Wisconsin's Clean Diesel Grant Programs Summary

Wisconsin Department of Natural Resources

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This report summarizes the results of the clean diesel grant programs administered by the Wisconsin Department of Natural Resources (DNR) and its government partners. Wisconsin benefits substantially from the pollution reduction, health cost savings, and local economic incentives of clean diesel grant programs. Strong public-private partnerships have made these programs successful. Grantees garner fuel-efficiency and improve their bottom-line with clean diesel technology installations. Technology manufacturers and vendors, some of which are based in Wisconsin, also receive financial benefits by selling and installing the clean diesel technologies. Wisconsin citizens benefit from cleaner air and health cost savings. Program benefits become more impressive when combined with numerous other grant programs and individual actions.

EXECUTIVE SUMMARY

- Diesel vehicles and equipment are vital to the transportation system and economy. These machines are durable, long-lasting and generally fuel-efficient. However, due to their longevity they are a large source of harmful emissions.

- Clean diesel grant programs offer much-needed financial assistance to diesel equipment operators to purchase and install technologies that will reduce emissions from older diesel equipment.

- Many clean diesel grants have been available nationwide and in Wisconsin to fund technologies such as exhaust retrofit devices, idle reduction devices, engine repowers, engine emission upgrades and equipment replacements.

- Nearly 4,500 pieces of diesel equipment in Wisconsin, including trucks, school and transit buses, and construction, agricultural, locomotive and municipal equipment, have benefited from these grant programs.

- The projects described in this report will reduce over 557,000 tons of emissions and over 48 million gallons of diesel fuel.

- Implementing clean diesel technologies is an extremely cost effective means of improving air quality. Projects under the Wisconsin clean diesel grant programs have an average lifetime cost-effectiveness of approximately $2,240 per ton of emissions reduced (excluding CO_2).

- A $17.1 million federal and state investment into Wisconsin's clean diesel grant programs was exceeded by grant recipients with a higher match of $18.5 million (excluding in-kind contributions).

- Emission reductions achieved under these grant programs will result in over $14 million savings each year in health benefits and nearly $202 million in health cost savings over the lifetime of the programs.

- For every $1 of federal or state dollars invested in these programs nearly $12 of health costs were saved.

BACKGROUND

The United States Environmental Protection Agency (EPA) estimates that there are approximately 20 million diesel engines operating across the country.[1] Diesel-powered engines are the workhorse of the nation's transportation economy playing a vital role in freight movement, construction, public transportation, and agriculture. However, many scientific studies have linked diesel pollution, which contributes to particulate matter (PM, also called soot), ozone (also called smog) and air toxics, with a number of cancer risks and respiratory and cardiac health effects.[2] Reducing diesel engine emissions is one of the most important air quality and public health challenges facing the United States.

Diesel emissions account for approximately 58 percent (105,084 tons per year) of the state's total mobile source nitrogen oxide emissions (NOx) and 60 percent (5,593 tons per year) of the state's total mobile source fine particulate matter emissions ($PM_{2.5}$). Furthermore, diesel emissions from mobile sources - both on-highway and nonroad - represent approximately 37 percent of total NOx emissions in the state.[3] NOx is a precursor to ozone pollution and contributes to secondary $PM_{2.5}$ formation. About 38 percent (approximately 2.2 million residents) of Wisconsin's population lives in the eastern counties that have historically experienced elevated ozone and/or $PM_{2.5}$ levels and this population is at the highest risk for suffering the health effects sited above.[4] The EPA finalized a more stringent ozone National Ambient Air Quality Standard (NAAQS) in 2015. Controlling diesel emissions is important to both public health and to maintain Wisconsin's attainment of federal air quality standards.

Under the Clean Air Act, EPA sets stringent standards for diesel fuels and new diesel engines, including heavy-duty trucks, buses, and nonroad equipment. In 2006, ultra-low sulfur diesel (ULSD) became available for the on-highway fleet. In 2010, ULSD became required for use in nonroad equipment. Cleaner truck standards took effect beginning in model year 2007. In 2004, EPA promulgated the Clean Air Non-Road Diesel Rule, which resulted in dramatic pollution reductions from nonroad heavy duty diesel engines in construction, agriculture, industrial and airport equipment. The standards under this rule took effect for new engines in 2008 and were fully phased in for all sized engines by 2015. EPA also established the Clean Locomotive and Marine Diesel Rule, phased in from 2008 to 2015, for new and remanufactured engines. In 2030, when these rules are fully implemented, nationally the annual public health benefits are expected to exceed $185 billion per year.[1]

Diesel engines have very long life cycles, often in excess of 30 years. While EPA rules impact new engines and fuel, the challenge remains to address the over 10 million existing unregulated and older diesel engines, commonly referred to as the "legacy fleet," as expeditiously and practicable as possible.[5] To accelerate public health benefits, EPA created a national clean diesel program of which Region 5 leads the Midwest Clean Diesel Initiative (MCDI), a public-private partnership to voluntarily reduce diesel emissions prior to, or in addition to mandatory deadlines. A public and private stakeholder partnership in Wisconsin's diesel industry, known as the *Wisconsin Clean Diesel Coalition*, supports MCDI's goal of reducing emissions from the legacy fleet. The coalition explores, develops and implements diesel emission reduction strategies. It uses education and financial assistance to help diesel equipment operators reduce emissions.

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[1] United States Environmental Protection Agency. (August 2009). *Report to Congress: Highlights of the Diesel Emissions Reduction Program*. (EPA Publication No. EPA-420-R-09-006).
[2] United States Environmental Protection Agency. (May 2002). *Health assessment document for diesel engine exhaust*. (EPA Publication No. EPA/600/8-90/057F).
[3] United States Environmental Protection Agency. 2011 National Emissions Inventory, version 2.
[4] U.S. Census Bureau. 2010 Census. Retrieved from http://quickfacts.census.gov/qfd/states/55000.html
[5] United States Environmental Protection Agency. (February 2016). *Third Report to Congress: Highlights from the Diesel Emission Reduction Program*. (EPA Publication No. EPA-420-R-16-004).

EPA determined that their clean diesel grant programs are the most cost-effective strategy for reducing diesel emissions, apart from PM reductions most effectively achieved through EPA regulations for heavy-duty diesel engines and diesel fuel.[1] A study conducted to compare the cost-effectiveness of eligible Congestion Mitigation and Air Quality (CMAQ) program strategies found diesel retrofit projects to be the second most cost-effective strategy. This study indicates that other CMAQ strategies such as van pool programs, traffic signalization improvements, alternative fuel vehicles, bike paths, or high occupancy vehicle lanes cost anywhere from $10,000 to over $200,000 per ton equivalent of air pollution removed, whereas diesel retrofit projects cost only $5,340 per ton equivalent of air pollution removed.[6] Reducing diesel emissions also is an extremely cost-effective means to improve public health. EPA estimates that each federal dollar invested in clean diesel projects has leveraged as much as $3 from other organizations and is generating between $5 and $21 in public health benefits.[5]

The DNR, with support through the Wisconsin Clean Diesel Coalition, encourages diesel operators to undertake a variety of emission reduction strategies in an effort to improve air quality, safeguard public health and reduce fuel consumption. DNR and other organizations offer several grant programs to encourage and assist these efforts. Many of the intended benefits have been achieved through the grant programs and requests for their continuation remain high, demonstrating overwhelming support for the success and continuation of these programs.

GRANT PROGRAM DESCRIPTIONS

Below is a list of the clean diesel grant programs that have been offered to date by DNR and its government partners. The benefits relayed in this report are a result of these specific programs.

DNR-Congestion Mitigation and Air Quality (CMAQ) Retrofit Program
DNR received over $1 million through the CMAQ program from the federal and state Department of Transportation (DOT) to install exhaust retrofit devices on school buses and municipal equipment. Funding was made available from 2004 through 2010 to public and private school bus fleets and municipalities in the 10 counties in eastern Wisconsin that were in non-attainment of the 1997 ozone NAAQS.

DNR-Midwest Clean Diesel Initiative (MCDI) Nonroad Retrofit Grant
DNR received $50,000 from EPA's MCDI to install exhaust retrofit devices on nonroad municipal equipment and private construction equipment.

DNR-Midwest Clean Diesel Initiative Waste Hauler Grant Program
DNR received approximately $50,000 from EPA's MCDI to retrofit waste haulers with exhaust controls. After funding eligible waste haulers, remaining funds were used to install idling control devices on long-haul trucks at a Wisconsin-based trucking company.

DNR-Diesel Emission Reduction Act (DERA) Wisconsin Clean Diesel Grant Program
Since 2008, DNR has received between $120,000 to $350,000 annually through EPA's DERA State Clean Diesel Grant Program. The grants are leveraged by subrecipients. Funds have been made available to owners of various diesel-powered equipment (on-road, off-road and stationary) within the public and private sector for a variety of technologies (exhaust control retrofits, on-board idling reduction devices,

[6] Westcott, Robert F. (2005). *Cleaning the air: Comparing the cost effectiveness of diesel retrofits vs. current CMAQ projects*. Retrieved from http://www.dnr.state.wi.us/air/pdf/dieselretrofitcosteffstudy.pdf

engine emission upgrades, engine repowers, and equipment replacements). Eligible project types and match requirements were expanded over the program's lifetime.

DNR-DERA Wisconsin Municipal and School Bus Grant
DNR received $1,182,826 from EPA's DERA National Clean Diesel Funding Assistance Program. The grant was leveraged by match from the subrecipients in varying amounts depending on project type. Funds were allocated to municipal and school bus fleets, which have a direct public benefit, for exhaust retrofits, idle controls, emission upgrades, engine repowers, and vehicle replacements.

DNR-DERA American Recovery and Reinvestment Act (ARRA) Wisconsin Clean Diesel Grant Program
DNR received $1.73 million from EPA's DERA State Clean Diesel Grant Program through ARRA. The grant was leveraged by match from the subrecipients. Funds were made available to owners of any diesel-powered equipment (on-road, off-road and stationary) within the public and private sectors for a variety of technologies.

DNR-DERA ARRA Switch Locomotive Idle Reduction Grant
DNR received approximately $571,000 from EPA's DERA National Clean Diesel Funding Assistance Program through ARRA. The grant was leveraged by the subrecipients. Funds were allocated to two locomotive fleets to install idle reduction devices on switch locomotives, which are older, high idle and high emitting vehicles. Lower than expected costs allowed remaining funds to be reallocated to three fleets that applied for the DERA State Grant. This resulted in idle reduction units for long haul trucks and engine powers on construction equipment.

Department of Administration (DOA)-Diesel Truck Idle Reduction Grant Program
The Wisconsin Department of Commerce received state funding through Wisconsin Act 25 to establish a grant program to reduce idling on Wisconsin-based long haul trucks. The program, covering half of the cost of the idle control device, funded approximately $4 million from 2006 to 2008 and then was supplemented with a $2 million grant from ARRA when the state funds ended (EPA's DERA National Clean Diesel Funding Assistance Program). The program was renewed at $1 million per year for fiscal years 2012-2015. The program is now housed at the Department of Administration.

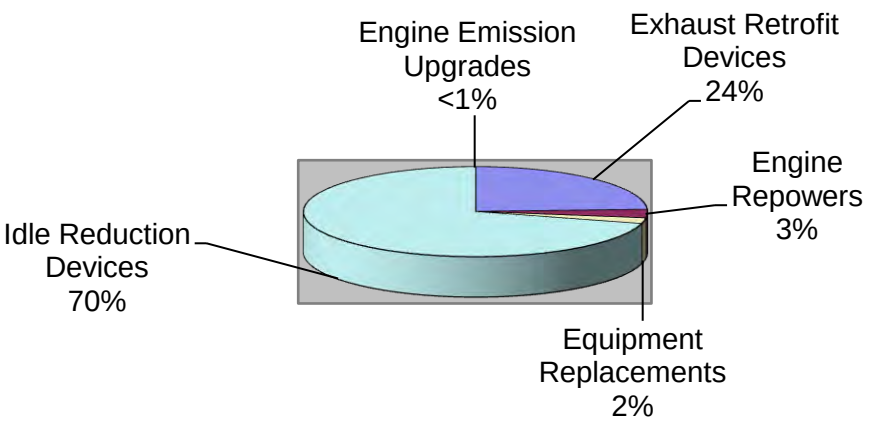
Department of Transportation (DOT)-DERA Nonroad Engine Repower Grant Program
The Wisconsin DOT received $750,000 in 2008 through EPA's DERA National Clean Diesel Funding Assistance Program. Grants were offered at 50 percent (up to $30,000 per repower) for engine repower projects on older construction equipment to companies that performed highway construction projects in Wisconsin.

PROJECT SUMMARY

The table below lists the number of pieces of equipment and type of equipment funded by these grant programs by project type. Overall, 4,484 pieces of equipment have been impacted to date, reducing emissions and saving fuel and operating costs for trucking companies, school districts and bus companies, construction companies, agricultural operations, municipalities and others (results are more extensively detailed in the Grant Program Results Summary Table).

Project Type	Equipment Type	# of Pieces of Equipment
Exhaust Retrofit Devices	School Buses	800
	Construction Equipment (trucks and nonroad)	88
	Municipal On-road Equipment (dump trucks, packers, lifts, sweepers)	187
	Municipal Off-road Equipment (cranes, forklifts, boats)	13
	Generators	5
Idle Reduction Devices	Trucks	2,968
	School Buses	124
	Locomotives	40
	Municipal Equipment	7
Engine Repowers	Construction Equipment	71
	Agricultural Equipment	34
	Refrigeration trailers	32
	Generators	5
Engine Emission Upgrades	Construction Equipment	7
Equipment Replacements	School Buses	79
	Refrigeration Trailers	21
	Construction Equipment	1
	Refuse Hauler	1
	Dump Truck	1
		4,484

Amount of Equipment by Project Type



Below are brief descriptions of the technologies used under the various projects contained in this report.

Exhaust Retrofit Devices – Several types of devices can be installed to a vehicle's exhaust system to reduce tailpipe emissions. A few different types were used under these grant programs. Diesel Oxidation Catalysts (DOC) reduce emissions of PM, hydrocarbons (HC) and carbon monoxide (CO) at a cost ranging between $700-$5,000 depending on the application. DOCs are maintenance-free. Diesel Particulate Filters (DPF) are similar to DOCs, but have up to triple the PM reductions, higher HC and CO reductions, require regular maintenance and cost over $8,000. Partial DPFs, which have the emission reductions and costs between a DOC and DPF, were used in one of these grant programs. Closed Crankcase Ventilation filters (CCV) are devices that capture almost 100 percent of the engine crankcase emissions and are used in conjunction with a DOC. They cost approximately $500-$1,000. Exhaust retrofit devices are a cost-effective way to reduce emissions on middle-aged equipment, though some devices have maintenance and operation impacts making the devices below average in popularity if other emission control options exist for the targeted application.

Idle Reduction Devices – Several types of technologies reduce idle time by powering essential vehicle components with the main engine turned off. These technologies provide electricity, heat to an engine, and/or heating and air conditioning (HVAC) to a vehicle's interior. Idle controls under these programs include diesel powered Auxiliary Power Units (APU) at a cost of $8,000-10,000, Battery Powered HVAC units at a cost of $6,000-9,000, direct fired heaters (DFH) at a cost of $2,000-4,500, Thermal Storage Systems at a cost of $4,000-5,000, and automatic engine shut-down/start-up systems for locomotives at a cost of $9,000-$18,000. Idle controls reduce primary pollutants (NOx, PM, HC, and CO) and largely reduce carbon dioxide (CO_2) emissions. Idle reduction devices are very popular because they reduce emissions while saving fuel and maintenance costs. They are very cost-effective and the fuel savings allow for a high return on investment.

Engine Repowers – A repower consists of replacing an older engine with one that meets more stringent emission standards. Repowers primarily reduce emissions of NOx, but also PM, HC and CO. The cost of a repower can range from $7,000 to over several hundred thousands of dollars depending on the engine application. The smaller and more accessible engines cost less for parts and labor. Engine repowers are a very cost effective solution for reducing emissions and they often save fuel and maintenance costs on outdated engines that still have a long expected remaining life on the rest of the equipment. They are especially favored for nonroad applications due to the longevity and expense of the equipment, which can extend its lifespan simply with a new engine versus an entire replacement.

Engine Emission Upgrades – Some fleets opt to rebuild an engine, rather than repower/replace it. During a complete rebuild, or separately, the engine's emission components may be upgraded to reduce the engine emissions. Upgrades reduce all of the primary pollutants (NOx, PM, HC and CO) at a cost of $25,000-$40,000. An engine emission upgrade is a cost-effective way to reduce emissions, specifically if the equipment is already undergoing an engine rebuild, but it is generally not popular as a stand-alone emission reduction solution since it has few additional benefits.

Equipment Replacements – Replacements consist of completely replacing an entire vehicle/piece of equipment. While costly, this is sometimes the only option for reducing exhaust from an older piece of equipment. Engine repowers, upgrades and exhaust retrofits are not options for every vehicle type. Replacing a vehicle reduces all primary pollutants and the cost range varies from a few thousand dollars to millions of dollars depending on the equipment. While replacements are favorable, they are generally cost-prohibitive and a last resort when no other emission reduction solution exists.

GRANT PROGRAM RESULTS SUMMARY TABLE

The table below summarizes the details and key results of the individual diesel grant programs including emission reductions by pollutant, fuel savings, total project costs, and cost effectiveness based on emissions reduced. While diesel emissions include several mobile source air toxics, this report identifies the key pollutants of concern: Nitrogen Oxides (NOx), Particulate Matter (PM), Hydrocarbons (HC), Carbon Monoxide (CO) and Carbon Dioxide (CO_2). These pollutants contribute to elevated ozone, particulate matter, and greenhouse gas levels. The emission reduction estimates are provided in annual and lifetime tons reduced, while the fuel savings and cost-effectiveness estimates are given over the project lifetime.

Emission reductions were estimated using the U.S.EPA Diesel Emissions Quantifier (DEQ), MOBILE 6.2 and National Mobile Inventory Model (NMIM). A variety of models were used given the complex nature of quantifying emissions from different types of engines operating under various conditions and due to the limitations of each model for certain project types. Some of these modeling limitations could not be remedied. For example, the NMIM and DEQ do not account for fuel savings from engine repower and replacement projects, thus fuel savings and related CO_2 reductions are actually higher than the estimates provided. The DEQ accounts for emissions from fuel, even if the fuel type is not related to the funded project, thus there is a decrease in NOx reductions and an increase in other pollutant reductions for the two programs where biodiesel was used and these emissions are not related to the grant program.

It is important to note that the DNR-administered grant programs' results are augmented by other programs implemented in Wisconsin. Other grant programs and many private fleet investments are not included in this report. Thus, the emission reductions estimated in the table below, while significant, represent a fraction of the total voluntary diesel emission reductions achieved across the state.

Grant Program	Project Type (Total # of Equipment Impacted)	Equipment Type (# of pieces impacted per type of technology)	Emission Reductions (tons) Annual/Lifetime					Lifetime Fuel Saved (gallons)	Total Project Cost / Cost-Effectiveness ($/ton)[1]
			NOx	PM	HC	CO	CO_2		
DNR- CMAQ Retrofit[2]	Exhaust Retrofits (935)	-School bus (611 DOC, 30 CCV, 74 DOC+CCV, 35 partial DPF) -On-road municipal (172 DOC) -Nonroad municipal (13 DOC)	-0.319/ -4.350	1.160/ 11.430	4.905/ 54.990	12.254/ 131.000	0	0	$1,008,039 $5,221/ton
DNR- EPA_MCDI Non-road	DOCs (20)	Construction equipment (20 DOC)	0	0.260/ 1.090	0.310/ 1.320	2.080/ 9.870	0	0	$41,000 $3,339/ton
DNR- EPA_MCDI Refuse Haulers + Trucks[3]	Idle Reduction + DOCs (12)	-Trucks (9 APU) -Refuse Haulers (3)	1.955/ 29.650	0.057/ 0.850	0.048/ 0.660	0.129/ 1.800	87.500/ 1,324	119,285	$84,120 $2,552/ton
DNR- EPA_DERA State 2008-2015	Mix (251)	-Trucks (92 mixed idle devices) -Refrigeration trailers (9 engine repowers, 1 replacement) -School buses (32 DFH, 48 replacements, 7 DOC) -Construction trucks (16 DOC) -Construction nonroad (8 DOC, 9 engine repowers, 1 engine emission upgrade) -Municipal onroad (7 DOC, 7 idle) -Irrigation sets and pumps (12	53.411/ 629.370	3.567/ 43.511	3.468/ 46.658	11.128/ 165.391	1,453/ 13,763	1,761,495	$6,326,790 $7,149/ton

		engine repowers) -Refuse Truck (1 replacement) -Generator (1 engine repower)							
DNR- EPA_DERA Municipal & School Bus	Mix (129)	-School bus (31 replacements, 42 DFH, 24 DPF, 19 DOC) -Construction nonroad (5 engine emission upgrades, 3 engine repowers) -Work trucks (5 DOC) -Dump truck (1 replacement)	7.820/ 137.100	0.530/ 7.890	0.950/ 14.070	4.100/ 57.310	41.500/ 503	45,286	$3,386,305 $15,651/ton
DNR- EPA_ARRA State	Mix (386)	-Trucks (202 mixed idle devices) -Refrigeration trailers (23 engine repowers, 20 replacements) -School buses (51 DFH) -Construction trucks (23 DOC) -Construction nonroad (21 DOC, 13 engine repowers, 1 emission upgrade, 1 replacement) -Irrigation sets (22 engine repowers) -Generators (5 DOC, 4 engine repowers)	77.278/ 1,094	3.993/ 39.610	5.453/ 35.630	21.892/ 148.690	2,734/ 43,308	3,905,399	$3,036,445 $2,304/ton
DNR- EPA_ARRA Locomotive	Idle Reduction + Engine Repowers (69)	-Switch locomotives (40 idle timers) -Trucks (27 battery HVAC) -Construction equipment (2 engine repowers)	137.192/ 2,644	4.144/ 71.440	8.194/ 154.450	16.463/ 284.660	4,575/ 90,953	7,070,263	$738,048 $234/ton
DOA- WI Act 25 Truck Idle Reduction 2007-2015	Idle Reduction (2,076)	Trucks (2,076 mixed idle devices)	481.966/ 6,962	11.339/ 164.639	3.096/ 47.472	18.576/ 282.768	21,425/ 308,375	27,781,562	$15,699,186 $2,105/ton
Commerce- EPA_ARRA Truck Idle Reduction	Idle Reduction (562)	Trucks (562 mixed idle devices)	120.268/ 1,869	2.810/ 44.398	1.686/ 25.852	10.116/ 153.988	5,364/ 83,353	7,509,275	$4,168,121 $1,991/ton
DOT- EPA_DERA Nonroad Repower	Engine Repowers (44)	Construction equipment (44 engine repowers)	59.056/ 349.630	5.910/ 36.970	5.835/ 35.310	26.557/ 168.880	0	0	$1,634,360 $2,766/ton
Total Lifetime Emission Reductions			**13,710**	**421.828**	**416.412**	**1,404**	**541,579**		
Total Fuel Savings								**48,192,565 gallons**	
Total Cost (Grant Dollars/Match Dollars)								**$35,709,055 ($17,151,605/ $18,557,450)**	
Average Cost Effectiveness								**$2,238/ton**	

[1] Cost-effectiveness is based on total project cost (grant dollars plus subrecipient match dollars) and all pollutant reductions combined over program lifetime, except CO_2. Including CO_2 reductions significantly improves cost-effectiveness.

[2] 150 pieces of on-road municipal equipment in this program use biodiesel fuel, which has an emission reduction reflected in the estimate, unrelated to the program.

[3] The three refuse haulers in this program use biodiesel fuel, which has an emission reduction reflected in the estimate, unrelated to the program.

SUCCESSES AND BENEFITS

Air Quality Benefits

The clean diesel grant programs are achieving substantial emission reductions. Approximately 15,952 tons of the pollutants (557,531 tons including CO_2) identified in the grant program results summary table will be reduced over the lifetime of these programs. Lifetime NOx reductions alone are equivalent to reducing emissions from over 10.9 billion miles of on-road vehicle travel.[7] The financial assistance and results of these programs have encouraged continued industry participation leading to ongoing and long-term air quality benefits. The Grant Program Results Summary Table contains details each program's emissions reductions.

Health-Economic Benefits

Health cost savings can be realized by reducing air pollution. A landmark study analyzed the costs of hospitalization, chronic illness, asthma attacks and lost work days associated with various emissions of motor vehicles.[8] Using findings from this study, over $14 million in total annual health cost savings is achieved by the clean diesel programs outlined in this report. These health costs savings are primarily achieved by reducing NOx and $PM_{2.5}$. Annual NOx emission reductions alone totaled over 938 tons for a health cost savings of over $10.6 million per year. Even more substantial is the estimated lifetime health cost savings of over $201 million.

Annual Health Cost Reduction from Diesel Grant Emission Reductions (annual ton reduction*cost per ton)

NOx	PM	HC	CO	CO_2	Total
938.627*$11,332	33.770*$109,000	33.945*$718	123.295*$50	35,680*?	
$10,636,521	**$3,680,930**	**$24,373**	**$6,165**	**-**	**$14,347,989**

Lifetime Health Cost Reduction from Diesel Grant Emission Reductions (lifetime ton reduction*cost per ton)

NOx	PM	HC	CO	CO_2	Total
13,710*$11,332	421.828*$109,000	416.412*$718	1,404*$50	541,579*?	
$155,361,720	**$45,979,252**	**$298,984**	**$70,200**	**-**	**$201,710,156**

Other Economic Benefits

Fuel savings

Over 48 million gallons of fuel are estimated to be saved through the lifetime of these grant programs, which saves over $106 million at the current price of $2.20 per gallon of diesel. This is equivalent to removing 2,400 long-haul trucks from the road for a year. Please refer to the Grant Program Results Summary table for a breakdown of fuel savings by program.

Reduced maintenance

Numerous projects within these programs reduce maintenance costs for the participating fleets. For example, installing newer engines saves time and money that fleet operators have had to spend maintaining outdated engines. Installing idle reduction devices reduces the run time of the main truck engine, reducing wear and tear and associated maintenance and parts costs. Many fleets undertake these projects with the goal of reducing maintenance and associated costs.

[7] Estimate calculated using travel and emission results for southeastern Wisconsin from MOVES2014 modeling performed by the Wisconsin Department of Natural Resources. (2014).

[8] McCubbin, Donald R. & Delucchi, Mark A. (September 1999). The health costs of motor-vehicle-related air pollution. *Journal of Transport Economics and Policy, Vol. 33*, Part 3, pp.253-86.

PROGRAM CONTINUATION

There are many benefits achieved through clean diesel grant programs. The programs administered by DNR and its partners have sparked interest and encouraged personal investment by fleets statewide. Grant participants and partners are sharing the success stories through the diesel industry and are creating positive energy and continued participation, extending the program benefits well into the future.

When grants are available, both EPA and DNR receive funding requests which exceed the amount of funds that are available. Clean diesel programs have proven to be a cost-effective means of reducing emissions and a win-win for all, benefitting business, health and the environment.

PROGRAM FEEDBACK

"The Clean Diesel Grant Program allowed the Alma School District to update a bus in our aged fleet. This grant means a lot to us as we, like many schools, are facing difficult fiscal issues. We are already seeing a significant drop in fuel consumption and the idle time on our new bus has been reduced to practically zero." Steven N. Sedlmayr, Superintendent, School District of Alma

"This program is very helpful to small trucking companies to assist with their efforts to become more environmentally friendly. I hope the program is continued and expanded in the future." Bob Leslie, President, R&H Service Inc., recipient of a Diesel Truck Idling Reduction Grant

"Our new refrigeration reefer unit would not have been possible without the grant. It is hard to believe how much we have saved in fuel alone. Less fuel, less exhaust, cleaner burning." Pete Hogan, Head Technician, Earl L. Bonsack Inc., recipient of DERA Wisconsin Clean Diesel Grant Program grants

"With your assistance and leadership, customers are able to test various technologies that, in many cases, lead to the customer specifying this technology onto additional equipment paid for 100 percent by the customer. …Inland Power Group, based in Butler, Wisconsin, appreciates the increased service and parts business associated with helping these customers secure emission reduction devices and products that help to reduce fuel consumption….I realize that without the work you and your counterparts have been providing, suppliers like Inland and their customers would find it extremely difficult to help to promote and to reduce the emissions in our region." Bob Giguere, Product Support Manager, Inland Power Group

"Hortonville Area School District (HASD) is always looking for ways to help keep our air clean… because of budget restrictions we are not able to utilize these technologies until we work these products through the vehicle replacement rotation, which are about 15- 20 years. Grants allow us to… expedite our process... We are running an article in our school district newsletter, which goes to all of our residents, along with including information about this on our district website. I plan to continue applying … to help us keep the air for our children clean." Harold Steenbock, Transportation Supervisor, HASD

"America's Service Line has been a participant in the Idle Reduction Grant program since 2009 … to install idle reduction units on our Class 8 trucks. We strongly believe in this program, the environment is important to all of us, and by doing our small part this can lead to a much bigger piece of having a cleaner world to live in. Our drivers have found this program to be a great success, since some states have no idling laws in place. We would request … making the idle reduction grant a permanent part of the states bi-annual budget. We believe this is a major reason why we continue to purchase "Green" technologies." Chris Cerveny, Business Analyst, America's Service Line