

ENVIRONMENTAL SYNOPSIS

The Chairman's Corner

Rep. Scott E. Hutchinson, Chairman



Did you know that the month of May kicked off with the observance of "Safe Drinking Water Week"? May 1-7 marked that event in Pennsylvania.

Did you also know that with more than 10,000 systems, Pennsylvania has the fourth highest number of public water systems in the nation? Not only that, but according to a 2002 statewide survey commissioned by the Joint Committee, 75.5 percent of the more than 1,700 Pennsylvanians responding said they got their water from a public system.

Most times when we think about safe drinking water, we are thinking about quality. And, if surveys are to be believed, Pennsylvanians place a great deal of importance on the quality of their water as well as faith in their drinking water systems. Responses to the 2002 survey showed that more than 90 percent of Pennsylvanians believed that the quality of public water (as well as sewer systems, recycling and trash disposal services) was important to their communities. More than 62 percent rated it very important.

More responses to the 2002 survey indicated that 86.4 percent of Pennsylvanians were satisfied with their public water systems. As a matter of fact, 91.7 percent rated their water quality as either excellent or OK.

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PA TRIVIA QUESTION:
Called the "Father of America's Water-Works", what engineer/architect designed Philadelphia's first municipal water system?
(See page 8 for the answer)

In the next few weeks, the Joint Committee will be releasing the results of a 2005 statewide survey. I can reveal to you now, however, that while a small majority (52.5 percent) of Pennsylvanians believe they are being exposed to too many harmful substances, most don't believe their water systems are to blame. Only 2.9 percent believed harmful substances were coming from their drinking water. However, 31 percent blamed lakes and streams for exposure to harmful substances.

(continued on page 8)

NOTES FROM THE DIRECTOR

CRAIG D. BROOKS, DIRECTOR

The climate for clean energy in Pennsylvania seems to be getting better all the time. SmartPower, a nationwide, non-profit marketing campaign has been called upon to lead a state-wide campaign to promote clean energy - electricity from sources such as wind, solar and water. Their mission is to have 20 percent of the state's energy supply come from clean, renewable sources by 2010. The timing couldn't be more opportune. We can certainly boast about an active clean energy industry, where development and expansions of markets are taking place, Renewable Portfolio Standards (RPS) have been instituted and Pennsylvania has landed a major wind turbine manufacturer.

The RPS requires utilities in the state to purchase a steadily increasing portion of their energy from clean energy sources. The RPS calls for 18 percent of all energy generated in Pennsylvania to come from clean, efficient sources within 15 years. The rules include a specific requirement for electricity generated from solar. Pennsylvania is the 18th state to adopt such standards and the solar electricity requirement is one of the most aggressive of all those adopted so far.

The new message is aimed at creating and building markets by selling clean energy as an energy source that is strong and as reliable as any other

The wind turbine company mentioned earlier is a Spanish company and the second largest wind energy company in the world. Gamesa plans to build a high-tech plant to manufacture wind turbine blades in Ebensburg, Pennsylvania, about 20 miles west of Altoona. The new manufacturing plant will create up to 500 construction and operation jobs, including 236 permanent positions.

Combined with the construction, operation and maintenance jobs, the Gamesa manufacturing facility along with two offices located in Philadelphia is expected to create 1,000 jobs over the next five years. Gamesa currently has agreements to sell 600 megawatts of wind power and has set a goal of 1,000 megawatts of wind power in the state.

In order to take advantage of this unique opportunity in Pennsylvania, the SmartPower campaign plans on delivering a message of clean energy that will change myths about the reliability of renewable energy and dispel ideas that clean energy is not capable of providing an ever-increasing portion of the state's energy needs. For years, clean energy has been sold as good for the environment; however the market hasn't grown along with this concept. SmartPower's message represents the first time that clean energy won't be sold as an environmental product, but rather as energy that is strong and as reliable as any other energy source.

The central message – "Clean energy. It's real. It's here. It's working. Let's make more." – has the potential to create a thriving clean energy market here in Pennsylvania. Clean energy is no longer simply a vision for the future because there are simple and cost effective systems that are available immediately that will help Commonwealth residents clean their air, improve their health and reduce their dependence on foreign oil.

And most importantly, the lights will go on in the house and the electricity supply will be reliable.



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.

Who is Guarding the Nation's Critical Infrastructure?

– Tony M. Guerrieri, Research Analyst

Critical infrastructures are those physical and cyber-based systems essential to the minimal operations of the economy and the government. They include agriculture and food, water, public health, energy, transportation and the chemical industry. It is estimated that 85 percent of the nation's infrastructure is owned and operated by private industry. Customarily, private companies engage in risk management planning. They also invest in security as a necessary component of their business operations.

A report by the Congressional Research Service (CRS) provides background information concerning private, uniformed security guards in the United States and their role in critical infrastructure protection. The CRS report describes a workforce that tends to be ill-trained, low-paid, and not subject to background checks for previous criminal behavior.

Private security services are an \$11 billion a year industry in the United States. Many of these private security guards protect shopping malls and department stores, but many others protect more likely terror targets, such as nearly every nuclear power plant in the country. Companies running nuclear power plants either provide their own security or hire companies to provide armed guards.

While over 50 percent of security guards are employed by one of the four largest security firms in the nation, the rest work for thousands of smaller companies spread across the country.

In 2003, approximately one million security guards (including airport screeners) were employed in the United States – compared to 650,000 full-time, sworn state and local law enforcement personnel. Of these guards, analysis indicates that up to five percent, or over 50,000, protected what have been defined as critical infrastructure and assets.

One basic measure of security guard activity is year-to-year change in employment. Security guard employment has increased in certain critical infrastructure sectors since September 11, 2001, although overall employment of security guards has declined in the last five years. Total security guard employment (excluding airport screeners) fell by approximately 124,000 (11 percent) between 1999 and 2003, while the number of police increased approximately 34,000 (six percent) during the same period.

Reasons for the decline range from apathy to economics, according to the CRS report. The economic recession which followed 9/11 forced many companies to cut discretionary expenses, including security guard expenses, to maintain profitability.

The employment trend for airport screeners has differed from other security guards. When airport screening was federalized after September 11, 2001, the number of screeners more than doubled to approximately 60,000 in November 2002. In March 2004, the number was reduced to 44,000 workers, although the number of screeners is still 57 percent higher than in 2001.

A CRS report describes a security force that is ill-trained, low-paid and without background checks for previous criminal behavior

The report suggests that security guards are relatively low paid workers. Privately contracted security guard salaries averaged \$19,400 per year nationwide in 2003 (about \$9.33 per hour), less than half of the average salary for police (\$44,960 per year) and well below the average U.S. salary for all occupations (\$36,210 per year).

State regulations regarding criminal background checks for security guards vary. Twenty-three states (including the District of Columbia) have licensing requirements which authorize federal criminal background checks for contract security guards. It would pick up a criminal record anywhere in the country, not just in the

state where the guard applies for work. An additional 12 states (including Pennsylvania) authorize only state criminal checks. The remaining 16 states have no background check regulations.

Training is another area that has suffered. There are no U.S. federal requirements for training of critical infrastructure guards other than airport screeners and nuclear guards. While there are no federal regulations setting standards for guards, the states have created a widely-varied patchwork of laws and regulations. In Alaska, unarmed private security guards must have 48 hours of training. In other states, such as California, Florida and Oklahoma, guards must have 40 hours of training. In 29 other states, including Pennsylvania, there are no specific training requirements for unarmed guards.

A copy of the Congressional Research Services report, *"Guarding America: Security Guards and U.S. Critical Infrastructure Protection"*, is available on the Internet at: <http://www.fas.org/sgp/crs/RL32670.pdf>.

Automakers Ranked on Emissions Performance

– Craig D. Brooks, Executive Director

According to a report that assesses U.S. automakers based on their pollution performance records, Honda Motor Co. continued to produce cars and trucks that on average emitted the least amount of greenhouse and smog-producing gases of six automakers, while General Motors Corp., the largest manufacturer, dropped to last in the ranking. Following Honda in the ranking from the least polluting to the most polluting were: Nissan, Toyota, Ford, Daimler-Chrysler and General Motors. Honda finished first in 2003 and 2004. The report represents the third assessment of automakers in the United States and compares information on greenhouse gas emissions from each automaker.

Ground-level ozone, formed when nitrogen (NO_x) and hydrocarbons combine in the presence of sunlight to form urban smog, is attributed in large part to automobile emissions. Since 1960, state and federal governments have tightened regulations on auto emissions to help improve environmental conditions and protect public health. As a result, automakers have made significant progress in reducing emissions from cars and trucks. However, vehicle ownership has doubled and total miles traveled have also increased over the past 30 years. Therefore the gains in emissions reductions have not kept pace with the increasing vehicle ownership and driving habits, and in 2003, 57 percent of the U.S. population was living in areas that exceeded the current federal guidelines for smog.

The following are key results from the six major automakers in the United States by ranking:

First: Honda produced less than half the smog-forming pollutants of the industry average and produced 18 percent less global warming emissions by comparison to the average vehicle of its competitors. The company has increased its lead on the others on cleaner emissions, meeting or beating 2007 federal emission standards and clearly deserves the image of the greenest automaker in the United States. However, Honda's lead has been shrinking to the likes of Nissan and Toyota.

Second: Nissan climbed from third place to second due to a six percent improvement in emissions since model year 2001 and the second largest improvement on smog-forming pollution (9 percent) to meet or beat California's tighter smog standards. Its trucks improved to the same level of fuel economy as Toyota's and began shifting sales from SUV's to more efficient automobiles.

Third: Although Toyota slipped into third as a result of Nissan's pollution progress, the automaker still has a fleet that remains cleaner than the average but a truck fleet performance that remains relatively stagnant. If it had kept up with Nissan on pollution performance, it would have kept its second place standing.

Fourth: Ford has maintained a fourth place standing over the past three years and has shown very little improvement in pollution and heat-trapping gas emission performance in its cars and trucks. In recent years, the automaker abandoned its commitment to improve fuel economy of its SUV's which fell to model year 2000 levels.

Fifth: Daimler-Chrysler moved into fifth place due to GM's poor performance as well as modest fuel economy improvements in its trucks, which make up two-thirds of its sales. The automaker had an overall improvement, although small, on global warming pollutions emissions despite fleet fuel economy standards remaining below federal standards and an increase in light truck sales since model year 2001.

Sixth: General Motors bottomed out in the rankings, moving from the best of the "Big Three" to the worst over the past six model years. GM was the only automaker whose vehicles emitted more global warming pollution per vehicle in the model year 2003 than in model year 2001. Despite a commitment to lead the Big Three on fuel economy, GM trucks ranked below Ford's and Daimler-Chrysler.

The report, *"Automaker Rankings: The Environmental Performance of Car Companies"*, is available at the Internet site http://www.ucsusa.org/news/press_release.cfm?newsID=439.

Report Rates New England States on Reducing Dental Mercury

– Tony M. Guerrieri, Research Analyst

For over a century, dentists have favored the use of an amalgam consisting of about 50 percent mercury for filling teeth. While studies have shown that such fillings pose minimal health risks for those whose teeth are filled by them, both dental processes – filling and refilling teeth and collecting waste amalgam – and human funeral cremation – incinerating filled teeth with the rest of the body – pose mercury risks.

According to a report by the New England Zero Mercury Campaign, a coalition of six environmental and public health groups, several New England states have made progress in developing programs to address dental mercury while other states are failing to adequately address the issue. The report, *“Taking a Bite Out of Dental Mercury Pollution: The 2005 Report Card on Dental Mercury Use and Release Reduction”*, evaluates New England states on their efforts to capture dental mercury before it goes into wastewater systems.

The report recommended that dentists reduce their use of mercury fillings in consideration of environmental impacts. The report also recommended state actions to require that:

- dentists reduce mercury releases and notify patients about hazards of mercury fillings and alternatives;
- dental insurance policies provide equal coverage for alternative fillings in state contracts; and,
- prior to cremation, steps be taken to reduce the mercury emitted into the environment from fillings, since those releases are expected to double in 20 years.

More than half of the mercury currently being used in America resides in the amalgam dental fillings, according to the report. In the United States, the U.S. Environmental Protection Agency (EPA) estimates that mercury fillings (an “amalgam” of mercury and other metals) comprises 55 percent of the total, or 1,088 tons of mercury in the mouths of U.S. citizens nationwide. If current trends continue, this mercury will be haphazardly released into the environment over the next 10 to 15 years as those fillings age and are replaced, according to the report.

Although the metal is considered inert in a solid amalgam, it is often released after a dentist removes a filling and washes it into wastewater, often to be burned later as sludge in an incinerator or used to fertilize soil.

The groups releasing the report, including the National Wildlife Federation, Health Care Without Harm,

Clean Water Action, Natural Resources Council of Maine, and the Mercury Pilot Project, gave higher grades to Connecticut (B), Maine (B) and Massachusetts (B-) because they encourage dentists to use “amalgam separators” to remove mercury from wastewater. According to the report, more than 70 percent of dentists’ offices in Connecticut have complied with “best management practices” which require the use of separators. Failing grades were given to New Hampshire (D-plus) and Vermont (D) primarily due to the small number of dentists with amalgam separators, and Rhode Island (C-minus) barely passed.

According to the report, mercury emissions from crematoriums are expected to double over the next 20 years

Although the use of dental amalgams containing mercury has declined over the last decade in favor of more cosmetically appealing fillings, dentists still use 34 tons of mercury a year, according to EPA estimates cited in the report. Current dental practices result in significant quantities of mercury being released down the drain, in the trash, in biomedical waste, and from crematoriums, contributing to the buildup of this toxic heavy metal in the environment.

The report encourages dentists to stop using mercury fillings. But despite environmental concerns and the rising popularity of composite fillings, dentists have been reluctant to turn away from amalgam fillings because they are known to be durable. Instead, more are embracing amalgam separators, which collect mercury scraps from fillings taken from a patient’s mouth. A filter must be changed every six months, and the mercury is collected and recycled.

The report also reveals troubling new findings that mercury emissions from cremation are expected to double over the next 20 years. About 2.5 tons of mercury are emitted annually from crematoriums in the United States and that is expected to double to five tons. One reason for the increase in mercury emissions from crematoriums is that more people are dying today with some or all of their teeth in place, which means they also have more teeth with fillings. Cremations are also rising sharply. In Connecticut, for example, cremations rose from 25.7 percent of people who died in 1998 to 32 percent in 2003. By 2010, it is expected to rise to more than 42 percent.

The report, *“Taking a Bite Out of Mercury Pollution: The 2005 Report Card on Dental Mercury Use and Release Reduction”*, is available on the Internet at: http://www.mercurypolicy.org/new/documents/NEZMC_Report_Card_on_Dental_MercuryFINAL.pdf.

Help Needed to Meet Chesapeake Bay Cleanup Goals

– Craig D. Brooks, Executive Director

A Chesapeake Bay Watershed Blue Ribbon Finance Panel report issued last fall suggests that a financing authority needs to be established to help secure funding for the cleanup of the Chesapeake Bay by 2010, by using \$15 billion in capitalization over the next six years. The report, *“Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay”*, recommends that the federal government cover about 80 percent of the capitalization effort, or \$12 billion that could be used to leverage funds at the state and local level as well as the private sector.

The six states whose waters eventually flow into the Chesapeake Bay Maryland, Pennsylvania, Virginia, Delaware, New York and West Virginia - would put up the other 20 percent or approximately \$3 billion of the \$15 billion sought to fund the financing authority.

Referring to the 2000 Chesapeake Bay Agreement signed by the governors of the participating states, the health of the Chesapeake Bay is to be restored by 2010 by curbing nitrogen loads by 110 million pounds annually. The legal deadline for achieving this is approaching fast and existing programs do not meet the financial needs for restoring water quality to the bay.

The primary targets of the restoration efforts are reductions in nutrients and sediment, which deplete oxygen levels and choke out sea grasses and the aquatic life that depend on them. The report suggests that while it is difficult to determine the full cost of restoring the Bay water quality, it is clear that the current funding levels will not meet the cleanup needs.

The report recommends a financing plan modeled after state revolving loan fund authorities

The Chesapeake Bay is the largest U.S. estuary with about 64,000 miles of shoreline. It produces about 500 million pounds of seafood each year and is home to 3,600 species of birds, fish and other wildlife. According to the report, about 100,000 people move into the bay's watershed annually, creating stress on the bay through development activities that have added 41 percent more impervious surface area in the past decade. This means that more storm water is running off landscape, polluting area rivers and streams with nutrients, sediments and chemicals.

The report recommends that the financing authority be modeled after state revolving loan fund authorities that are currently used to finance wastewater and drinking water projects. Because each area of the watershed may have different cleanup priorities, this type of authority would allow areas within the watershed to pursue a variety of actions for Bay cleanup efforts. As an example, state revolving loan funds have exceeded \$50 billion since 1989 when the loan program first began and about \$22 billion was appropriated over that period to capitalize the fund.

The \$15 billion is a good start for bay cleanup funds but possibly up to \$27 billion may be needed. Despite more than 20 years of formal restoration efforts, no summary of costs of all restoration efforts is available. The idea is to use the \$15 billion to leverage other funds, bonds, grants or other funding mechanisms. These figures represent actions necessary to meet water quality standards watershed wide, not just the Bay standards.

The funding goals seem to be attainable. According to the report, the funding would come in increments, starting with \$1 billion in fiscal 2005 followed by another \$2 billion in each fiscal year 2006 through 2008 and \$2.5 billion in the remaining fiscal years.

The panel concluded that, while a range of smaller programs can play a key role, restoring the Chesapeake Bay will require a large-scale national and regional approach, capitalized by state and federal governments and directed according to a watershed wide strategy.

A copy of the report, *“Saving a National Treasure: Financing the Cleanup of the Chesapeake Bay”*, is available on the Internet at <http://www.chesapeakebay.net/blueribbon.htm>.

News to Use in the Environmental Synopsis... share it with a friend

The *Environmental Synopsis* is issued monthly.

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

If someone you know would like to receive a copy of the *Synopsis* each month, please contact the committee office at 717-787-7570.



ON THE HORIZON . . .

A LOOK AT UPCOMING EVENTS

- ✓ Monday, June 13, 12 noon, Room 205, Matthew J. Ryan Building – Environmental Issues Forum. Patrick Fitzgerald, president of the Philadelphia firm RecycleBank, will discuss the company's Philadelphia pilot program offering shopping and service coupon incentives to increase recycling.

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

The committee's April Environmental Issues Forum focused on the state's anti-litter efforts and the Great Pennsylvania Cleanup. Featured speaker for the event was the executive director of Keep Pennsylvania Beautiful Julia Marano (right), who spoke about the organization's mission, goals and projects. She was joined by PA DEP Secretary Kathleen McGinty (middle), who reported on the progress of the statewide cleanup effort, and PA Horticultural Society Executive Vice-president Blaine Bonham (left), who described the link between community greening and beautification with quality of life and economic revitalization.



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What does that say to us? Well, it should tell us that we all have a role to play in preserving and improving water quality. Don't just treat water to produce a safe finished product, but think about what you are tossing down the drain or out onto your yard or driveway before you do it. Often times those substances will end up in lakes or streams. And we know that lakes and streams are also often the sources of drinking water. So, while water treatment seems to be doing its job, we can all do better in protecting the quality of our water supplies.

For more on that issue, take a look at Craig Brooks' research brief this month on the cleanup of the Chesapeake Bay. Not only does that speak to water quality, but to the safety and quality of food (i.e., clams, oysters, fish and shrimp) that comes from the water supply.

When we think about safe drinking water these days, however, we are also thinking about the security of our water supplies, as the committee's Tony Guerrieri points out in one of this month's research briefs entitled "Who is Guarding the Nation's Critical Infrastructure?". In addition to the very question of who is guarding it, there are other questions to be asked. Can terrorists get to our water supply? What are our chances of stopping them? What can determined saboteurs do to the water? How easy is it to contaminate water supplies? These are all relatively new concerns in regard to drinking water, not to mention other critical infrastructure systems like food, energy and the chemical industry.

Far too many of us take clean water and a safe and secure water supply for granted. We expect that all we need do is turn on the faucet and good quality water will always be there. That is a dangerous assumption to make. There are so many factors, some natural and some manmade, that can affect water quality, or interrupt water supply. We need to be aware of them and each take a part in preserving, conserving and protecting water supplies.

I'd ask you to think about that as we move on from Safe Drinking Water Week.



Answer to the PA Trivia Question: Benjamin H. Latrobe

Source: Pennsylvania Trivia, compiled by Ernie and Jill Couch, Rutledge Hill Press

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Joint Legislative
Air and Water
Pollution Control and
Conservation
Committee