In addition to the options presented on the Green Pact for *Greening Public Fleets*, the following are easy to accomplish options to consider for reducing emissions and to include in a green fleet policy:

* Review arrangements for staff traveling to meetings and ensure that staff do not travel in separate vehicles to the same meetings or functions

* Actively encourage and promote video or teleconferencing as alternatives to meetings

* Encourage and provide guidance/assistance on the use of public transport

* Encourage and provide guidance/assistance with route/journey planning to avoid unnecessary miles traveled

* Regular maintenance of vehicles will ensure optimal efficiency and environmental performance.

* Smooth driving helps save fuel. Avoid harsh acceleration and heavy braking.

* Don't "warm-up" the car- it wastes fuel and is unnecessary if vehicle is tuned

* Do not fill the tank past the first 'click'

* Remove excess weight from the vehicle

* Reduce idling time. Idling for over 30 seconds uses more gas than it takes to restart the engine.

* Plan trips to have one linked trip rather than multiple trips

* Travel at moderate, steady speeds and avoid high speeds as they result in greater emissions and fuel economy loss (and are illegal!).

* Ensure proper tire inflation and keep wheels in proper alignment

* Park in the shade

MOBILE SOURCE EMISSION CALCULATION

Step 1: Obtain actual fuel consumption data.

The preferred approach is to obtain data on actual fuel consumption by fuel type. Methods include direct measurements of fuel use, such as official logs of vehicle fuel gauges or storage tanks; collected fuel receipts; and purchase records for bulk storage fuel purchases, in cases where you operate a fleet and store fuel at a facility.

Step 2: Determine the appropriate emission factor

If you cannot determine the fuel density, heat content, or carbon content of your specific fuels, use the default emission factors by fuel type in our table. You are encouraged to use more specific values than those given in table if available, for example, if you have data on specific gasoline used in terms of winter or summer grades, oxygenated vs. non-oxygenated fuels, or other local fuel characteristics. If possible, you should also obtain specific fuel information for other fuels such as off-road diesel fuel and fuel used for locomotive, rail or marine transport.

(See mobile emission factors table on back of page)

Step 3: Calculate total CO2 emissions and convert to metric tons

Equation	Calculating CO_2 Emissions From Mobile Combustion
Gasoline CO_2 Emissions – for 20 city vehicles (metric tons) = 10,000 (gallons) × 8.72 (kg CO_2/gal) ÷ 1,000 (mt/kg) = 87.2 (mt CO_2)	
Diesel CO_2 Emissions – for two fire trucks (metric tons) = 5,000 (gallons) × 10.04 (kg CO_2/gal) ÷ 1,000 (mt/kg) = 50.2 (mt CO_2)	
Total CO_2 Emissions = 87.2 + 50.2 = 137.4 (metric tons) (mt) (mt) (metric tons CO_2)	

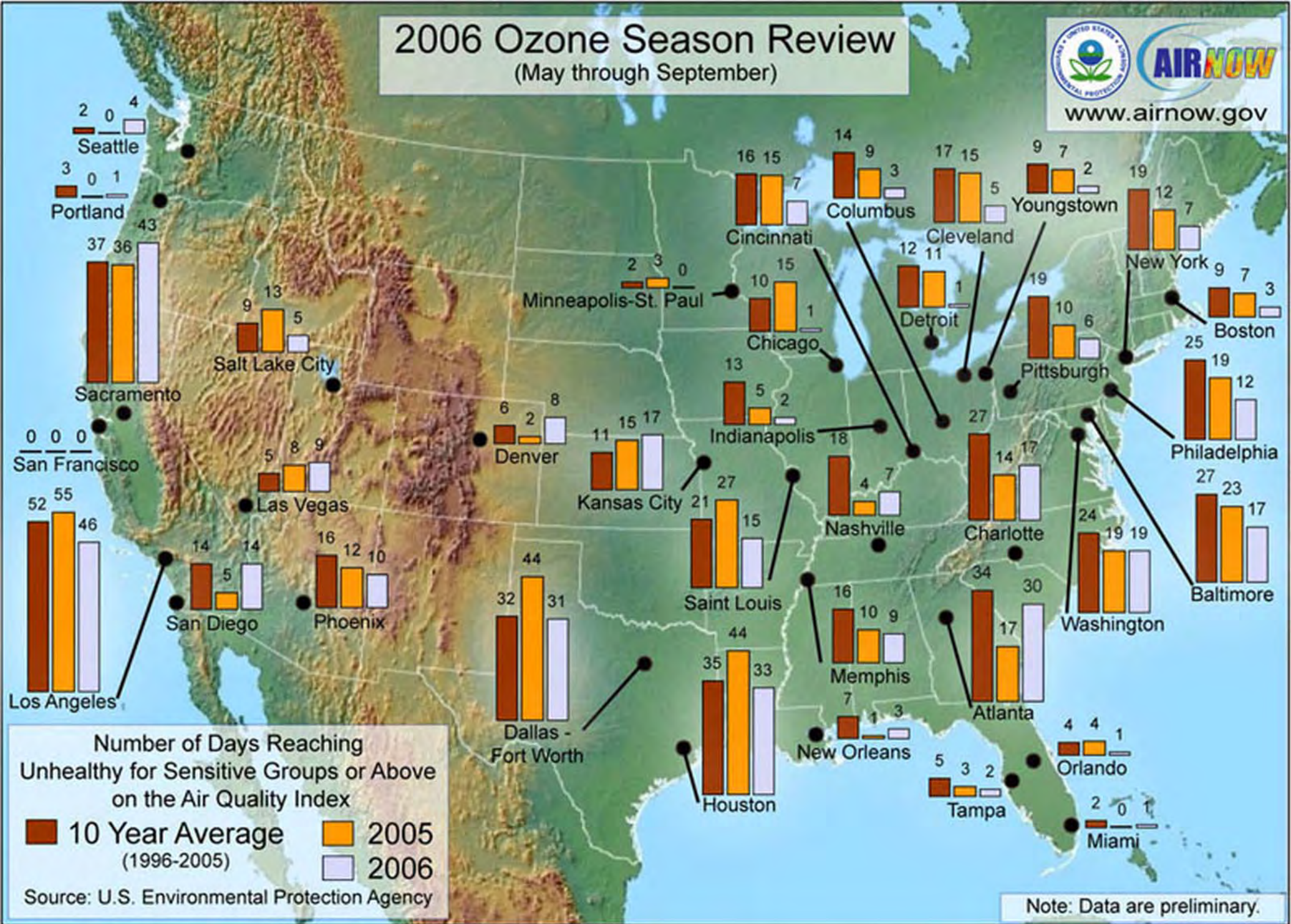
Emission Factors for Transport Fuels

Fuel Type	Carbon Content	Heat Content	Fraction Oxidized	CO_2 Emission Factor
Fuels Measured in Gallons	**kg C / MMBtu**	**MMBtu / barrel**		**kg CO_2 / gallon**
Motor Gasoline	19.33	5.218	0.99	8.72
Diesel Fuel No.1 and 2	19.95	5.825	0.99	10.04
Aviation Gasoline	18.87	5.048	0.99	8.23
Jet Fuel (Jet A or A-1)	19.33	5.67	0.99	9.47
Kerosene	19.72	5.67	0.99	9.66
Residual Fuel Oil (#5,6)	21.49	6.287	0.99	11.68
Crude Oil	20.33	5.8	0.99	10.19
Biodiesel (B100)*	NA	NA	0.99	9.29
Ethanol (E100)*	17.99	3.539	0.99	5.50
Methanol**	NA	NA	0.99	4.10
Liquefied Natural Gas (LNG)*	NA	NA	0.995	5.91
Liquefied Petroleum Gas (LPG)*	17.23	3.849	0.995	5.76
Propane	17.20	3.824	0.995	5.71
Ethane	16.25	2.916	0.995	4.12
Isobutane	17.75	4.162	0.995	6.42
n-Butane	17.72	4.328	0.995	6.66
Fuels Measured in Standard Cubic Feet	**kg C / MMBtu**	**Btu / Standard cubic foot**		**kg CO_2 / Standard cubic foot**
Compressed Natural Gas (CNG)*	14.47	1,027	0.995	0.054

Source: U.S. EPA, *Inventory of Greenhouse Gas Emissions and Sinks: 1990-2005* (2007), Annex 2.1, Tables A-31, A-34, A-36, A-39, except those marked * which are from EPA Climate Leaders Mobile Combustion Guidance (2004) and ** which are from California Climate Action Registry *General Reporting Protocol* Version 2.2 (2007), Table C.3.

If you do not have actual fuel data you will need the following information to estimate fuel usage:

Vehicle Type	Fuel	Model Year	No. of Vehicles	Annual Mileage	Fuel Economy
Passenger Cars	Motor Gasoline	2000	20	20,000	25 mpg
Police Cars	Motor Gasoline	2002	10	150,000	20 mpg
Fire Trucks	Diesel	1998	2	80,000	14 mpg


2006 Ozone Season Review
(May through September)
www.airnow.gov
AIRNOW
Seattle 2 0 4
Portland 3 0 1
Sacramento 37 36 43
San Francisco 0 0 0
Los Angeles 52 55 46
Salt Lake City 9 13 5
Las Vegas 5 8 9
San Diego 14 5 14
Phoenix 16 12 10
Denver 6 2 8
Kansas City 11 15 17
Minneapolis-St. Paul 2 3 0
Chicago 10 15 1
Cincinnati 16 15 7
Columbus 14 9 3
Cleveland 17 15 5
Detroit 12 11 1
Youngstown 9 7 2
Pittsburgh 19 10 6
New York 19 12 7
Boston 9 7 3
Philadelphia 25 19 12
Baltimore 27 23 17
Washington 24 19 19
Indianapolis 13 5 2
Saint Louis 21 27 15
Nashville 18 4 7
Charlotte 27 14 17
Atlanta 34 17 30
Memphis 16 10 9
Dallas - Fort Worth 32 44 31
Houston 35 44 33
New Orleans 7 1 3
Tampa 5 3 2
Orlando 4 4 1
Miami 2 0 1
Number of Days Reaching
Unhealthy for Sensitive Groups or Above
on the Air Quality Index
10 Year Average
(1996-2005)
2005
2006
Source: U.S. Environmental Protection Agency
Note: Data are preliminary.

Welcome to Mahoning Valley Air.org

Regional Forecast (More details...)

Mar. 14	Good	Mar. 15	Good
	$PM_{2.5}$		$PM_{2.5}$

Sign up

or change your AirAlert Subscription

(email address) Go

Air Quality

View a map of the number of unhealthy days for major cities across the U.S.

2006 Ozone Season Review

Downloads

Click here for downloads.

Web Site

Sponsored by Eastgate Regional Council of Governments.

Contact Us

Lisa M. Pompeo
Public Information Administrator
330-779-3800
Fax: 330-779-3838
lpompeo@eastgatecog.org

News & Events in the Valley

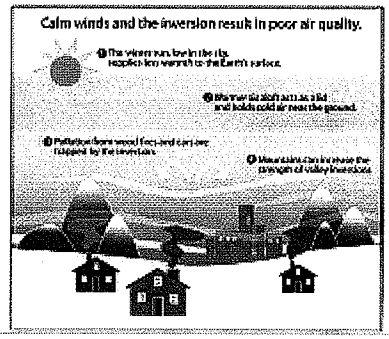
EPA Strengthens Ground-level Ozone Standards

Category	AQI Value	1997 8-hour (ppm)	2008 8-hour (ppm)
	0-50	0.000-0.064	0.000-0.059
Moderate	51-100	0.065-0.084	0.060-0.075
	101-150	0.085-0.104	0.076-0.095
	151-200	0.105-0.124	0.096-0.115
	201-300	0.125-0.374	0.116-0.374
	301-400	No Change	No Change
	401-500	No Change	No Change

(Washington, D.C. – March 12, 2008) To better protect public health and the Environment, U.S. Environmental Protection Agency (EPA) revised the standards of ground-level ozone today for the first time in more than a decade.

Read more...

Winter wood-burning can impact air quality



Wood smoke contains a mixture of gases and fine particles that can aggravate heart or respiratory problems in people of all ages but especially children, the elderly, and those with chronic conditions.

Read more...

Statistics for 2008

Advisory Days Calle

Unhealthy Days: 0

Maximum Observed

Ozone:

122 on May. 30

Particles:

74 on Feb. 25

Did you know

Don't top off your tanl you refuel. It may cau spillage, which then evaporates and contril smog levels.

OhioRideShar

Eastgate's new comm service that makes fin carpool partner as eas point, click, and ride. more information, visi www.ohiorideshare.co call 1-800-825-RIDE.

What Can I Do To Help?

When Eastgate Issues an Air Quality Advisory Day:

Don't refuel vehicles or equipment. If you absolutely have to, do it after 7:00 P.M., avoid spi or dripping gasoline, and do not top off the tank. Always make sure that gas caps are tightly sealed.

Avoid lawn care activities involving gasoline-powered equipment. Lawn equipment engines a generally inefficient and can be a considerable source of pollution.

Decrease Single Occupancy Vehicle (SOV) trips. Walk rather than drive to local stores. Bicyc Take a bus, carpool, or vanpool to work and recreational activities. Take advantage of OhioRideshare, Eastgate's new commuter service that makes finding a carpool partner as ea as point, click, and ride. For more information about OhioRideshare, visit http://www.ohiorideshare.com or call 1-800-825-RIDE. Reducing vehicles and congestion wi minimize the contribution of the automobile to the air quality problem.

Limit solvent usage. This includes charcoal lighter fluid, dry cleaning fluids, and oil based pai Generally speaking, if a match would ignite it, a liquid will contribute to air pollution formatic as it evaporates.

Reduce power demand. Cutting back on air conditioning or turning fans and lights off when i home or in the room will decrease demand on and emissions from electric power generation plants.

By taking these actions people can help to reduce air quality pollution and its health impacts For information you can post at your place of work or community site, call us at 330-779-38

Back to To

MIDWEST CLEAN DIESEL INITIATIVE

MCDI E-Update
November 2007

MCDI Salutes Jennifer Dunn of US EPA Region 5

EPA Region 5 and the Midwest Clean Diesel Initiative would like to recognize all the hard work and effort that Jennifer Dunn has brought to the team over the past two years. Jennifer has accepted a job in the private sector, and will no longer be working on the Midwest Clean Diesel Initiative. We're all going to miss her, and wish her the very best!

MCDI Leadership Group Meeting Next Steps

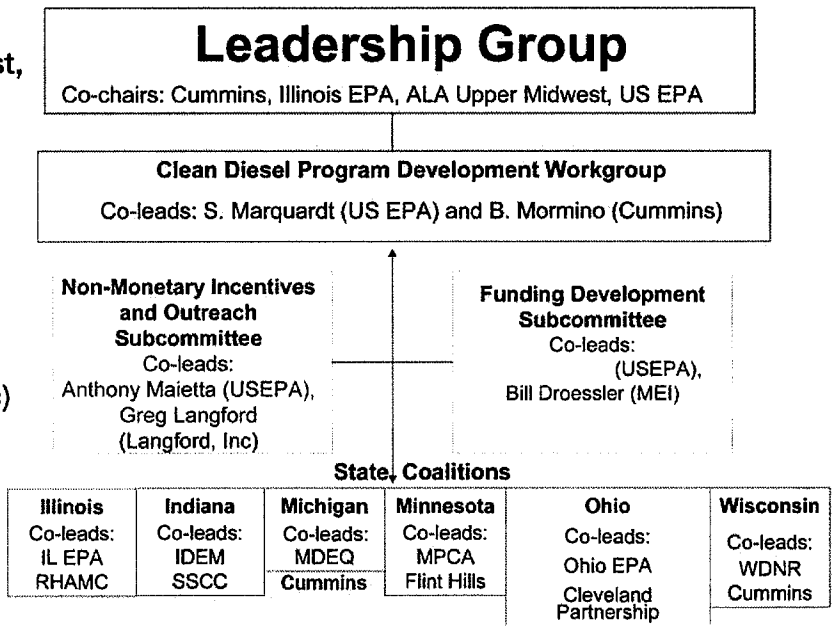
On October 11, the Midwest Clean Diesel Initiative Leadership Group met in Chicago, Illinois. Leadership group members discussed past accomplishnemts and laid out a path to move forward for the next year

Highlights of the meeting included the presentation of the 2007 Midwest Clean Diesel Leadership Awards (see the MCDI Spotlight at the end of this e-Update for information about this year's winners) and discussion on restructuring LG workgroups to a more task-oriented form.

The new structure for the MCDI Leadership Group is designed to meet the diverse and evolving needs of the six state coalitions that operate under the umbrella of the Midwest Clean Diesel Initiative.

As before, at the helm of the Leadership Group are the Co-Chairs (Cummins, Illinois EPA, the American Lung Association of the Upper Midwest, and US EPA). The Co-Chairs provide guidance and direction to the Clean Diesel Program Development Workgroup (led by US EPA and Cummins), which acts as a liason to the six State Coalitions and an aggregator of work products from two subcommittees.

The Non-Monetary Incentives and Outreach Subcommittee (led by US EPA and Langford, Inc) can provide case studies and other outreach documents to enhance a state coalition's outreach or highlight a project they've completed. The Funding Development Subcommittee (led by US EPA and MEI) explores new methods of funding while augmenting state coalitions' efforts to fund projects.



Story continued on next page...

...story continued from previous page

MCDI, through the Program Development Workgroup and subcommittees, provides support to the coalitions by providing technical information, outreach documents and information, networking opportunities, and more. The state coalitions are integral to meeting the ambitious goal of the Midwest Clean Diesel Initiative.

For more information, visit *http://www.epa.gov/midwestcleandiesel/leadershipgroup/index.html*

EPA Hosting Diesel Retroit Technology Verification Workshop on December 13, 2007

EPA is hosting a Diesel Retrofit Technology Verification Workshop at the Latham Hotel (Georgetown) on December 13, 2007. The goal of the workshop is to provide engine, retrofit technology, and fuel manufacturers with a better understanding of EPA's clean diesel retrofit technology verification process. The workshop will also touch on similar verification processes in California and Texas. Admission to the workshop is free.

Location:
The Latham Hotel in Georgetown
3000 M Street, NW
Washington, DC 20007

For further information, visit *http://www.epa.gov/otaq/retrofit/wkshp-agendum-20071213.htm*
To RSVP, contact Cheryl Jackson at *jackson.cheryl@epa.gov*

See the complete list of verified diesel retrofit technologies at *http://www.epa.gov/otaq/retrofit/verif-list.htm*

New Jersey Introduces Statewide Diesel Regulations Suite, Retrofit Program, and Web Site

On September 7, 2005, the State of New Jersey enacted the Diesel Risk Reduction Law, which contains provisions to drastically reduce diesel emissions from school buses, garbage trucks, transit buses, and other public and private diesel vehicles across the state. In August of this year, the regulations began to take effect, with a goal of retrofitting all New Jersey school buses by August, 2009. The ambitious program, which reallocates a portion of revenue from the state's Corporate Business Tax to completely fund all retrofits, is a powerful step toward cleaning up New Jersey's diesels and reducing citizens' exposure to harmful diesel exhaust. Anti-idling provisions are also contained in the regulations, creating a 3-minute limit on idling.

To accompany the regulations, the State has created a web site (StopTheSoot.org) to educate the public about the retrofit program and anti-idling regulations.

For more information on the Stop The Soot initiative, visit *http://stopthesoot.org*
To view New Jersey's Diesel Risk Reduction Law, visit *http://www.state.nj.us/dep/aqm*

MCDI Spotlight:

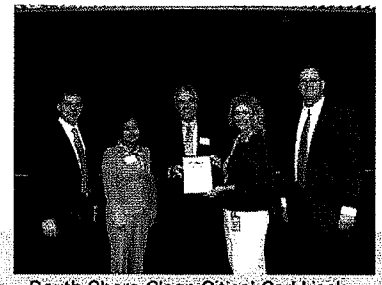
2007 Midwest Clean Diesel Leadership Award Winners

This month's MCDI Spotlight shines upon the winners of the 2007 Midwest Clean Diesel Leadership Awards. The MCDI Leadership Awards raise awareness and recognize individuals or organizations that have made significant, measurable improvements in air quality through the development and/or implementation of clean diesel actions (i.e. retrofits, replacements, fuels, education, leveraged funding, etc.). The MCDI Co-Chairs reviewed and selected this year's winners:

South Shore Clean Cities, Inc. was recognized for demonstrating leadership by creating and implementing clean diesel programs in Northwest Indiana and beyond. SSCC is a nonprofit organization that has forged many partnerships in the area. It has organized and contributed to more than 30 outreach events, retrofitted 35 school buses and seven other locally-owned vehicles, and created a web site and an anti-idling print, radio, and web campaign that reached thousands of Indiana residents.

Marten Transport, Ltd. is a trucking company with a fleet of about 2,200 vehicles. The company's goal is to retrofit its entire fleet with auxiliary power units in order to reduce whole-engine idling in an 18 month time period starting in June 2007. The project will save more than 4 million gallons of fuel a year and will cut air pollution. So far, more than 800 vehicles have been retrofitted.

Hamilton County, Ohio, Department of Environmental Services serves as a model for what local communities can do to affect voluntary emission reductions and clean the air in their communities. The department started the Southwest Ohio Clean Diesel Campaign in 2003, which continues today. It has partnered with public and private sector organizations, and since 2004 the department has retrofitted 265 buses and is on its way to meeting its goal of retrofitting 800 school buses.



South Shore Clean Cities' Carl Lisek with the MCDI Leadership Group Co-Chairs

Hamilton County's Sarah Dowers with the MCDI Leadership Group Co-Chairs

Marten Transport's Ed Accola with the MCDI Leadership Group Co-Chairs

VEHICLE EFFICIENCY

Vehicle efficiency is one of the most easily developed greenhouse gas reduction strategies for the transportation sector. It is particularly helpful because it has the ability to help leverage relatively large greenhouse gas reductions. Focusing on vehicle efficiency is imperative because the transition to a low- or no-carbon fuel, such as hydrogen, appears to be the most difficult for the transportation sector. Improved vehicle efficiency can take Ohio 21% of the way to where we need to be with respect to annual CO_2 emissions by mid century.

Technology Options

Conventional Technology Improvements

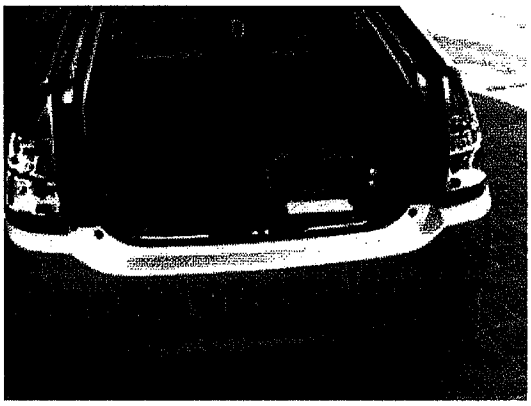
There are several opportunities for conventional improvements in light duty vehicles with respect to engines, transmissions, aerodynamics and tire drag, and inertia losses. Several studies suggest that a 20% to 25% reduction in greenhouse gas emissions is possible by adopting existing technology improvements.[54]

Electric Hybrid Drivetrains

An electric hybrid vehicle uses energy from braking to supply energy to the battery system. With some systems, such as the technology used by the Toyota Prius, the vehicle uses the battery for power at lower speeds and the gasoline engine at higher speeds. For other systems, such as the Honda Insight, the battery is used to assist the gasoline engine with power at both lower and higher speeds. The engine-battery technology of electric hybrids in combination with conventional technology improvements can provide a total greenhouse gas reduction of 40% to 50%. While electric hybrid drivetrains have been applied to larger vehicles such as buses and utility vehicles, current technology is generally not well suited for vehicles that carry very heavy loads, tow other equipment, or primarily are used for high-speed highway travel.[55]

Hydraulic Hybrid Drivetrains

Rather than using a battery to store power, hydraulic hybrid drivetrains use regenerative braking to capture and recover energy in the form of pressurized hydraulic fluid. This technology has been developed primarily for larger vehicles that carry heavy loads and also experience frequent starts and stops. Eaton and Peterbuilt recently have announced one of the first hydraulic hybrid vehicles–a trash hauler with this system that is estimated by the manufacturer to be 25% to 30% more fuel efficient than a conventional hauler.[56]. The U.S. EPA has been working with Eaton to develop this technology for medium-sized trucks and is targeting a fuel efficiency increase of between 60% and 70%.[57]



Plug-in Hybrid Electric Vehicles

Plug-in Hybrid Electric Vehicles (PHEVs) are grid-connectable hybrid electric vehicles that can operate on conventional gasoline or diesel and potentially on biofuels. The CO_2 emissions of PHEVs potentially are 50% lower than a gasoline electric hybrid, on a tailpipe basis.[58] However, total CO_2 emissions from vehicle use are highly dependent on the electricity source for the battery re-charging. Daimler Chrysler currently is testing a PHEV minivan, known as the Sprint.

Homogeneous Combustion Compression Ignition

Many heavy duty vehicles probably will need to utilize advanced combustion systems like Homogeneous Combustion Compression Ignition (HCCI) to meet future emission standards. If HCCI can successfully be commercialized, diesel engines in combination with other conventional technology improvements (like those previously mentioned) could provide greenhouse gas reductions for heavy duty vehicles of up to 35%. These engines also are well suited to lighter duty gasoline load carrying vehicles like pickup trucks, cargo vans and large SUVs.[59] Caterpillar's new ACERT engine is the first commercial application of this technology in a heavy duty engine.

FOUNDATION FOR ACTION

Ohio has a long-standing history of auto manufacturing–one of Ohio's largest manufacturing employers. Honda, for instance, is a major manufacturer of hybrid electric vehicles and is one of the largest manufacturing employers in the state.

Cleveland-based Eaton Corporation (one of the world's most diversified industrial manufacturers) developed a diesel electric hybrid utility vehicle for FedEx that is 50% more fuel efficient than the conventional FedEx vehicle. This hybrid model is slated to become the replacement vehicle for future FedEx delivery vehicles.

Both Eaton and Parker Hannifin (one of the world's leading manufacturers of motion and control technologies and systems, headquartered in Cleveland) have developed a hydraulic hybrid drivetrain for heavy duty vehicles.

Ohio House Bill 453 (Mason) would establish a state tax credit for new hybrid vehicle purchases. Under the proposed legislation, hybrid vehicles achieving 40 miles per gallon (mpg) or better according to U.S. EPA estimates would receive a $3,000 tax credit. Hybrid vehicles achieving less than 40 mpg would receive a $2,000 tax credit.

Recommended Measures

Within every class of vehicle, there is at least a 25% difference between the most efficient and least efficient vehicles. Ohio should focus on implementing measures that promote the development and use of the most efficient vehicle for each type.

Sales Tax Incentives

Ohio should consider adopting a sales tax credit for fuel efficient vehicles. Currently, ten states (Colorado, Connecticut, Florida, Maine, New Jersey, New York, Oregon, Pennsylvania, Utah and Washington) have tax incentives for the purchase of electric hybrid vehicles or fuel efficient vehicles. Most states focus the tax credits on the technology use, although Connecticut and Washington have a 40 mpg and 50 mpg minimum requirement, respectively. In order to maximize the greenhouse gas reduction benefit, one potential approach would be to apply a tax credit to the most efficient vehicles for each vehicle class.

Government Procurement

The State of Ohio vehicle fleets should meet a minimum high efficiency standard for new vehicle purchases, as well as meet an overall fleet efficiency target *(see Ohio House Bill 245 in Bio Sequestration and Products section for example approach)*.

Multi-state Cooperation

The FedEx/Eaton partnership led to the development of a new, much more fuel-efficient vehicle because of FedEx's vision and purchasing power. The State of Ohio should reach out to other states to consider creating a larger purchasing pool that can work with vehicle developers and manufacturers to produce more efficient vehicle types that meet state government needs. Manufacturers require an annual vehicle market size of approximately 25,000 new vehicle purchases before they are willing to introduce a new vehicle model to the marketplace. Ohio's state fleet is comprised of 7,100 vehicles. That number may not be enough to meet a manufacturer's new vehicle production requirement, but collectively the total estimated size of vehicle fleets from all states is 525,000 vehicles.

Voluntary Upgrades of Private Fleet Vehicles

Private fleet vehicles should consider developing voluntary new vehicle purchasing guidelines based on efficiency and adopt a total fleet efficiency target. While the FedEx/Eaton partnership resulted in the development of an entirely new vehicle, many companies with private vehicle fleets can upgrade their light and heavy duty vehicle fleets with vehicles and technologies that currently are available.

Community Hybrid Plug-in Programs

Vehicle manufacturers and utilities should work with a local community to "road test" how plug-in hybrids could be integrated into local transportation needs. A variety of local private and public fleets could be utilized to explore the more immediate practical niches for using this technology.

Next Steps for Vehicle Efficiency

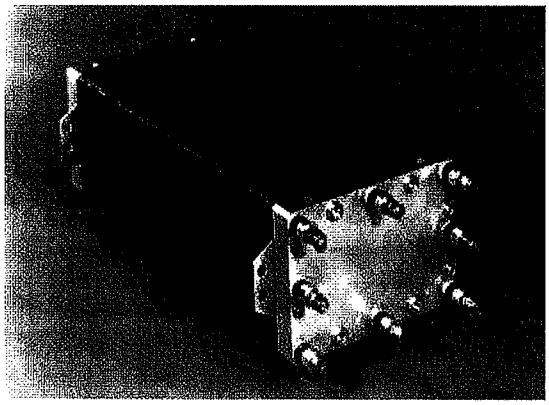
1. NGOs, business interests, and other stakeholders should work with the Department of Administrative Services to develop state procurement guidelines for efficient vehicles.
2. NGOs, business interests, and other stakeholders should work with state lawmakers to develop and adopt a sales tax incentive program targeted at the most efficient vehicles in all vehicle classes *(see Ohio House Bill 453 in Foundation for Action for more information)*.
3. The Governor should reach out to other Midwest/Great Lakes Governors to test interest in developing a larger purchasing pool that can drive vehicle efficiency improvements.
4. NGOs and private fleet owners should develop pilot programs to encourage private sector investment in more efficient vehicles.
5. The Governor should develop a working group to identify key research, development, and deployment projects for the next generation of energy markets, such as those mentioned above. The projects potentially could be leveraged through state activities, such as the Third Frontier Initiative and the Ohio FutureGen Task Force.

Co-Benefits from Promoting Vehicle Efficiency

Reducing petroleum consumption will help improve our energy security.

Ohio is historically a major manufacturer in the auto industry. Promoting innovative technology advancements will play to Ohio's strengths in manufacturing.

The state of Ohio is working to lay the foundation for our state role as a major manufacturer in the fuel cell industry. Development of efficient electric hybrid drivetrains is an important step toward developing fuel cell vehicles.



Costs

Conventional Technology Improvements

Studies suggest that a 20% to 25% reduction in greenhouse gas emissions is possible for a retail price impact of roughly $1,500.[60]

Hybrid Electric Vehicle (HEV)

The retail price impact of an HEV is on the order of $4,000, but could come down in the future to about $2,500.[61]

Plug-in Hybrid Electric Vehicle (PHEV)

Initial industry cost estimates are that PHEVs will cost an additional 10% to 20% above conventional hybrid electric vehicles.[62]

Homogeneous Combustion Compression Ignition (HCCI)

HCCI could provide greenhouse gas reductions of 30% to 35% for a cost of about $3,500 per engine.[63]

MEASURING SUCCESS

Carbon Budget Impacts

Near-term Carbon Budget Savings[64]

Utilizing more efficient vehicles provides immediate benefits for reducing carbon dioxide.

Long-term Carbon Budget Management[65]

Vehicle sector: Development and deployment of more efficient vehicles could supply an estimated 57.5% of the total budget cut needed for the transportation sector.

Specific Greenhouse Gas Reduction Examples[66]

Gradually improving vehicle efficiency in light and heavy duty vehicles could reduce estimated annual tail pipe greenhouse gas emissions by as much as 43% by mid century–an annual estimated reduction of 56,365,282 tons of CO_2 (13.98 MMTC).

Massachusetts To Retrofit All School And Transit Buses In The State By 2010

Last year, the Commonwealth of Massachusetts announced the dedication of $22.5 million to retrofit all diesel powered regional transit and public school buses in the state by September 30, 2010. This year, the first installment of funds totalling $7.5 million has been committed, and progress on bus retrofits is underway. This ambitious retrofit initiative is the result of an agreement between the state's Executive Office of Transportation and Department of Environmental Protection. Additionally, the agreement provides for funds to retrofit locomotives on the 'T' commuter rail line as well as the continued implementation of a clean construction provision that makes sure that all construction equipment over 50 horsepower which work on state construction projects has been retrofitted with clean diesel technology.

To learn more about Massachusetts' program, visit *http://www.mass.gov/dep/air/community/schbusir.htm*

Indiana Clean Air Events: December 2007

South Shore Clean Cities, Inc., in conjunction with the Northwest Indiana Quality of Life Council, are holding a forum entitled "Climate Change and the Region - Setting Our Resolve" at Purdue University (North Central campus) on Friday, December 7. Among the speakers for this event will be US Congressman Joe Donnelly, Valparaiso Mayor Jon Costas, and Mark Maassel, President of NIPSCO.

The forum's purpose is to educate Northwest Indiana Quality of Life Council members about local and regional efforts to reduce greenhouse gases, as well as to hopefully bring about real actions that council members can take in their personal and work lives. An alternatively-fueled bus will be provided by South Shore Clean Cities to pick up participants along a predefined route, with the goal of reducing the greenhouse gases produced by participants getting to and from the forum.

Attendance for Quality of Life council members is free, and there is a $15 requested contribution for non-members.

To reserve a seat, contact Meg Haller at *mhaller@nwiqlc.org* or call *(219) 531-4200 x4206* by December 1. To learn more about the Northwest Indiana Quality of Life Council, visit them on the web at: *http://www.nwiqlc.org*

Diesel Technology Forum Hosting Free Webinar on Diesel Retrofit Projects: Lessons Learned

On December 5, 2007, the Diesel Technology Forum continues its series of free webinars on clean diesel with "Diesel Retrofit Projects: Lessons Learned". Many people know that diesel retrofit technology can significantly reduce emissions and that funding sources are available to help pay project costs. But who has carried one of these projects to completion? The December 5, webinar will feature presenters from Cummins, DeKalb County School Systems, Oregon DEQ, and NESCAUM who have been involved with successful diesel retrofit projects. They will pass on the lessons they've learned and their experiences with diesel retrofit projects.

You can register for this free webinar at: *http://www.dieselforum.org/resources/webinars*

You will need an internet connection to participate in the webinar.

News Release

OHIO DEPARTMENT OF TRANSPORTATION

OFFICE OF COMMUNICATIONS - 1980 W. Broad Street, Columbus, Ohio 43223
http://www.dot.state.oh.us

State to Partner With Local Communities on Clean Diesel Initiative

ODOT to assist with new retrofit technology on older engines

(COLUMBUS – *May 22, 2007*) Governor Ted Strickland today directed the Ohio Department of Transportation (ODOT) to change how Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding can be used, allowing local communities to retrofit older diesel engines with new, clean diesel technology.

Strickland's order marks a change in policy by ODOT, which historically did not allow Metropolitan Planning Organizations (MPOs) to use CMAQ funds in this manner. Opening up CMAQ funding for these types of projects is part of the ongoing mission of ODOT Director James G. Beasley to review how the funding sources administered by the department can best be used.

"Allowing local communities to make this investment will put them ahead of the curve in decreasing air pollution and helping our cities get closer to federal air quality attainment," Strickland said. "The Ohio Department of Transportation will work closely with the Ohio Environmental Protection Agency and our local communities to make the air we breathe better.

MPOs will now be able to use CMAQ funds budgeted to them over the next two years, and any unprogrammed funds from past years, to immediately address diesel-retrofitting efforts. The MPOs can retrofit older diesel engines on public transit, truck and construction fleets with new, clean diesel technology.

"CMAQ funds have a very specific purpose: to mitigate congestion and improve air quality," said Director Beasley. "By giving local communities these new tools, we are also giving these communities more options to consider as they work with us to fight traffic and air quality problems."

The Ohio EPA will work in partnership with ODOT to ensure CMAQ funds are properly administered to projects that will help bring areas in Ohio, particularly in northeastern Ohio, in attainment with federal air quality standards.

"This initiative by ODOT adds much-needed support to our diesel retrofitting of school buses in communities that do not meet federal air quality standards for fine particulates," said Chris Korleski, Director of the Ohio Environmental Protection Agency.

Ohio EPA created the Clean Diesel School Bus Fund in 2006 to encourage school districts to install pollution controls on diesel school buses, and use cleaner fuel to reduce diesel emissions and improve air quality. Ohio EPA reports that its retrofits will eliminate more than four tons of air pollution, including carbon monoxide, hydrocarbons and fine particulate emissions.

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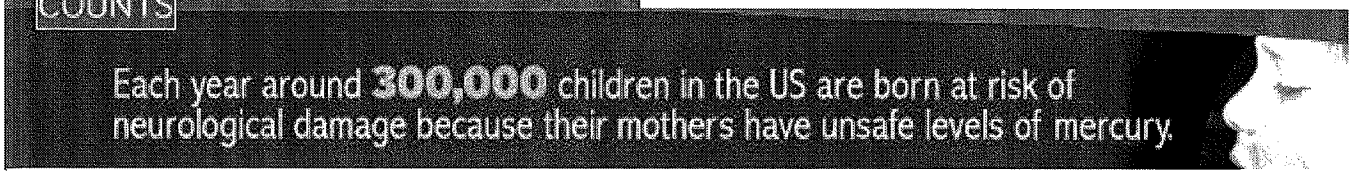
For more information contact: Scott Varner (ODOT) at 614-644-8640 or
Melissa Fazekas, (Ohio EPA) at 614-644-2782.



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Low-Impact Paving

What is low-impact paving?
Low-impact paving is a strategy for reducing smog-forming emissions from paving roads, fire lanes, parking lots and other surfaces with asphalt. By using non-petroleum-based paving systems, specially formulated sealants and coatings, and special design features, communities can reduce smog-forming emissions of volatile organic compounds (VOCs). These options provide other environmental benefits, lower construction or maintenance costs, and can enhance the aesthetics of a project. For every one acre of low-impact paving, as much as 2 tons of VOC emissions are eliminated compared to emulsified paving.

Why use alternative paving methods?
Because crude oil is a key ingredient in asphalt, the manufacture, transport, processing and application of asphalt all contribute VOCs to regional smog. Many of the coatings, sealants, caulks and markings required in paving projects are also sources of VOCs. Each summer day in the Chicago area, more than 13 tons of VOCs are emitted from emulsified paving projects. Low-impact paving can reduce these emissions and offers many other benefits.

Improved aesthetics.
Special design options such as reflective surface areas, island planters and shade trees enhance a project's aesthetic appeal. On Chicago's Navy Pier, the Chicago Shakespeare Theater installed a rooftop garden area, paving 1,722 square feet with gray Gravelpave2. The designer filled the area with small gray gravel to give the impression of an English garden. The rectangular perimeter features raised planters filled with colorful flowers.

Enhanced traffic safety.
Reduced surface area, transit design features and pedestrian amenities have proven effective in reducing traffic speeds and accidents, thereby extending the life of roadways, reducing air pollution from traffic and saving pedestrian lives.

Reduced costs.
Some low-impact paving options may allow a project to qualify for zoning variances that reduce the amount of required parking. Others options include systems that are more durable and easily repaired than traditional asphalt, eliminating frequent, expensive and unsightly patching. Some design features can reduce or eliminate the need to construct stormwater management systems. In Maryland, the National Archives paved a fire lane and jogging trail with Grasspave2 to ensure emergency access yet preserve aesthetic harmony with the wooded forest setting. In communities that assess water and sewage charges based on impermeable surface area, low-impact paving can lead to lower annual fees.

How do we implement low-impact paving?
Options for implementing this strategy will vary based on your project's location, economics, and type. In general, a project will incorporate one or more of the following key features:

Alternative paving materials.
Several companies have developed paving methods that utilize grass or gravel as alternatives to asphalt. This option is ideal for overflow and special use parking facilities. A company called Invisible Structures outlines several alternatives and provides case studies or impervious pavement alternatives.

Minimizing demand for parking.
Local zoning officials can tap the expertise of regional transportation officials to ensure that new developments incorporate pedestrian-friendly, transit-oriented design elements and other strategies to minimize the need to drive The Regional Transportation Agency's (RTA's) transportation demand management study is a good resources.

Traffic calming.
Traffic calming design options can reduce the amount of asphalt used, increase pedestrian travel and decrease vehicle emissions. Traffic calming is the combination of mainly physical measures that reduce the negative effects o motor vehicle use, alter driver behavior and improve conditions for non-motorized street users. municipal transportation

Heat island reduction.
Due to the lack of trees and use of dark surfaces like roofs and pavements, most cities have temperatures 2 to 10 degrees hotter than surrounding areas, hence the term "hea island." Parking lot design can incorporate alternative paving materials, reflective surface coatings, island landscaping and shade trees to reduce the "heat island" effect. A model tree shading ordinance. Sacramento adopted a tree shading ordinance for parking lots and encourages the use of "cooler paving materials. Another good reference on ways to reduce the heat island impact of paving are on the City of Chicago's

website.

Is low-impact paving a proven strategy?
Yes.

Dominican University in River Forest recently installed a gravel-paved parking lot that utilizes an Invisible Structures system. Though the installation of the lot itself was a little more expensive than blacktop – $1.5 million as opposed to $1.25 million – there was no need to build a drainage system, which saved on overall project costs. And since the gravel could be laid around trees already in the lot, there was no need to remove or replant them.

In 1997, the Department of Defense (DOD) awarded a contract to repair and maintain its parking lots and access roads at four Washington, DC, area facilities. This 5-year, $1 million-per-year project required the contractor to use recycled content and low VOC products as well as meet DOD's traditional price and performance specifications. The contractor's products have increased recycled-content percentages, reduced VOC levels, and lowered overall toxicity. DOD did not sacrifice cost or performance to achieve its environmental goals. In fact, the cost was less than if DOD had used traditional paving products with equivalent performance.

How we measure and report clean air benefits?
Basic information about the type and size of your project an the low-impact paving options you choose is all you need to calculate your community's clean-air benefits. Just call the Clean Air Counts campaign for help.

Reporting
Basic information about the type and size of your project an the low-impact paving options you choose is all you need to calculate your community's clean-air benefits.

Begin Reporting!

CLEAN AIR COUNTS: 177 North State Street, 5th Floor Chicago, IL 60601 info@cleanaircounts.org