

**Think Globally; Act Locally  
Community and Workplace**  
David Faulkner

The May/June 2005 Horizons described ways to practice conservation around our homes. Since it is in our best interest to also protect the environment outside our homes, this issue of Horizons focuses on what we can do in our communities and at work.

Each community has an identity. Its identity is made up of people, natural resources, and their interactions. These interactions directly affect health, well-being, and local quality of life, as well as the overall health of our natural environment.

Protecting the environment of our communities and workplaces provides several benefits. Clean air, water, and soil resources are essential to our health, the health of the environment, and enjoyment in our daily lives. Second, an attractive community builds local pride and attracts others, which stimulates the economy. Third, a clean, healthy community with an active economy increases property values. All of these benefits can improve our quality of life. What individuals, communities, and businesses can do to protect our environment is not very different from what we as individuals can do to achieve the same objective. The biggest difference is that community and workplace conservation requires a commitment from businesses and government.

**The Problems**

*Litter*

Litter is costly. According to the Virginia Department of Transportation (VDOT), Adopt-a-Highway volunteers cleaned more than 13,000 miles of Virginia's state maintained roads at a savings to the state of about \$3 million annually. The 263,715 bags of trash collected in 2004 (from only about

one-quarter of all state maintained roads) equate to 52,743 cubic yards of trash—a cube 37.5 yards on each side. By June 2005, only about 2,131 cubic yards (10,657 bags) of trash had been collected (Barnett, 2005). In addition to the enormous cost of collecting and disposing of litter, most litter ends up in landfills; whereas, many of the materials collected (glass, metal, wood, paper and plastic) could have been recycled.

Beyond the cost of collecting and disposing of litter and the waste of resources it represents, litter may be a hazard to motorists, as well as to wildlife. Litter can choke, entangle, poison, gash, or burn many wild animals including migratory waterfowl and songbirds.

In addition, littering is prohibited by law (Code of Virginia § 33.1-346–33.1-346.1). Anyone convicted of littering is guilty of a misdemeanor. The penalty could be up to 12 months in jail or between \$200 and \$2,500 in fines or both. Community service cleaning up litter may be ordered instead of jail time.

*Pet waste*

Many communities have laws about cleaning up after our pets. People do not like to have dog droppings in common areas along roads, trails, and recreational facilities. When dogs defecate in the street or near streams, the feces can be washed into the storm water or stream and can pollute the water or spread disease or both.

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### *Brush and Burning*

Citizens and businesses often burn brush from trees and bushes. Virginia has laws prohibiting open burning of trash or brush during certain times of the day and year. Twice a year, from February 15 to April 30 and again from October 15 to November 30, burning is prohibited before 4 p.m. The governor can declare a restriction on burning at other times as can local authorities.

### *Erosion and Nutrient Pollution*

As we spend more time driving, flying, and boating, we create air, soil, and water pollution and use nonrenewable petroleum resources. Motor vehicles—cars, trucks, buses, boats, airplanes—all rely on petroleum for power. The emissions from these vehicles create greenhouse gases increase smog and ozone, and pollute our water and soil resources.

Construction sites and roads can also produce significant pollution to soil and water if not handled properly.

Controlling the movement of nutrients and agricultural and lawn chemicals is critical for protecting water quality. Excessive nutrients in our waterways can cause proliferation of algae. These algae blooms subsequently can deplete oxygen, which deprives other species of essential oxygen resources. Algae blooms not only deplete oxygen available in the water column, but also shade out submerged aquatic vegetation which is vital for many aquatic ecosystems. The end result is a water body less able to support a stable and diverse population of aquatic species and poorer quality water resources for recreation and commercial use.

### *Too Much Waste*

How often have we bought something that has more packaging material than product? At work, we use the computer for all kinds of information—whether it is financial, presentations, research, or something else. Often we find we need paper copies of the information. Some of the information we'll only use for background and later throw away or recycled. Some of what we use will also have more information than we need, resulting in wasted paper if we print it.

### **Community and Workplace Good Will Solutions**

Many of following “good will” solutions will save money for the community and the workplace:

### *Litter and recycling*

Litter is almost completely preventable. Intentional littering reflects a lack of responsibility and respect for property. Many items of litter not only represent visual pollution but also emit toxins over time as sun, wind, rain, and changing temperatures break them down. Teaching children not to litter and to help clean up litter will improve our communities and help children to feel pride in their contribution to the community.

By organizing and participating in workdays to cleanup community areas and trails, roadsides, parks, and lakes, we contribute to both our well-being and that of the community. Repairing damage and erecting signs that explain proper access and use of trails and common areas will enhance everyone's enjoyment. Including our children in these activities will help them learn respect for community and private property. Our volunteering helps keep community costs down so that limited tax dollars can be used to provide more necessary services.

Recycling programs can be established in our workplaces and curb-side recycling in our communities for all recyclable materials. Recycling programs must be convenient or they will be neglected. Programs must be cost effective or communities cannot afford them. Incorporating both these aspects into a curb-side recycling program will be challenging. Information on where items, including CD's, styrofoam, and flashlight batteries can be recycled is available at <http://www.earth911.org/master.asp>.

### *Pet waste*

Fecal waste from dogs is a major source of bacteria in our streams and watersheds. In some watershed, a large portion of the fecal contamination can be matched to dogs. A large proportion of dogs are not tended by their owners. Nearly half the dog owners seldom or never walk their dogs. Of those who do walk their dogs, over 40 percent rarely or never clean up dog waste. Of those who rarely or never clean up after their dogs, nearly half would not clean up even if faced with complaints or fines or if improved sanitary collection or disposal methods were available. Of those surveyed, 63 percent agreed that pet wastes contribute to water quality problems (Pollution Prevention Fact Sheet: Animal Waste Collection.) We can help when walking our dogs in public areas by carrying plastic bags to collect and properly dispose of their fecal waste. We can also encourage the community to provide dog parks where the fecal waste is contained in a small area and easily cleaned up.

## Community Policy Solutions

### Transportation

Public transportation and other government vehicles can be modified or purchased so as to make use of biodiesel, ethanol, or hybrids that are less polluting than conventional fuels and vehicles. Fuel mileage efficiency can be greatly improved. Hybrids are gaining popularity as fuel-efficient alternatives to cars with conventional gas combustion motors. Hybrids combine gas and electric motors to more efficiently serve transportation needs without sacrificing very much performance or comfort ([http://www.eere.energy.gov/EE/trans\\_alt\\_vehicles.html](http://www.eere.energy.gov/EE/trans_alt_vehicles.html)). Another alternative is a diesel vehicle using biodiesel fuel, which is a mixture of petrodiesel and bio-renewable oils such as soy oil. Biodiesel is less polluting than many other fuels (<http://biodieselnow.com> and <http://www.biodiesel.org>). Most diesel vehicles can use certain biodiesels without any modifications. Only a few regions in Virginia have biodiesel available (<http://www.biodiesel.org/buyingbiodiesel/retailfuelingsites/default.shtm>). Ethanol is yet another fuel alternative. As with biodiesel, ethanol fuel availability in Virginia remains low (<http://www.e85fuel.com/database/search.php>). Ethanol, like biodiesel, is produced from renewable resources such as corn. Research indicates that crop residues and even municipal solid waste can serve as feedstocks for ethanol production, and that ethanol from these sources has more energy and reduces greenhouse gases more than corn ethanol (Herwick, 2005).

Encouraging conservation and development of clean, renewable energy sources, technologies, and supporting policies for research and development of these new technologies will help reduce our dependence on foreign oil and improve air and water quality. Biodiesel and ethanol could also provide welcome stimuli to the agriculture sector of our economy.

Keeping vehicles, boats, mowers, generators, and so forth in good operating condition keeps them efficient, reduces pollution, and ultimately costs less in repairs and fuel. We can encourage our workplaces and local governments to maintain existing equipment and replace aging vehicles with energy efficient ones or with alternative fuel vehicles or diesel

ones powered with biodiesel fuel. These actions will help the environment and may reduce costs.

### Water quality

Low impact development (LID) practices<sup>1</sup> and strategies reduce development impacts to water quality. By replicating predevelopment conditions (<http://www.riverfriends.org/>). LID focuses on keeping soil resources in place, protecting water quality, minimizing sprawl, costly and inefficient traffic snarls, and fragmentation of wildlife habitat, all of which enhance quality of life in our communities.

Local Virginia governments often have good erosion and sediment ordinances in place, but some localities lack adequate staff to insure compliance with such ordinances. Public commitment to preventing erosion and sediment problems can help strengthen these programs so that both the letter and the spirit of the law are implemented.

Environmentally sensitive areas such as natural springs, seeps, and wetlands, groundwater recharge areas, karst topography features such as sinkholes or closed basins, and riparian zones<sup>2</sup> need to be protected so that drinking water resources are not damaged. These areas are essential for protecting water quality and may be protected and enhanced by

- Encouraging shoreline and streamside vegetation;
- Creating vegetative buffers adjacent to and around sensitive areas;
- Discouraging or even prohibiting use of gasoline powered boats and swimming in water supply reservoirs;
- Requiring the removal of pet feces deposited adjacent to water supply sources;
- Establishing and maintaining a water quality monitoring program;
- Promoting fish passage to upstream spawning areas for reproduction by maintaining stream channels free from debris blockages, unneeded dams, and excessive sediment deposition; and
- Letting floodplains be floodplains.

Promoting and adopting on-site storm-water management practices including use of sediment and debris basins, rain-

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<sup>1</sup> Thanks to the pioneering work of professional staff during the 1990's in Prince George's County, Maryland, LID is having an impact on development actions across the country. A summary of LID concepts and benefits is available at [http://www.toolbase.org/docs/MainNav/GreenBuilding/3833\\_Municipal-final-screen.pdf](http://www.toolbase.org/docs/MainNav/GreenBuilding/3833_Municipal-final-screen.pdf)

<sup>2</sup> Riparian zones include the streams as well as the areas within the stream's zone of influence from surface and subsurface water flows. Thus, the stream itself and the area parallel to the stream including the stream channel, the banks, adjacent floodplain and all streamside vegetation comprise a stream's riparian zone.

gardens (<http://www.dof.virginia.gov/rfb/rain-gardens.shtml>), wetlands (<http://www.waterrecycling.com/constwetlands.htm>), and groundwater recharge ponds will provide storage for storm water and a habitat for wildlife and plants. If correctly designed, they can become local recreational attractions and focal points for environmental education.

Businesses' and communities' landscape areas can be enhanced by planting trees wherever possible and by replanting trees that have been damaged or died. Landscaping common property with native species often results in minimal maintenance while providing wildlife habitat. Green-spaces, natural corridors and wildlife sanctuaries, pedestrian and bike trails, and recreational areas can be included in the local comprehensive plan. Such amenities enhance the workplace and community, and help to protect headwaters regions by letting floodplains and riparian zones perform their natural functions.

Wildlife species have minimum habitat requirements for life and for reproduction. Severe fragmentation of wildlife habitat is a direct effect of development associated with urban and suburban sprawl. Efforts to design habitat areas into comprehensive development plans can greatly enhance the natural attractiveness and functionality of these areas for our own enjoyment and the benefit of wildlife. Older areas that were developed without planning can be retrofitted to link isolated fragments of habitat to each other. Such efforts will improve the habitat value of green space and often meet the minimum requirements for some species.

## **Community and Workplace Economic Solutions**

### *Burning*

Burn restrictions and laws are imposed to prevent uncontrolled and uncontrollable fires. Open fires at the wrong time of the year or the wrong time of day can result in uncontrolled fires. Composting is a far safer means of disposing of organic wastes and results in a high-value product: humus. Composting turns organic "wastes" into a valuable resource for lawns, flower beds, and vegetable gardens. Yard waste pickup can eliminate the need to burn leaves and brush. If this yard waste is then composted, it provides humus for use in the community's landscape, sale, or giveaway to landscapers and homeowners. Using this compost reduces the community cost of landscaping or could bring money into the community treasury.

### *Recycling and recycled materials*

Promoting the purchase of recycled materials in our workplaces and by local governments, such as paper and shipping boxes made from recycled fibers, will help recycle natural resources and, in many cases, can be cost-effective. As an expression of corporate values, recycling and purchasing recycled materials can be used as a very practical and valuable tool for public relations and marketing. "Green marketing," a term used to characterize products that either minimize detrimental effects or are benign to the environment and beneficial to the consumer may offer a competitive edge. (For more information see [http://www.greenmarketing.com/green\\_marketing\\_book/green\\_marketing\\_book.html](http://www.greenmarketing.com/green_marketing_book/green_marketing_book.html)).

"WasteWise" is the Environmental Protection Agency's (EPA) program to help businesses reduce waste: The EPA website <http://www.epa.gov/wastewise> provides resources and initiatives for businesses and governments. Businesses and governments can save money by using the practices described in the WasteWise materials and can also receive national recognition for their efforts, which in turn, can significantly help their marketing efforts.

### **A final word**

Our future welfare and that of our children depend on the actions we take individually and collectively today. Modern history is full of examples of how progressive developments were later shown to have significant negative consequences. DDT solved a major insect problem but had severe unintended consequences for other animals and humans over the longer term. Wetlands were once considered only breeders of insects and disease and were destroyed without consideration of their ecological system functions and values. We now understand that wetlands remove many pollutants from water and serve many other useful purposes.

While using nature to control nature is the least detrimental to the environment, the intentional importation and use of exotic plant, animal, and insect species without understanding the potential for their invasive spread and the ecological displacement of native species (for example, kudzu, multiflora rose, autumn olive, purple loosestrife, snakehead fish, and mute swans) can be harmful.

Reduce/Reuse/Recycle is a slogan that we can put into action. The result will have a tremendous impact on our communities and workplaces. Paying attention to our choices as we use natural resources will enhance our communities and businesses. Our individual actions need to be part of the solution to environmental degradation problems. We should "think globally; act locally."

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**\*\*Welcome** to Kevin Boyle, the new Department Head of Agricultural and Applied Economics.

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