County K Grade Crossing Elimination Project

Benefit-Cost Analysis Narrative

FY 2026 BUILD GRANT PROGRAM

Submitted by
Waukesha County, WI

WAUKESHA COUNTY
LEADING THE WAY

FEBRUARY 2026

Introduction

This Benefit-Cost Analysis (BCA) provides a comprehensive evaluation of the proposed County K Grade Crossing Elimination Project in Waukesha County, WI, capturing both the long-term benefits and associated costs. The analysis covers a 30-year period from 2033 to 2062, reflecting the full lifecycle of the project following its anticipated completion at the end of 2032. The BCA for this project follows the principles documented in the United States Department of Transportation (USDOT) Benefit-Cost Analysis Guidance for Discretionary Grant Programs (December 2025) and uses the recommended parameter values where applicable. The BCA compares the benefits and costs of moving forward with the proposed improvements against a no-build scenario, clearly demonstrating the substantial advantages of construction.

The benefits quantified in the BCA include:

- **Economic Competitiveness:** Savings on travel time costs
- **Environmental Sustainability:** Estimated reductions in NO_x and $PM_{2.5}$ emissions
- **Safety:** The expected reduction in crashes and associated costs
- **Residual Value and Remaining Service Life:** Expected life of the project beyond the 30 year analysis period
- **Repurposed Land Sale:** Land sale revenue from roadway reconfiguration

Other non-monetized benefits considered for this analysis included:

- **Quality of Life:** Benefits to pedestrians and cyclists due to improved multiuse path development

Project Description

The County K project stretches from the intersection with County F (Waukesha Avenue) eastward to Roberta Drive. The BUILD grant project is designed to tackle multiple critical issues while dramatically improving County K for future use. This ambitious project aims to significantly enhance safety, alleviate traffic congestion, boost mobility and operations, and expand County K to meet the goals of the broader project. The purpose of this project is to grade separate County K and the Canadian National (CN) railroad by raising County K on a bridge over the railroad to alleviate safety and mobility concerns for motorists, pedestrians, first responders, and all who rely on this critical transportation facility. Figure 1 below shows the County K and CN railroad crossing and the surrounding quarry, businesses, residences, agricultural land, and County maintenance facility.
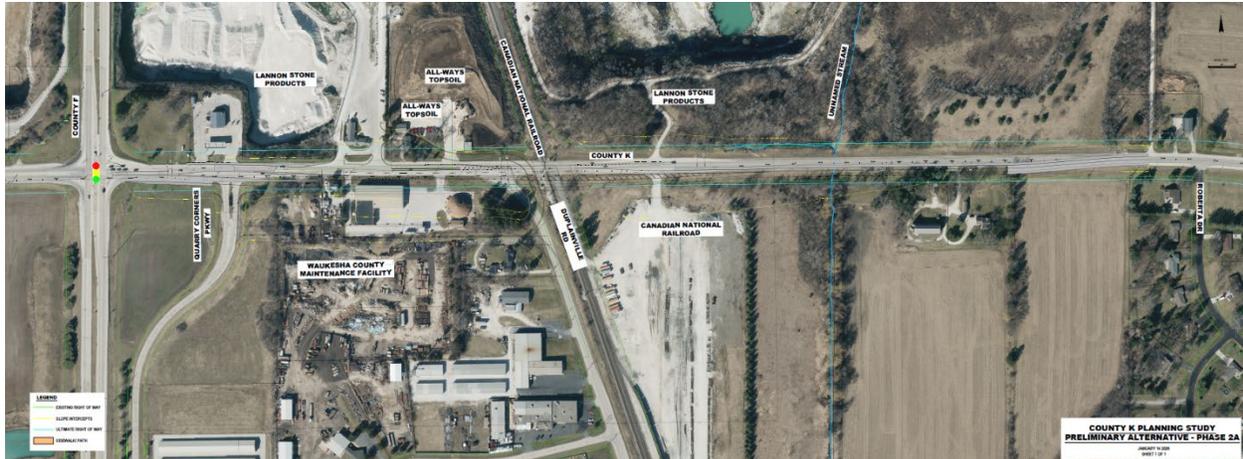
Figure 1: County K Grade Crossing Elimination Location Map

County F/County K to CN Railroad Crossing

With the expansion of County K to four lanes, direct access to the Lannon Stone property will be limited to right-in/right-out movements for safety and efficiency. To ensure trucks can still safely enter and exit from the eastbound side, the project includes a longer bridge and a thoughtfully designed access road running along the north side of County K. This new route passes under the proposed overpass beside the railroad and connects with the re-aligned Duplainville Road south of County K, allowing trucks to reach County K at the Quarry Corners Parkway intersection without unnecessary detours or safety risks. Because Duplainville Road sits so close to the CN railroad, it will be shifted west, looping around the Waukesha County Maintenance Facility. These changes are designed not just to keep traffic moving smoothly, but to make sure local businesses like Lannon Stone and the numerous construction-related businesses within the industrial development between County F and Duplainville Road can continue to operate efficiently and safely.

County K/CN Railroad Crossing

The core scope of the project calls for elevating County K over the CN railroad track while maintaining its existing horizontal alignment. Both the CN railroad's horizontal and vertical alignments would remain unchanged, meaning there would be no impact on CN train operations and no need for temporary tracks or signal work like a shoofly to maintain service. The proposed bridge over the CN railroad is designed as a robust three-span structure, stretching 223 feet in total length with a 17-degree skew. It includes four 12-foot travel lanes, 2-foot paved inside shoulders, and 10-foot paved outside shoulders. The design also features a barrier protected 12-foot shared use facility on the bridge, supporting safe and accessible travel for pedestrians and cyclists.

CN Railroad Crossing to Roberta Drive

East of the County K/CN grade separation, the roadway will be designed to transition smoothly from the new four-lane section back to a two-lane configuration, ensuring a seamless connection with the existing rural stretch that extends to Roberta Drive. This transition is engineered for both safety and comfort, featuring two 12-foot travel lanes and generous 10-foot paved shoulders. Similar to the west approach, the east approach will feature a 45-mph posted speed.

Analysis Period

The analysis period for this BCA is comprehensive, encompassing both the pre-construction and post-construction phases to fully capture the project's impacts. The construction period, assumed to occur from 2031 to 2032, accounts for all capital investment costs. Following completion, operations are projected to begin in late 2032, with the analysis extending 30 years through 2062 to allow for the accrual of long-term benefits.

Project Costs

The total estimated cost for the project is $34,151,476. Table 1 below breaks down these costs by each phase. According to the BCA spreadsheet, design work is planned for 2027-2028, real estate will be handled in 2029-2030, and construction is set for 2031-2032.

Table 1: Project Budget Summary by Source and Use

Funding Source	Design Engineering	Right-of-Way	Construction & Construction Engineering	Total Funding
BUILD Funds	$1,694,028	$6,985,829	$16,320,143	$25,000,000
Other Federal Funds (STP-M: Pending)	$0	$0	$2,321,181	$2,321,181
Non-Federal Funds (Waukesha County)	$423,507	$1,746,457	$4,660,331	$6,830,295
Total Project Cost	$2,117,535	$8,732,286	$23,301,655	$34,151,476

Project Benefits

All benefits and project costs were developed using the Benefit-Cost Analysis Guidance for Discretionary Grant Programs (December 2025) and best-available data. All dollar values are consistent with those presented elsewhere and are expressed in 2024 dollars for the entire 30-year BCA analysis period.

Travel Time Cost Savings – $174,601,924

In developing the BCA for the project, several key factors were considered to capture the true economic impact of travel delays and the value of time savings for both passenger vehicles and trucks. The analysis began by establishing the hourly value of time for cars and trucks. Next, the average delay per vehicle was calculated in minutes, based on field data collected in October 2024 which was then used to determine the delay cost per vehicle by multiplying the hourly value of time by the delay duration. These individual costs were scaled up to daily delay costs for both cars and trucks by factoring in the number of vehicles affected each day. Finally, the total annual cost was estimated by aggregating these daily figures over the course of a year. The overall methodology used to study the impact of the queuing and delay of the at-grade crossing was based on an Environmental Impact Report prepared for the Southern California International Gateway Project by The Port of Los Angeles. The calculations in the referenced study were based on Webster's Uniform Delay Model. By quantifying these metrics, the analysis demonstrated how reducing delays through grade separation and improved traffic flow would result in substantial annual savings for travelers, strengthening the economic case for the project and highlighting its value to the community and region.

As part of the analysis, traffic projections were drawn from the County K Existing Conditions Traffic and Safety Report completed in 2025. Table 2 below highlights the projected Annual Average Daily Traffic (AADT) for 2055, revealing a substantial 35% increase on County K and an even more dramatic 61% rise on Duplainville Road. The projected AADT values for cars and trucks through 2062, detailed in the Travel Time Savings tab of the BCA spreadsheet, served as the foundation for calculating both annual and total travel time savings. This data-driven approach ensures the analysis accurately reflects future conditions and the significant benefits the project will deliver as traffic volumes continue to climb.

Table 2: Project Traffic Volumes

Roadway (location)	AADT by Year				
	2025	2031 (Build Year)	2040	2055 (Design Year)	% Increase (2025 to 2055)
County K (County F – CN Railroad)	13,400	14,300	15,800	18,100	+35%
Duplainville Road	2,300	2,600	3,000	3,700	+61%

The Road User Cost (RUC) tab in the spreadsheet includes some deviations from the USDOT's recommended monetization values, reflecting a tailored approach for this analysis. Specifically, the BCA used vehicle operation costs based on the 2021 weighted average for passenger vehicles and the average truck operating cost. These figures account for real-world expenses

such as fuel, maintenance, and repairs, providing a more accurate estimate of the actual costs borne by road users. The proposed improvements are expected to deliver substantial vehicle travel time savings, totaling $174,601,924 in undiscounted value and $31,269,577 in discounted value.

Safety Benefits – $17,837,631

The safety benefits were rigorously calculated and thoroughly documented using data from the County K Existing Conditions Traffic and Safety Report (2025). This analysis incorporated detailed crash records from 2020 to 2024, providing a clear picture of current safety challenges along the corridor. Statewide crash data was also leveraged to benchmark historic crash rates on County K against state averages. As shown in Figure 2 below, in just five years (2020-2024), 17 crashes have taken place near the Duplainville Road and CN railroad intersection. Crash costs were calculated related to the County K railroad crossing and existing at-grade intersections of Duplainville Road and Quarry Corners Blvd, along with the non-intersection crashes. The new grade separated crossing, relocated Duplainville Road intersection, right-in/right-out access improvements at Quarry Corners Blvd and Lannon Stone, along with the new raised medians, wider paved shoulder should eliminate crashes at this crossing, reducing the number of incidents to zero.
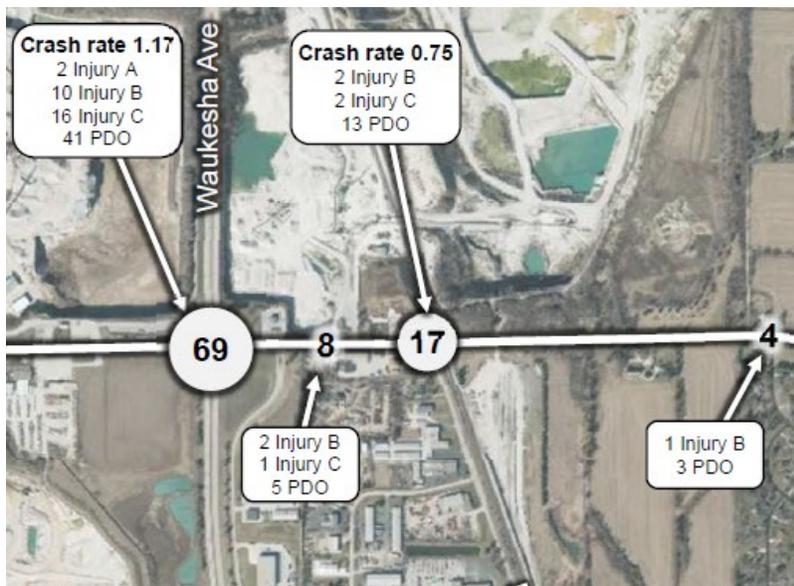
Figure 2: Crash Summary – County F (Waukesha Avenue) to Roberta Drive (2020-2024)

The Crash Modification Factor (CMF) table attached highlights the safety benefits associated with each of the improvements included in this project. By incorporating a raised median, reducing the speed limit from 50 mph to 45 mph, widening the outside shoulder, installing a shared use path, and grade separating the County K and CN rail crossing, the project is expected

to significantly reduce both the frequency and severity of crashes along the corridor. Each of these measures is supported by established CMF values, demonstrating their proven effectiveness in enhancing safety for all users, drivers, pedestrians, and bicyclists alike.

The BCA takes a conservative approach to safety benefits, as it does not include or quantify the 8 mid-block crashes west of the crossing or the 4 mid-block crashes near Roberta Drive. As a result, the actual safety improvements and crash reductions from the project may be even greater than what is reflected in the current analysis. Because traffic projections extend through the entire BCA analysis period to 2062, safety costs were calculated using the anticipated growth in traffic volumes shown in Table 2. All supporting data for these calculations can be found under "Safety Benefit" in the BCA spreadsheet, providing a transparent and robust foundation for the project's projected safety improvements. The proposed improvements are projected to generate significant safety benefits, with a total value of $17,837,631 (undiscounted) and $4,069,361 (discounted).

Emissions Reduction Savings – $2,587,105

Grade separating County K from the CN railroad will eliminate the need for vehicles to idle while waiting for passing trains at the crossing. According to the Environmental Protection Agency (EPA), light duty gas-fueled vehicles can emit 0.059 grams of nitrogen oxides (NO_x) per minute while idling and heavy duty diesel trucks can emit 0.563 grams per minute. Additionally, the EPA states that heavy duty diesel trucks emit 0.018 grams of particulate matter under 2.5 microns ($PM_{2.5}$) per minute. As shown in the BCA Emissions tab, the improvements at the CN railroad crossing would result in a total savings of 60.78 metric tons of NO_x and 1.0 metric tons of $PM_{2.5}$ from 2033-2062. Using the annual costs for emissions per metric tons in USDOT's BCA guidance, this would result in total savings (2033-2062) of $2,587,105.

Residual Value and Remaining Service Life Benefits – $12,568,810

A residual value was calculated for the remaining service life of the road and the railroad overpass. Residual value was calculated using the total project cost and the remaining service life at the end of the analysis period (2062). For the project calculation, the analysis period includes 30 years of project operations, but the road has a useful service life of 50 years, and the railroad overpass has a useful service life of 75 years. The total road project cost, in real dollars, is $8,544,000 million and $15,252,016 for the railroad overpass. The total residual value of the project is $12,568,810, as detailed in the Residual Value tab of the BCA spreadsheet.

Repurposed Land Sale – $885,506

As part of the new road design, the project will acquire 3 relocation parcels along the south side of County K between Quarry Corners Blvd and Duplainville Road. These parcels are needed for the roadway improvements and will result in 90,000 square feet of surplus land at the conclusion of construction. The County anticipates the opportunity to offer the surplus property for sale and redevelopment. Right now, it's valued at $720,000, but by the time it's ready to be sold in 2033, that price is expected to rise to about $885,500 with a 3% inflation factor. Selling this land not only helps the County recover some project costs, but also creates new opportunities for the community to grow.

Quality of Life

As previously described, the project features a barrier protected 12-foot shared use facility on the bridge, supporting safe and accessible travel for pedestrians and cyclists. Pedestrian and cyclist projections could not be calculated for this analysis in order to determine a monetary benefit, but it is expected that these improved facilities will promote additional pedestrian and cyclist usage and provide a great quality of life benefit for the community. The need for enhanced transportation facilities is evident as the County continues its expansion along this corridor.

Benefit-Cost Analysis Summary

As detailed in Table 3, the BCA accounts for all net benefits and net costs associated with the proposed improvements over the project's entire lifecycle. Over the 30-year evaluation period (2033–2062), the analysis demonstrates that the proposed project delivers a fully discounted **Benefit-Cost Ratio of 2.06** compared to the no-build scenario.

Table 3: Summary of Benefit-Cost Analysis

Category	Discounted Value (2024$)
Total Discounted Benefits	$37,470,567
Total Discounted Costs	$18,201,277
Net Present Value	$19,269,290
Benefit-Cost Ratio	2.06

Treatment	CMF	Crash Types	Crash Severities	Notes
Adding a through lane in each direction	0.71	All	All	This CMF applies to rural roadways with AADTs around 10,000 vpd. The data is limited and this value should be used with caution.
Constructing raised medians Eliminating left turns	0.49	Right-angle, Left-turn, Rear-end	All	This CMF is applicable to raised medians for urban driveway access control. The removal of left turns is covered under the raised median CMF.
Speed Limit Reduction	0.86-0.95	All	KABC	Studies were not conducted in the United States. The quality ratings are lower, and these values should be used with caution.
Widening outside paved shoulder width from 3 ft to 6 ft (County Y to Brookfield Rd)	0.82-0.85	All	All	The CMF range represents the difference between a divided or undivided facility. This CMF does not account for the combined effects of adding a raised median and widening the outside paved shoulder. In the referenced studies, the median condition remains unchanged. The CMF for widening a 3 ft paved outside shoulder to 6 ft. would best apply between County Y and Brookfield Rd where the existing paved outside shoulder ranges from 0 ft to 6 ft and the proposed outside paved shoulder is 6 ft (4 ft shoulder + 2 ft gutter pan).
Widening outside paved shoulder width from 3 ft to 8 ft (County JK to County Y)	0.71-0.77	All	All	The CMF for widening a 3 ft paved outside shoulder to 8 ft would best apply between County JK and County Y where the existing paved outside shoulder ranges from 0 ft to 3 ft and the proposed outside paved shoulder is 8 ft.
Converting 2-way stop controlled intersections to modern roundabouts	0.42 (urban) 0.48 (rural)	All	KABC	
	1.49 (urban) 1.87 (rural)	All	PDO	
Converting signal-controlled intersections to modern roundabouts	0.86	All	KABC	
	1.32	All	PDO	
Remove at-grade rail crossing				No CMF data available
Install shared path	0.75	Veh-Bicycle	All	

Idling Vehicle Emissions for Passenger Cars, Light-Duty Trucks, and Heavy-Duty Trucks

The amount of pollution that a vehicle emits is dependent on many factors. The U.S. Environmental Protection Agency (EPA) has developed a series of computer models that estimate the average emissions for different types of highway vehicles. This fact sheet is one of a series on highway vehicle emission factors. It presents average emission rates for passenger cars, light-duty trucks, (e.g., pickup trucks, sport-utility vehicles), heavy-duty trucks (semi tractor-trailers), and motorcycles when they are idling.

Introduction

There are a number of factors that affect the rate at which any vehicle emits air pollutants, whether the vehicle is being driven or is at idle (engine running, but vehicle not moving). Some of the most important are:

- vehicle type/size (passenger cars, light-duty trucks, heavy-duty trucks, motorcycles)
- vehicle age and accumulated mileage
- fuel used (gasoline, diesel, others)
- ambient weather conditions (temperature, precipitation, wind)
- maintenance condition of the vehicle (well maintained, in need of maintenance, presence and condition of pollution control equipment)

The most current version of the computer model that EPA uses to estimate average in-use emissions from highway vehicles is MOBILE6.2. EPA, the States, and others use this model to estimate total emissions of pollutants generated by highway vehicles in various geographic areas and over specific time periods. The idle emission rates or "emission factors" presented in this fact sheet are based on national data representing the in-use fleet as of July 2008.

The emission rates of hydrocarbons (both volatile organic compounds [VOCs] and Total Hydrocarbons [THC]), carbon monoxide (CO), and nitrogen oxides (NOx) for idling vehicles are presented in the following tables. In addition, the emission rates of particulate matter (PM_{10} and $PM_{2.5}$) are provided for heavy-duty diesel vehicles only because the MOBILE model does not include PM for the other vehicle categories during idle operation.1 These emission factors assume an "average" properly maintained vehicle, operating on typical gasoline or diesel fuel, on a warm summer day. Emission rates can be higher in very hot weather (especially HC) or in very cold weather (especially CO).

National average values are used for registration distributions by age (what fraction of all cars, or light trucks, in use today are of the current model year, are one to two years old, 2 to 3 years old, and so forth up to 25 years old) and annual mileage accumulation rates by age (newer vehicles tend to be driven more miles per year than do older vehicles). Some of the other primary assumptions incorporated in these emission factors are:

• Ambient temperatures:	72 to 92 °F day time range
• Nominal gasoline volatility:	9.0 psi Reid vapor pressure (RVP)
• Weathered fuel volatility:	8.6 psi RVP
• Gasoline sulfur content:	30 ppm
• Diesel sulfur content:	330 ppm
• Inspection/maintenance program:	No
• Reformulated gasoline:	No

Note that these emission rates are applicable for relatively short periods of idle time, as observed in drive-thru lanes, at toll gates, at stop lights, and in very heavily congested traffic. These idle emission rates are not applicable to "hoteling" situations for heavy-duty diesel trucks, where the truck engine may be idling for periods of hours at a time with many accessories being operated from the engine power. EPA is currently studying the issue of emissions from heavy-duty

---

Abbreviations and Acronyms Used

CO:	Carbon monoxide; a regulated pollutant
CO₂:	Carbon dioxide; the primary byproduct of all fossil fuel combustion
g:	gram(s)
g/hr:	grams per hour
g/min:	grams per minute
GVW:	Gross Vehicle Weight
lb:	pound
NOx:	Nitrogen oxides; a regulated pollutant
PM₁₀:	Particulate matter under 10 microns diameter; a regulated pollutant
PM₂.₅:	Particulate matter under 2.5 microns diameter, sometimes referred to as "fine particulate"
ppm:	parts per million
psi:	pounds per square inch
RVP:	Reid vapor pressure; a standardized method for expressing the volatility, or tendency to evaporate, of gasoline
THC:	Total hydrocarbons
VMT:	Vehicle miles traveled
VOC:	Volatile organic compounds; equivalent to THC plus aldehydes minus both methane and ethane

diesel trucks during "hoteling" situations; more information on this subject is available on EPA's SmartWay Transport Partnership Program web site at: www.epa.gov/smartway/idling.htm.

These emission rates also are not applicable for buses (urban transit buses and school buses). Average idle emission estimates for urban and school buses are provided in the fact sheet "Average In-Use Emission Factors for Urban Buses and School Buses" (EPA420-F-08-026).

Idle Emission Rates

The following tables present idle emission factors expressed as grams per hour (g/hr) and grams per minute (g/min) of idle time. Table 1 presents idling emission rates for gasoline-fueled and diesel cars, light-duty trucks, and heavy-duty vehicles, and motorcycles.

<div style="border:1px solid">

Definitions of Vehicle Types

(Gross Vehicle Weight)

LDGV: Light-duty gasoline-fueled vehicles, up to 6000 lb GVW (gasoline-fueled passenger cars)

LDGT: Light-duty gasoline-fueled trucks, up to 8500 lb GVW (includes pick-up trucks, minivans, passenger vans, sport-utility vehicles, etc.)

HDGV: Heavy-duty gasoline-fueled vehicles, over 8500 lb GVW (gasoline-fueled heavy-duty trucks)

LDDV: Light-duty diesel vehicles, up to 6000 lb GVW (diesel engine passenger cars)

LDDT: Light-duty diesel trucks, up to 8500 lb GVW (diesel engine light-duty trucks)

HDDV: Heavy-duty diesel vehicles, over 8500 lb GVW (diesel engine heavy-duty trucks)

MC: Motorcycles (only those certified for highway use; all are gasoline-fueled)

</div>

Emission Facts

The HDDV column represents the average of all diesel engine vehicles over 8,500 lb gross vehicle weight (GVW); this category is dominated by the heaviest HDDVs (GVW Classes VIIIa and VIIIb) which exceed 33,000 lb GVW.

Table 1: Average Idle Emission Rates by Pollutant and Vehicle Type[2]

Pollutant	Units	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
VOC	g/hr	2.683	4.043	6.495	1.373	2.720	3.455	19.153
	g/min	0.045	0.067	0.108	0.023	0.045	0.058	0.319
THC	g/hr	3.163	4.838	7.260	1.353	2.680	3.503	21.115
	g/min	0.053	0.081	0.121	0.023	0.045	0.058	0.352
CO	g/hr	71.225	72.725	151.900	7.018	5.853	25.628	301.075
	g/min	1.187	1.212	2.532	0.117	0.098	0.427	5.018
NOx	g/hr	3.515	4.065	5.330	2.690	3.705	33.763	1.625
	g/min	0.059	0.068	0.089	0.045	0.062	0.563	0.027
$PM_{2.5}$	g/hr	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	1.100	N/A[1]
	g/min	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	0.018	N/A[1]
PM_{10}	g/hr	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	1.196	N/A[1]
	g/min	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	0.020	N/A[1]

Table 2 presents HDDV idle emission rates by weight class. The GVW weight classes are:

Heavy-Duty Diesel Vehicle Classifications

(Gross Vehicle Weight)

IIb: 8,501-10,000 lb (e.g., full-size pick-up trucks, very large passenger vans)
III: 10,001-14,000 lb (e.g., panel trucks, small enclosed delivery trucks)
IV: 14,001-16,000 lb (e.g., city delivery trucks, landscape utility trucks)
V: 16,001-19,500 lb (e.g., bucket utility trucks, large walk-in delivery trucks)
VI: 19,501-26,000 lb (e.g., rack trucks, single axle vans)
VII: 26,001-33,000 lb (e.g., tow trucks, garbage collection trucks)
VIIIa: 33,001-60,000 lb (e.g., long-haul semi-tractor trailer rigs)
VIIIb: > 60,000 lb (e.g., long-haul semi-tractor trailer rigs)

Emission Facts

Table 2: Average Idle Emission Rates for Heavy-Duty Diesel Vehicles by GVW Class[3]

Pollutant	Units	IIb	III	IV	V	VI	VII	VIIIa	VIIIb
VOC	g/hr g/min	1.465 0.024	1.555 0.026	2.025 0.034	2.120 0.035	2.820 0.047	3.503 0.058	3.518 0.059	4.218 0.070
THC	g/hr g/min	1.498 0.025	1.580 0.026	2.055 0.034	2.150 0.036	2.865 0.048	3.553 0.059	3.565 0.059	4.270 0.071
CO	g/hr g/min	9.305 0.155	10.068 0.168	12.898 0.215	13.183 0.220	15.163 0.253	19.055 0.318	26.548 0.442	34.473 0.575
NOx	g/hr g/min	12.668 0.211	13.530 0.226	17.850 0.298	18.655 0.311	24.325 0.405	30.343 0.506	35.758 0.596	42.345 0.706
$PM_{2.5}$	g/hr g/min	1.103 0.018	1.010 0.017	1.065 0.018	1.008 0.017	1.069 0.018	1.093 0.018	1.070 0.018	1.114 0.019
PM_{10}	g/hr g/min	1.199 0.020	1.098 0.018	1.157 0.019	1.095 0.018	1.162 0.019	1.188 0.020	1.163 0.019	1.211 0.020

For More Information

The other fact sheets in this series and additional information are available on the Office of Transportation and Air Quality's Web site at:

Emission factor fact sheets:
www.epa.gov/otaq/consumer.htm

Modeling and estimating vehicle emissions:
www.epa.gov/otaq/models.htm

Fuel economy:
www.epa.gov/fueleconomy
www.fueleconomy.gov/

Improving fuel economy and reducing emissions:
www.epa.gov/epahome/trans.htm
www.fueleconomy.gov/feg/drive.shtml

Finding the "greenest" vehicle:
www.epa.gov/greenvehicles

Endnotes

1. The MOBILE model includes PM estimates for heavy-duty diesel vehicles only during idle operation because there has been insufficient emission testing of PM for gasoline-fueled vehicles of the type necessary to develop emission rates for these vehicles at idle, since the PM contribution to ambient air quality from gasoline vehicles and the few light duty diesel cars and trucks in the fleet is normally negligible.

Emission Facts

2. Figures presented in this fact sheet are averages only. Individual vehicles can differ substantially in the amount of pollution emitted while idling from the values indicated here. Emission rates may differ slightly from original sources due to rounding.

3. All of the emission estimates provided in this document are consistent, in terms of assumptions made and modeling methodology, with those provided in the other fact sheets in this series: "Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks" (EPA420-F-08-024), "Average In-Use Emissions from Heavy-Duty Trucks" (EPA420-F-08-027), and "Average In-Use Emission Factors for Urban Buses and School Buses" (EPA420-F-08-026).