

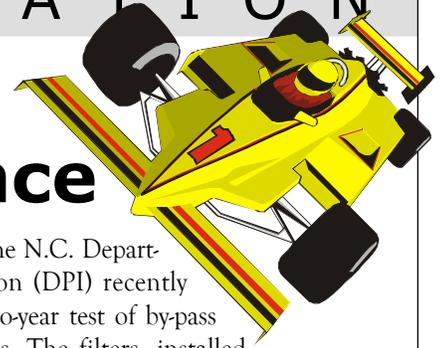


N.C. Division  
of Pollution  
Prevention  
and  
Environmental  
Assistance

# FOCUS

## WASTE MINIMIZATION

### Finish First with Vehicle Efficiency and Maintenance



Most manufacturers, businesses, and governments maintain some type of motor fleet. Vehicle operation and maintenance is costly and can create significant environmental impacts. To help fleet managers identify appropriate alternatives to using gasoline and minimize waste from vehicle maintenance, the Division of Pollution Prevention and Environmental Assistance (DPPEA) has been tracking several new technologies that address these issues. Presented here are pollution prevention opportunities that organizations may consider to reduce operating costs and pollutant releases to the environment.

#### EFFICIENCY

**Alternative Fuels.** Recently, North Carolina state government has been testing alternate fuel cars. Consistent with EPA regulations for state governments to purchase percentages of new vehicles with alternate fuel capabilities, North Carolina purchased cars that run on LPG (liquefied petroleum gas), propane, and natural gas as well as gasoline. Originally, with only a few refueling sites, the ranges and uses of these vehicles were limited. However, more alternate gas refueling stations are being built across the state. Refer to *Alternative Fuels for Fleets* on page 2 for further details.

**Fuel Catalyzers.** DPPEA is working with a small North Carolina company to test a new device that may significantly improve gas/diesel mileage and reduce nitrogen oxide (NOx) emissions. This device is installed in the vehicle fuel line where fuel is injected into the cylinders. The unit ionizes the fuel to make it burn more efficiently. This technology has been shown to work well on both gasoline and diesel engines and also on all types of oil and gas-fired heaters. Tests indicate fuel efficiency gains of about 10% for city driving and 30% to 40% for highway mileage. NOx concentrations were reduced substantially by 75% and some heaters are saving well over 50% of fuel costs.

**By-Pass Filters.** The N.C. Department of Public Instruction (DPI) recently completed a successful two-year test of by-pass filters for 48 school buses. The filters, installed in parallel with the regular full-flow filter, take a side-stream of 10-15% of the normal oil flow and clean the oil while the engine is running. Additionally, the filters remove particles of dirt and grit down to one micron in size as well as fuel and water that may get into the lube oil system. This filtration system keeps the oil as good as new and consequently the oil can go without changing for extended periods. Most of the test buses have gone three years without an oil change. The cleaned-up oil should also significantly reduce the wear on the engines and reduce major maintenance costs. As a result of this test program, DPI installed by-pass filters on all 580 new buses purchased for year 2000.

A very significant part of the by-pass filter program was inclusion of periodic oil analyses. Samples of the engine oil were taken at 5000-mile intervals and tested for viscosity, soot levels, metals, and additives. Test results gave bus managers confidence that the filters were keeping the oil clean. The metal test results also showed if engine parts were wearing and if so which ones. Costs of these tests ranged from \$6-\$12. The same principles that apply to lube oil change also apply to other vehicle oils and fluids such as transmission oils and steering fluids. If vehicles experience difficulties with oil breaking down or getting too dirty too soon, consider installing a by-pass filter.

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## Alternative Fuels for Fleets

### Foreign Oil Dependence and Environmental Factors Encourage Change

Our nation's increasing concerns about air quality issues and its dependence on foreign oil prompted Congress to pass the Energy Policy Act (EPAAct) of 1992. EPAAct accelerated adoption of Alternative Fueled Vehicles (AFVs) for federal and state fleets meeting specific size and geographic requirements. For example, 50% of all 2000 model light duty vehicles must be AFV for state fleets subject to the EPAAct requirements. Although this action has been delayed, EPAAct gives the U.S. Department of Energy authority to impose similar AVF requirements for municipal and private fleets.



Chronically high levels of ozone, acid rain, and haze have prompted federal and state law makers to tighten controls on mobile source emissions. In 1999, the N. C. General Assembly set a state reduction goal for NO<sub>x</sub> emissions from all sources by 25% by 2009. Consequently, the state's Ambient Air Quality Improvement Act of 1999 mandates by 2004 at least 50% of the new/replacement transit buses must be AFV in counties where motor vehicle emissions inspections are required. In those counties with a population of 100,000 or more, new/replacement school buses purchased after January 1, 2004 must be either at least 50% AFVs or low emission vehicles. The bill also calls for incentives to purchase AFVs and build fueling stations.

see *ALTERNATIVE FUELS*, page 3

*FINISH FIRST*, from page 1

### MAINTENANCE

**Washing.** North Carolina statutes prohibit discharge of any vehicle washing wastewater to a storm sewer, either by runoff or direct discharge. With a permit issued by the proper authority, facilities that wash vehicle bodies may recycle wash water or discharge to a sanitary sewer or septic system. A typical wash water recycling system consists of sedimentation basin for grit/sand removal, oil/water separator, and disinfection unit and costs up to \$20,000. Due to the build-up of dissolved solids, the wash water must be changed periodically. The water can be disposed in the sanitary sewer if no oil is present. If oil is contained in the wash water, a professional oil removal company should perform the work.

A new alternative to the water wash systems is the "waterless car wash" that uses a material very similar to car wax. The "waterless car wash" is sprayed onto the car using a handheld spray canister. The cleaner dries and then is wiped off. Bobby Murray Chevrolet in Raleigh uses a waterless car wash and reports the waterless wash takes less time since pre-washing dirt or sand is not necessary. The waterless wash removes the dirt/sand without scratching the surface or leaving streaks and provides a very good finish that lasts for 2-3 months. It can also be used on glass.

**Painting.** Due to new environmental regulations for paint disposal, spray gun cleaning and filter disposal, vehicle painting and repainting has become much more involved in recent years. Vehicle maintenance operators can realize significant cost savings and environmental benefits from

more efficient application systems. The Guilford County school bus maintenance shop developed a more environmentally friendly, lower cost system for repainting school buses. Prior to the new system, buses were repainted every two years, requiring at least two coats of a solvent-based paint. The shop switched to a polyurethane paint that meets new environmental regulations and requires only one coat. The single coat is thicker and lasts significantly longer (4 to 6 years). The solvent-based paint costs \$35/gal as compared to the polyurethane cost of \$100/gal. Based on material purchases, the cost of painting a bus with polyurethane costs only about \$40 more than with solvent-based paint. However, the longer life with its overall reduced use of paint and labor makes it a very economical alternative as well as lowers air emissions by about 75%.

**Repair Waste.** Most auto repair shops typically generate hazardous waste from vehicle maintenance services. Common wastes include used oil, oil filters, antifreeze, tires, batteries, and cleaner solvent/rags. Minimizing these wastes can reduce costs associated with disposal, regulatory requirements, liability, and shop operations. The insert, "Automotive Waste Management," provides guidance on regulatory requirements for proper management of automotive repair waste and pollution prevention options to minimize generation.

For further information on the fuel catalyzers, by-pass filters, waterless car wash, and the Guilford County paint project, contact Bill Albright with DPPEA at 919.715.6499 or by e-mail at [Bill.Albright@ncmail.net](mailto:Bill.Albright@ncmail.net). ♻

ALTERNATIVE FUELS, from page 2

## What are AFVs?

AFVs currently on the market use the following alternative fuels: ethanol (E-85), compressed natural gas (CNG), liquefied petroleum gas (LPG), liquefied natural gas (LNG), methanol 85, and batteries. Many vehicles are flex-fueled or bi-fueled, meaning they can run on either a standard fuel (i.e., gasoline) or an alternative fuel. In the Triangle, nearly 1,300 AFV vehicles are in operation. Most of these E-85 vehicles operate on gasoline where ethanol is not yet available. About 10% of the Triangle's AFVs use compressed natural gas with the remainder being LPG or electric. The table below compares AFV emissions (for carbon monoxide, hydrocarbons, carbon dioxide, and nitrogen oxides) to those of reformulated gasoline.

<b>TAIL-PIPE EMISSION REDUCTION AS COMPARED TO REFORMULATED GASOLINE</b>	
<b>Compressed Natural Gas</b>	<b>80% less</b>
<b>Liquefied Petroleum Gas</b>	<b>60% less</b>
<b>Methanol-85</b>	<b>40% less</b>
<b>Ethanol-85</b>	<b>20% less</b>

## What Types and Where Are AFVs Being Used?

Many types and sizes of fleet vehicles are available that use alternative fuels; however, light duty vehicles are the most prevalent. Original equipment manufacturers offer dedicated and bi-fueled models using ethanol, CNG or propane, and electric powered models. Large engine manufacturers also offer AFV engines for heavy-duty vehicles and transit/school buses. The Charlotte-Mecklenburg School Transportation Department is using CNG school buses. While state and federal fleets have been mandated to purchase AFVs, many North Carolina counties and municipalities are also using AFVs and/or have invested in AFV fueling infrastructure. These include Rocky Mount, Charlotte-Mecklenburg, Raleigh, Gastonia, Winston-Salem, Hickory, Belmont, Chapel Hill, Durham, and Garner. Private fleets have had minimal activity with AFVs; however, public-private partnerships in Hickory and Raleigh are encouraging more private fleets to test and employ AFVs.

## Economic and Technical Considerations

The economics of AFVs vary widely. For example, the cost of a flex-fuel E-85 sedan is comparable to that of the same gasoline model. A dedicated CNG sedan may cost \$3-5,000 more. The general public is unaware that certain Ford and Chrysler vehicles currently being sold are flex-fueled E-85. Fuel costs for AFVs using CNG and LPG can be far less

than gasoline, while fuel costs for E-85 vehicles are slightly more than gasoline. While there are advantages and disadvantages in maintenance and operation for all AFVs, overall fleet experiences have been very positive.

When considering purchasing AFVs, fleet managers also struggle with a number of technical issues. Fleet managers willing to test AFVs may not have the fueling infrastructure available which can be costly to implement. Most private sector entrepreneurs are not prepared to build fueling stations until a market is assured. To help establish this infrastructure, purchase AFVs, and develop educational programs, several public and private organizations have acquired grants from the Division of Air Quality's Mobile Source Emission Reduction Grant Program. Since 1995, over \$3.5 million in grants have been distributed. Refer to page 5 for detailed information on the grants. As with any new technology, AFV performance, operation, maintenance, and safety comparisons are not always easy to make; however, with adequate resources and training, fleet managers can find considerable costs savings and environmental improvements with AFVs.

For more information on AFVs and resources, check out the following web sites:

- N.C. Division Air Quality Mobile Source Grant**  
919.715.6257  
[daq.state.nc.us/Offices/Technical/Mobile](http://daq.state.nc.us/Offices/Technical/Mobile)
- National Alternative Fuels Hotline**  
800.423.1363  
[www.afdc.doe.gov](http://www.afdc.doe.gov) or [www.fleets.doe.gov](http://www.fleets.doe.gov)
- Clean Cities Hotline**  
800.224.8437 [www.cccities.doe.gov](http://www.cccities.doe.gov)
- Energy Information Administration**  
202.586.8800 [www.eia.doe.gov](http://www.eia.doe.gov)
- Natural Gas Vehicle Coalition**  
703.527.3022 [www.ngvc.org](http://www.ngvc.org)
- American Gas Association**  
703.841.8000 [www.aga.com](http://www.aga.com)
- LNG Express**  
[www.lngexpress.com](http://www.lngexpress.com)
- National Ethanol Vehicle Coalition**  
800.385.8895
- Renewable Fuels Association**  
202.289.3835 [www.ethanolRFA.org](http://www.ethanolRFA.org)
- Propane Vehicle Council**  
202.371.6262 [www.propanegas.com/vehicle](http://www.propanegas.com/vehicle)
- National Propane Gas Association**  
708.515.0600 [www.propanegas.com](http://www.propanegas.com)
- American Methanol Institute**  
202.467.5050 [www.methanol.org](http://www.methanol.org)
- California Energy Commission**  
916.653.4634 [www.energy.ca.gov](http://www.energy.ca.gov)
- The Electric Vehicle Association of the Americas**  
800.438.3228 [www.evaa.org](http://www.evaa.org)

## North Carolina Organizations Recognized for 1999 Environmental Accomplishments

During the Governor's Awards for Excellence in Waste Reduction ceremony on April 28, 2000, 12 organizations were honored for their environmental achievements. During 1999, these organizations collectively saved 2,502 tons of hazardous waste; 20,714 tons of solid waste; 50 million gallons of water; and more than \$5 million.

"These companies have raised the bar for sustaining North Carolina's environment," said DENR Secretary Bill Holman. "Their pollution prevention efforts in source reduction, reuse, recycling, and resource recovery show that protecting the environment can also be good for business and the state's economy." Award recipients and their accomplishments follow:

### LARGE BUSINESS

#### OUTSTANDING ACHIEVEMENT

**KONICA MANUFACTURING USA** of Whitsett is an ISO 14001 certified manufacturer of photographic paper. Konica increased solid waste recycling, solvent reclamation, and water conservation. Hazardous waste generation is down 75% and water consumption by 33%. Annual savings exceed \$165,000.

#### SIGNIFICANT ACHIEVEMENT

**HONEYWELL** of Rocky Mount manufactures fuel controls for the aerospace industry. Honeywell's Wastestream Minimization Team implemented material reuse, solvent elimination, and employee training, which saved \$230,000 annually in reduced chemical purchases and disposal costs.

#### EXCEPTIONAL STEWARD

**BEERS CONSTRUCTION** in Raleigh, Winston-Salem, and Charlotte is ISO 14001 certified, trains all employees on environmental protection, and seeks ways to prevent pollution during construction projects.

### MEDIUM BUSINESS

#### OUTSTANDING ACHIEVEMENT

In 1998, **LOUISIANA-PACIFIC ENGINEERED WOOD PRODUCTS** in Wilmington formed an Environmental Committee that increased solid waste recycling, reduced hazardous waste generation, and located markets for wood waste. Yearly savings and income total \$82,000.

#### SIGNIFICANT ACHIEVEMENT

**KENNAMETAL** in Henderson produces metal powders used in metal cutting tool manufacturing. Product substitution and process changes led to elimination of all ammonia air emissions, 60% reduction in hexane air emissions, and

**NORTH CAROLINA**

**GOVERNOR'S AWARD**

**19 99**



**FOR EXCELLENCE IN  
WASTE REDUCTION**

50% decrease in packaging costs. Total yearly savings from these projects exceed \$120,000.

### SMALL BUSINESS

#### OUTSTANDING ACHIEVEMENT

**EMJ AMERICA**, a computer distributor in Apex, significantly reduced shipping waste. Due to facility wastewater discharge limits, EMJ also installed an innovative water recycling system that uses a constructed

wetland to cleanse its wastewater discharges.

### FEDERAL GOVERNMENT

#### OUTSTANDING ACHIEVEMENT

**THE NAVAL AVIATION DEPOT'S HAZARDOUS MATERIAL MANAGEMENT SYSTEM** at Cherry Point saved \$441,000 in disposal costs and generated \$75,000 in sales of spent fuels and oils. Cherry Point also diverted 1072 tons of solid waste from landfills. Annual savings including recycling revenues exceed \$1 million.

see *GOVERNOR'S AWARDS*, page 5

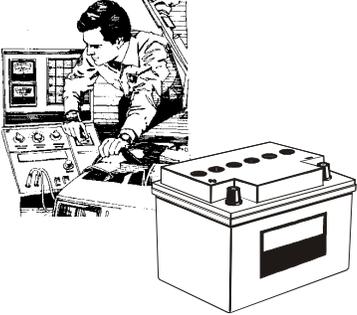
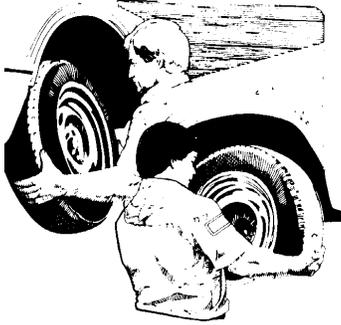
## STATE AGENCY RECOGNIZED FOR VEHICLE EFFICIENCY

Due to tremendous financial and environmental benefits from its vehicle rebuilding program, N.C.'s Motor Fleet Management (MFM) was recognized as an Exceptional Steward in the 1999 Governor's Awards for Excellence in Waste Reduction. After successful completion of a vehicle rebuilding test program, MFM established a contract to rebuild 220 vehicles for an estimated savings of over \$2,000,000. The pilot project included 60 Chevrolet Caprices that received new engines, transmission, brakes, suspension, seats, carpet, and other items appropriate for the vehicle's intended use.

In addition to the rebuilding program, the N.C. MFM is involved in many environmentally sustainable projects including "rightsizing" of the state's fleet providing the most efficient vehicle for the intended job. Other waste reduction projects include oil bypass filters, tire recycling, alternative fuels, and expansion of the rebuilding program for vans and large four-wheel drive vehicles.

# Automotive Waste Regulatory Reference

MATERIAL	REGULATORY ISSUES	POLLUTION PREVENTION OPTIONS
<p><b>USED MOTOR OIL</b></p> 	<p>Not regulated as a hazardous waste in N.C. if it is recycled or burned for energy recovery. Otherwise, generator must determine if it is a hazardous waste prior to disposal.</p> 	<ul style="list-style-type: none"> <li>☞ Change oil only when necessary.</li> <li>☞ Use longer lasting oils.</li> <li>☞ Consider by-pass filters to extend oil life.</li> <li>☞ Recycle used oil, and collect from Do-It-Yourselfers to recycle their used oil.</li> <li>☞ Consider burning used oil in an on-site space heater (up to 500,000 Btu/hour).</li> </ul>
<p><b>USED OIL FILTERS</b></p> 	<p>Terne-plated oil filters, generally used in heavy-duty vehicles like transit buses and on- and off-road trucks, are considered hazardous due to the lead content. Non terne-plated used oil filters are not considered a hazardous waste if these filters have been gravity hot-drained by one of the following methods:</p> <ol style="list-style-type: none"> <li>① puncturing the filter anti drain-back valve or filter dome end and hot draining;</li> <li>② hot-draining and crushing;</li> <li>③ dismantling and hot-draining; or</li> <li>④ any other equivalent hot-draining method that will remove used oil.</li> </ol>	<ul style="list-style-type: none"> <li>☞ Perform oil changes only when necessary to minimize the quantity of oil filters.</li> <li>☞ Encourage the use of longer lasting synthetic oils to decrease frequency of oil changes.</li> <li>☞ Crush filter or use another means (hot-draining, pressurized air) to remove as much oil as possible before recycling or landfilling.</li> <li>☞ Consider reusable or by-pass oil filters.</li> <li>☞ Consider recycling crushed oil filters.</li> </ul>
<p><b>USED ANTIFREEZE</b></p> 	<p>Used antifreeze is not regulated as a hazardous waste as long as the metal content is not too high and is not corrosive (the pH must be great than 2 or less than 12.5). If the results from the Toxic Characteristics Leaching Procedure (TCLP) indicate metal contents that exceed the following, then the used antifreeze will be considered a hazardous waste:</p> <ul style="list-style-type: none"> <li>• Cadmium 1.0 mg/L</li> <li>• Chromium 5.0 mg/L</li> <li>• Lead 5.0 mg/L</li> </ul> <p>Do not mix used oil or other wastes in the antifreeze.</p> <p>Do not dispose of antifreeze in storm sewers or the trash, and do not dispose of antifreeze in a sanitary sewer without permission of the staff from the local wastewater treatment plant. Used antifreeze is banned from disposal in landfills and municipal incinerators.</p>	<ul style="list-style-type: none"> <li>☞ Determine if antifreeze needs to be changed by testing properties such as corrosion inhibition and freeze protection.</li> <li>☞ Reuse antifreeze directly, i.e., without treatment, when possible.</li> <li>☞ Recycle antifreeze on- or off-site and use recycled antifreeze in vehicles.</li> <li>☞ On-site recycling systems available utilize filtration/centrifugation, ultrafiltration, chemical filtration, vacuum distillation, or ion exchange.</li> <li>☞ Consider using propylene glycol to replace ethylene glycol. While propylene glycol is more expensive, it is less toxic to humans and animals.</li> </ul>

MATERIAL	REGULATORY ISSUES	POLLUTION PREVENTION OPTIONS
<p><b>LEAD-ACID BATTERIES</b></p> 	<p>Lead-acid batteries are considered a characteristic hazardous waste because of the lead and acid content and are banned from North Carolina landfills. However, lead-acid batteries that are reclaimed are not considered hazardous and do not count in the hazardous waste quantities generated per month.</p> <p>Lead-acid (and other hazardous waste batteries) batteries can also be managed as universal waste.</p>	<ul style="list-style-type: none"> <li>🔑 Service batteries regularly and change them only when necessary.</li> <li>🔑 Use longer lasting batteries.</li> <li>🔑 Recycle lead-acid batteries. Those not recycled must be disposed as hazardous or managed as a universal waste.</li> <li>🔑 Store and secure batteries to prevent leakage of acid or hydrogen gas.</li> </ul>
<p><b>USED TIRES</b></p>  	<p>Used tires are <i>not</i> currently classified as a hazardous waste in North Carolina. However, used whole tires were banned from landfills as of March 1990.</p> <p>Check with your county manager or county solid waste office for any special county ordinance concerning scrap tires.</p>	<ul style="list-style-type: none"> <li>🔑 Encourage customers to maintain proper air pressure, periodically rotate and balance tires, and check front-end alignment.</li> <li>🔑 Prevent unnecessary tire changeouts.</li> <li>🔑 Seek opportunities to reuse or retread any discarded tires.</li> <li>🔑 Recycle scrap tires. Whole scrap tires may be used for retaining walls, dock buffers, or playground equipment. Tires can also be processed for door and gym mats or for erosion control.</li> </ul>
<p><b>SMALL PARTS CLEANERS</b></p>  	<p>Small parts washers are used to clean automobile components during repair and maintenance activities. Many parts washers use petroleum based, low flash-point solvents such as mineral spirits. These flammable solvents must be handled as hazardous waste if the flash point is &lt;math&gt;&lt;140^{\circ}\text{F}&lt;/math&gt; when recycled or disposed. Even if a spent solvent is a high flash-point solvent and is characterized as non-hazardous, the solvent must be handled through a solvent servicer for recycling, fuel blending, or incineration.</p> <p>Ignitable hazardous waste can be mixed in used oil and managed as a used oil if the mixture has a flash point of &gt;math&gt;140^{\circ}\text{F}&lt;/math&gt; and the used oil hauler will accept it. If the waste is hazardous for any other reason (i.e. due to metal content or other TCLP constituent, exhibits another characteristic such as corrosivity, it's a listed waste) it cannot be mixed in with the used oil.</p>	<ul style="list-style-type: none"> <li>🔑 Increase solvent life by examining cleaning needs and avoiding cleaning parts when possible, using scrapers or other mechanical means before placing dirty part in the basin, or extending the time between solvent servicing.</li> <li>🔑 Filter solvents to extend their useful life.</li> <li>🔑 Utilize solvent alternatives with higher flash points (above &lt;math&gt;140^{\circ}\text{F}&lt;/math&gt;) to eliminate the generation of hazardous waste.</li> <li>🔑 Maintain the non-hazardous status of spent solvents by avoiding contamination with chlorinated (RCRA F-listed solvents such as 1,1,1-TCA or TCE) solvents or other chemicals that could lower the flash point, and review the type of material being cleaned so that metals contamination of the solvent does not make the solvent a hazardous waste.</li> <li>🔑 Use an aqueous based cleaner instead of a solvent in parts washer units.</li> </ul>

GOVERNOR'S AWARDS, from page 4

**STATE AGENCY**

**OUTSTANDING ACHIEVEMENT**

THE N.C. ZOO in Asheboro was recognized for energy and water conservation and solid waste reduction and recycling accomplishments. Aquatic filtration systems, leak detection, and dry clean-up saved 340,000 gallons of water, and 336,000 kilowatts of electricity in 1999. Staff use of bikes saved over 2,000 gas-powered miles. Composting organic materials and cardboard diverted over 88 tons of solid waste from disposal. Total savings exceeded \$200,000.

**SIGNIFICANT ACHIEVEMENT**

NORTH CAROLINA STATE UNIVERSITY (NCSU) in Raleigh operates a program that generates 17,000 cubic yards of mulch yearly for campus landscaping. During the 1999 Special Olympics, NCSU composted over 7 tons of food waste. NCSU saved over \$645,000 last year in disposal fees and mulch purchases.

**EXCEPTIONAL STEWARDS**

THE SAMPSON COUNTY CORRECTION INSTITUTE reduced large amounts of landfilled organic waste by a vermicomposting program. Two units house 200,000 worms that eat 125 pounds of organic waste per day producing a compost product. This solid waste recycling saved over \$80,000 in 1999 disposal fees.

N.C. MOTOR FLEET MANAGEMENT. See page 4 highlight.

**LOCAL GOVERNMENT**

**EXCEPTIONAL STEWARD**

UNION COUNTY PUBLIC WORKS was honored for its wastewater reclamation and industrial pretreatment programs. Union County receives wastewater from two golf course communities that it disinfects for reuse as irrigation water for the golf courses.

For information on these award winners, contact Barb Satler at 919.715.6519 or Barbara.Satler@ncmail.net. ☐

**Multimedia News Update**

*Air Quality News*

**MOBILE SOURCE EMISSIONS REDUCTION GRANTS AVAILABLE**

Mobile Source Emissions Reduction Grants are available from the Division of Air Quality to reduce emissions from on and off-road mobile sources in North Carolina. The Mobile Source Emissions Reduction Grants are funded by a tax of 1/64 of a cent per gallon of gasoline sold, which generates about \$800,000 annually. Applications for these grants will be accepted from Oct. 1 until Dec. 31, 2000.

**Grant Consideration and Criteria:**

Applicants should consider the following guidelines when submitting proposals for alternative fuel vehicles and infrastructure. First, original equipment manufacturer vehicles, rather than converted vehicles, are preferred. Second, funds are only available for the incremental cost of alternative fuel vehicles. Third, alternative fueling facilities funded by this grant program must be publicly accessible.

**Grant Selection Criteria:**

- Degree of matching or "in-kind" funds proposed for the project.
- Degree of control program implementation and actual emission reduction as opposed to planning.
- Assessment and permanence of benefits from the proposed project.
- Breadth of applicability of results in North Carolina.
- Low cost/high benefit of project and potential for high total benefits in state.
- Overall length of project (preference for 2 years or less).

- Degree of support/participation from affected parties and public perception of appropriateness of selected projects.

**Grant Requirements:**

- Project must emphasize mobile source emissions reduction, [i.e. hydrocarbon (HC), carbon monoxide (CO), and nitrogen oxides (NO<sub>x</sub>)].
- Project must emphasize actual emission reductions as opposed to planning and proposal must be for a "new" project.
- Grantees must report to DENR on actual benefits of completed project.

**Previous Grant Recipients:**

TRIANGLE J COUNCIL OF GOVERNMENTS was awarded \$100,000 for its Triangle Clean Cities initiative to further air quality education and promote use of alternative fuels in the Triangle region.

THE CITY OF HICKORY received \$300,000 for development of a fast-fill natural gas fueling station for use by the City of Hickory and other municipalities/public agencies.

MEREDITH COLLEGE in Raleigh was granted \$58,915 to establish a solar electric charging station, an electric vehicle charging station, and electric powered truck.

For more information on the grants, contact Melissa Ellender at 919.715.6257 or melissa.ellender@ncmail.net. ☐



## Air Quality News

### STATE APPROVES NEW METHOD FOR TESTING EXHAUST

North Carolina has a new tool for fighting ozone-forming emissions from cars and trucks. Legislation approved July 2000 requires service stations to use a new, more effective test method for air-pollution controls on cars and trucks starting in 2002. Ozone, the key component in urban smog, is the most widespread air quality problem in the state. In 1999, ozone levels exceeded the standard in North Carolina on 68 days, fifth highest in the nation. Cars, trucks and other mobile sources account for half of the ozone-forming emissions statewide and up to 90 percent in major metropolitan areas.



“This new test will help us do a better job testing the air-pollution controls on cars and trucks, so we can reduce ozone levels. The new test also will be simpler to use, more effective at detecting problems, and less costly to consumers than other options.” said Bill Holman, Secretary of the N.C. Department of Environment and Natural Resources.

To deal with the ozone problem, Governor Jim Hunt proposed a Clean Air Plan that calls for substantial reductions in emissions from motor vehicles and power plants. The state legislature enacted a major portion of the Governor’s plan last year by adopting legislation that: enhances and expands the auto emissions testing program from nine to 48 counties by 2006; requires low-sulfur gasoline statewide by 2004; offers incentives for alternative fuel vehicles; and provides more funding for rail and mass transit.

The existing emissions test, which is required in nine urban counties, uses a probe to directly measure the concentrations of pollutants in the tailpipes of vehicles. But the existing tailpipe test does not determine the cause of high pollutant levels and doesn’t measure NOx, the main cause of ozone pollution. The new on-board diagnostic (OBD) test doesn’t directly measure pollutants in exhaust, but instead uses vehicles’ computer systems to determine if

all of the pollution controls are working. If a vehicle fails the OBD test, the computer identifies what needs to be repaired. OBD testing also is much less costly and time-consuming than other emissions testing methods.

Emissions tests currently are required in Cabarrus, Durham, Forsyth, Gaston, Guilford, Mecklenburg, Orange, Union and Wake counties. Under House Bill 1638, OBD tests will be required in the nine existing counties for 1996 and newer vehicles, with tailpipe tests required for 1975 through 1995 vehicles, starting on July 1, 2002. OBD

tests only will be required in all new counties added to the emissions testing program. New counties will be added to the emissions testing program according to the following schedule:

JULY 1, 2003

Catawba, Cumberland, Davidson, Iredell, Johnston and Rowan

JANUARY 1, 2004

Alamance, Chatham, Franklin, Lee, Lincoln, Moore, Randolph and Stanly

JULY 1, 2004

Buncombe, Cleveland, Granville, Harnett and Rockingham

JANUARY 1, 2005

Edgecombe, Lenoir, Nash, Pitt, Robeson, Wayne and Wilson

JULY 1, 2005

Burke, Caldwell, Haywood, Henderson, Rutherford, Stokes, Surry and Wilkes

JANUARY 1, 2006

Brunswick, Carteret, Craven, New Hanover and Onslow

For additional information on this and other air quality issues, access DAQ’s Web site at [daq.state.nc.us](http://daq.state.nc.us) or call 919.733.3340.

*FOCUS: Waste Minimization* is published by the divisions of Pollution Prevention and Environmental Assistance, Waste Management, Air Quality, and Water Quality of the N.C. Department of Environment and Natural Resources (DENR). It is intended to provide North Carolina industries and other interested parties with current information concerning proper waste management and waste reduction. The information contained in this publication is believed to be accurate and reliable. However, the application of this information is at the reader’s own risk. Mention of products and services in the publication does not constitute an endorsement by the State of North Carolina. The information contained in this publication may be cited freely.

If you have comments, waste minimization case summaries, resource information, or questions for the next issue of the *FOCUS* newsletter, call Norma Murphy at (919) 715-6513, fax (919) 715-6794, e-mail [Norma.Murphy@ncmail.net](mailto:Norma.Murphy@ncmail.net), or write the N.C. Division of Pollution Prevention and Environmental Assistance (DPPEA), 1639 MAIL SERVICE CENTER, RALEIGH NC 27699-1639.

State of North Carolina: James B. Hunt, Jr., Governor; Bill Holman, DENR Secretary; Gary Hunt, DPPEA Director.



Visit  
DPPEA  
online:

[www.p2pays.org](http://www.p2pays.org)

## Solid Waste News

### COMPUTER AND ELECTRONICS REUSE AND RECYCLING

The Recycling Business Assistance Center (RBAC) and Southern Waste Information eXchange (SWIX) will sponsor two one-day workshops on electronics recycling in Raleigh and Charlotte in October (exact locations and dates are yet to be determined). The workshops are intended to address the current status of electronics recycling in North Carolina, markets for electronics, establishing recycling programs for local governments and the private sector, and regulatory considerations of handling, disposing, and recycling electronics. For more information, contact Ray Moreau with SWIX 800.441.7949 or John Blaisdell with RBAC 919.715.6522. ♻️



#### ELECTRONICS RECYCLING WEB RESOURCES

**N.C. Electronics Market Assessment:**  
[www.p2pays.org/ref/02/0162206.pdf](http://www.p2pays.org/ref/02/0162206.pdf)

**US EPA's Compilation of Resources:**  
[www.epa.gov/epr/elec-org.htm](http://www.epa.gov/epr/elec-org.htm)  
[www.epa.gov/jtr/comm/electron.htm](http://www.epa.gov/jtr/comm/electron.htm)

**EPA's Common Sense Initiatives:**  
[www.epa.gov/commonsense/computer/index.htm](http://www.epa.gov/commonsense/computer/index.htm)

**Trade Associations and Organizations:**  
[www.deer2.com/](http://www.deer2.com/)  
[www.nsc.org/ehc/epr2.htm](http://www.nsc.org/ehc/epr2.htm)  
[computer.org/tab/ehsc/](http://computer.org/tab/ehsc/)  
[www.iaer.org/](http://www.iaer.org/)  
[www.nrc-recycle.org/Programs/electronics](http://www.nrc-recycle.org/Programs/electronics)  
[www.svtc.org](http://www.svtc.org)

## Water Quality News

### NEW ONSITE DISCHARGE REQUIREMENTS

Under a final rule effective April 5, 2000, EPA added new requirements that eliminate or reduce the injection of wastes through motor vehicle waste disposal wells and large capacity cesspools, regulated by EPA as Class V underground injection wells. Cesspools are typically dry wells that receive untreated sanitary waste, and which sometimes have an open bottom and/or perforated sides. Class V injection wells include dry wells or septic tank and leachfield combinations that receive or have received fluids from vehicle repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop, or any facility that does vehicle repair work.

The new requirements prohibit new cesspools and motor

vehicle waste wells nationwide as of April 2000, phase out existing cesspools by April 2005, and phase out existing motor vehicle waste wells unless permitted by the appropriate regulatory agency. Class V wells are a concern because they pose a risk to underground sources of drinking water. 89% of America's public water systems use ground water as a drinking water source. EPA estimates that there are more than 600,000 Class V injection wells currently in the United States.

The North Carolina Underground Injection Program and the Onsite Wastewater Program are currently assessing North Carolina's requirements to ensure compliance with the federal mandate. For further information contact Amy Axon with the Underground Injection Program at 919.715.6165. ♻️

### WASTEWATER REGULATIONS FOR VEHICLE MAINTENANCE FACILITIES

Vehicle maintenance facilities have two basic options for handling wastewater generated at the facility. Operators can connect to an existing municipal wastewater treatment system via a sewer line or install an onsite discharge system that typically entails a septic tank and drain field.

To connect to a municipal wastewater treatment system, the facility will have to contact the local utility department and be approved and permitted for connection to the sewer system. The local utility department will provide any restrictions related to discharge limitations for the wastewater discharged from the vehicle maintenance facility.

These restrictions will vary depending on the municipality. If the vehicle maintenance facility is not located near a sewer system it will have to construct an onsite discharge system. The facility will need to contact the local health department in order to receive approval and be permitted for an onsite discharge system.

Onsite wastewater discharge systems and associated piping are not allowed to receive vehicle maintenance fluids that originate from the internal portion of vehicles. Only rinse water that contacts the outer surface of the vehicle and does not come in contact with internal vehicle fluids can be discharged to onsite wastewater discharge systems. ♻️

## WWW.P2PAYS.ORG/RBAC IS UPDATED

To maximize the ease and efficiency of access to recycling business resources, DPPEA's Recycling Business Assistance Center (RBAC) strives to provide on its Web site detailed information on the following:

- Business Development Assistance
- Financing
- Recycling Markets Assistance and  
*Directory of Markets for Recyclable Materials*
- Partnerships
- Key Resources
- Links

The Web site has been updated with RBAC client needs in mind and includes many essential resources and links to information for starting or expanding a recycling business in North Carolina. Please contact John Blaisdell at 919.715.6522 or John.Blaisdell@ncmail.net if you have any suggestions. ♻️

## DON'T LET YOUR SUBSCRIPTION EXPIRE



A yellow postcard is included in this issue for continuation of your subscription to FOCUS: Waste Minimization. Additionally, to reduce paper waste, DPPEA offers electronic delivery of the newsletter. To keep receiving FOCUS by electronic or regular mail, complete the postage-paid postcard and mail by September 30, 2000. If you mailed in the pink response card from the last issue, please ignore this request. We appreciate your efforts in updating our newsletter database.

## CALENDAR OF EVENTS

EVENT	DATE	LOCATION	CONTACT
<b>National Recycling Coalition's 19th Annual Conference</b>	Sept. 10-13	Charlotte	NRC Registration Hotline 703.683.9025, ext. 401
<b>5th Annual Southeast Recycling and Environmental Business Investment Forum</b>	Sept. 20	Charlotte	Ted Campbell 803.737.0477
<b>Implementing and ISO 14001 Environmental Management System</b>	Sept. 19-21	Charlotte	Excel Partnership 800.374.3818
<b>ISO 14001 Lead Auditor Course</b>	Sept. 23-27	Charlotte	Excel Partnership 800.374.3818
<b>Advanced EMS Auditor Course for Quality and Environmental Professionals</b>	Sept. 25	RTP, NC	Excel Partnership 800.374.3818
<b>Environmental Awareness: Strategic Management for Your Business</b>	Sept. 26	Asheville	Environmental Resource Services, 706.777.3967
<b>Environmental Management Systems ISO 14001 Internal Auditor Training</b>	Sept. 28-29	Asheville	Environmental Resource Services, 706.777.3967

### DPPEA-FY00-03.

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