

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



The Commonwealth of Pennsylvania is moving forward in its attempt to increase recycling, and the Joint Conservation Committee (JCC) recently paid a visit to the spot where the state hopes to make that happen. At the same spot, one can find a center for environmental training, education and research.

The spot is not in an exotic locale, but right down the road from Harrisburg in central Pennsylvania's Lower Swatara Township, near

Middletown, at an institution that is one of the most famous and venerated in Pennsylvania – the Pennsylvania State University. Penn State's Harrisburg campus is the site of the Environmental Training Center (ETC) and the state's new Recycling Markets Center (RMC), where the campaign to boost existing recycling markets and develop new ones will take shape.

The committee first visited the recycling center, and its new director Warren Weaver, earlier this summer. On that same visit, the committee also had the opportunity to check out the ETC with its coordinator, Alison Shuler. More on the training center and its unique facilities further on in this column.

Weaver, formerly with the Pennsylvania Technical Assistance Program (PENNTAP), gave the committee an overview of the new recycling center. Penn State Harrisburg was awarded a five-year, \$5 million grant from the Pennsylvania Department of Environmental Protection (DEP) to open the center. Right now, the center is staffing up, and is expected to add three staff members when at its full complement. Earlier this month, Robert J. "Bob" Bylone, Jr., formerly recycling coordinator for Schuylkill County and a project assistant for Penn State Harrisburg's Environmental Engineering Department with the ETC, was named Recycling Program Manager.

Director Weaver indicated that the center would be working closely with Pennsylvania manufacturers on a client by client basis and on both the demand and supply sides to increase the amount of recyclables in Pennsylvania products. Priority materials at the outset are tires, organics, plastics and glass.

Our committee has long been active in recycling, having helped put together the legislation to set up the state's municipal recycling program and to renew the program and its funding source as the sunset date approached. The committee was also instrumental in crafting the state's Waste Tire Recycling Act in 1996 and an update to the act in Act 111 of 2002. So, our interest in the center is a natural.

We are excited about the RMC because our own studies have found that finding new markets and new uses for recycled materials is key to building the industry and to continuing the state's largely successful efforts to reduce domestic trash generation, hauling, landfilling and disposal. While according to DEP, Pennsylvania already recycles about 36 percent of its waste and has an \$18 billion recycling and reuse industry, there is always room for improvement.

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NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, EXECUTIVE DIRECTOR

As the law struggles to keep pace with technology, battle lines are being drawn over automobile data recorders that some say would make the music industry's copyright wars pale in comparison. Could data recorders, also known as "black boxes", and similar to the ones used by the airline industry, become a part of the everyday driving experience? Well, they already are.

The devices, installed by automakers in 65 percent of new cars, are already recording driver information in more than 30 million cars. While the information about car usage they record could present opportunities to improve safety and reduce congestion, black boxes are raising some red flags...and several questions remain.

Technically called an event data recorder, the device is about four inches square. It doesn't record voices, only data. The primary function is to control a car's air bags and it only records when they deploy or nearly deploy. The devices record information in a loop that is supposed to be erased. Some devices, however capture many functions such as speed, brake function and seatbelt use. Five to 10 seconds of the information is permanently stored for law enforcement and safety officials as well as insurance companies in case an accident occurs.

But, who owns the downloaded data? Quite simply, the debate over that question has begun and is picking up speed, particularly since black boxes have already figured prominently in several civil and criminal cases. Some vehicle manufacturers claim that the technology and devices belong to them and therefore so does the information. Many state legislatures disagree and are stepping up efforts to regulate the recorders. Legislatures are concerned about privacy

issues and want the vehicle owners to have complete discretion over black box information, even if an accident occurs. The general feeling by state officials is that "if you bought and paid for the device, the data should be yours". North Dakota has already passed "black box privacy" legislation and similar bills have been passed in Arkansas and California as well.

Backers of the black box privacy legislation are also concerned about the future use of the devices and the type and amount of information contained on them. As technology improves, more complex and

more personal information could be recorded on the boxes. Within a few years, a person's driving record could actually be stored inside the black box.

Critics of the legislation want the black box data made available to improve traffic safety and automobile design, and want to

use the information as evidence in possible criminal cases and lawsuits. The same technology has allowed operators to disable stolen cars, even while they're in use. Some services offer automatic collision notification, alerting authorities when airbags are deployed. Other proposed technologies sound like science fiction. One in development involves cars communicating directly with other cars and the infrastructure. For example, when a car hits an ice patch, it will send the information to other cars and road signs, which will post the information.

Several insurance companies are offering rate reductions to customers, whose driving habits are monitored by advanced black boxes, leading to concerns that companies will structure rates to penalize unmonitored customers. California and New York have already passed laws prohibiting insurance companies from using black box information for that purpose.

Auto data recorders -- otherwise known as "black boxes" -- are sparking debate over rules of usage, ownership and the limits of technology

RESEARCH BRIEFS

Each month, the committee's staff researches and prepares a number of "briefs" on several topics relevant to the Joint Conservation Committee's mission. Very often, these briefs include references to reports and further research on the topics so that readers may pursue issues on their own.

Some States Not Warning Residents of Sewage Problems

– Tony M. Guerrieri, Research Analyst

Sewage overflows from sanitary sewer systems and from combined sewer systems are a major problem and are a big reason why many of the nation's streams, rivers and lakes remain unsafe for swimming and fishing. The problem is especially acute in the eight Great Lakes states (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania and Wisconsin) where communities are burdened with systems that discharge hundreds of millions of gallons of untreated or partially treated sewage into waterways after heavy rains.

According to a report by the U.S. Public Interest Research Group (PIRG), despite the known risks associated with sewage overflows, citizens in the eight Great Lakes states are often not told when sewage spills occur. The PIRG report, *"Sewage Warning!: What the Public Doesn't Know About Sewage Dumping in the Great Lakes"*, suggests that most states have weak, nonexistent or unevenly enforced sewage dumping public notification laws and regulations.

The objectives of a public notification program are to educate the public about potential health impacts from contact with sewer overflow discharges, alert members of the public who are affected by discharges and enable the public to better protect themselves from exposure to waterborne pathogens associated with discharges. The elements of a strong dumping right-to-know program include direct, immediate public notification via multiple methods as well as pre-notification of potential dumping, annual reports that detail the extent of the problem, and a public education and outreach program that teaches citizens how to avoid sewage contamination.

The report assesses public notification about sewage overflows and assigns a letter grade to each state based on the strength of their public notification requirements.

Michigan got the highest grade – an A-minus - because state law requires all wastewater facilities to report spills within 24 hours to a major local newspaper, county or

regional health departments, downstream communities, and the Michigan Department of Environmental Quality. Michigan is also the only state that compiles detailed information about overflows in an annual report.

Indiana received a B-plus as a model for its direct public notification. With the passage in 2000 of new standards, wastewater treatment plant operators must notify the affected public, anyone who requests notification, and local health departments about overflows. New York earned a B-minus. Despite some strong requirements, there are still significant loopholes, particularly in wastewater treatment facility combined sewer overflow (CSO) reporting and in providing information directly to the public. Minnesota received a C-plus although the report recommends that its notification system be more systematic and coordinated.

Pennsylvania received a C-minus in the report. Although the report states that Pennsylvania's reporting program contains the basic elements of a good notification program, it does not clearly spell out that all dumping incidents have to be reported (i.e., a wastewater treatment plant could make the argument that there is no "public health" threat). The PIRG report highlights another major concern: direct notification of the public is not required.

Illinois also earned a C-minus due to its scattered approach to public notification. Wisconsin received a D-plus because its vague rules need to be expanded, clarified and codified. Ohio, which earned a D-minus, the lowest grade of the eight states, requires only that facilities submit a monthly report summarizing overflows that occur. Although there are warning signs near drainage pipes on some waterways, measures to alert the public that overflows have occurred vary throughout the state.

Sewage discharges have widespread impacts across the Great Lakes region, causing beach closings and limiting fishing and other recreational activities. In some instances, sewage is discharged into rivers that also serve as primary sources of drinking water. Exposure to viruses, bacteria, pathogens and other sewage related pollutants or toxics is an obvious public health concern.

The report recommends a more aggressive system that will warn people when sewage runoffs and dumping take place at all beaches and other waterways. It could include direct, immediate public notification through the media, a website and telephone hot-line, and an “opt-in” e-mail notification system. The report also calls for communities to disconnect stormwater and sewage tie-ins and for local, state and federal governments to provide the necessary funding to make the improvements.

The Public Interest Research Group’s 25-page report, *“Sewage Warning! What the Public Doesn’t Know about Sewage Dumping in the Great Lakes”*, is available on the Internet at: <http://uspig.org/reports/sewagedumping.pdf>.

Scrap Recyclers Encourage Improved Design of Electronic Products

– Craig D. Brooks, Executive Director

E-Recycling is an increasingly growing segment of the private sector scrap recycling industry that has become an essential part of waste policy options in the United States. To prevent the likelihood of landfilling a large percentage of electronic waste, the scrap industry has been working to successfully recycle the millions of tons of electronic scrap generated each year.

A new policy on electronics recycling adopted by the Institute of Scrap Recycling Industries (ISRI) promotes manufacturer financial responsibility and encourages better product design to encourage recycling rather than disposal. The institute represents more than 1,200 companies that process, broker and consume scrap commodities including metals, paper, plastics, rubber, glass, electronics and textiles. The institute’s aim is to promote public awareness of the value and importance of recycling. In doing so, ISRI has established a coalition of business and environmental organizations to address what the industry calls “e-scrap” and the increasing need to recycle electronic products and divert them from landfills.

About one-fourth of ISRI’s members currently recycle electronic products and the list is growing rapidly. The institute encourages manufacturers to “internalize” recycling costs through design adjustments or absorbing costs of collecting, transporting and recycling electronics rather than having consumers pay additional fees. In

theory, this encourages greater responsibility on the part of manufacturers to better design for recycling. The goal is to have products designed so that they will have value to recyclers and can be recycled at no additional cost. ISRI’s policy calls for a ban on the disposal of recyclable electronics.

Much of the debate on the state and federal level has focused on how to finance an electronic collection and recycling system. However, the institute is currently developing legislation that will address the e-scrap recycling issue from all sides including design, manufacturing, demanufacturing and environmental impacts as well as economic incentives.

ISRI has been supportive of legislation that:

- **Holds producers financially responsible for the collection, transportation and recycling of electronics to the recycler where and when necessary to help ensure that electronics properly enter the recycling stream. However, ISRI supports ending producer financial responsibility and advanced recycling fees as soon as practical.**
- **Consistent with the institute’s “Design for Recycling” policy, encourages manufacturers to consider, during the manufacturing stage, the need to ensure that their products can be safely and economically recycled.**
- **Promotes the benefits of environmental management systems as a means to promote and ensure the proper handling of electronic products destined for recycling.**
- **Controls the quality of electronic scrap by using accepted industry standards and scrap specifications for recycling.**
- **Includes a ban on the disposal of recyclable electronics. Recyclable electronics are those commodities that can be safely and economically recycled using existing recycling methods and technologies.**
- **Provides a competitive environment and long-term viability for a recycling infrastructure.**

A summary of ISRI’s policy statement on electronics recycling is available at <http://www.isri.org/content/contentfolders/contentfolder1stlevel/policystatements/escrap.pdf>.

Carbon Dioxide Emissions and the Auto Industry

– Tony M. Guerrieri, Research Analyst

Emissions of carbon dioxide from cars and light trucks have increased 25 percent between 1990 and 2003, with the rising sales of sports utility vehicles (SUVs) and mini-vans accounting for much of the increase, according to a report by Environmental Defense. In a report titled, “Automakers’ Corporate Carbon Burdens: Update for 1990-2003”, Environmental Defense said that in 2003, total carbon dioxide emissions from cars and light trucks topped 317 million metric tons.

The report, updated from 2002, analyzed the carbon dioxide emitted by the new vehicles sold each year by major auto manufacturers. The carbon burden is the total carbon dioxide emitted by a group of vehicles each year and represents their lifetime average global warming impact.

The six largest automakers in the U.S. market – General Motors, Ford, Daimler-Chrysler, Toyota, Honda and Nissan – had an 87 percent market share and accounted for 88 percent of the new fleet carbon burden in 2003. The next six firms – Volkswagen, Hyundai, Mitsubishi, BMW, Kia and Subaru – had a combined market share of 12 percent in 2003 and accounted for nearly all of the remaining new fleet carbon burden.

Nissan’s new fleet-average carbon dioxide lifetime emissions showed the most growth between 1990 and 2003, up 8.4 percent to 4.87 tons per vehicle, or one million tons in 2003. Ford was second, with emissions advancing 7.7 percent to 5.56 tons per vehicle, or five million tons in 2003.

General Motors, with the largest market share, also had the largest carbon dioxide emissions at 6.4 million metric tons per year for 2003 model year vehicles. The per-vehicle emission rate in 2003 was 5.37 tons per year, a 6.3 percent increase.

DaimlerChrysler’s carbon dioxide emissions rate went up by 6.8 percent over the same period, reaching a carbon burden of three million tons in 2003.

Of the six largest automakers, Toyota had the smallest increase in emissions per vehicle over the 13-year period, with emissions rising 2.9 percent to 4.56 tons per car. Toyota’s average light truck fuel economy was the same in 2003 as it was in 1990 despite an expansion of the company’s lineup into SUVs and larger, more powerful trucks, the report said.

Despite its fleet of hybrid-electric cars, Honda’s 2003 new fleet-average carbon dioxide emissions rate rose 5.7 percent from its 1990 level, even though its emissions rate is still the lowest among the big six. Honda’s carbon burden reached 1.7 million tons in 2003.

At the same time, the report said, fleet-average lifetime carbon dioxide emissions of BMW vehicles declined 12.7 percent between 1990 and 2003 to 4.89 tons per vehicle, while seeing a fivefold increase in U.S. sales. Volkswagen cut its vehicles’ lifetime carbon emissions by 3.3 percent to 4.21 tons per vehicle while doubling sales, the report said.

Part of the 13-year increase is due to more vehicles on the road. However, according to the report, Americans also bought more SUVs and mini-vans during that period, and they get fewer miles per gallon of gasoline. Hyundai increased its carbon dioxide emissions 16 percent over 13 years. In 1990, the company sold no trucks in the United States, but in 2003, trucks were 24 percent of its sales. DaimlerChrysler’s truck share increased by 24 points to reach 74 percent in 2003, the highest among the big six automakers.

For more on fuel economy trends, see “Average Fuel Economy Rises for Model Year 2005 Vehicles” on page 6

Led by SUVs, light trucks grew from 17 percent of the U.S. automobile market to more than 50 percent by 2003, the report said. While automakers are required to achieve a 27.5 miles-per-gallon corporate average fuel economy standard, light trucks and SUVs were required to achieve only 20.5 to 20.7 miles-per-gallon during the 1990-2003 model years. Because they are held to a lax fuel economy standard, new light trucks emitted 38 percent more carbon dioxide per mile than new cars in 2003, the report said.

Another trend dragging down progress on emissions is increasing sales of heavier vehicles whose carbon burdens cannot be counted. According to the report, this includes three-quarter and one-ton pickups and a growing number of the largest SUVs, such as the Hummer H2 and the Ford Excursion.

These vehicles, manufactured by General Motors, Ford and DaimlerChrysler, escape fuel economy regulation, and federal agencies do not track them. Because there is little quantifiable data, their additional carbon burdens are not included in the report. That means, according to Environmental Defense, the actual carbon burdens of General Motors, Ford and DaimlerChrysler are even larger than what is estimated in the report.

The Environmental Defense report, “Automakers’ Corporate Carbon Burdens: Update For 1990-2003”, is available at http://www.environmentaldefense.org/documents/4715_CarbonBurdensUpdateFinal.pdf.

Average Fuel Economy Rises For Model Year 2005 Vehicles

– Craig D. Brooks, Executive Director

U.S. fuel economy has remained relatively constant over the past decade, and the average miles per gallon (mpg) for the fleet of 2005 automobiles and light trucks was slightly higher at 21.0 mpg, compared with 20.8 in 2004 and 2003.

Average model year 2005 fuel economy is 24.7 mpg for cars and 18.2 for light trucks, according to a report by the U.S. Environmental Protection Agency (EPA). The model year 2005 average is the highest since 1996 but five percent below the 1987-1988 peak of 22.1 mpg.

The report, *“Light Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2005”*, summarizes key fuel economy and technology trends related to those cars and light duty vehicles sold in the United States. Light duty vehicles are those vehicles that EPA characterizes as cars and light duty trucks, sport utility vehicles (SUV’s), vans and pickup trucks with less than 8,500 pounds of gross vehicle weight ratings. The fuel economy values are based on “real world” estimates provided by the federal government to consumers, and are about 15 percent lower than the fuel economy values used by manufacturers and the Department of Transportation for compliance with the Corporate Average Fuel Economy Program.

According to the report, since 1975, the combined fuel economy of the car and light truck fleet has moved through four phases:

1. A rapid increase from 1975 continuing to the mid-1980’s
2. A slow increase extending into the late 1980’s
3. A gradual decline until the mid-1990’s
4. A period of relative constant fuel economy since then.

The agency estimates that the 0.2 mpg increase for model year 2005 vehicles compared with the 2004 model year is offset in part by the increasing popularity of less fuel efficient light duty trucks, particularly SUV’s. The offset would have been greater, if not for technological advancements, because vehicle weight has increased and performance has improved, but the

average fuel economy has remained virtually constant.

For model year 2005, light trucks are projected to account for 50 percent of all light duty vehicles. After over two decades of growth, the market share for light trucks has been half of the overall light duty vehicle market since 2002. Most of the growth in the light truck market has been led by the increase in the popularity of SUV’s which now account for more than one-fourth of all new light duty vehicles. The model year 2005 light duty vehicles are estimated to be heavier, faster and more powerful than in 2004 and this continues a 20-plus year trend of increasing weight and power and faster acceleration. Compared to 1987, this year’s fleet is 21 percent heavier, 24 percent faster and 80 percent more powerful.

Although not surprising, the report says that sales for SUV’s have increased and appear to be replacing cars and wagons as the new “family vehicle”. Considering the five classes of vehicles: cars, wagons, SUV’s, vans and pickups, the biggest increase in the market share since 1975 has been for SUV’s, up from less than two percent to 26 percent this year. The biggest decrease has been for cars, down from over 70 percent to about 45 percent. In addition, the combination of wagons and vans has been constant for the past two decades. While sales for wagons have dropped from nine percent in 1975 to about four percent this year, van sales have increased from about four percent in 1975 to about 10 percent this year.

More information on automotive trends and fuel economy is available at <http://www.epa.gov/otaq/fetrends.htm>.

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The newsletter examines timely issues concerning environmental protection and natural resources.

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ON THE HORIZON . . .

A LOOK AT UPCOMING EVENTS



✓ **Monday, November 14, 12 noon, Room 205, Matthew J. Ryan Building – Environmental Issues Forum.** Audubon Pennsylvania’s Paul Zeph, director of the Kittatinny Ridge Project, will describe the project and introduce Audubon’s statewide Important Bird Area Program. The Kittatinny Ridge is the largest forest area in central and southeast PA, the state’s largest Important Bird Area, and a key recreation corridor and source of drinking water.

Environmental Issues Forums are open to the public. Please call the committee office at (717) 787-7570 if you would like to attend.

COMMITTEE CHRONICLES . . .

REVIEW OF SOME COMMITTEE MEMORABLE EVENTS

As recounted in The Chairman’s Corner on page 1, the Joint Committee recently toured the Environmental Training Center (ETC) and the Recycling Markets Center (RMC) at Penn State’s Harrisburg campus. These are some scenes from that visit.



Alison Shuler, ETC coordinator, explains the workings of one of the center’s labs and some of its equipment to JCC Executive Director Craig Brooks.



Lab Supervisor Mitch Spear explains the workings of the water filtration system

JCC Executive Director Craig Brooks (right) discusses the ETC’s operation with its director, Professor Charles Cole, PhD., P.E. (center) and new Recycling Program Manager Robert J. Bylone, Jr.



(Continued from page 1)

A DEP spokesman described the RMC this way, "The...center is an engine for economic development...The goal behind the center is to enhance and expand the current markets for recycling materials through education, information gathering and sharing, network opportunity creation and marketing techniques."

For more photos from the committee visit to the PSU Harrisburg center, see Committee Chronicles on page 7.

The initial start of the setup of the RMC was carried out under the auspices of Penn State Harrisburg's ETC, part of the university's Environmental Engineering Department. The committee met with the training center's Director Professor Charles A. Cole, Ph.D., P.E, ETC Coordinator Alison Shuler and Senior Project Associate Brenda Firestone to learn more about the training center. We learned, for example, that the center works with both DEP and the U.S. Environmental Protection Agency (EPA) and operates in conjunction with the "Small Public Water Systems Technology Assistance Center" (SPWSTAC).

Among services available at the center are classroom training, hands-on process control training, workstation training, lab workshops, distance learning, and technology demonstrations. The ETC offers over 30 types of DEP-approved certification classes for both water and wastewater operator licensing. The center also carries out extensive research. Current research includes disinfection by-product control, membrane filtration, biosolids odor control and sustainable water management. And, the Environmental Engineering Department offers academic programs at the undergraduate and graduate levels.



The pilot size water filtration and purification system at the Environmental Training Center (ETC)

practice hands-on skills. Additional workstations allow for work on pumps, valves, meters, chemicals, cross-control devices and other necessary skills for operators. Through EPA funding, the center operates SPWSTAC, and offers technical assistance, outreach/resource information and workshops/training in such areas as computerization and financial management. All ETC courses are delivered at numerous locations throughout the state, and this schedule is available on the ETC website.

The committee was impressed with what was being done at both the ETC and the RMC and thanks both centers' staffs for a warm welcome and an interesting visit. For more information about the ETC and SPWSTAC visit their website at www.hbg.psu.edu/etc. For more information on the RMC, check out its website at www.parmc.org.

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