13.08240	0.59047	0.45769
9	2000	6	3.86618	0.05964	0.00874	13.11134	0.58782	0.45577
9	2000	7	3.29305	0.07277	0.01067	13.77342	0.60565	0.47025
9	2000	8a	3.29305	0.07277	0.01067	17.75347	0.70980	0.55548
9	2000	8b	3.29305	0.07277	0.01067	21.01527	0.79581	0.62630
9	2001	2b	0.56662	0.01413	0.00207	7.51591	0.38983	0.29524
9	2001	3	1.39939	0.03855	0.00565	12.01748	0.55121	0.42591
9	2001	4	1.50213	0.03765	0.00552	12.65590	0.57426	0.44462
9	2001	5	1.53979	0.03732	0.00547	12.67789	0.57502	0.44522
9	2001	6	1.54237	0.03729	0.00547	13.10236	0.58540	0.45377
9	2001	7	1.35199	0.03897	0.00571	13.06305	0.58473	0.45322
9	2001	8a	1.35199	0.03897	0.00571	18.35272	0.72472	0.56770
9	2001	8b	1.35199	0.03897	0.00571	20.83808	0.79035	0.62186
9	2002	2b	0.53873	0.01572	0.00230	7.61997	0.39363	0.29829
9	2002	3	1.44617	0.05204	0.00763	11.74460	0.54143	0.41794
9	2002	4	1.58335	0.04793	0.00703	12.64884	0.57402	0.44438
9	2002	5	1.62321	0.04674	0.00685	12.64884	0.57402	0.44438
9	2002	6	1.62578	0.04666	0.00684	12.89321	0.58021	0.44952
9	2002	7	1.36346	0.05451	0.00799	13.15203	0.58649	0.45464
9	2002	8a	1.36346	0.05451	0.00799	16.49677	0.67634	0.52782
9	2002	8b	1.36346	0.05451	0.00799	20.49910	0.78105	0.61421
9	2003	2b	0.47405	0.01492	0.00219	4.60419	0.33287	0.25221
9	2003	3	1.40817	0.05641	0.00827	7.29757	0.47101	0.36362
9	2003	4	1.52464	0.05466	0.00801	7.89923	0.50237	0.38896

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2003	5	1.55986	0.05414	0.00794	7.89923	0.50237	0.38896
9	2003	6	1.56216	0.05410	0.00793	8.58989	0.51502	0.39913
9	2003	7	1.34141	0.05741	0.00842	8.53522	0.52163	0.40458
9	2003	8a	1.34154	0.05741	0.00842	10.02085	0.61854	0.48341
9	2003	8b	1.34154	0.05741	0.00842	11.62817	0.71300	0.56097
9	2004	2b	0.39791	0.00751	0.00108	4.58496	0.33035	0.25032
9	2004	3	1.44197	0.03264	0.00479	7.42805	0.46984	0.36273
9	2004	4	1.60506	0.03010	0.00441	8.07227	0.50199	0.38868
9	2004	5	1.65161	0.02938	0.00431	8.07227	0.50199	0.38868
9	2004	6	1.65460	0.02933	0.00430	8.74084	0.51994	0.40308
9	2004	7	1.34142	0.03420	0.00501	8.67938	0.52419	0.40664
9	2004	8a	1.34142	0.03420	0.00501	10.04294	0.61524	0.48077
9	2004	8b	1.34142	0.03420	0.00501	11.63921	0.71372	0.56155
9	2005	2b	0.32433	0.00621	0.00089	4.44763	0.32201	0.24381
9	2005	3	1.43219	0.03181	0.00466	7.20593	0.45959	0.35451
9	2005	4	1.52285	0.03028	0.00444	8.00527	0.50005	0.38712
9	2005	5	1.56256	0.02960	0.00434	8.00527	0.50005	0.38712
9	2005	6	1.56544	0.02956	0.00433	8.55378	0.51756	0.40116
9	2005	7	1.39736	0.03240	0.00475	8.59849	0.52563	0.40784
9	2005	8a	1.39754	0.03240	0.00475	10.24267	0.62791	0.49123
9	2005	8b	1.39754	0.03240	0.00475	11.71024	0.71736	0.56456
9	2006	2b	0.36077	0.00722	0.00104	4.50411	0.32709	0.24764
9	2006	3	1.42266	0.03446	0.00505	7.07541	0.45723	0.35253
9	2006	4	1.54080	0.03215	0.00471	7.81756	0.49524	0.38324
9	2006	5	1.58522	0.03128	0.00459	7.81756	0.49524	0.38324
9	2006	6	1.58830	0.03122	0.00458	8.24832	0.51025	0.39528
9	2006	7	1.36973	0.03550	0.00520	8.33403	0.51878	0.40231
9	2006	8a	1.36996	0.03549	0.00520	10.07461	0.62202	0.48641
9	2006	8b	1.36996	0.03549	0.00520	11.67688	0.71657	0.56390
9	2007	2b	0.30864	0.00630	0.00091	2.92659	0.01391	0.00163
9	2007	3	1.43587	0.03427	0.00502	4.84071	0.02099	0.00245
9	2007	4	1.53852	0.03203	0.00470	5.23434	0.02247	0.00263
9	2007	5	1.57999	0.03111	0.00456	5.23434	0.02247	0.00263

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2007	6	1.58297	0.03104	0.00455	5.41692	0.02302	0.00269
9	2007	7	1.39373	0.03518	0.00516	5.65943	0.02384	0.00279
9	2007	8a	1.39512	0.03517	0.00516	7.41896	0.02976	0.00348
9	2007	8b	1.39512	0.03517	0.00516	8.56847	0.03367	0.00393
9	2008	2b	0.23871	0.00712	0.00104	2.84896	0.01364	0.00160
9	2008	3	0.92713	0.03349	0.00491	4.33149	0.01916	0.00224
9	2008	4	0.89994	0.03259	0.00478	4.65113	0.02036	0.00238
9	2008	5	0.88545	0.03211	0.00471	4.65113	0.02036	0.00238
9	2008	6	0.88432	0.03208	0.00470	4.80662	0.02084	0.00243
9	2008	7	0.93585	0.03377	0.00495	4.86873	0.02106	0.00246
9	2008	8a	0.93576	0.03377	0.00495	6.08195	0.02515	0.00294
9	2008	8b	0.93576	0.03377	0.00495	8.09981	0.03202	0.00374
9	2009	2b	0.13975	0.00570	0.00087	2.83785	0.01346	0.00159
9	2009	3	0.57551	0.02529	0.00371	5.05473	0.02185	0.00256
9	2009	4	0.57731	0.02507	0.00368	5.38711	0.02313	0.00270
9	2009	5	0.57826	0.02495	0.00366	5.38711	0.02313	0.00270
9	2009	6	0.57834	0.02494	0.00366	5.46379	0.02337	0.00273
9	2009	7	0.57495	0.02536	0.00372	5.75887	0.02433	0.00284
9	2009	8a	0.57504	0.02535	0.00372	7.46766	0.02994	0.00350
9	2009	8b	0.57504	0.02535	0.00372	8.53600	0.03352	0.00392
9	2010	2b	0.05804	0.00313	0.00055	1.45543	0.00957	0.00115
9	2010	3	0.11726	0.01396	0.00205	3.46829	0.02683	0.00314
9	2010	4	0.11727	0.01396	0.00205	3.81126	0.02973	0.00347
9	2010	5	0.11728	0.01396	0.00205	3.81126	0.02973	0.00347
9	2010	6	0.11728	0.01396	0.00205	3.93916	0.03133	0.00366
9	2010	7	0.11726	0.01396	0.00205	4.26836	0.02897	0.00339
9	2010	8a	0.11726	0.01396	0.00205	6.40150	0.01968	0.00230
9	2010	8b	0.11726	0.01396	0.00205	7.80995	0.01231	0.00144
9	2011	2b	0.06263	0.00373	0.00069	1.53799	0.00915	0.00110
9	2011	3	0.12474	0.01385	0.00203	2.89386	0.02184	0.00256
9	2011	4	0.13730	0.01361	0.00199	3.12582	0.02400	0.00280
9	2011	5	0.14357	0.01349	0.00198	3.12582	0.02400	0.00280
9	2011	6	0.14404	0.01348	0.00197	3.25749	0.02497	0.00292

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2011	7	0.12045	0.01393	0.00204	3.43337	0.02384	0.00279
9	2011	8a	0.12045	0.01393	0.00204	5.16874	0.01876	0.00219
9	2011	8b	0.12045	0.01393	0.00204	6.94486	0.01226	0.00143
9	2012	2b	0.06591	0.00412	0.00076	1.49174	0.00958	0.00117
9	2012	3	0.12687	0.01373	0.00201	2.94926	0.02326	0.00272
9	2012	4	0.13181	0.01365	0.00200	3.14967	0.02513	0.00294
9	2012	5	0.13463	0.01360	0.00199	3.14967	0.02513	0.00294
9	2012	6	0.13486	0.01359	0.00199	3.22401	0.02537	0.00297
9	2012	7	0.12538	0.01376	0.00202	3.50475	0.02419	0.00283
9	2012	8a	0.12538	0.01376	0.00202	5.43526	0.01796	0.00210
9	2012	8b	0.12538	0.01376	0.00202	6.87725	0.01208	0.00141
9	2013	2b	0.06019	0.00333	0.00073	1.68581	0.00960	0.00119
9	2013	3	0.13330	0.01268	0.00186	3.06329	0.02474	0.00290
9	2013	4	0.14184	0.01250	0.00183	3.26000	0.02691	0.00315
9	2013	5	0.14605	0.01242	0.00182	3.26000	0.02691	0.00315
9	2013	6	0.14639	0.01241	0.00182	3.33663	0.02732	0.00319
9	2013	7	0.13048	0.01273	0.00186	3.56851	0.02543	0.00297
9	2013	8a	0.13074	0.01273	0.00186	4.92577	0.01687	0.00197
9	2013	8b	0.13074	0.01273	0.00186	5.74063	0.01093	0.00128
9	2014	2b	0.05253	0.00310	0.00078	0.93062	0.00249	0.00045
9	2014	3	0.13432	0.01231	0.00180	2.50410	0.00629	0.00075
9	2014	4	0.13753	0.01226	0.00180	2.68556	0.00673	0.00079
9	2014	5	0.13940	0.01224	0.00179	2.68556	0.00673	0.00079
9	2014	6	0.13954	0.01224	0.00179	2.74472	0.00684	0.00080
9	2014	7	0.13336	0.01232	0.00180	2.93737	0.00675	0.00079
9	2014	8a	0.13336	0.01232	0.00180	4.27995	0.00654	0.00076
9	2014	8b	0.13336	0.01232	0.00180	5.33800	0.00613	0.00072
9	2015	2b	0.05220	0.00311	0.00088	0.77207	0.00236	0.00048
9	2015	3	0.13422	0.01231	0.00180	2.35868	0.00618	0.00075
9	2015	4	0.13716	0.01227	0.00180	2.58425	0.00673	0.00079
9	2015	5	0.13888	0.01225	0.00179	2.58425	0.00673	0.00079
9	2015	6	0.13902	0.01224	0.00179	2.64412	0.00683	0.00080
9	2015	7	0.13335	0.01232	0.00180	2.85275	0.00674	0.00079

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2015	8a	0.13335	0.01232	0.00180	4.27242	0.00654	0.00076
9	2015	8b	0.13335	0.01232	0.00180	5.36547	0.00614	0.00072
9	2016	2b	0.04753	0.00288	0.00085	0.72621	0.00222	0.00046
9	2016	3	0.13412	0.01231	0.00180	2.25891	0.00609	0.00074
9	2016	4	0.13678	0.01227	0.00180	2.50858	0.00673	0.00079
9	2016	5	0.13834	0.01225	0.00179	2.50858	0.00673	0.00079
9	2016	6	0.13847	0.01225	0.00179	2.55959	0.00682	0.00080
9	2016	7	0.13333	0.01232	0.00180	2.72388	0.00675	0.00079
9	2016	8a	0.13333	0.01232	0.00180	4.00233	0.00658	0.00077
9	2016	8b	0.13333	0.01232	0.00180	5.18777	0.00618	0.00072
9	2017	2b	0.04065	0.00279	0.00091	0.69753	0.00214	0.00048
9	2017	3	0.13400	0.01231	0.00180	2.15864	0.00605	0.00074
9	2017	4	0.13630	0.01228	0.00180	2.41049	0.00673	0.00079
9	2017	5	0.13767	0.01226	0.00179	2.41049	0.00673	0.00079
9	2017	6	0.13778	0.01226	0.00179	2.45151	0.00680	0.00080
9	2017	7	0.13332	0.01232	0.00180	2.58337	0.00675	0.00079
9	2017	8a	0.13332	0.01232	0.00180	3.66138	0.00661	0.00077
9	2017	8b	0.13332	0.01232	0.00180	4.73803	0.00621	0.00073
9	2018	2b	0.03282	0.00282	0.00092	0.51524	0.00207	0.00047
9	2018	3	0.10003	0.01223	0.00179	2.00507	0.00582	0.00072
9	2018	4	0.10824	0.01211	0.00177	2.25880	0.00646	0.00075
9	2018	5	0.11253	0.01204	0.00176	2.25880	0.00646	0.00075
9	2018	6	0.11286	0.01204	0.00176	2.36980	0.00668	0.00078
9	2018	7	0.09733	0.01227	0.00180	2.47750	0.00657	0.00077
9	2018	8a	0.09733	0.01227	0.00180	3.58893	0.00645	0.00075
9	2018	8b	0.09733	0.01227	0.00180	4.64334	0.00614	0.00072
9	2019	2b	0.02971	0.00279	0.00091	0.45163	0.00199	0.00046
9	2019	3	0.09534	0.01223	0.00179	1.94670	0.00576	0.00071
9	2019	4	0.10351	0.01212	0.00177	2.22456	0.00646	0.00075
9	2019	5	0.10784	0.01206	0.00176	2.22456	0.00646	0.00075
9	2019	6	0.10817	0.01205	0.00176	2.33119	0.00667	0.00078
9	2019	7	0.09268	0.01227	0.00180	2.44418	0.00656	0.00077
9	2019	8a	0.09268	0.01227	0.00180	3.57609	0.00645	0.00075

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2019	8b	0.09268	0.01227	0.00180	4.64079	0.00614	0.00072
9	2020	2b	0.02204	0.00163	0.00053	0.28925	0.00118	0.00027
9	2020	3	0.09067	0.00742	0.00109	1.34830	0.00375	0.00046
9	2020	4	0.09887	0.00738	0.00109	1.56711	0.00428	0.00050
9	2020	5	0.10324	0.00736	0.00108	1.56711	0.00428	0.00050
9	2020	6	0.10358	0.00736	0.00108	1.64107	0.00442	0.00052
9	2020	7	0.08804	0.00743	0.00109	1.72041	0.00437	0.00051
9	2020	8a	0.08804	0.00743	0.00109	2.53876	0.00438	0.00051
9	2020	8b	0.08804	0.00743	0.00109	3.34674	0.00426	0.00050
9	2021	2b	0.01890	0.00145	0.00044	0.25968	0.00110	0.00024
9	2021	3	0.08544	0.00739	0.00109	1.31484	0.00368	0.00045
9	2021	4	0.09337	0.00733	0.00108	1.54532	0.00425	0.00050
9	2021	5	0.09761	0.00730	0.00107	1.54532	0.00425	0.00050
9	2021	6	0.09793	0.00730	0.00107	1.61695	0.00438	0.00051
9	2021	7	0.08290	0.00740	0.00109	1.68954	0.00432	0.00051
9	2021	8a	0.08290	0.00740	0.00109	2.47241	0.00430	0.00050
9	2021	8b	0.08290	0.00740	0.00109	3.27540	0.00415	0.00048
9	2022	2b	0.01618	0.00147	0.00045	0.23589	0.00110	0.00024
9	2022	3	0.08090	0.00739	0.00109	1.29727	0.00369	0.00045
9	2022	4	0.08915	0.00733	0.00108	1.52842	0.00425	0.00050
9	2022	5	0.09357	0.00730	0.00107	1.52842	0.00425	0.00050
9	2022	6	0.09391	0.00730	0.00107	1.60025	0.00438	0.00051
9	2022	7	0.07826	0.00740	0.00109	1.67678	0.00432	0.00051
9	2022	8a	0.07826	0.00740	0.00109	2.47755	0.00430	0.00050
9	2022	8b	0.07826	0.00740	0.00109	3.27911	0.00414	0.00048
9	2023	2b	0.01426	0.00145	0.00045	0.23173	0.00109	0.00024
9	2023	3	0.08086	0.00739	0.00109	1.29092	0.00367	0.00045
9	2023	4	0.08900	0.00733	0.00108	1.52842	0.00425	0.00050
9	2023	5	0.09337	0.00730	0.00107	1.52842	0.00425	0.00050
9	2023	6	0.09371	0.00730	0.00107	1.59889	0.00438	0.00051
9	2023	7	0.07826	0.00740	0.00109	1.67262	0.00432	0.00050
9	2023	8a	0.07826	0.00740	0.00109	2.46177	0.00430	0.00050
9	2023	8b	0.07826	0.00740	0.00109	3.27397	0.00414	0.00048

Table A-g. SmartWay Category - Package

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
9	2024	2b	0.01426	0.00145	0.00045	0.23173	0.00109	0.00024
9	2024	3	0.08086	0.00739	0.00109	1.29092	0.00367	0.00045
9	2024	4	0.08900	0.00733	0.00108	1.52842	0.00425	0.00050
9	2024	5	0.09337	0.00730	0.00107	1.52842	0.00425	0.00050
9	2024	6	0.09371	0.00730	0.00107	1.59889	0.00438	0.00051
9	2024	7	0.07826	0.00740	0.00109	1.67262	0.00432	0.00050
9	2024	8a	0.07826	0.00740	0.00109	2.46177	0.00430	0.00050
9	2024	8b	0.07826	0.00740	0.00109	3.27397	0.00414	0.00048

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	Pre-1992	2b	5.10061	0.03703	0.00543	7.95227	0.28105	0.21681
10	Pre-1992	3	5.73070	0.10331	0.01514	10.76138	0.40662	0.31846
10	Pre-1992	4	5.83542	0.10869	0.01593	14.19145	0.57155	0.45201
10	Pre-1992	5	5.74280	0.10397	0.01524	14.74914	0.54984	0.43473
10	Pre-1992	6	5.24646	0.07813	0.01145	15.09016	0.56447	0.44638
10	Pre-1992	7	5.24646	0.07813	0.01145	15.80599	0.59798	0.47307
10	Pre-1992	8a	5.25448	0.07809	0.01145	24.65362	0.84064	0.66643
10	Pre-1992	8b	5.25448	0.07809	0.01145	30.39822	0.99104	0.78639
10	1992	2b	5.10061	0.03703	0.00543	7.95227	0.28105	0.21681
10	1992	3	5.73070	0.10331	0.01514	10.76138	0.40662	0.31846
10	1992	4	5.83542	0.10869	0.01593	14.19145	0.57155	0.45201
10	1992	5	5.74280	0.10397	0.01524	14.74914	0.54984	0.43473
10	1992	6	5.24646	0.07813	0.01145	15.09016	0.56447	0.44638
10	1992	7	5.24646	0.07813	0.01145	15.80599	0.59798	0.47307
10	1992	8a	5.25448	0.07809	0.01145	24.65362	0.84064	0.66643
10	1992	8b	5.25448	0.07809	0.01145	30.39822	0.99104	0.78639
10	1993	2b	5.10061	0.03703	0.00543	7.95227	0.28105	0.21681
10	1993	3	5.73070	0.10331	0.01514	10.76138	0.40662	0.31846
10	1993	4	5.83542	0.10869	0.01593	14.19145	0.57155	0.45201
10	1993	5	5.74280	0.10397	0.01524	14.74914	0.54984	0.43473
10	1993	6	5.24646	0.07813	0.01145	15.09016	0.56447	0.44638
10	1993	7	5.24646	0.07813	0.01145	15.80599	0.59798	0.47307
10	1993	8a	5.25448	0.07809	0.01145	24.65362	0.84064	0.66643
10	1993	8b	5.25448	0.07809	0.01145	30.39822	0.99104	0.78639
10	1994	2b	4.44426	0.04073	0.00597	7.08126	0.51564	0.40157
10	1994	3	5.90511	0.07836	0.01149	9.13841	0.62471	0.48942
10	1994	4	5.95199	0.07880	0.01155	13.01310	0.78609	0.62073
10	1994	5	5.95003	0.07877	0.01154	16.24003	0.87565	0.69193
10	1994	6	5.23816	0.07226	0.01059	16.59625	0.86468	0.68328
10	1994	7	5.23816	0.07226	0.01059	19.98107	0.86825	0.68644
10	1994	8a	7.74648	0.09860	0.01445	28.93255	0.91806	0.72694
10	1994	8b	7.74648	0.09860	0.01445	30.92002	0.93173	0.73811
10	1995	2b	4.54469	0.05491	0.00805	7.27439	0.50878	0.39679

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	1995	3	5.80222	0.15897	0.02330	12.50136	0.73764	0.58141
10	1995	4	5.91441	0.16752	0.02455	14.37355	0.79495	0.62759
10	1995	5	5.88754	0.16558	0.02427	16.76306	0.86148	0.68075
10	1995	6	5.22862	0.11467	0.01681	17.33545	0.84126	0.66480
10	1995	7	5.22862	0.11467	0.01681	19.61362	0.85914	0.67917
10	1995	8a	7.58853	0.23286	0.03413	28.60066	0.91682	0.72588
10	1995	8b	7.58853	0.23286	0.03413	30.68742	0.92993	0.73665
10	1996	2b	3.67986	0.03508	0.00514	7.26605	0.48755	0.38061
10	1996	3	5.87813	0.11353	0.01664	13.92342	0.79126	0.62469
10	1996	4	5.93596	0.11702	0.01715	15.56622	0.81666	0.64517
10	1996	5	5.93333	0.11696	0.01714	16.65127	0.86640	0.68456
10	1996	6	5.27961	0.07674	0.01125	18.77087	0.85696	0.67736
10	1996	7	5.27961	0.07674	0.01125	19.85261	0.86639	0.68492
10	1996	8a	7.58854	0.17231	0.02525	28.55776	0.91751	0.72640
10	1996	8b	7.58854	0.17231	0.02525	30.80120	0.93327	0.73932
10	1997	2b	3.43565	0.02867	0.00420	5.90045	0.41160	0.31868
10	1997	3	5.80184	0.10163	0.01490	10.85594	0.64591	0.50753
10	1997	4	5.94290	0.10742	0.01574	13.36260	0.80407	0.63500
10	1997	5	5.91177	0.10623	0.01557	15.22947	0.87063	0.68791
10	1997	6	5.25799	0.07930	0.01162	15.23229	0.82893	0.65485
10	1997	7	5.25799	0.07930	0.01162	16.95872	0.84177	0.66516
10	1997	8a	8.79224	0.07026	0.01030	27.39142	0.90513	0.71646
10	1997	8b	8.79224	0.07026	0.01030	30.39169	0.92539	0.73300
10	1998	2b	3.08956	0.02437	0.00357	6.38231	0.32155	0.24824
10	1998	3	3.90933	0.10195	0.01494	13.10281	0.43554	0.34130
10	1998	4	3.94128	0.11281	0.01653	13.88906	0.44895	0.35227
10	1998	5	3.89784	0.10053	0.01473	14.63335	0.43010	0.33702
10	1998	6	3.82720	0.07484	0.01097	14.23735	0.44156	0.34628
10	1998	7	3.82720	0.07484	0.01097	15.16480	0.44383	0.34807
10	1998	8a	4.37203	0.16840	0.02468	25.21191	0.59027	0.46583
10	1998	8b	4.37203	0.16840	0.02468	28.71487	0.63495	0.50203
10	1999	2b	2.38509	0.02913	0.00427	5.89889	0.32158	0.24828
10	1999	3	3.90058	0.09797	0.01436	8.82686	0.40498	0.31671

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	1999	4	4.05175	0.10215	0.01497	9.43100	0.42246	0.33112
10	1999	5	4.08268	0.10148	0.01487	9.47068	0.42331	0.33178
10	1999	6	4.08478	0.10153	0.01488	9.60772	0.42472	0.33282
10	1999	7	3.77113	0.09408	0.01379	10.12591	0.43464	0.34078
10	1999	8a	3.79518	0.10015	0.01468	18.67348	0.59132	0.46660
10	1999	8b	3.79518	0.10015	0.01468	21.41706	0.64039	0.50638
10	2000	2b	2.12818	0.02688	0.00394	6.03824	0.32595	0.25185
10	2000	3	3.96628	0.09133	0.01339	8.87501	0.40761	0.31890
10	2000	4	4.15376	0.08247	0.01209	9.35761	0.42120	0.33006
10	2000	5	4.20245	0.08016	0.01175	9.43607	0.42282	0.33134
10	2000	6	4.20551	0.08002	0.01173	9.61645	0.42777	0.33524
10	2000	7	3.83563	0.09751	0.01429	10.86398	0.44914	0.35241
10	2000	8a	3.83563	0.09751	0.01429	17.23080	0.56353	0.44427
10	2000	8b	3.83563	0.09751	0.01429	21.23417	0.63727	0.50385
10	2001	2b	0.71315	0.01932	0.00283	5.74766	0.31773	0.24514
10	2001	3	1.63639	0.07790	0.01142	8.62132	0.39877	0.31182
10	2001	4	1.70113	0.07709	0.01130	9.01578	0.41024	0.32133
10	2001	5	1.72487	0.07679	0.01126	9.05535	0.41108	0.32199
10	2001	6	1.72650	0.07677	0.01125	9.84341	0.42791	0.33542
10	2001	7	1.60656	0.07828	0.01148	9.69667	0.42456	0.33276
10	2001	8a	1.60656	0.07828	0.01148	18.14660	0.57942	0.45706
10	2001	8b	1.60656	0.07828	0.01148	21.05793	0.63333	0.50067
10	2002	2b	0.68006	0.01634	0.00240	5.81235	0.31959	0.24666
10	2002	3	1.66373	0.05121	0.00751	8.42539	0.39289	0.30700
10	2002	4	1.75001	0.04672	0.00685	8.99446	0.40914	0.32046
10	2002	5	1.77511	0.04542	0.00666	8.99446	0.40914	0.32046
10	2002	6	1.77673	0.04533	0.00665	9.37181	0.41975	0.32887
10	2002	7	1.61178	0.05391	0.00790	9.93751	0.42850	0.33592
10	2002	8a	1.61178	0.05391	0.00790	15.61939	0.53264	0.41935
10	2002	8b	1.61178	0.05391	0.00790	20.68807	0.62620	0.49491
10	2003	2b	0.59281	0.01670	0.00245	4.17044	0.27012	0.20843
10	2003	3	1.64412	0.05903	0.00865	5.76834	0.34049	0.26607
10	2003	4	1.71769	0.05792	0.00849	6.13147	0.35664	0.27936

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2003	5	1.73996	0.05758	0.00844	6.13147	0.35664	0.27936
10	2003	6	1.74141	0.05756	0.00844	6.53051	0.37109	0.29079
10	2003	7	1.60201	0.05967	0.00875	6.69467	0.38207	0.29964
10	2003	8a	1.60211	0.05966	0.00875	8.70619	0.49130	0.38712
10	2003	8b	1.60211	0.05966	0.00875	10.13834	0.57150	0.45179
10	2004	2b	0.49319	0.00806	0.00116	4.14627	0.26823	0.20700
10	2004	3	1.66335	0.03370	0.00494	5.81940	0.34133	0.26672
10	2004	4	1.76379	0.03244	0.00476	6.20668	0.35847	0.28078
10	2004	5	1.79249	0.03207	0.00470	6.20668	0.35847	0.28078
10	2004	6	1.79434	0.03205	0.00470	6.59265	0.37500	0.29389
10	2004	7	1.60152	0.03448	0.00505	6.74751	0.38461	0.30164
10	2004	8a	1.60152	0.03448	0.00505	8.68270	0.48949	0.38567
10	2004	8b	1.60152	0.03448	0.00505	10.14195	0.57220	0.45235
10	2005	2b	0.39987	0.00683	0.00098	4.04459	0.26231	0.20232
10	2005	3	1.64861	0.03300	0.00484	5.69098	0.33529	0.26183
10	2005	4	1.70598	0.03216	0.00471	6.17842	0.35711	0.27970
10	2005	5	1.73110	0.03179	0.00466	6.17842	0.35711	0.27970
10	2005	6	1.73293	0.03176	0.00466	6.49843	0.37211	0.29162
10	2005	7	1.62658	0.03332	0.00488	6.77998	0.38757	0.30404
10	2005	8a	1.62674	0.03332	0.00488	8.91282	0.50187	0.39567
10	2005	8b	1.62674	0.03332	0.00488	10.20206	0.57503	0.45465
10	2006	2b	0.44252	0.00777	0.00112	4.10107	0.26643	0.20551
10	2006	3	1.64814	0.03483	0.00511	5.64480	0.33322	0.26017
10	2006	4	1.72181	0.03360	0.00493	6.09783	0.35288	0.27635
10	2006	5	1.74951	0.03314	0.00486	6.09783	0.35288	0.27635
10	2006	6	1.75143	0.03311	0.00485	6.34792	0.36533	0.28625
10	2006	7	1.61517	0.03538	0.00519	6.64503	0.38115	0.29894
10	2006	8a	1.61536	0.03538	0.00519	8.80438	0.49661	0.39145
10	2006	8b	1.61536	0.03538	0.00519	10.18216	0.57439	0.45412
10	2007	2b	0.37916	0.00687	0.00099	2.18975	0.01156	0.00135
10	2007	3	1.65397	0.03469	0.00509	3.36724	0.01527	0.00178
10	2007	4	1.71840	0.03342	0.00490	3.61302	0.01606	0.00188
10	2007	5	1.74428	0.03290	0.00482	3.61302	0.01606	0.00188

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2007	6	1.74615	0.03286	0.00482	3.77655	0.01654	0.00193
10	2007	7	1.62752	0.03521	0.00516	4.17924	0.01780	0.00208
10	2007	8a	1.62870	0.03522	0.00516	6.15275	0.02399	0.00280
10	2007	8b	1.62870	0.03522	0.00516	7.09380	0.02704	0.00316
10	2008	2b	0.29725	0.00770	0.00113	2.13406	0.01138	0.00134
10	2008	3	1.11729	0.03407	0.00499	2.98956	0.01404	0.00164
10	2008	4	1.07476	0.03356	0.00492	3.17405	0.01462	0.00171
10	2008	5	1.05209	0.03328	0.00488	3.17405	0.01462	0.00171
10	2008	6	1.05032	0.03326	0.00488	3.30593	0.01502	0.00175
10	2008	7	1.13093	0.03423	0.00502	3.43326	0.01542	0.00180
10	2008	8a	1.13077	0.03423	0.00502	4.92450	0.02004	0.00234
10	2008	8b	1.13077	0.03423	0.00502	6.73271	0.02582	0.00302
10	2009	2b	0.17718	0.00615	0.00095	2.10757	0.01109	0.00131
10	2009	3	0.65713	0.02574	0.00377	3.50477	0.01571	0.00184
10	2009	4	0.65590	0.02566	0.00376	3.71763	0.01643	0.00192
10	2009	5	0.65520	0.02562	0.00376	3.71763	0.01643	0.00192
10	2009	6	0.65515	0.02562	0.00376	3.79733	0.01666	0.00195
10	2009	7	0.65751	0.02577	0.00378	4.24949	0.01805	0.00211
10	2009	8a	0.65750	0.02577	0.00378	6.16739	0.02401	0.00280
10	2009	8b	0.65750	0.02577	0.00378	7.05757	0.02688	0.00314
10	2010	2b	0.06994	0.00336	0.00060	0.90880	0.00761	0.00092
10	2010	3	0.10708	0.01162	0.00170	1.83464	0.01461	0.00171
10	2010	4	0.10710	0.01162	0.00170	1.99744	0.01582	0.00185
10	2010	5	0.10712	0.01162	0.00170	1.99744	0.01582	0.00185
10	2010	6	0.10712	0.01162	0.00170	2.07284	0.01640	0.00192
10	2010	7	0.10708	0.01162	0.00170	2.38862	0.01490	0.00174
10	2010	8a	0.10708	0.01162	0.00170	3.78657	0.00992	0.00116
10	2010	8b	0.10708	0.01162	0.00170	4.45817	0.00694	0.00081
10	2011	2b	0.07235	0.00385	0.00073	1.01026	0.00760	0.00092
10	2011	3	0.11482	0.01138	0.00167	1.57442	0.01296	0.00152
10	2011	4	0.12867	0.01096	0.00161	1.67234	0.01389	0.00162
10	2011	5	0.13559	0.01076	0.00158	1.67234	0.01389	0.00162
10	2011	6	0.13611	0.01074	0.00157	1.73295	0.01421	0.00166

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2011	7	0.11010	0.01153	0.00169	1.89065	0.01345	0.00157
10	2011	8a	0.11010	0.01153	0.00169	2.93819	0.01005	0.00118
10	2011	8b	0.11010	0.01153	0.00169	3.70232	0.00699	0.00082
10	2012	2b	0.07411	0.00415	0.00079	0.94681	0.00768	0.00095
10	2012	3	0.11639	0.01124	0.00165	1.56992	0.01348	0.00158
10	2012	4	0.12189	0.01108	0.00162	1.65731	0.01429	0.00167
10	2012	5	0.12505	0.01099	0.00161	1.65731	0.01429	0.00167
10	2012	6	0.12530	0.01099	0.00161	1.69669	0.01434	0.00168
10	2012	7	0.11472	0.01128	0.00165	1.92105	0.01343	0.00157
10	2012	8a	0.11472	0.01128	0.00165	3.01658	0.00953	0.00111
10	2012	8b	0.11472	0.01128	0.00165	3.61290	0.00690	0.00081
10	2013	2b	0.07092	0.00353	0.00080	1.13903	0.00758	0.00096
10	2013	3	0.12271	0.01029	0.00151	1.66793	0.01359	0.00160
10	2013	4	0.13251	0.01003	0.00147	1.74407	0.01447	0.00169
10	2013	5	0.13729	0.00990	0.00145	1.74407	0.01447	0.00169
10	2013	6	0.13768	0.00989	0.00145	1.77773	0.01455	0.00170
10	2013	7	0.11946	0.01037	0.00152	1.94694	0.01325	0.00155
10	2013	8a	0.11984	0.01037	0.00152	2.62202	0.00860	0.00101
10	2013	8b	0.11984	0.01037	0.00152	2.91996	0.00616	0.00072
10	2014	2b	0.06196	0.00322	0.00086	0.51686	0.00229	0.00044
10	2014	3	0.12303	0.00994	0.00146	1.09536	0.00409	0.00050
10	2014	4	0.12677	0.00986	0.00144	1.16450	0.00431	0.00050
10	2014	5	0.12894	0.00982	0.00144	1.16450	0.00431	0.00050
10	2014	6	0.12912	0.00981	0.00144	1.19124	0.00436	0.00051
10	2014	7	0.12192	0.00996	0.00146	1.34452	0.00432	0.00051
10	2014	8a	0.12192	0.00996	0.00146	2.08928	0.00425	0.00050
10	2014	8b	0.12192	0.00996	0.00146	2.51247	0.00400	0.00047
10	2015	2b	0.06157	0.00325	0.00099	0.41040	0.00225	0.00049
10	2015	3	0.12292	0.00994	0.00146	0.98031	0.00404	0.00050
10	2015	4	0.12634	0.00987	0.00145	1.06453	0.00431	0.00050
10	2015	5	0.12835	0.00983	0.00144	1.06453	0.00431	0.00050
10	2015	6	0.12851	0.00983	0.00144	1.09289	0.00436	0.00051
10	2015	7	0.12190	0.00996	0.00146	1.26299	0.00432	0.00051

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2015	8a	0.12190	0.00996	0.00146	2.07355	0.00425	0.00050
10	2015	8b	0.12190	0.00996	0.00146	2.52620	0.00401	0.00047
10	2016	2b	0.05593	0.00301	0.00096	0.39106	0.00214	0.00048
10	2016	3	0.12281	0.00994	0.00146	0.93331	0.00399	0.00050
10	2016	4	0.12590	0.00988	0.00145	1.02515	0.00431	0.00050
10	2016	5	0.12773	0.00984	0.00144	1.02515	0.00431	0.00050
10	2016	6	0.12787	0.00984	0.00144	1.04886	0.00435	0.00051
10	2016	7	0.12189	0.00996	0.00146	1.18334	0.00433	0.00051
10	2016	8a	0.12189	0.00996	0.00146	1.93124	0.00428	0.00050
10	2016	8b	0.12189	0.00996	0.00146	2.43181	0.00404	0.00047
10	2017	2b	0.04678	0.00290	0.00103	0.37567	0.00209	0.00051
10	2017	3	0.12267	0.00994	0.00146	0.88963	0.00397	0.00050
10	2017	4	0.12536	0.00989	0.00145	0.98173	0.00431	0.00050
10	2017	5	0.12695	0.00986	0.00144	0.98173	0.00431	0.00050
10	2017	6	0.12708	0.00985	0.00144	1.00040	0.00435	0.00051
10	2017	7	0.12189	0.00996	0.00146	1.10479	0.00433	0.00051
10	2017	8a	0.12189	0.00996	0.00146	1.72113	0.00429	0.00050
10	2017	8b	0.12189	0.00996	0.00146	2.16370	0.00406	0.00047
10	2018	2b	0.03722	0.00286	0.00103	0.26184	0.00202	0.00050
10	2018	3	0.09084	0.00987	0.00145	0.80808	0.00383	0.00049
10	2018	4	0.09975	0.00968	0.00142	0.90510	0.00415	0.00049
10	2018	5	0.10440	0.00958	0.00140	0.90510	0.00415	0.00049
10	2018	6	0.10476	0.00957	0.00140	0.95012	0.00425	0.00050
10	2018	7	0.08792	0.00993	0.00145	1.04408	0.00421	0.00049
10	2018	8a	0.08792	0.00993	0.00145	1.67106	0.00420	0.00049
10	2018	8b	0.08792	0.00993	0.00145	2.10401	0.00399	0.00047
10	2019	2b	0.03338	0.00278	0.00101	0.22761	0.00195	0.00050
10	2019	3	0.08655	0.00987	0.00145	0.77982	0.00379	0.00049
10	2019	4	0.09533	0.00969	0.00142	0.88701	0.00415	0.00049
10	2019	5	0.09997	0.00960	0.00141	0.88701	0.00415	0.00049
10	2019	6	0.10033	0.00959	0.00140	0.93089	0.00424	0.00050
10	2019	7	0.08370	0.00993	0.00145	1.02780	0.00420	0.00049
10	2019	8a	0.08370	0.00993	0.00145	1.66540	0.00420	0.00049

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2019	8b	0.08370	0.00993	0.00145	2.10297	0.00399	0.00047
10	2020	2b	0.02391	0.00161	0.00059	0.14560	0.00115	0.00029
10	2020	3	0.08229	0.00597	0.00088	0.53670	0.00245	0.00031
10	2020	4	0.09101	0.00589	0.00086	0.62117	0.00273	0.00032
10	2020	5	0.09567	0.00584	0.00086	0.62117	0.00273	0.00032
10	2020	6	0.09603	0.00584	0.00086	0.65182	0.00279	0.00033
10	2020	7	0.07948	0.00600	0.00088	0.71973	0.00278	0.00032
10	2020	8a	0.07948	0.00600	0.00088	1.18369	0.00286	0.00033
10	2020	8b	0.07948	0.00600	0.00088	1.51795	0.00277	0.00032
10	2021	2b	0.02039	0.00139	0.00048	0.12923	0.00106	0.00025
10	2021	3	0.07731	0.00594	0.00087	0.52001	0.00240	0.00030
10	2021	4	0.08555	0.00584	0.00086	0.60932	0.00271	0.00032
10	2021	5	0.08997	0.00579	0.00085	0.60932	0.00271	0.00032
10	2021	6	0.09031	0.00579	0.00085	0.63865	0.00276	0.00032
10	2021	7	0.07466	0.00597	0.00088	0.69969	0.00274	0.00032
10	2021	8a	0.07466	0.00597	0.00088	1.13652	0.00278	0.00032
10	2021	8b	0.07466	0.00597	0.00088	1.46370	0.00267	0.00031
10	2022	2b	0.01721	0.00140	0.00048	0.11460	0.00106	0.00025
10	2022	3	0.07318	0.00594	0.00087	0.50975	0.00240	0.00030
10	2022	4	0.08171	0.00585	0.00086	0.59984	0.00271	0.00032
10	2022	5	0.08628	0.00580	0.00085	0.59984	0.00271	0.00032
10	2022	6	0.08663	0.00579	0.00085	0.62951	0.00276	0.00032
10	2022	7	0.07045	0.00597	0.00088	0.69330	0.00274	0.00032
10	2022	8a	0.07045	0.00597	0.00088	1.13886	0.00278	0.00032
10	2022	8b	0.07045	0.00597	0.00088	1.46493	0.00267	0.00031
10	2023	2b	0.01470	0.00139	0.00048	0.11235	0.00105	0.00025
10	2023	3	0.07314	0.00594	0.00087	0.50716	0.00239	0.00030
10	2023	4	0.08155	0.00585	0.00086	0.59984	0.00271	0.00032
10	2023	5	0.08607	0.00580	0.00085	0.59984	0.00271	0.00032
10	2023	6	0.08642	0.00579	0.00085	0.62889	0.00276	0.00032
10	2023	7	0.07045	0.00597	0.00088	0.69064	0.00274	0.00032
10	2023	8a	0.07045	0.00597	0.00088	1.13163	0.00278	0.00032
10	2023	8b	0.07045	0.00597	0.00088	1.46309	0.00267	0.00031

Table A-10. SmartWay Category - Refrigerated

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
10	2024	2b	0.01470	0.00139	0.00048	0.11235	0.00105	0.00025
10	2024	3	0.07314	0.00594	0.00087	0.50716	0.00239	0.00030
10	2024	4	0.08155	0.00585	0.00086	0.59984	0.00271	0.00032
10	2024	5	0.08607	0.00580	0.00085	0.59984	0.00271	0.00032
10	2024	6	0.08642	0.00579	0.00085	0.62889	0.00276	0.00032
10	2024	7	0.07045	0.00597	0.00088	0.69064	0.00274	0.00032
10	2024	8a	0.07045	0.00597	0.00088	1.13163	0.00278	0.00032
10	2024	8b	0.07045	0.00597	0.00088	1.46309	0.00267	0.00031

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	Pre-1992	2b	4.48152	0.05791	0.00849	8.82590	0.30145	0.23290
11	Pre-1992	3	5.44211	0.17878	0.02620	12.83615	0.49081	0.38443
11	Pre-1992	4	5.51772	0.18896	0.02769	17.35558	0.70941	0.55955
11	Pre-1992	5	5.45073	0.18002	0.02638	17.89534	0.72110	0.56852
11	Pre-1992	6	5.09357	0.13119	0.01923	18.09455	0.72690	0.57322
11	Pre-1992	7	5.09357	0.13119	0.01923	18.47901	0.73808	0.58232
11	Pre-1992	8a	5.10071	0.13107	0.01921	24.25443	0.89034	0.70447
11	Pre-1992	8b	5.10071	0.13107	0.01921	28.18095	0.99298	0.78702
11	1992	2b	4.48152	0.05791	0.00849	8.82590	0.30145	0.23290
11	1992	3	5.44211	0.17878	0.02620	12.83615	0.49081	0.38443
11	1992	4	5.51772	0.18896	0.02769	17.35558	0.70941	0.55955
11	1992	5	5.45073	0.18002	0.02638	17.89534	0.72110	0.56852
11	1992	6	5.09357	0.13119	0.01923	18.09455	0.72690	0.57322
11	1992	7	5.09357	0.13119	0.01923	18.47901	0.73808	0.58232
11	1992	8a	5.10071	0.13107	0.01921	24.25443	0.89034	0.70447
11	1992	8b	5.10071	0.13107	0.01921	28.18095	0.99298	0.78702
11	1993	2b	4.48152	0.05791	0.00849	8.82590	0.30145	0.23290
11	1993	3	5.44211	0.17878	0.02620	12.83615	0.49081	0.38443
11	1993	4	5.51772	0.18896	0.02769	17.35558	0.70941	0.55955
11	1993	5	5.45073	0.18002	0.02638	17.89534	0.72110	0.56852
11	1993	6	5.09357	0.13119	0.01923	18.09455	0.72690	0.57322
11	1993	7	5.09357	0.13119	0.01923	18.47901	0.73808	0.58232
11	1993	8a	5.10071	0.13107	0.01921	24.25443	0.89034	0.70447
11	1993	8b	5.10071	0.13107	0.01921	28.18095	0.99298	0.78702
11	1994	2b	3.87756	0.02350	0.00344	7.88927	0.81681	0.63452
11	1994	3	5.56592	0.04070	0.00596	10.78924	0.98337	0.76778
11	1994	4	5.60411	0.04087	0.00599	16.10754	1.22402	0.96312
11	1994	5	5.60176	0.04085	0.00599	19.28811	1.37195	1.08062
11	1994	6	5.02899	0.03839	0.00563	19.31125	1.32823	1.04618
11	1994	7	5.02899	0.03839	0.00563	21.22959	1.23128	0.97031
11	1994	8a	7.53452	0.05575	0.00817	27.11046	1.02101	0.80675
11	1994	8b	7.53452	0.05575	0.00817	28.54366	0.97223	0.76897
11	1995	2b	4.05718	0.05010	0.00734	8.13042	0.80711	0.62753

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	1995	3	5.48603	0.16021	0.02348	15.25564	1.15605	0.90821
11	1995	4	5.57461	0.16935	0.02482	17.20149	1.22137	0.96094
11	1995	5	5.55298	0.16736	0.02453	19.59991	1.32219	1.04146
11	1995	6	5.03533	0.11254	0.01649	19.58627	1.24104	0.97752
11	1995	7	5.03533	0.11254	0.01649	21.08446	1.21555	0.95786
11	1995	8a	7.26876	0.20170	0.02956	26.93414	1.03022	0.81388
11	1995	8b	7.26876	0.20170	0.02956	28.40116	0.97773	0.77323
11	1996	2b	3.27023	0.03597	0.00527	8.30889	0.77259	0.60089
11	1996	3	5.54946	0.13539	0.01984	17.11341	1.22152	0.96111
11	1996	4	5.59300	0.13971	0.02048	18.43933	1.22883	0.96756
11	1996	5	5.59036	0.13977	0.02049	19.46573	1.33065	1.04802
11	1996	6	5.10307	0.08878	0.01301	20.63301	1.24250	0.97889
11	1996	7	5.10307	0.08878	0.01301	21.36607	1.22271	0.96358
11	1996	8a	7.26876	0.15288	0.02241	26.96495	1.03482	0.81746
11	1996	8b	7.26876	0.15288	0.02241	28.52791	0.98073	0.77564
11	1997	2b	2.69282	0.01945	0.00285	6.33215	0.65264	0.50445
11	1997	3	5.48800	0.07103	0.01041	12.85960	1.00736	0.78916
11	1997	4	5.59710	0.07504	0.01100	16.57433	1.25792	0.98992
11	1997	5	5.57275	0.07421	0.01088	18.19357	1.35876	1.07002
11	1997	6	5.06718	0.05557	0.00814	17.91765	1.26066	0.99250
11	1997	7	5.06718	0.05557	0.00814	19.05462	1.24346	0.97923
11	1997	8a	8.56045	0.04230	0.00620	26.07867	1.04929	0.82849
11	1997	8b	8.56045	0.04230	0.00620	28.23473	0.97649	0.77211
11	1998	2b	2.29375	0.01884	0.00276	7.25868	0.35265	0.26986
11	1998	3	3.17562	0.08519	0.01249	15.44003	0.52376	0.40817
11	1998	4	3.17532	0.09479	0.01389	16.33650	0.54245	0.42329
11	1998	5	3.16662	0.08434	0.01236	16.79417	0.50651	0.39450
11	1998	6	3.17342	0.06139	0.00900	16.54737	0.52768	0.41146
11	1998	7	3.17342	0.06139	0.00900	17.13362	0.52202	0.40703
11	1998	8a	3.52912	0.13231	0.01939	23.49983	0.64477	0.50710
11	1998	8b	3.52912	0.13231	0.01939	25.80551	0.68175	0.53776
11	1999	2b	1.80831	0.02562	0.00376	6.72029	0.35184	0.26915
11	1999	3	3.23169	0.10092	0.01479	10.84186	0.48900	0.37999

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	1999	4	3.42763	0.10390	0.01523	11.65608	0.51614	0.40196
11	1999	5	3.47118	0.10381	0.01522	11.67975	0.51669	0.40240
11	1999	6	3.47391	0.10385	0.01522	11.56663	0.50758	0.39523
11	1999	7	3.06473	0.09823	0.01440	11.97589	0.51756	0.40328
11	1999	8a	3.08199	0.10116	0.01483	18.16337	0.64377	0.50619
11	1999	8b	3.08199	0.10116	0.01483	20.32182	0.68690	0.54189
11	2000	2b	1.61072	0.01838	0.00269	6.91601	0.35855	0.27458
11	2000	3	3.34907	0.06850	0.01004	10.85863	0.48948	0.38052
11	2000	4	3.60112	0.06171	0.00905	11.45562	0.50896	0.39629
11	2000	5	3.66654	0.05995	0.00879	11.50185	0.51001	0.39713
11	2000	6	3.67065	0.05984	0.00877	11.53917	0.50841	0.39599
11	2000	7	3.17326	0.07323	0.01073	12.43625	0.52659	0.41069
11	2000	8a	3.17326	0.07323	0.01073	17.00643	0.61788	0.48513
11	2000	8b	3.17326	0.07323	0.01073	20.16224	0.68351	0.53909
11	2001	2b	0.55771	0.01236	0.00181	6.50458	0.34500	0.26363
11	2001	3	1.34998	0.03989	0.00585	10.58589	0.48000	0.37282
11	2001	4	1.43876	0.03950	0.00579	11.14465	0.49866	0.38794
11	2001	5	1.47131	0.03936	0.00577	11.16832	0.49921	0.38838
11	2001	6	1.47354	0.03935	0.00577	11.68775	0.50940	0.39672
11	2001	7	1.30903	0.04007	0.00587	11.59336	0.50758	0.39525
11	2001	8a	1.30903	0.04007	0.00587	17.68039	0.63092	0.49577
11	2001	8b	1.30903	0.04007	0.00587	20.00430	0.67953	0.53585
11	2002	2b	0.53074	0.01450	0.00213	6.60082	0.34825	0.26625
11	2002	3	1.38991	0.04874	0.00715	10.34768	0.47214	0.36643
11	2002	4	1.50843	0.04483	0.00657	11.14433	0.49858	0.38785
11	2002	5	1.54288	0.04369	0.00640	11.14433	0.49858	0.38785
11	2002	6	1.54510	0.04361	0.00639	11.36650	0.50323	0.39171
11	2002	7	1.31849	0.05110	0.00749	11.77109	0.51087	0.39789
11	2002	8a	1.31849	0.05110	0.00749	15.76135	0.59169	0.46354
11	2002	8b	1.31849	0.05110	0.00749	19.70836	0.67313	0.53057
11	2003	2b	0.46512	0.01316	0.00193	4.06043	0.29450	0.22512
11	2003	3	1.35764	0.05200	0.00762	6.48739	0.41047	0.31858
11	2003	4	1.45847	0.05062	0.00742	7.01904	0.43594	0.33915

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2003	5	1.48897	0.05020	0.00736	7.01904	0.43594	0.33915
11	2003	6	1.49096	0.05018	0.00736	7.58612	0.44599	0.34724
11	2003	7	1.29988	0.05279	0.00774	7.62499	0.45454	0.35418
11	2003	8a	1.29999	0.05279	0.00774	9.24221	0.54109	0.42440
11	2003	8b	1.29999	0.05279	0.00774	10.68904	0.61329	0.48360
11	2004	2b	0.39014	0.00696	0.00101	4.04254	0.29230	0.22345
11	2004	3	1.38659	0.03124	0.00458	6.58782	0.40955	0.31789
11	2004	4	1.52705	0.02938	0.00431	7.15285	0.43568	0.33896
11	2004	5	1.56715	0.02885	0.00423	7.15285	0.43568	0.33896
11	2004	6	1.56972	0.02881	0.00422	7.70194	0.44962	0.35015
11	2004	7	1.30005	0.03239	0.00475	7.73269	0.45632	0.35562
11	2004	8a	1.30005	0.03239	0.00475	9.25438	0.53895	0.42269
11	2004	8b	1.30005	0.03239	0.00475	10.69777	0.61390	0.48409
11	2005	2b	0.31605	0.00572	0.00082	3.92080	0.28501	0.21773
11	2005	3	1.37726	0.03054	0.00448	6.39892	0.40126	0.31123
11	2005	4	1.45541	0.02939	0.00431	7.10212	0.43431	0.33785
11	2005	5	1.48964	0.02888	0.00423	7.10212	0.43431	0.33785
11	2005	6	1.49213	0.02885	0.00423	7.55392	0.44784	0.34872
11	2005	7	1.34725	0.03098	0.00454	7.69932	0.45864	0.35750
11	2005	8a	1.34741	0.03098	0.00454	9.45902	0.54967	0.43148
11	2005	8b	1.34741	0.03098	0.00454	10.75804	0.61641	0.48617
11	2006	2b	0.35040	0.00660	0.00095	3.97083	0.28951	0.22117
11	2006	3	1.36908	0.03262	0.00478	6.29820	0.39968	0.30990
11	2006	4	1.47104	0.03091	0.00453	6.95676	0.43082	0.33503
11	2006	5	1.50939	0.03026	0.00444	6.95676	0.43082	0.33503
11	2006	6	1.51205	0.03022	0.00443	7.31117	0.44237	0.34430
11	2006	7	1.32340	0.03338	0.00489	7.48739	0.45343	0.35329
11	2006	8a	1.32361	0.03338	0.00489	9.31892	0.54520	0.42783
11	2006	8b	1.32361	0.03338	0.00489	10.73188	0.61592	0.48575
11	2007	2b	0.29980	0.00577	0.00083	2.49240	0.01245	0.00146
11	2007	3	1.37990	0.03245	0.00476	4.19363	0.01826	0.00213
11	2007	4	1.46856	0.03077	0.00451	4.53421	0.01943	0.00227
11	2007	5	1.50437	0.03008	0.00441	4.53421	0.01943	0.00227

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2007	6	1.50695	0.03003	0.00440	4.69721	0.01986	0.00232
11	2007	7	1.34352	0.03314	0.00486	5.00966	0.02081	0.00243
11	2007	8a	1.34474	0.03314	0.00486	6.75682	0.02599	0.00304
11	2007	8b	1.34474	0.03314	0.00486	7.73858	0.02892	0.00338
11	2008	2b	0.23425	0.00654	0.00096	2.42554	0.01223	0.00143
11	2008	3	0.91126	0.03183	0.00467	3.76566	0.01690	0.00198
11	2008	4	0.88220	0.03116	0.00457	4.04823	0.01789	0.00209
11	2008	5	0.86670	0.03079	0.00451	4.04823	0.01789	0.00209
11	2008	6	0.86550	0.03077	0.00451	4.18350	0.01825	0.00213
11	2008	7	0.92058	0.03205	0.00470	4.27633	0.01854	0.00217
11	2008	8a	0.92048	0.03205	0.00470	5.55488	0.02234	0.00261
11	2008	8b	0.92048	0.03205	0.00470	7.35402	0.02772	0.00324
11	2009	2b	0.13950	0.00524	0.00080	2.42416	0.01202	0.00142
11	2009	3	0.57379	0.02406	0.00353	4.37831	0.01891	0.00221
11	2009	4	0.57401	0.02391	0.00350	4.66297	0.01992	0.00233
11	2009	5	0.57410	0.02383	0.00349	4.66297	0.01992	0.00233
11	2009	6	0.57411	0.02382	0.00349	4.73620	0.02012	0.00235
11	2009	7	0.57373	0.02411	0.00353	5.09606	0.02118	0.00247
11	2009	8a	0.57376	0.02410	0.00353	6.78932	0.02608	0.00305
11	2009	8b	0.57376	0.02410	0.00353	7.70475	0.02878	0.00336
11	2010	2b	0.05641	0.00291	0.00051	1.18197	0.00837	0.00101
11	2010	3	0.10724	0.01269	0.00186	2.84943	0.02306	0.00270
11	2010	4	0.10725	0.01269	0.00186	3.12722	0.02551	0.00298
11	2010	5	0.10726	0.01269	0.00186	3.12722	0.02551	0.00298
11	2010	6	0.10726	0.01269	0.00186	3.23612	0.02684	0.00314
11	2010	7	0.10723	0.01269	0.00186	3.57775	0.02463	0.00288
11	2010	8a	0.10723	0.01269	0.00186	5.45820	0.01648	0.00193
11	2010	8b	0.10723	0.01269	0.00186	6.58196	0.01053	0.00123
11	2011	2b	0.06013	0.00345	0.00064	1.25332	0.00803	0.00097
11	2011	3	0.11463	0.01255	0.00184	2.38836	0.01898	0.00222
11	2011	4	0.12744	0.01227	0.00180	2.57936	0.02083	0.00243
11	2011	5	0.13383	0.01213	0.00178	2.57936	0.02083	0.00243
11	2011	6	0.13431	0.01211	0.00178	2.68635	0.02163	0.00253

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2011	7	0.11027	0.01264	0.00185	2.86636	0.02055	0.00240
11	2011	8a	0.11027	0.01264	0.00185	4.38618	0.01586	0.00185
11	2011	8b	0.11027	0.01264	0.00185	5.79652	0.01050	0.00123
11	2012	2b	0.06287	0.00380	0.00071	1.21449	0.00840	0.00103
11	2012	3	0.11648	0.01242	0.00182	2.42641	0.02016	0.00236
11	2012	4	0.12154	0.01232	0.00181	2.59000	0.02176	0.00254
11	2012	5	0.12443	0.01226	0.00180	2.59000	0.02176	0.00254
11	2012	6	0.12467	0.01226	0.00180	2.65274	0.02194	0.00256
11	2012	7	0.11495	0.01245	0.00182	2.92705	0.02079	0.00243
11	2012	8a	0.11495	0.01245	0.00182	4.58648	0.01516	0.00177
11	2012	8b	0.11495	0.01245	0.00182	5.72025	0.01036	0.00121
11	2013	2b	0.05821	0.00309	0.00068	1.38361	0.00840	0.00105
11	2013	3	0.12272	0.01144	0.00168	2.52324	0.02130	0.00250
11	2013	4	0.13157	0.01126	0.00165	2.68347	0.02313	0.00270
11	2013	5	0.13592	0.01116	0.00163	2.68347	0.02313	0.00270
11	2013	6	0.13627	0.01115	0.00163	2.74580	0.02345	0.00274
11	2013	7	0.11978	0.01150	0.00168	2.96743	0.02166	0.00253
11	2013	8a	0.12009	0.01150	0.00168	4.10543	0.01416	0.00166
11	2013	8b	0.12009	0.01150	0.00168	4.73907	0.00935	0.00109
11	2014	2b	0.05113	0.00290	0.00073	0.75369	0.00226	0.00041
11	2014	3	0.12348	0.01110	0.00162	2.00833	0.00543	0.00065
11	2014	4	0.12682	0.01105	0.00162	2.15013	0.00579	0.00068
11	2014	5	0.12876	0.01102	0.00161	2.15013	0.00579	0.00068
11	2014	6	0.12892	0.01102	0.00161	2.19882	0.00588	0.00069
11	2014	7	0.12247	0.01111	0.00163	2.38783	0.00581	0.00068
11	2014	8a	0.12247	0.01111	0.00163	3.54484	0.00566	0.00066
11	2014	8b	0.12247	0.01111	0.00163	4.37736	0.00532	0.00062
11	2015	2b	0.05077	0.00290	0.00083	0.62081	0.00215	0.00044
11	2015	3	0.12337	0.01110	0.00162	1.88045	0.00534	0.00065
11	2015	4	0.12643	0.01105	0.00162	2.05583	0.00579	0.00068
11	2015	5	0.12822	0.01103	0.00161	2.05583	0.00579	0.00068
11	2015	6	0.12837	0.01102	0.00161	2.10553	0.00587	0.00069
11	2015	7	0.12246	0.01111	0.00163	2.31128	0.00581	0.00068

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2015	8a	0.12246	0.01111	0.00163	3.53935	0.00566	0.00066
11	2015	8b	0.12246	0.01111	0.00163	4.40134	0.00533	0.00062
11	2016	2b	0.04620	0.00269	0.00080	0.58303	0.00203	0.00043
11	2016	3	0.12327	0.01110	0.00163	1.79883	0.00527	0.00064
11	2016	4	0.12604	0.01106	0.00162	1.99275	0.00579	0.00068
11	2016	5	0.12767	0.01103	0.00162	1.99275	0.00579	0.00068
11	2016	6	0.12780	0.01103	0.00162	2.03494	0.00586	0.00069
11	2016	7	0.12245	0.01111	0.00163	2.19726	0.00581	0.00068
11	2016	8a	0.12245	0.01111	0.00163	3.31275	0.00570	0.00067
11	2016	8b	0.12245	0.01111	0.00163	4.25277	0.00537	0.00063
11	2017	2b	0.03936	0.00260	0.00085	0.55871	0.00197	0.00044
11	2017	3	0.12314	0.01110	0.00163	1.71708	0.00523	0.00064
11	2017	4	0.12554	0.01106	0.00162	1.91255	0.00579	0.00068
11	2017	5	0.12697	0.01104	0.00162	1.91255	0.00579	0.00068
11	2017	6	0.12709	0.01104	0.00162	1.94633	0.00585	0.00068
11	2017	7	0.12244	0.01111	0.00163	2.07526	0.00581	0.00068
11	2017	8a	0.12244	0.01111	0.00163	3.01195	0.00572	0.00067
11	2017	8b	0.12244	0.01111	0.00163	3.86309	0.00539	0.00063
11	2018	2b	0.03163	0.00263	0.00086	0.41220	0.00190	0.00044
11	2018	3	0.09161	0.01103	0.00161	1.59180	0.00504	0.00062
11	2018	4	0.09984	0.01089	0.00159	1.78814	0.00556	0.00065
11	2018	5	0.10413	0.01082	0.00158	1.78814	0.00556	0.00065
11	2018	6	0.10446	0.01082	0.00158	1.87703	0.00575	0.00067
11	2018	7	0.08891	0.01107	0.00162	1.98612	0.00566	0.00066
11	2018	8a	0.08891	0.01107	0.00162	2.94487	0.00559	0.00065
11	2018	8b	0.08891	0.01107	0.00162	3.77829	0.00532	0.00062
11	2019	2b	0.02863	0.00260	0.00085	0.36140	0.00182	0.00043
11	2019	3	0.08733	0.01103	0.00161	1.54491	0.00498	0.00062
11	2019	4	0.09547	0.01090	0.00160	1.75976	0.00556	0.00065
11	2019	5	0.09978	0.01084	0.00159	1.75976	0.00556	0.00065
11	2019	6	0.10011	0.01083	0.00159	1.84539	0.00573	0.00067
11	2019	7	0.08469	0.01107	0.00162	1.95907	0.00565	0.00066
11	2019	8a	0.08469	0.01107	0.00162	2.93496	0.00559	0.00065

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2019	8b	0.08469	0.01107	0.00162	3.77635	0.00532	0.00062
11	2020	2b	0.02116	0.00152	0.00050	0.23132	0.00108	0.00025
11	2020	3	0.08308	0.00668	0.00098	1.06942	0.00324	0.00040
11	2020	4	0.09120	0.00663	0.00097	1.23851	0.00368	0.00043
11	2020	5	0.09553	0.00661	0.00097	1.23851	0.00368	0.00043
11	2020	6	0.09587	0.00660	0.00097	1.29797	0.00379	0.00044
11	2020	7	0.08047	0.00670	0.00098	1.37773	0.00375	0.00044
11	2020	8a	0.08047	0.00670	0.00098	2.08466	0.00380	0.00044
11	2020	8b	0.08047	0.00670	0.00098	2.72412	0.00369	0.00043
11	2021	2b	0.01816	0.00135	0.00041	0.20764	0.00101	0.00022
11	2021	3	0.07818	0.00665	0.00098	1.04233	0.00318	0.00039
11	2021	4	0.08593	0.00658	0.00097	1.22032	0.00365	0.00043
11	2021	5	0.09008	0.00655	0.00096	1.22032	0.00365	0.00043
11	2021	6	0.09040	0.00655	0.00096	1.27771	0.00376	0.00044
11	2021	7	0.07569	0.00667	0.00098	1.35012	0.00371	0.00043
11	2021	8a	0.07569	0.00667	0.00098	2.02265	0.00372	0.00043
11	2021	8b	0.07569	0.00667	0.00098	2.65555	0.00358	0.00042
11	2022	2b	0.01557	0.00136	0.00042	0.18865	0.00101	0.00022
11	2022	3	0.07406	0.00665	0.00098	1.02789	0.00318	0.00039
11	2022	4	0.08210	0.00659	0.00097	1.20625	0.00365	0.00043
11	2022	5	0.08641	0.00655	0.00096	1.20625	0.00365	0.00043
11	2022	6	0.08674	0.00655	0.00096	1.26389	0.00376	0.00044
11	2022	7	0.07148	0.00667	0.00098	1.33997	0.00371	0.00043
11	2022	8a	0.07148	0.00667	0.00098	2.02713	0.00372	0.00043
11	2022	8b	0.07148	0.00667	0.00098	2.65838	0.00358	0.00042
11	2023	2b	0.01367	0.00135	0.00042	0.18516	0.00100	0.00022
11	2023	3	0.07402	0.00665	0.00098	1.02293	0.00317	0.00039
11	2023	4	0.08195	0.00659	0.00097	1.20626	0.00365	0.00043
11	2023	5	0.08621	0.00655	0.00096	1.20626	0.00365	0.00043
11	2023	6	0.08655	0.00655	0.00096	1.26278	0.00375	0.00044
11	2023	7	0.07148	0.00667	0.00098	1.33621	0.00371	0.00043
11	2023	8a	0.07148	0.00667	0.00098	2.01430	0.00372	0.00043
11	2023	8b	0.07148	0.00667	0.00098	2.65447	0.00358	0.00042

Table A-11. SmartWay Category - Specialized

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
11	2024	2b	0.01367	0.00135	0.00042	0.18516	0.00100	0.00022
11	2024	3	0.07402	0.00665	0.00098	1.02293	0.00317	0.00039
11	2024	4	0.08195	0.00659	0.00097	1.20626	0.00365	0.00043
11	2024	5	0.08621	0.00655	0.00096	1.20626	0.00365	0.00043
11	2024	6	0.08655	0.00655	0.00096	1.26278	0.00375	0.00044
11	2024	7	0.07148	0.00667	0.00098	1.33621	0.00371	0.00043
11	2024	8a	0.07148	0.00667	0.00098	2.01430	0.00372	0.00043
11	2024	8b	0.07148	0.00667	0.00098	2.65447	0.00358	0.00042

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	Pre-1992	2b	4.92083	0.04015	0.00588	8.02917	0.28012	0.21630
12	Pre-1992	3	5.60408	0.11510	0.01687	11.07116	0.41591	0.32589
12	Pre-1992	4	5.70002	0.12116	0.01776	14.70811	0.58824	0.46509
12	Pre-1992	5	5.61512	0.11584	0.01698	15.25088	0.57260	0.45258
12	Pre-1992	6	5.16069	0.08673	0.01271	15.56862	0.58576	0.46308
12	Pre-1992	7	5.16069	0.08673	0.01271	16.24419	0.61578	0.48702
12	Pre-1992	8a	5.16853	0.08668	0.01270	24.53006	0.84418	0.66915
12	Pre-1992	8b	5.16853	0.08668	0.01270	29.78272	0.98401	0.78077
12	1992	2b	4.92083	0.04015	0.00588	8.02917	0.28012	0.21630
12	1992	3	5.60408	0.11510	0.01687	11.07116	0.41591	0.32589
12	1992	4	5.70002	0.12116	0.01776	14.70811	0.58824	0.46509
12	1992	5	5.61512	0.11584	0.01698	15.25088	0.57260	0.45258
12	1992	6	5.16069	0.08673	0.01271	15.56862	0.58576	0.46308
12	1992	7	5.16069	0.08673	0.01271	16.24419	0.61578	0.48702
12	1992	8a	5.16853	0.08668	0.01270	24.53006	0.84418	0.66915
12	1992	8b	5.16853	0.08668	0.01270	29.78272	0.98401	0.78077
12	1993	2b	4.92083	0.04015	0.00588	8.02917	0.28012	0.21630
12	1993	3	5.60408	0.11510	0.01687	11.07116	0.41591	0.32589
12	1993	4	5.70002	0.12116	0.01776	14.70811	0.58824	0.46509
12	1993	5	5.61512	0.11584	0.01698	15.25088	0.57260	0.45258
12	1993	6	5.16069	0.08673	0.01271	15.56862	0.58576	0.46308
12	1993	7	5.16069	0.08673	0.01271	16.24419	0.61578	0.48702
12	1993	8a	5.16853	0.08668	0.01270	24.53006	0.84418	0.66915
12	1993	8b	5.16853	0.08668	0.01270	29.78272	0.98401	0.78077
12	1994	2b	4.28134	0.03630	0.00532	7.13436	0.55883	0.43506
12	1994	3	5.76343	0.06734	0.00987	9.36450	0.67787	0.53083
12	1994	4	5.80747	0.06766	0.00992	13.53613	0.85325	0.67339
12	1994	5	5.80537	0.06763	0.00991	16.69868	0.95094	0.75104
12	1994	6	5.13930	0.06280	0.00920	17.00558	0.93499	0.73846
12	1994	7	5.13930	0.06280	0.00920	20.16440	0.92299	0.72938
12	1994	8a	7.62091	0.08599	0.01260	28.43051	0.93064	0.73677
12	1994	8b	7.62091	0.08599	0.01260	30.24993	0.93390	0.73976
12	1995	2b	4.39746	0.05306	0.00778	7.33661	0.55168	0.43006

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	1995	3	5.66819	0.15435	0.02262	12.93354	0.80105	0.63107
12	1995	4	5.77261	0.16253	0.02382	14.82498	0.85969	0.67834
12	1995	5	5.74742	0.16069	0.02355	17.18688	0.93111	0.73540
12	1995	6	5.13521	0.11196	0.01641	17.67077	0.90161	0.71214
12	1995	7	5.13521	0.11196	0.01641	19.81553	0.91262	0.72112
12	1995	8a	7.45116	0.22206	0.03255	28.13553	0.93102	0.73698
12	1995	8b	7.45116	0.22206	0.03255	30.04201	0.93332	0.73925
12	1996	2b	3.55937	0.03467	0.00508	7.37766	0.52907	0.41281
12	1996	3	5.73933	0.11399	0.01671	14.43697	0.85645	0.67580
12	1996	4	5.79287	0.11747	0.01722	16.02487	0.87901	0.69407
12	1996	5	5.79018	0.11743	0.01721	17.07193	0.93662	0.73968
12	1996	6	5.18703	0.07708	0.01130	19.07107	0.91510	0.72297
12	1996	7	5.18703	0.07708	0.01130	20.05785	0.91971	0.72675
12	1996	8a	7.45117	0.16637	0.02438	28.11048	0.93236	0.73801
12	1996	8b	7.45117	0.16637	0.02438	30.15393	0.93661	0.74188
12	1997	2b	3.25847	0.02631	0.00386	5.89995	0.44606	0.34528
12	1997	3	5.66769	0.09062	0.01328	11.16699	0.70076	0.55039
12	1997	4	5.79894	0.09562	0.01401	13.89709	0.87341	0.68937
12	1997	5	5.76987	0.09459	0.01386	15.69767	0.94510	0.74636
12	1997	6	5.16166	0.07135	0.01046	15.66584	0.89465	0.70640
12	1997	7	5.16166	0.07135	0.01046	17.29718	0.90273	0.71296
12	1997	8a	8.67344	0.06564	0.00962	27.03343	0.92450	0.73160
12	1997	8b	8.67344	0.06564	0.00962	29.78223	0.92935	0.73604
12	1998	2b	2.90529	0.02301	0.00337	6.44705	0.31970	0.24679
12	1998	3	3.71895	0.09572	0.01403	13.42312	0.44406	0.34784
12	1998	4	3.74481	0.10581	0.01551	14.22467	0.45839	0.35952
12	1998	5	3.70821	0.09440	0.01384	14.91518	0.43612	0.34160
12	1998	6	3.65203	0.07054	0.01034	14.54669	0.44953	0.35238
12	1998	7	3.65203	0.07054	0.01034	15.41239	0.45046	0.35313
12	1998	8a	4.15029	0.15808	0.02317	24.74409	0.59518	0.46960
12	1998	8b	4.15029	0.15808	0.02317	27.91574	0.63859	0.50483
12	1999	2b	2.24976	0.02806	0.00411	5.95490	0.31953	0.24666
12	1999	3	3.72068	0.09562	0.01401	9.12973	0.41345	0.32320

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	1999	4	3.87535	0.09890	0.01450	9.77656	0.43283	0.33905
12	1999	5	3.90759	0.09818	0.01439	9.81261	0.43362	0.33967
12	1999	6	3.90973	0.09821	0.01439	9.89202	0.43264	0.33886
12	1999	7	3.58839	0.09252	0.01356	10.39171	0.44284	0.34703
12	1999	8a	3.61065	0.09800	0.01436	18.46544	0.59613	0.47029
12	1999	8b	3.61065	0.09800	0.01436	21.01843	0.64404	0.50919
12	2000	2b	2.00648	0.02495	0.00366	6.10525	0.32434	0.25057
12	2000	3	3.79298	0.08453	0.01239	9.16634	0.41550	0.32494
12	2000	4	3.98607	0.07599	0.01114	9.67091	0.43023	0.33696
12	2000	5	4.03622	0.07377	0.01081	9.74215	0.43175	0.33816
12	2000	6	4.03937	0.07363	0.01079	9.88149	0.43498	0.34073
12	2000	7	3.65841	0.09049	0.01326	11.08678	0.45658	0.35808
12	2000	8a	3.65841	0.09049	0.01326	17.10021	0.56857	0.44812
12	2000	8b	3.65841	0.09049	0.01326	20.85038	0.64093	0.50667
12	2001	2b	0.67545	0.01742	0.00255	5.79050	0.31510	0.24307
12	2001	3	1.56017	0.06529	0.00957	8.92114	0.40688	0.31802
12	2001	4	1.62711	0.06457	0.00947	9.35046	0.41979	0.32862
12	2001	5	1.65167	0.06431	0.00943	9.38641	0.42057	0.32924
12	2001	6	1.65335	0.06429	0.00942	10.12073	0.43601	0.34159
12	2001	7	1.52932	0.06562	0.00962	9.97728	0.43293	0.33913
12	2001	8a	1.52932	0.06562	0.00962	17.96625	0.58424	0.46074
12	2001	8b	1.52932	0.06562	0.00962	20.68308	0.63705	0.50353
12	2002	2b	0.64396	0.01582	0.00232	5.86209	0.31724	0.24480
12	2002	3	1.58880	0.04999	0.00733	8.71872	0.40066	0.31294
12	2002	4	1.67805	0.04552	0.00667	9.33656	0.41897	0.32796
12	2002	5	1.70401	0.04422	0.00648	9.33656	0.41897	0.32796
12	2002	6	1.70569	0.04413	0.00647	9.66557	0.42789	0.33507
12	2002	7	1.53507	0.05268	0.00772	10.21947	0.43698	0.34239
12	2002	8a	1.53507	0.05268	0.00772	15.59066	0.53859	0.42388
12	2002	8b	1.53507	0.05268	0.00772	20.34221	0.63013	0.49793
12	2003	2b	0.56156	0.01571	0.00230	4.08444	0.26817	0.20690
12	2003	3	1.56763	0.05492	0.00805	5.83150	0.34753	0.27145
12	2003	4	1.64374	0.05368	0.00787	6.22343	0.36552	0.28614

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2003	5	1.66677	0.05331	0.00782	6.22343	0.36552	0.28614
12	2003	6	1.66828	0.05329	0.00781	6.64255	0.37854	0.29648
12	2003	7	1.52406	0.05563	0.00816	6.79302	0.38971	0.30547
12	2003	8a	1.52416	0.05563	0.00815	8.73650	0.49636	0.39098
12	2003	8b	1.52416	0.05563	0.00815	10.14253	0.57492	0.45442
12	2004	2b	0.46780	0.00770	0.00111	4.06170	0.26626	0.20544
12	2004	3	1.58793	0.03230	0.00473	5.88896	0.34789	0.27174
12	2004	4	1.69220	0.03094	0.00454	6.30583	0.36675	0.28710
12	2004	5	1.72199	0.03055	0.00448	6.30583	0.36675	0.28710
12	2004	6	1.72391	0.03053	0.00448	6.71192	0.38222	0.29941
12	2004	7	1.52374	0.03313	0.00486	6.85296	0.39191	0.30721
12	2004	8a	1.52374	0.03313	0.00486	8.71955	0.49443	0.38943
12	2004	8b	1.52374	0.03313	0.00486	10.14697	0.57558	0.45495
12	2005	2b	0.37893	0.00650	0.00094	3.95751	0.26019	0.20065
12	2005	3	1.57460	0.03162	0.00464	5.75144	0.34150	0.26659
12	2005	4	1.63377	0.03075	0.00451	6.27482	0.36546	0.28608
12	2005	5	1.65969	0.03037	0.00445	6.27482	0.36546	0.28608
12	2005	6	1.66157	0.03034	0.00445	6.61132	0.37974	0.29744
12	2005	7	1.55188	0.03196	0.00468	6.87783	0.39505	0.30975
12	2005	8a	1.55204	0.03196	0.00468	8.94407	0.50665	0.39931
12	2005	8b	1.55204	0.03196	0.00468	10.20507	0.57833	0.45718
12	2006	2b	0.41930	0.00740	0.00106	4.01190	0.26428	0.20381
12	2006	3	1.57270	0.03338	0.00489	5.69726	0.33963	0.26507
12	2006	4	1.64902	0.03210	0.00471	6.18545	0.36155	0.28297
12	2006	5	1.67772	0.03162	0.00464	6.18545	0.36155	0.28297
12	2006	6	1.67970	0.03159	0.00463	6.44875	0.37350	0.29248
12	2006	7	1.53854	0.03395	0.00498	6.73280	0.38908	0.30499
12	2006	8a	1.53874	0.03395	0.00498	8.83272	0.50163	0.39528
12	2006	8b	1.53874	0.03395	0.00498	10.18493	0.57773	0.45670
12	2007	2b	0.35918	0.00654	0.00094	2.20847	0.01148	0.00134
12	2007	3	1.57918	0.03323	0.00487	3.47868	0.01556	0.00182
12	2007	4	1.64585	0.03194	0.00468	3.74011	0.01642	0.00192
12	2007	5	1.67263	0.03140	0.00460	3.74011	0.01642	0.00192

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2007	6	1.67457	0.03137	0.00460	3.89938	0.01688	0.00197
12	2007	7	1.55182	0.03376	0.00495	4.29441	0.01812	0.00212
12	2007	8a	1.55301	0.03377	0.00495	6.21863	0.02418	0.00282
12	2007	8b	1.55301	0.03377	0.00495	7.14231	0.02719	0.00318
12	2008	2b	0.28173	0.00734	0.00108	2.15219	0.01130	0.00133
12	2008	3	1.06662	0.03268	0.00479	3.10580	0.01435	0.00168
12	2008	4	1.02673	0.03216	0.00471	3.30996	0.01501	0.00175
12	2008	5	1.00546	0.03188	0.00467	3.30996	0.01501	0.00175
12	2008	6	1.00380	0.03186	0.00467	3.43825	0.01539	0.00180
12	2008	7	1.07941	0.03285	0.00482	3.56347	0.01578	0.00184
12	2008	8a	1.07926	0.03285	0.00482	5.01928	0.02031	0.00237
12	2008	8b	1.07926	0.03285	0.00482	6.78984	0.02599	0.00304
12	2009	2b	0.16820	0.00586	0.00090	2.13150	0.01103	0.00131
12	2009	3	0.63924	0.02471	0.00362	3.62284	0.01604	0.00188
12	2009	4	0.63787	0.02462	0.00361	3.84671	0.01681	0.00196
12	2009	5	0.63709	0.02457	0.00360	3.84671	0.01681	0.00196
12	2009	6	0.63702	0.02456	0.00360	3.92421	0.01704	0.00199
12	2009	7	0.63966	0.02474	0.00363	4.36705	0.01840	0.00215
12	2009	8a	0.63966	0.02474	0.00363	6.23454	0.02421	0.00283
12	2009	8b	0.63966	0.02474	0.00363	7.10613	0.02703	0.00316
12	2010	2b	0.06656	0.00324	0.00057	0.93957	0.00759	0.00092
12	2010	3	0.10622	0.01173	0.00172	1.98737	0.01587	0.00186
12	2010	4	0.10623	0.01173	0.00172	2.16825	0.01727	0.00202
12	2010	5	0.10625	0.01173	0.00172	2.16825	0.01727	0.00202
12	2010	6	0.10625	0.01173	0.00172	2.24885	0.01797	0.00210
12	2010	7	0.10621	0.01173	0.00172	2.57589	0.01634	0.00191
12	2010	8a	0.10621	0.01173	0.00172	4.06287	0.01086	0.00127
12	2010	8b	0.10621	0.01173	0.00172	4.80348	0.00747	0.00087
12	2011	2b	0.06914	0.00373	0.00070	1.03312	0.00752	0.00091
12	2011	3	0.11388	0.01151	0.00169	1.69739	0.01384	0.00162
12	2011	4	0.12757	0.01112	0.00163	1.81140	0.01492	0.00174
12	2011	5	0.13440	0.01092	0.00160	1.81140	0.01492	0.00174
12	2011	6	0.13492	0.01091	0.00160	1.87953	0.01531	0.00179

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2011	7	0.10921	0.01165	0.00171	2.04500	0.01450	0.00169
12	2011	8a	0.10921	0.01165	0.00171	3.18355	0.01088	0.00127
12	2011	8b	0.10921	0.01165	0.00171	4.05350	0.00750	0.00088
12	2012	2b	0.07105	0.00403	0.00077	0.97596	0.00766	0.00095
12	2012	3	0.11548	0.01137	0.00167	1.70028	0.01446	0.00170
12	2012	4	0.12091	0.01122	0.00165	1.80048	0.01540	0.00180
12	2012	5	0.12403	0.01114	0.00163	1.80048	0.01540	0.00180
12	2012	6	0.12428	0.01114	0.00163	1.84395	0.01547	0.00181
12	2012	7	0.11383	0.01141	0.00167	2.08173	0.01451	0.00170
12	2012	8a	0.11383	0.01141	0.00167	3.28258	0.01034	0.00121
12	2012	8b	0.11383	0.01141	0.00167	3.96647	0.00741	0.00087
12	2013	2b	0.06769	0.00341	0.00077	1.15964	0.00757	0.00096
12	2013	3	0.12177	0.01042	0.00153	1.79660	0.01473	0.00173
12	2013	4	0.13143	0.01018	0.00149	1.88754	0.01577	0.00184
12	2013	5	0.13615	0.01005	0.00147	1.88754	0.01577	0.00184
12	2013	6	0.13653	0.01004	0.00147	1.92624	0.01589	0.00186
12	2013	7	0.11857	0.01050	0.00154	2.10870	0.01449	0.00169
12	2013	8a	0.11893	0.01050	0.00154	2.87116	0.00941	0.00110
12	2013	8b	0.11893	0.01050	0.00154	3.22635	0.00663	0.00078
12	2014	2b	0.05927	0.00313	0.00083	0.54989	0.00225	0.00043
12	2014	3	0.12214	0.01008	0.00148	1.24286	0.00425	0.00051
12	2014	4	0.12582	0.01000	0.00147	1.32414	0.00448	0.00052
12	2014	5	0.12796	0.00996	0.00146	1.32414	0.00448	0.00052
12	2014	6	0.12813	0.00996	0.00146	1.35478	0.00455	0.00053
12	2014	7	0.12104	0.01010	0.00148	1.51763	0.00450	0.00053
12	2014	8a	0.12104	0.01010	0.00148	2.34024	0.00444	0.00052
12	2014	8b	0.12104	0.01010	0.00148	2.83079	0.00420	0.00049
12	2015	2b	0.05888	0.00315	0.00095	0.44074	0.00220	0.00048
12	2015	3	0.12203	0.01008	0.00148	1.12744	0.00419	0.00052
12	2015	4	0.12540	0.01001	0.00147	1.22690	0.00448	0.00052
12	2015	5	0.12737	0.00997	0.00146	1.22690	0.00448	0.00052
12	2015	6	0.12753	0.00997	0.00146	1.25907	0.00454	0.00053
12	2015	7	0.12103	0.01010	0.00148	1.43891	0.00450	0.00053

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2015	8a	0.12103	0.01010	0.00148	2.32763	0.00444	0.00052
12	2015	8b	0.12103	0.01010	0.00148	2.84652	0.00420	0.00049
12	2016	2b	0.05350	0.00292	0.00092	0.41828	0.00209	0.00047
12	2016	3	0.12192	0.01008	0.00148	1.07507	0.00414	0.00052
12	2016	4	0.12496	0.01002	0.00147	1.18407	0.00448	0.00052
12	2016	5	0.12676	0.00998	0.00146	1.18407	0.00448	0.00052
12	2016	6	0.12691	0.00998	0.00146	1.21109	0.00453	0.00053
12	2016	7	0.12102	0.01010	0.00148	1.35323	0.00450	0.00053
12	2016	8a	0.12102	0.01010	0.00148	2.17119	0.00447	0.00052
12	2016	8b	0.12102	0.01010	0.00148	2.74346	0.00423	0.00049
12	2017	2b	0.04489	0.00281	0.00098	0.40144	0.00204	0.00049
12	2017	3	0.12178	0.01008	0.00148	1.02530	0.00411	0.00052
12	2017	4	0.12442	0.01003	0.00147	1.13484	0.00448	0.00052
12	2017	5	0.12599	0.01000	0.00146	1.13484	0.00448	0.00052
12	2017	6	0.12612	0.01000	0.00146	1.15623	0.00453	0.00053
12	2017	7	0.12101	0.01009	0.00148	1.26713	0.00450	0.00053
12	2017	8a	0.12101	0.01009	0.00148	1.94496	0.00448	0.00052
12	2017	8b	0.12101	0.01009	0.00148	2.45515	0.00425	0.00050
12	2018	2b	0.03576	0.00279	0.00099	0.28399	0.00197	0.00049
12	2018	3	0.09020	0.01000	0.00147	0.93707	0.00397	0.00050
12	2018	4	0.09899	0.00982	0.00144	1.05057	0.00432	0.00050
12	2018	5	0.10358	0.00973	0.00143	1.05057	0.00432	0.00050
12	2018	6	0.10393	0.00972	0.00142	1.10317	0.00443	0.00052
12	2018	7	0.08732	0.01006	0.00147	1.20191	0.00438	0.00051
12	2018	8a	0.08732	0.01006	0.00147	1.89148	0.00438	0.00051
12	2018	8b	0.08732	0.01006	0.00147	2.39039	0.00418	0.00049
12	2019	2b	0.03213	0.00272	0.00097	0.24744	0.00190	0.00048
12	2019	3	0.08595	0.01001	0.00147	0.90587	0.00393	0.00050
12	2019	4	0.09461	0.00984	0.00144	1.03085	0.00432	0.00050
12	2019	5	0.09920	0.00975	0.00143	1.03085	0.00432	0.00050
12	2019	6	0.09955	0.00974	0.00143	1.08195	0.00442	0.00052
12	2019	7	0.08314	0.01006	0.00147	1.18396	0.00438	0.00051
12	2019	8a	0.08314	0.01006	0.00147	1.88524	0.00439	0.00051

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2019	8b	0.08314	0.01006	0.00147	2.38923	0.00419	0.00049
12	2020	2b	0.02316	0.00158	0.00056	0.15829	0.00112	0.00028
12	2020	3	0.08173	0.00606	0.00089	0.62451	0.00254	0.00032
12	2020	4	0.09034	0.00598	0.00088	0.72294	0.00284	0.00033
12	2020	5	0.09494	0.00594	0.00087	0.72294	0.00284	0.00033
12	2020	6	0.09529	0.00593	0.00087	0.75857	0.00291	0.00034
12	2020	7	0.07896	0.00608	0.00089	0.83006	0.00290	0.00034
12	2020	8a	0.07896	0.00608	0.00089	1.33988	0.00298	0.00035
12	2020	8b	0.07896	0.00608	0.00089	1.72438	0.00291	0.00034
12	2021	2b	0.01978	0.00137	0.00046	0.14091	0.00104	0.00024
12	2021	3	0.07679	0.00602	0.00088	0.60618	0.00249	0.00031
12	2021	4	0.08493	0.00593	0.00087	0.71008	0.00282	0.00033
12	2021	5	0.08928	0.00588	0.00086	0.71008	0.00282	0.00033
12	2021	6	0.08962	0.00588	0.00086	0.74424	0.00288	0.00034
12	2021	7	0.07417	0.00605	0.00089	0.80858	0.00286	0.00033
12	2021	8a	0.07417	0.00605	0.00089	1.28939	0.00290	0.00034
12	2021	8b	0.07417	0.00605	0.00089	1.66658	0.00280	0.00033
12	2022	2b	0.01675	0.00138	0.00047	0.12581	0.00104	0.00024
12	2022	3	0.07270	0.00603	0.00088	0.59534	0.00249	0.00031
12	2022	4	0.08112	0.00594	0.00087	0.69992	0.00282	0.00033
12	2022	5	0.08563	0.00589	0.00086	0.69992	0.00282	0.00033
12	2022	6	0.08598	0.00588	0.00086	0.73440	0.00288	0.00034
12	2022	7	0.07001	0.00605	0.00089	0.80169	0.00286	0.00033
12	2022	8a	0.07001	0.00605	0.00089	1.29219	0.00290	0.00034
12	2022	8b	0.07001	0.00605	0.00089	1.66807	0.00280	0.00033
12	2023	2b	0.01439	0.00137	0.00047	0.12336	0.00103	0.00024
12	2023	3	0.07266	0.00603	0.00088	0.59236	0.00248	0.00031
12	2023	4	0.08097	0.00594	0.00087	0.69992	0.00282	0.00033
12	2023	5	0.08543	0.00589	0.00086	0.69992	0.00282	0.00033
12	2023	6	0.08578	0.00589	0.00086	0.73370	0.00288	0.00034
12	2023	7	0.07001	0.00605	0.00089	0.79881	0.00286	0.00033
12	2023	8a	0.07001	0.00605	0.00089	1.28401	0.00290	0.00034
12	2023	8b	0.07001	0.00605	0.00089	1.66590	0.00280	0.00033

Table A-12. SmartWay Category - Tanker

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
12	2024	2b	0.01439	0.00137	0.00047	0.12336	0.00103	0.00024
12	2024	3	0.07266	0.00603	0.00088	0.59236	0.00248	0.00031
12	2024	4	0.08097	0.00594	0.00087	0.69992	0.00282	0.00033
12	2024	5	0.08543	0.00589	0.00086	0.69992	0.00282	0.00033
12	2024	6	0.08578	0.00589	0.00086	0.73370	0.00288	0.00034
12	2024	7	0.07001	0.00605	0.00089	0.79881	0.00286	0.00033
12	2024	8a	0.07001	0.00605	0.00089	1.28401	0.00290	0.00034
12	2024	8b	0.07001	0.00605	0.00089	1.66590	0.00280	0.00033

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	Pre-1992	2b	4.94894	0.03739	0.00548	7.90161	0.27516	0.21253
13	Pre-1992	3	5.58394	0.10537	0.01544	10.84468	0.40353	0.31629
13	Pre-1992	4	5.67994	0.11077	0.01623	14.40059	0.56917	0.45027
13	Pre-1992	5	5.59498	0.10603	0.01554	14.93930	0.54994	0.43494
13	Pre-1992	6	5.14022	0.08014	0.01175	15.27310	0.56419	0.44629
13	Pre-1992	7	5.14022	0.08014	0.01175	15.99621	0.59708	0.47249
13	Pre-1992	8a	5.14817	0.08010	0.01174	24.59648	0.83772	0.66427
13	Pre-1992	8b	5.14817	0.08010	0.01174	29.92187	0.98243	0.77969
13	1992	2b	4.94894	0.03739	0.00548	7.90161	0.27516	0.21253
13	1992	3	5.58394	0.10537	0.01544	10.84468	0.40353	0.31629
13	1992	4	5.67994	0.11077	0.01623	14.40059	0.56917	0.45027
13	1992	5	5.59498	0.10603	0.01554	14.93930	0.54994	0.43494
13	1992	6	5.14022	0.08014	0.01175	15.27310	0.56419	0.44629
13	1992	7	5.14022	0.08014	0.01175	15.99621	0.59708	0.47249
13	1992	8a	5.14817	0.08010	0.01174	24.59648	0.83772	0.66427
13	1992	8b	5.14817	0.08010	0.01174	29.92187	0.98243	0.77969
13	1993	2b	4.94894	0.03739	0.00548	7.90161	0.27516	0.21253
13	1993	3	5.58394	0.10537	0.01544	10.84468	0.40353	0.31629
13	1993	4	5.67994	0.11077	0.01623	14.40059	0.56917	0.45027
13	1993	5	5.59498	0.10603	0.01554	14.93930	0.54994	0.43494
13	1993	6	5.14022	0.08014	0.01175	15.27310	0.56419	0.44629
13	1993	7	5.14022	0.08014	0.01175	15.99621	0.59708	0.47249
13	1993	8a	5.14817	0.08010	0.01174	24.59648	0.83772	0.66427
13	1993	8b	5.14817	0.08010	0.01174	29.92187	0.98243	0.77969
13	1994	2b	4.30560	0.03693	0.00541	7.00074	0.52046	0.40543
13	1994	3	5.74353	0.06756	0.00990	9.16700	0.63323	0.49628
13	1994	4	5.78748	0.06786	0.00995	13.24303	0.80022	0.63203
13	1994	5	5.78531	0.06783	0.00994	16.38494	0.89024	0.70360
13	1994	6	5.12128	0.06336	0.00929	16.73151	0.87859	0.69441
13	1994	7	5.12128	0.06336	0.00929	20.06685	0.87993	0.69581
13	1994	8a	7.59966	0.08633	0.01265	28.55833	0.92146	0.72978
13	1994	8b	7.59966	0.08633	0.01265	30.38721	0.93276	0.73907
13	1995	2b	4.41384	0.05273	0.00773	7.19917	0.51375	0.40078

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	1995	3	5.64871	0.14992	0.02197	12.64813	0.74996	0.59127
13	1995	4	5.75280	0.15763	0.02310	14.54544	0.80799	0.63803
13	1995	5	5.72761	0.15588	0.02285	16.89716	0.87502	0.69158
13	1995	6	5.11779	0.11003	0.01613	17.44951	0.85358	0.67468
13	1995	7	5.11779	0.11003	0.01613	19.68100	0.87035	0.68817
13	1995	8a	7.44668	0.22208	0.03255	28.25438	0.92049	0.72893
13	1995	8b	7.44668	0.22208	0.03255	30.17615	0.93124	0.73783
13	1996	2b	3.57297	0.03436	0.00504	7.23184	0.49314	0.38512
13	1996	3	5.71920	0.10931	0.01602	14.11875	0.80414	0.63500
13	1996	4	5.77282	0.11260	0.01650	15.74467	0.82925	0.65525
13	1996	5	5.77005	0.11253	0.01649	16.78231	0.88006	0.69551
13	1996	6	5.16661	0.07462	0.01094	18.91523	0.86903	0.68704
13	1996	7	5.16661	0.07462	0.01094	19.91586	0.87740	0.69377
13	1996	8a	7.44669	0.16871	0.02473	28.22408	0.92133	0.72957
13	1996	8b	7.44669	0.16871	0.02473	30.28218	0.93458	0.74050
13	1997	2b	3.30806	0.02674	0.00392	5.81130	0.41528	0.32159
13	1997	3	5.64758	0.08904	0.01305	10.95449	0.65662	0.51609
13	1997	4	5.77885	0.09383	0.01375	13.58650	0.81829	0.64637
13	1997	5	5.74976	0.09284	0.01361	15.40272	0.88564	0.69992
13	1997	6	5.14150	0.07062	0.01035	15.40745	0.84248	0.66571
13	1997	7	5.14150	0.07062	0.01035	17.10883	0.85457	0.67541
13	1997	8a	8.66197	0.06923	0.01015	27.14366	0.91004	0.72049
13	1997	8b	8.66197	0.06923	0.01015	29.91002	0.92687	0.73431
13	1998	2b	2.96196	0.02338	0.00343	6.30358	0.31105	0.24065
13	1998	3	3.75905	0.09498	0.01392	13.15045	0.43046	0.33762
13	1998	4	3.78839	0.10479	0.01536	13.94264	0.44440	0.34895
13	1998	5	3.74826	0.09356	0.01371	14.65994	0.42313	0.33187
13	1998	6	3.68361	0.07044	0.01032	14.27726	0.43599	0.34219
13	1998	7	3.68361	0.07044	0.01032	15.17712	0.43772	0.34358
13	1998	8a	4.19428	0.16009	0.02346	24.84560	0.58875	0.46485
13	1998	8b	4.19428	0.16009	0.02346	28.05348	0.63385	0.50132
13	1999	2b	2.28980	0.02825	0.00414	5.81658	0.31091	0.24056
13	1999	3	3.75246	0.09319	0.01366	8.89736	0.40043	0.31349

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	1999	4	3.89865	0.09600	0.01407	9.52879	0.41912	0.32876
13	1999	5	3.92873	0.09502	0.01393	9.56601	0.41995	0.32942
13	1999	6	3.93075	0.09505	0.01393	9.66036	0.41957	0.32908
13	1999	7	3.62734	0.09047	0.01326	10.17265	0.43012	0.33752
13	1999	8a	3.64996	0.09642	0.01413	18.45482	0.59017	0.46592
13	1999	8b	3.64996	0.09642	0.01413	21.00509	0.63944	0.50578
13	2000	2b	2.04222	0.02562	0.00375	5.96174	0.31549	0.24428
13	2000	3	3.81693	0.08476	0.01242	8.93288	0.40255	0.31527
13	2000	4	3.99818	0.07592	0.01113	9.42862	0.41687	0.32695
13	2000	5	4.04526	0.07362	0.01079	9.50228	0.41847	0.32822
13	2000	6	4.04821	0.07348	0.01077	9.64423	0.42195	0.33097
13	2000	7	3.69063	0.09092	0.01333	10.90115	0.44470	0.34921
13	2000	8a	3.69063	0.09092	0.01333	17.07858	0.56188	0.44320
13	2000	8b	3.69063	0.09092	0.01333	20.84230	0.63633	0.50327
13	2001	2b	0.68579	0.01775	0.00260	5.65764	0.30673	0.23717
13	2001	3	1.57438	0.06439	0.00944	8.69785	0.39413	0.30853
13	2001	4	1.63701	0.06361	0.00933	9.11588	0.40650	0.31869
13	2001	5	1.65998	0.06332	0.00928	9.15299	0.40733	0.31934
13	2001	6	1.66156	0.06331	0.00928	9.91063	0.42341	0.33219
13	2001	7	1.54551	0.06476	0.00949	9.75758	0.42019	0.32962
13	2001	8a	1.54551	0.06476	0.00949	17.96482	0.57826	0.45638
13	2001	8b	1.54551	0.06476	0.00949	20.67718	0.63243	0.50013
13	2002	2b	0.65397	0.01593	0.00234	5.72688	0.30875	0.23881
13	2002	3	1.60086	0.04972	0.00729	8.50001	0.38808	0.30359
13	2002	4	1.68433	0.04508	0.00661	9.10255	0.40565	0.31801
13	2002	5	1.70862	0.04373	0.00641	9.10255	0.40565	0.31801
13	2002	6	1.71018	0.04365	0.00640	9.43227	0.41479	0.32527
13	2002	7	1.55062	0.05251	0.00770	10.01533	0.42446	0.33305
13	2002	8a	1.55062	0.05251	0.00770	15.55762	0.53101	0.41833
13	2002	8b	1.55062	0.05251	0.00770	20.34008	0.62536	0.49443
13	2003	2b	0.56986	0.01590	0.00233	4.06158	0.26099	0.20183
13	2003	3	1.58165	0.05329	0.00781	5.71934	0.33656	0.26330
13	2003	4	1.65290	0.05199	0.00762	6.09244	0.35384	0.27741

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2003	5	1.67447	0.05160	0.00756	6.09244	0.35384	0.27741
13	2003	6	1.67588	0.05157	0.00756	6.48718	0.36694	0.28779
13	2003	7	1.54087	0.05403	0.00792	6.65700	0.37890	0.29740
13	2003	8a	1.54098	0.05402	0.00792	8.64548	0.49032	0.38657
13	2003	8b	1.54098	0.05402	0.00792	10.03009	0.57077	0.45137
13	2004	2b	0.47437	0.00772	0.00111	4.03829	0.25913	0.20042
13	2004	3	1.60034	0.03175	0.00465	5.76980	0.33697	0.26362
13	2004	4	1.69756	0.03044	0.00446	6.16634	0.35511	0.27840
13	2004	5	1.72534	0.03007	0.00441	6.16634	0.35511	0.27840
13	2004	6	1.72712	0.03005	0.00441	6.54933	0.37055	0.29066
13	2004	7	1.54052	0.03255	0.00477	6.70929	0.38105	0.29910
13	2004	8a	1.54052	0.03255	0.00477	8.62474	0.48830	0.38496
13	2004	8b	1.54052	0.03255	0.00477	10.03394	0.57143	0.45189
13	2005	2b	0.38409	0.00654	0.00094	3.93686	0.25327	0.19578
13	2005	3	1.58675	0.03109	0.00456	5.63983	0.33082	0.25867
13	2005	4	1.64211	0.03026	0.00444	6.13854	0.35388	0.27742
13	2005	5	1.66636	0.02990	0.00438	6.13854	0.35388	0.27742
13	2005	6	1.66812	0.02987	0.00438	6.45661	0.36810	0.28872
13	2005	7	1.56549	0.03141	0.00461	6.74402	0.38449	0.30188
13	2005	8a	1.56565	0.03141	0.00461	8.85118	0.50096	0.39517
13	2005	8b	1.56565	0.03141	0.00461	10.09060	0.57425	0.45417
13	2006	2b	0.42483	0.00742	0.00107	3.99149	0.25724	0.19886
13	2006	3	1.58569	0.03273	0.00480	5.59265	0.32895	0.25716
13	2006	4	1.65697	0.03153	0.00462	6.05783	0.34999	0.27433
13	2006	5	1.68377	0.03107	0.00456	6.05783	0.34999	0.27433
13	2006	6	1.68563	0.03104	0.00455	6.30669	0.36188	0.28379
13	2006	7	1.55379	0.03327	0.00488	6.60952	0.37852	0.29713
13	2006	8a	1.55399	0.03327	0.00488	8.74503	0.49586	0.39108
13	2006	8b	1.55399	0.03327	0.00488	10.07173	0.57364	0.45368
13	2007	2b	0.36396	0.00657	0.00094	2.15836	0.01121	0.00131
13	2007	3	1.59144	0.03259	0.00478	3.37290	0.01510	0.00176
13	2007	4	1.65376	0.03137	0.00460	3.62391	0.01592	0.00186
13	2007	5	1.67875	0.03086	0.00452	3.62391	0.01592	0.00186

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2007	6	1.68057	0.03082	0.00452	3.78022	0.01638	0.00191
13	2007	7	1.56586	0.03308	0.00485	4.19115	0.01769	0.00207
13	2007	8a	1.56705	0.03309	0.00485	6.13577	0.02396	0.00280
13	2007	8b	1.56705	0.03309	0.00485	7.03908	0.02701	0.00316
13	2008	2b	0.28573	0.00736	0.00108	2.10428	0.01103	0.00129
13	2008	3	1.07985	0.03210	0.00471	3.01549	0.01391	0.00163
13	2008	4	1.03859	0.03160	0.00463	3.21129	0.01453	0.00170
13	2008	5	1.01659	0.03133	0.00459	3.21129	0.01453	0.00170
13	2008	6	1.01487	0.03131	0.00459	3.33616	0.01491	0.00174
13	2008	7	1.09308	0.03226	0.00473	3.46804	0.01533	0.00179
13	2008	8a	1.09293	0.03226	0.00473	4.94962	0.02003	0.00234
13	2008	8b	1.09293	0.03226	0.00473	6.69764	0.02581	0.00302
13	2009	2b	0.17076	0.00588	0.00091	2.08122	0.01077	0.00128
13	2009	3	0.64686	0.02429	0.00356	3.51091	0.01556	0.00182
13	2009	4	0.64500	0.02420	0.00355	3.72645	0.01630	0.00190
13	2009	5	0.64395	0.02414	0.00354	3.72645	0.01630	0.00190
13	2009	6	0.64386	0.02414	0.00354	3.80393	0.01653	0.00193
13	2009	7	0.64743	0.02432	0.00356	4.26195	0.01796	0.00210
13	2009	8a	0.64742	0.02432	0.00356	6.14841	0.02398	0.00280
13	2009	8b	0.64742	0.02432	0.00356	7.00230	0.02684	0.00314
13	2010	2b	0.06741	0.00326	0.00058	0.90175	0.00740	0.00090
13	2010	3	0.10583	0.01159	0.00170	1.86399	0.01475	0.00173
13	2010	4	0.10586	0.01159	0.00170	2.03138	0.01601	0.00187
13	2010	5	0.10587	0.01159	0.00170	2.03138	0.01601	0.00187
13	2010	6	0.10587	0.01159	0.00170	2.10799	0.01661	0.00194
13	2010	7	0.10583	0.01159	0.00170	2.43755	0.01506	0.00176
13	2010	8a	0.10583	0.01159	0.00170	3.87954	0.00998	0.00117
13	2010	8b	0.10583	0.01159	0.00170	4.56653	0.00701	0.00082
13	2011	2b	0.06981	0.00374	0.00071	0.99720	0.00737	0.00090
13	2011	3	0.11354	0.01136	0.00167	1.59933	0.01304	0.00153
13	2011	4	0.12737	0.01095	0.00161	1.70323	0.01401	0.00164
13	2011	5	0.13428	0.01075	0.00158	1.70323	0.01401	0.00164
13	2011	6	0.13480	0.01073	0.00157	1.76607	0.01434	0.00168

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2011	7	0.10883	0.01150	0.00169	1.93216	0.01356	0.00158
13	2011	8a	0.10883	0.01150	0.00169	3.02881	0.01010	0.00118
13	2011	8b	0.10883	0.01150	0.00169	3.82698	0.00705	0.00082
13	2012	2b	0.07160	0.00404	0.00077	0.93840	0.00748	0.00092
13	2012	3	0.11509	0.01121	0.00164	1.59756	0.01358	0.00159
13	2012	4	0.12059	0.01106	0.00162	1.68931	0.01442	0.00169
13	2012	5	0.12374	0.01097	0.00161	1.68931	0.01442	0.00169
13	2012	6	0.12399	0.01097	0.00161	1.73036	0.01447	0.00169
13	2012	7	0.11343	0.01126	0.00165	1.96653	0.01354	0.00158
13	2012	8a	0.11343	0.01126	0.00165	3.11481	0.00958	0.00112
13	2012	8b	0.11343	0.01126	0.00165	3.73878	0.00696	0.00081
13	2013	2b	0.06845	0.00343	0.00078	1.12197	0.00738	0.00093
13	2013	3	0.12139	0.01027	0.00150	1.69347	0.01372	0.00161
13	2013	4	0.13118	0.01002	0.00147	1.77550	0.01464	0.00171
13	2013	5	0.13596	0.00989	0.00145	1.77550	0.01464	0.00171
13	2013	6	0.13635	0.00988	0.00145	1.81126	0.01473	0.00172
13	2013	7	0.11814	0.01035	0.00152	1.99140	0.01339	0.00156
13	2013	8a	0.11852	0.01035	0.00152	2.71142	0.00866	0.00101
13	2013	8b	0.11852	0.01035	0.00152	3.03106	0.00622	0.00073
13	2014	2b	0.05997	0.00314	0.00084	0.52021	0.00223	0.00043
13	2014	3	0.12169	0.00992	0.00145	1.13851	0.00404	0.00049
13	2014	4	0.12543	0.00985	0.00144	1.21186	0.00426	0.00050
13	2014	5	0.12760	0.00980	0.00144	1.21186	0.00426	0.00050
13	2014	6	0.12777	0.00980	0.00144	1.24028	0.00432	0.00050
13	2014	7	0.12057	0.00995	0.00146	1.40189	0.00428	0.00050
13	2014	8a	0.12057	0.00995	0.00146	2.18626	0.00424	0.00050
13	2014	8b	0.12057	0.00995	0.00146	2.63137	0.00403	0.00047
13	2015	2b	0.05957	0.00317	0.00096	0.41503	0.00219	0.00048
13	2015	3	0.12158	0.00992	0.00145	1.02566	0.00399	0.00050
13	2015	4	0.12500	0.00986	0.00144	1.11521	0.00426	0.00050
13	2015	5	0.12700	0.00982	0.00144	1.11521	0.00426	0.00050
13	2015	6	0.12716	0.00981	0.00144	1.14523	0.00431	0.00050
13	2015	7	0.12056	0.00994	0.00146	1.32399	0.00428	0.00050

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2015	8a	0.12056	0.00994	0.00146	2.17350	0.00425	0.00050
13	2015	8b	0.12056	0.00994	0.00146	2.64616	0.00404	0.00047
13	2016	2b	0.05412	0.00294	0.00093	0.39463	0.00209	0.00047
13	2016	3	0.12147	0.00993	0.00145	0.97750	0.00395	0.00049
13	2016	4	0.12456	0.00986	0.00145	1.07548	0.00426	0.00050
13	2016	5	0.12638	0.00983	0.00144	1.07548	0.00426	0.00050
13	2016	6	0.12653	0.00982	0.00144	1.10063	0.00431	0.00050
13	2016	7	0.12055	0.00994	0.00146	1.24198	0.00428	0.00050
13	2016	8a	0.12055	0.00994	0.00146	2.02632	0.00427	0.00050
13	2016	8b	0.12055	0.00994	0.00146	2.54937	0.00406	0.00047
13	2017	2b	0.04534	0.00283	0.00100	0.37884	0.00204	0.00049
13	2017	3	0.12133	0.00993	0.00145	0.93224	0.00392	0.00050
13	2017	4	0.12401	0.00987	0.00145	1.03069	0.00426	0.00050
13	2017	5	0.12560	0.00984	0.00144	1.03069	0.00426	0.00050
13	2017	6	0.12573	0.00984	0.00144	1.05055	0.00430	0.00050
13	2017	7	0.12054	0.00994	0.00146	1.16057	0.00428	0.00050
13	2017	8a	0.12054	0.00994	0.00146	1.80951	0.00429	0.00050
13	2017	8b	0.12054	0.00994	0.00146	2.27471	0.00408	0.00048
13	2018	2b	0.03608	0.00280	0.00100	0.26581	0.00197	0.00049
13	2018	3	0.08978	0.00985	0.00144	0.84914	0.00378	0.00048
13	2018	4	0.09865	0.00967	0.00142	0.95188	0.00410	0.00048
13	2018	5	0.10329	0.00957	0.00140	0.95188	0.00410	0.00048
13	2018	6	0.10364	0.00956	0.00140	0.99986	0.00421	0.00049
13	2018	7	0.08687	0.00991	0.00145	1.09863	0.00417	0.00049
13	2018	8a	0.08687	0.00991	0.00145	1.75753	0.00419	0.00049
13	2018	8b	0.08687	0.00991	0.00145	2.21205	0.00402	0.00047
13	2019	2b	0.03240	0.00273	0.00098	0.23131	0.00190	0.00048
13	2019	3	0.08554	0.00986	0.00144	0.82007	0.00375	0.00048
13	2019	4	0.09429	0.00968	0.00142	0.93336	0.00410	0.00048
13	2019	5	0.09891	0.00959	0.00140	0.93336	0.00410	0.00048
13	2019	6	0.09927	0.00958	0.00140	0.98007	0.00420	0.00049
13	2019	7	0.08270	0.00991	0.00145	1.08195	0.00416	0.00049
13	2019	8a	0.08270	0.00991	0.00145	1.75185	0.00419	0.00049

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NOx g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NOx g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2019	8b	0.08270	0.00991	0.00145	2.21100	0.00402	0.00047
13	2020	2b	0.02330	0.00158	0.00057	0.14794	0.00112	0.00028
13	2020	3	0.08134	0.00596	0.00087	0.56476	0.00242	0.00031
13	2020	4	0.09002	0.00588	0.00086	0.65399	0.00270	0.00032
13	2020	5	0.09466	0.00584	0.00086	0.65399	0.00270	0.00032
13	2020	6	0.09502	0.00583	0.00086	0.68659	0.00276	0.00032
13	2020	7	0.07855	0.00599	0.00088	0.75798	0.00275	0.00032
13	2020	8a	0.07855	0.00599	0.00088	1.24535	0.00285	0.00033
13	2020	8b	0.07855	0.00599	0.00088	1.59598	0.00279	0.00033
13	2021	2b	0.01989	0.00137	0.00047	0.13148	0.00104	0.00024
13	2021	3	0.07639	0.00593	0.00087	0.54762	0.00237	0.00030
13	2021	4	0.08459	0.00584	0.00086	0.64186	0.00267	0.00031
13	2021	5	0.08897	0.00579	0.00085	0.64186	0.00267	0.00031
13	2021	6	0.08931	0.00578	0.00085	0.67305	0.00274	0.00032
13	2021	7	0.07376	0.00596	0.00087	0.73719	0.00272	0.00032
13	2021	8a	0.07376	0.00596	0.00087	1.19585	0.00277	0.00032
13	2021	8b	0.07376	0.00596	0.00087	1.53887	0.00269	0.00031
13	2022	2b	0.01683	0.00138	0.00047	0.11697	0.00103	0.00024
13	2022	3	0.07232	0.00593	0.00087	0.53732	0.00237	0.00030
13	2022	4	0.08079	0.00584	0.00086	0.63227	0.00267	0.00031
13	2022	5	0.08533	0.00579	0.00085	0.63227	0.00267	0.00031
13	2022	6	0.08568	0.00578	0.00085	0.66379	0.00273	0.00032
13	2022	7	0.06961	0.00596	0.00087	0.73082	0.00272	0.00032
13	2022	8a	0.06961	0.00596	0.00087	1.19849	0.00277	0.00032
13	2022	8b	0.06961	0.00596	0.00087	1.54019	0.00269	0.00031
13	2023	2b	0.01443	0.00137	0.00047	0.11467	0.00103	0.00024
13	2023	3	0.07228	0.00593	0.00087	0.53460	0.00236	0.00030
13	2023	4	0.08064	0.00584	0.00086	0.63227	0.00267	0.00031
13	2023	5	0.08513	0.00579	0.00085	0.63227	0.00267	0.00031
13	2023	6	0.08548	0.00579	0.00085	0.66313	0.00273	0.00032
13	2023	7	0.06961	0.00596	0.00087	0.72802	0.00272	0.00032
13	2023	8a	0.06961	0.00596	0.00087	1.19091	0.00277	0.00032
13	2023	8b	0.06961	0.00596	0.00087	1.53827	0.00269	0.00031

Table A-13. SmartWay Category - TL/Dry Van

Category ID	Engine Model Yr	Truck Class	Gas NO _x g/mi	Gas BC g/mi	Gas PM _{2.5} g/mi	Diesel NO _x g/mi	Diesel BC g/mi	Diesel PM _{2.5} g/mi
13	2024	2b	0.01443	0.00137	0.00047	0.11467	0.00103	0.00024
13	2024	3	0.07228	0.00593	0.00087	0.53460	0.00236	0.00030
13	2024	4	0.08064	0.00584	0.00086	0.63227	0.00267	0.00031
13	2024	5	0.08513	0.00579	0.00085	0.63227	0.00267	0.00031
13	2024	6	0.08548	0.00579	0.00085	0.66313	0.00273	0.00032
13	2024	7	0.06961	0.00596	0.00087	0.72802	0.00272	0.00032
13	2024	8a	0.06961	0.00596	0.00087	1.19091	0.00277	0.00032
13	2024	8b	0.06961	0.00596	0.00087	1.53827	0.00269	0.00031

Appendix B: NO_x, PM & BC Idle Factors – g/hr 2022 Calendar Year, MOVES3.1 Basis

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
BC	Diesel	Pre-1992	1.9205	1.9205	1.6821	1.9090	1.9090
BC	Diesel	1992	1.9205	1.9205	1.6821	1.9090	1.9090
BC	Diesel	1993	1.9205	1.9205	1.6821	1.9090	1.9090
BC	Diesel	1994	4.0432	4.0432	3.5316	3.3006	2.9187
BC	Diesel	1995	4.0516	4.0516	3.5316	3.3006	2.9187
BC	Diesel	1996	4.0543	4.0543	3.5316	3.3006	2.9187
BC	Diesel	1997	4.0162	4.0162	3.5316	3.3006	2.9187
BC	Diesel	1998	3.7805	3.7805	3.3216	3.1336	2.7913
BC	Diesel	1999	3.8080	3.8080	3.3216	3.1336	2.7913
BC	Diesel	2000	3.7390	3.7390	3.3216	3.1336	2.7913
BC	Diesel	2001	3.3302	3.3302	3.3216	3.1336	2.7913
BC	Diesel	2002	3.3305	3.3305	3.3216	3.1336	2.7913
BC	Diesel	2003	2.8328	2.8328	2.8253	2.8253	2.5226
BC	Diesel	2004	2.8331	2.8331	2.8253	2.8253	2.5226
BC	Diesel	2005	2.8316	2.8316	2.8253	2.8253	2.5226
BC	Diesel	2006	2.8315	2.8315	2.8253	2.8253	2.5226
BC	Diesel	2007	0.0456	0.0456	0.0454	0.0303	0.0303
BC	Diesel	2008	0.0456	0.0456	0.0454	0.0303	0.0303
BC	Diesel	2009	0.0456	0.0456	0.0454	0.0303	0.0303
BC	Diesel	2010	0.0058	0.0058	0.0069	0.0577	0.0021
BC	Diesel	2011	0.0057	0.0057	0.0067	0.0566	0.0021
BC	Diesel	2012	0.0058	0.0058	0.0067	0.0569	0.0021
BC	Diesel	2013	0.0058	0.0058	0.0060	0.0507	0.0018
BC	Diesel	2014	0.0007	0.0007	0.0008	0.0066	0.0027
BC	Diesel	2015	0.0007	0.0007	0.0008	0.0066	0.0027
BC	Diesel	2016	0.0007	0.0007	0.0008	0.0066	0.0027
BC	Diesel	2017	0.0007	0.0007	0.0008	0.0066	0.0027

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
BC	Diesel	2018	0.0007	0.0007	0.0008	0.0061	0.0027
BC	Diesel	2019	0.0007	0.0007	0.0008	0.0061	0.0027
BC	Diesel	2020	0.0004	0.0004	0.0005	0.0042	0.0019
BC	Diesel	2021	0.0004	0.0004	0.0005	0.0042	0.0019
BC	Diesel	2022	0.0004	0.0004	0.0005	0.0042	0.0019
BC	Diesel	2023	0.0004	0.0004	0.0005	0.0042	0.0019
BC	Diesel	2024	0.0004	0.0004	0.0005	0.0042	0.0019
BC	E10	Pre-1992	0.0196	0.0196	0.0196	0.0196	0.0196
BC	E10	1992	0.0196	0.0196	0.0196	0.0196	0.0196
BC	E10	1993	0.0196	0.0196	0.0196	0.0196	0.0196
BC	E10	1994	0.0064	0.0064	0.0064	0.0064	0.0064
BC	E10	1995	0.0076	0.0076	0.0076	0.0076	0.0076
BC	E10	1996	0.0178	0.0178	0.0178	0.0178	0.0178
BC	E10	1997	0.0187	0.0187	0.0187	0.0187	0.0187
BC	E10	1998	0.0112	0.0112	0.0112	0.0112	0.0112
BC	E10	1999	0.0054	0.0054	0.0054	0.0054	0.0054
BC	E10	2000	0.0024	0.0024	0.0024	0.0024	0.0024
BC	E10	2001	0.0023	0.0023	0.0023	0.0023	0.0023
BC	E10	2002	0.0096	0.0096	0.0096	0.0096	0.0096
BC	E10	2003	0.0057	0.0057	0.0057	0.0057	0.0057
BC	E10	2004	0.0100	0.0100	0.0100	0.0100	0.0100
BC	E10	2005	0.0100	0.0100	0.0100	0.0100	0.0100
BC	E10	2006	0.0100	0.0100	0.0100	0.0100	0.0100
BC	E10	2007	0.0100	0.0100	0.0100	0.0100	0.0100
BC	E10	2008	0.0100	0.0100	0.0100	0.0100	0.0100
BC	E10	2009	0.0076	0.0076	0.0076	0.0076	0.0076
BC	E10	2010	0.0081	0.0081	0.0092	0.0031	0.0031
BC	E10	2011	0.0081	0.0081	0.0092	0.0031	0.0031
BC	E10	2012	0.0081	0.0081	0.0092	0.0031	0.0031
BC	E10	2013	0.0081	0.0081	0.0081	0.0031	0.0031
BC	E10	2014	0.0081	0.0081	0.0081	0.0031	0.0031
BC	E10	2015	0.0081	0.0081	0.0081	0.0031	0.0031
BC	E10	2016	0.0081	0.0081	0.0081	0.0031	0.0031

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
BC	E10	2017	0.0081	0.0081	0.0081	0.0031	0.0031
BC	E10	2018	0.0081	0.0081	0.0081	0.0020	0.0031
BC	E10	2019	0.0081	0.0081	0.0081	0.0020	0.0031
BC	E10	2020	0.0051	0.0051	0.0051	0.0020	0.0020
BC	E10	2021	0.0051	0.0051	0.0051	0.0020	0.0020
BC	E10	2022	0.0051	0.0051	0.0051	0.0020	0.0020
BC	E10	2023	0.0051	0.0051	0.0051	0.0020	0.0020
BC	E10	2024	0.0051	0.0051	0.0051	0.0020	0.0020
NOx	Diesel	Pre-1992	122.0872	122.0872	122.0869	141.3956	141.3956
NOx	Diesel	1992	122.0872	122.0872	122.0869	141.3956	141.3956
NOx	Diesel	1993	122.0872	122.0872	122.0869	141.3956	141.3956
NOx	Diesel	1994	122.0869	122.0869	122.0870	141.3959	141.3955
NOx	Diesel	1995	122.0867	122.0867	122.0866	141.3955	141.3957
NOx	Diesel	1996	122.0869	122.0869	122.0863	141.3955	141.3956
NOx	Diesel	1997	122.0868	122.0868	122.0866	141.3956	141.3956
NOx	Diesel	1998	97.6691	97.6691	97.6691	118.7282	118.7279
NOx	Diesel	1999	97.6694	97.6694	97.6694	97.6690	156.6232
NOx	Diesel	2000	97.6692	97.6692	97.6691	97.6694	156.6231
NOx	Diesel	2001	97.6087	97.6087	97.6695	97.6688	156.6236
NOx	Diesel	2002	97.6069	97.6069	97.6690	97.6692	156.6233
NOx	Diesel	2003	22.1873	22.1873	22.2015	46.3494	57.6141
NOx	Diesel	2004	22.1868	22.1868	22.2016	46.3494	57.6141
NOx	Diesel	2005	22.1896	22.1896	22.2016	46.3493	57.6140
NOx	Diesel	2006	22.1898	22.1898	22.2015	46.3493	57.6140
NOx	Diesel	2007	20.5599	20.5599	20.5747	23.0982	53.9493
NOx	Diesel	2008	20.5589	20.5589	20.5696	23.0945	53.9452
NOx	Diesel	2009	20.5625	20.5625	20.5755	23.0997	53.9493
NOx	Diesel	2010	17.5413	17.5413	20.0081	35.8814	47.6265
NOx	Diesel	2011	23.0795	23.0795	26.2626	34.7501	42.2070
NOx	Diesel	2012	20.2315	20.2315	23.0162	34.8456	41.6655
NOx	Diesel	2013	31.5541	31.5541	31.6718	21.0340	35.9174
NOx	Diesel	2014	14.3856	14.3856	14.4262	29.0942	49.5792
NOx	Diesel	2015	10.1644	10.1644	10.1981	27.9514	49.3595

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
NOx	Diesel	2016	10.1608	10.1608	10.1982	27.9585	50.0975
NOx	Diesel	2017	10.1593	10.1593	10.1981	27.8397	52.9662
NOx	Diesel	2018	6.3976	6.3976	10.1977	26.0174	52.9689
NOx	Diesel	2019	5.3969	5.3969	10.1978	26.0176	52.9692
NOx	Diesel	2020	3.4640	3.4640	6.4542	18.3856	38.3837
NOx	Diesel	2021	2.9880	2.9880	6.4543	18.3849	38.3820
NOx	Diesel	2022	2.4740	2.4740	6.4542	18.3854	38.3832
NOx	Diesel	2023	2.4738	2.4738	6.4543	18.3850	38.3820
NOx	Diesel	2024	2.4738	2.4738	6.4543	18.3850	38.3820
NOx	E10	Pre-1992	6.9913	6.9913	6.9913	6.9913	6.9913
NOx	E10	1992	6.9913	6.9913	6.9913	6.9913	6.9913
NOx	E10	1993	6.9913	6.9913	6.9913	6.9913	6.9913
NOx	E10	1994	7.0090	7.0090	7.0090	7.0090	7.0090
NOx	E10	1995	7.0090	7.0090	7.0090	7.0090	7.0090
NOx	E10	1996	7.0090	7.0090	7.0090	7.0090	7.0090
NOx	E10	1997	7.0090	7.0090	7.0090	7.0090	7.0090
NOx	E10	1998	14.5236	14.5236	14.5236	14.5236	14.5236
NOx	E10	1999	14.5236	14.5236	14.5237	14.5236	14.5236
NOx	E10	2000	14.5236	14.5236	14.5237	14.5236	14.5236
NOx	E10	2001	7.6099	7.6099	6.1736	6.1736	6.1736
NOx	E10	2002	7.6302	7.6302	6.1736	6.1736	6.1736
NOx	E10	2003	7.6605	7.6605	6.1736	6.1736	6.1736
NOx	E10	2004	7.6118	7.6118	6.1736	6.1736	6.1736
NOx	E10	2005	7.5470	7.5470	6.1736	6.1736	6.1736
NOx	E10	2006	7.5703	7.5703	6.1736	6.1736	6.1736
NOx	E10	2007	7.5915	7.5915	6.1736	6.1736	6.1736
NOx	E10	2008	3.7764	3.7764	3.1380	1.8521	1.8521
NOx	E10	2009	0.1085	0.1085	0.0904	1.8521	1.8521
NOx	E10	2010	0.3034	0.3034	0.2555	0.2555	0.2555
NOx	E10	2011	0.3042	0.3042	0.2555	0.2555	0.2555
NOx	E10	2012	0.3030	0.3030	0.2555	0.2555	0.2555
NOx	E10	2013	0.3004	0.3004	0.2555	0.2555	0.2555
NOx	E10	2014	0.2834	0.2834	0.2555	0.2555	0.2555

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
NOx	E10	2015	0.2853	0.2853	0.2555	0.2555	0.2555
NOx	E10	2016	0.2868	0.2868	0.2555	0.2555	0.2555
NOx	E10	2017	0.2864	0.2864	0.2555	0.2555	0.2555
NOx	E10	2018	0.1254	0.1254	0.1394	0.1394	0.1394
NOx	E10	2019	0.0959	0.0959	0.1394	0.1394	0.1394
NOx	E10	2020	0.0750	0.0750	0.1394	0.1394	0.1394
NOx	E10	2021	0.0550	0.0550	0.1394	0.1394	0.1394
NOx	E10	2022	0.0341	0.0341	0.1394	0.1394	0.1394
NOx	E10	2023	0.0342	0.0342	0.1394	0.1394	0.1394
NOx	E10	2024	0.0342	0.0342	0.1394	0.1394	0.1394
PM2.5	Diesel	Pre-1992	4.5399	4.5399	5.3012	6.0162	6.0162
PM2.5	Diesel	1992	4.5399	4.5399	5.3012	6.0162	6.0162
PM2.5	Diesel	1993	4.5399	4.5399	5.3012	6.0162	6.0162
PM2.5	Diesel	1994	9.4957	9.4957	11.1299	10.4018	9.1983
PM2.5	Diesel	1995	9.4688	9.4688	11.1300	10.4018	9.1983
PM2.5	Diesel	1996	9.4604	9.4604	11.1299	10.4018	9.1983
PM2.5	Diesel	1997	9.5819	9.5819	11.1299	10.4018	9.1983
PM2.5	Diesel	1998	9.0025	9.0025	10.4681	9.8756	8.7968
PM2.5	Diesel	1999	8.9144	8.9144	10.4681	9.8756	8.7968
PM2.5	Diesel	2000	9.1349	9.1349	10.4682	9.8756	8.7968
PM2.5	Diesel	2001	8.2569	8.2569	10.4682	9.8756	8.7968
PM2.5	Diesel	2002	8.1937	8.1937	10.4682	9.8756	8.7968
PM2.5	Diesel	2003	6.9634	6.9634	8.9039	8.9039	7.9500
PM2.5	Diesel	2004	6.8932	6.8932	8.9040	8.9040	7.9500
PM2.5	Diesel	2005	7.2731	7.2731	8.9039	8.9040	7.9500
PM2.5	Diesel	2006	7.3086	7.3086	8.9039	8.9039	7.9500
PM2.5	Diesel	2007	0.3906	0.3906	0.3889	0.2598	0.2598
PM2.5	Diesel	2008	0.3903	0.3903	0.3889	0.2598	0.2598
PM2.5	Diesel	2009	0.3902	0.3902	0.3889	0.2598	0.2598
PM2.5	Diesel	2010	0.0495	0.0495	0.0590	0.4940	0.0178
PM2.5	Diesel	2011	0.0490	0.0490	0.0570	0.4844	0.0178
PM2.5	Diesel	2012	0.0494	0.0494	0.0574	0.4868	0.0178
PM2.5	Diesel	2013	0.0497	0.0497	0.0515	0.4339	0.0158

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
PM2.5	Diesel	2014	0.0064	0.0064	0.0066	0.0564	0.0235
PM2.5	Diesel	2015	0.0063	0.0063	0.0066	0.0565	0.0235
PM2.5	Diesel	2016	0.0063	0.0063	0.0066	0.0564	0.0234
PM2.5	Diesel	2017	0.0063	0.0063	0.0066	0.0563	0.0234
PM2.5	Diesel	2018	0.0063	0.0063	0.0066	0.0526	0.0234
PM2.5	Diesel	2019	0.0063	0.0063	0.0066	0.0526	0.0234
PM2.5	Diesel	2020	0.0037	0.0037	0.0039	0.0356	0.0164
PM2.5	Diesel	2021	0.0037	0.0037	0.0039	0.0356	0.0163
PM2.5	Diesel	2022	0.0037	0.0037	0.0039	0.0356	0.0164
PM2.5	Diesel	2023	0.0037	0.0037	0.0039	0.0356	0.0163
PM2.5	Diesel	2024	0.0037	0.0037	0.0039	0.0356	0.0163
PM2.5	E10	Pre-1992	0.1338	0.1338	0.1338	0.1338	0.1338
PM2.5	E10	1992	0.1338	0.1338	0.1338	0.1338	0.1338
PM2.5	E10	1993	0.1338	0.1338	0.1338	0.1338	0.1338
PM2.5	E10	1994	0.0437	0.0437	0.0437	0.0437	0.0437
PM2.5	E10	1995	0.0521	0.0521	0.0521	0.0521	0.0521
PM2.5	E10	1996	0.1213	0.1213	0.1213	0.1213	0.1213
PM2.5	E10	1997	0.1276	0.1276	0.1276	0.1276	0.1276
PM2.5	E10	1998	0.0762	0.0762	0.0762	0.0762	0.0762
PM2.5	E10	1999	0.0370	0.0370	0.0370	0.0370	0.0370
PM2.5	E10	2000	0.0164	0.0164	0.0164	0.0164	0.0164
PM2.5	E10	2001	0.0154	0.0154	0.0154	0.0154	0.0154
PM2.5	E10	2002	0.0653	0.0653	0.0653	0.0653	0.0653
PM2.5	E10	2003	0.0386	0.0386	0.0386	0.0386	0.0386
PM2.5	E10	2004	0.0703	0.0703	0.0682	0.0682	0.0682
PM2.5	E10	2005	0.0702	0.0702	0.0682	0.0682	0.0682
PM2.5	E10	2006	0.0702	0.0702	0.0682	0.0682	0.0682
PM2.5	E10	2007	0.0702	0.0702	0.0682	0.0682	0.0682
PM2.5	E10	2008	0.0700	0.0700	0.0682	0.0682	0.0682
PM2.5	E10	2009	0.0530	0.0530	0.0516	0.0516	0.0516
PM2.5	E10	2010	0.0548	0.0548	0.0613	0.0204	0.0204
PM2.5	E10	2011	0.0548	0.0548	0.0613	0.0204	0.0204
PM2.5	E10	2012	0.0548	0.0548	0.0613	0.0204	0.0204

**Table B-1. Short Duration Idle Emission Factors
(< 60 minutes per idle event) (g/hr)**

Pollutant	Fuel	Model Year	Class 2b	Class 3	Class 4-5	Class 6-7	Class 8a/b
PM2.5	E10	2013	0.0547	0.0547	0.0535	0.0185	0.0185
PM2.5	E10	2014	0.0543	0.0543	0.0535	0.0185	0.0185
PM2.5	E10	2015	0.0543	0.0543	0.0535	0.0185	0.0185
PM2.5	E10	2016	0.0544	0.0544	0.0535	0.0185	0.0185
PM2.5	E10	2017	0.0543	0.0543	0.0535	0.0185	0.0185
PM2.5	E10	2018	0.0543	0.0543	0.0535	0.0165	0.0185
PM2.5	E10	2019	0.0542	0.0542	0.0535	0.0165	0.0185
PM2.5	E10	2020	0.0325	0.0325	0.0321	0.0117	0.0127
PM2.5	E10	2021	0.0325	0.0325	0.0321	0.0117	0.0127
PM2.5	E10	2022	0.0325	0.0325	0.0321	0.0117	0.0127
PM2.5	E10	2023	0.0325	0.0325	0.0321	0.0117	0.0127
PM2.5	E10	2024	0.0325	0.0325	0.0321	0.0117	0.0127

Table B-2: Extended Idle Emission Factors (Class 8b Diesel Only) (g/hr)

Model Year	NOx	PM _{2.5}	BC
Pre-1992	145.6319	4.9182	1.1179
1992	145.6319	4.9182	1.1179
1993	145.6319	4.9182	1.1179
1994	145.6322	7.5663	1.6725
1995	145.6320	7.5687	1.6774
1996	145.6309	7.5795	1.6995
1997	145.6318	7.5665	1.6729
1998	145.6314	7.2443	1.6215
1999	145.6317	7.2252	1.5793
2000	145.6316	7.2129	1.5524
2001	145.6316	7.2139	1.5546
2002	145.6315	7.2130	1.5526
2003	145.6319	6.5186	1.4030
2004	145.6319	6.5186	1.4030
2005	145.6329	6.5186	1.4030
2006	145.6313	6.5186	1.4030
2007	107.5392	0.0970	0.0149
2008	107.5399	0.0970	0.0149
2009	107.5401	0.0970	0.0149
2010	45.8762	0.0519	0.0110
2011	45.8762	0.0519	0.0110
2012	45.8762	0.0519	0.0110
2013	45.8763	0.0405	0.0094
2014	45.8762	0.0405	0.0094
2015	45.8762	0.0405	0.0094
2016	45.8763	0.0405	0.0094
2017	45.8762	0.0405	0.0094
2018	45.8761	0.0405	0.0094
2019	45.8763	0.0405	0.0094
2020	45.8762	0.0405	0.0094
2021	45.8760	0.0405	0.0094
2022	45.8764	0.0405	0.0094
2023	45.8760	0.0405	0.0094
2024	45.8760	0.0405	0.0094



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