



Share solutions, recycle ideas, and initiate actions for a greener office.

Sustainability: One Perspective

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In this issue you will learn how your office can *Take the Green Initiative* by

- Encouraging employees to use alternative transportation
- Changing office light fixtures to cost-saving LEDs
- Sharing your green ideas and best practices with others

By Dan Donovan

The term *sustainability* is becoming an overused word that is mistakenly associated with things that are not truly sustainable. We're probably all aware of products that are touted as sustainable when we know that isn't the case. Instead, the term is being used to gain additional support for something that might otherwise not be able to stand on its own.

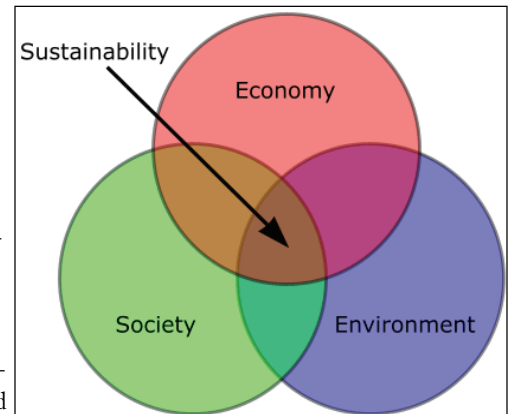
Sustainability is sometimes seen as being synonymous with *environmentally friendly*. But just because something is environmentally friendly doesn't necessarily make the product or idea sustainable. By definition in order for it to be truly sustainable, the idea or product must be not only environmentally friendly, but also *socially acceptable* and *economically practical*. Without this trifecta, it can't flourish, and if it can't flourish, it isn't sustainable.

Think about it a minute: An idea might be environmentally and socially acceptable but not economically practical — in

other words it costs too much. Will this product continue to be used? It may be used for some period of time, but not indefinitely. Negative financial pressures will eventually overtake the positive influences and its use will be discontinued.

Meeting all three factors is a win-win-win idea, so how can you go wrong? Our challenge is finding the win-win-win trifecta, the truly sustainable ideas.

At Western Federal Lands Highway Division, this point came to life several years ago when we were considering implementing an office-wide recycling program. We knew it was the right thing to do environmentally and that employees were supportive of the idea, but we were not sure about the cost. The uncertainty about the costs involved caused lukewarm support;



however when we determined that a recycling program would actually save the office money, we received full, unconditional support, and had no reason not to move forward.

Now, nearly eight years later, our recycling and composting program continues to be a big success, is one of the pillars of our Going Green program, and has helped to launch a broader sustainability program within our office.

Dan Donovan is Director of the Office of Program Administration for FHWA Western Federal Lands Highway Division.

Green Speaker Exchange



Froggy rides a thoroughbred at the Governor's Derby Breakfast.

By Bernadette Dupont

Quite literally it was a *green* speaker exchange: the speakers were green and they spoke about green topics.

Let me introduce you to KERMMIT: a very important member of our FHWA-KY family. KERMMIT stands for Kentucky's Energy, Recycling, Marketing, Mascot in Transportation, but his friends just call him "Froggy." Before coming to work at FHWA, Froggy was pretty famous — in fact world famous — as he's quite a character!

You've probably heard that a Metro station in D.C. was named after him — Froggy Bottoms! That happened after Froggy visited a local pub and took in a little too much — shall we say "pond water" — and ended up face down in the dirt. This, of course, left his bottom facing up! You've heard of "Bottoms Up" before — guess where that came from!

Froggy is fun to hang out with and people are always hanging out at his pad. He sings and plays guitar and one day some folks from Vermont heard him and they decided to name their guitar after him — Froggy Bottom Guitars (they never let him live it down).

Froggy wanted to escape all his fame for a little while so he crossed the "big pond" to visit a relative in Scotland (Nessie as they fondly call her). It too

became a trip to remember. Immediately upon his arrival he met Ms. Mouse, and the courtship began! That story is well remembered in a Scottish ballad "Froggie Went A-Courtin'." You've probably heard Bob Dylan sing the song. Or perhaps you've seen the Tom and Jerry cartoon about his antics! His romance became so famous it was made into a skit for the Muppets Show with Kermit the Frog playing Froggy. However, his relationship with Ms. Mouse ended in disaster, so Froggy returned home to America. He

Ms. Gigi. She was a speaker at one of the Council meetings of the Florida Metropolitan Planning Organization. Froggy had packed his suitcase with a few souvenirs in order to endear himself to his Florida friends, and he wasted no time in sharing a few Kentucky Bourbon Balls with Ms. Gigi.

Froggy and Ms. Gigi hit it off so well that the Florida Division allowed Gigi to return to Kentucky with Froggy for a visit. She was a delight! And she has gotten along very well everyone. Froggy took Gigi on a tour of Frankfort and to a

few other places close by. They never missed a chance to tell at least one *green* fact to anyone and everyone who would listen. They are quite the talkers!

Ms. Gigi returned home after about a month — she missed her Florida home and family — and to this day Froggy continues to send her postcards.

The moral of the story:

Do something unique to generate enthusiasm for the *Going Greener Initiative*. Sending postcards back and forth keeps the "green" alive in everyone and generates enthusiasm. **GO GREEN!**

Bernadette Dupont, a Transportation Specialist in FHWA Kentucky Division, was recipient of the 2010 FHWA Administrator's Going Greener Individual Award. This award recognizes an individual for their leadership and innovation in advancing FHWA's Going Greener Initiative.

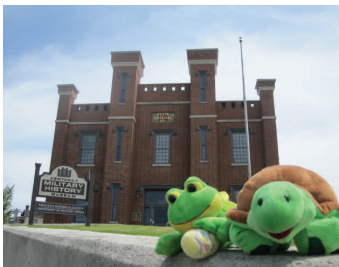


Green leadership and mascots: Joyce Curtis, Jeff Paniati, Bob Talley, Laurie Leffler.

has been trying to redeem himself ever since by helping the world **GO GREEN!**

Froggy joined the Kentucky Division about three years ago. After spreading the *green* word in Kentucky for about a year, he decided to take his show on the road. He spent a month with the Florida Division to help inspire Floridians to *Go Green*. He attended several meetings and made a presentation on FHWA's *Going Greener Initiatives*. That's where he met

"They never missed a chance to tell at least one green fact to anyone and everyone who would listen."



Froggy and Ms. Gigi visit Kentucky's Military History Museum.

LEDs Light up Oregon Division's Green Efforts

It's one thing to remind employees to turn off the lights, but how can you cut electricity costs when building or office security requires that some lights must remain lit all the time? The FHWA Oregon Division faced that dilemma with six of the overhead fixtures in its Salem office, so Going Green coordinator Bruce Moody started checking into the use of light emitting diodes, or LED lighting.

The division partnered with the building owner to convert six of the overhead fixtures in the office. While these fixtures served as lighting for employee cubicles, they were also left on day and night for emergency lighting. The building owner

converted the four-tube fluorescent fixtures to accommodate LED tubes, a task that entailed little more than adding a few wires and took only about 15 minutes per fixture. Moody checked on line to find the best deal on suitable LED tubes for the Division to purchase.

Once the fixtures were converted, the Division determined that two LED tubes provided sufficient lighting, saving the cost of replacing all four tubes. The fact that LED tubes do not require a ballast as fluorescent tubes do is a potential savings as well.

The conversion was made in September 2012. While the initial outlay per unit is more,

the LEDs are rated to last nearly twice as long and use a little more than half the wattage of a fluorescent tube for a savings of about 10 percent over 50,000 hours (5.7 years). Once the economics of the new fixtures have been proven, future conversions will be considered by the Division and the Building owner.

Find out more:

Watch a video on converting light fixtures from fluorescent to LED at <http://www.youtube.com/embed/i531LFG9fA>



The left near fixture is emergency lighting that is lit continuously. Two LED tubes replaced four fluorescent tubes, providing long-term energy savings.

Electricity Cost/kWh	=	\$0.0500
Bulb on time # hrs/day	=	12
Bulb on time # days/wk	=	5
Recycle cost/bulb-ft	=	\$0.05
Recycle cost/ballast	=	\$1.25
Operational Hrs/yr	=	3120
Fluorescent Bulb Watts	=	32
LED Bulb Watts	=	18
# Lamps Considered	=	400
Initial Cost/Fluorescent Lamp	=	\$2.00
Initial Cost/Ballast	=	\$22.00
Initial Cost/LED Lamp	=	\$45.00

Assumptions: 4 lamp tubes
 No ballast electrical use (loss)
 No cost to remove generated lamp/ballast added heat (LEDs add <25% heat of fluorescent)
 Fluorescents on a two year replacement cycle
 LED bulbs good for 50,000 + operational hours
 # Ballast replacements proportional to # lamps replaced => 1:25
 Ballast type = electronic, high gain, non-pcb
 Labor cost not included (take approx 20 minutes to replace fluorescent with LED)
 Electrical KW demand and demand costs not included but expected to decrease

To use spreadsheet modify values in yellow highlight area

	FIRST YEAR COSTS		Year 2 Costs		Year 3 Costs	
	Fluorescent	LED	Fluorescent	LED	Fluorescent	LED
#Lamps Used/yr	400	400	400	400	400	400
#Ballast Used/yr	16	0	16	0	16	0
Cost Recycle lamps	\$80.00	\$0.00	\$0.00	0	\$80.00	0
Cost Recycle ballast	\$20.00	\$0.00	\$0.00	0	\$20.00	0
Total Lamp Wattage	12,800	7,200	12,800	7,200	12,800	7,200
Elec kWh Used/yr	39,936	22,464	39,936	22,464	39,936	22,464
Electric Cost/yr	\$1,996.80	\$1,123.20	\$1,996.80	\$1,123.20	\$1,996.80	\$1,123.20
Material Cost/yr	\$1,152.00	\$18,000.00	\$0.00	\$0.00	\$1,152.00	\$0.00
Recycle Cost/yr	\$100.00	\$0.00	\$0.00	\$0.00	\$100.00	\$0.00
Total Ownership Cost/yr	\$3,249	\$19,123	\$1,997	\$1,123	\$3,249	\$1,123

"LEDs are rated to last nearly twice as long and use a little more than half the wattage of a fluorescent tube."



Western Federal Lands Highway Division changed to LED lighting five years ago and has adapted this interactive spreadsheet to track cost savings. To obtain a copy of this Excel document send a request to the email listed on page 6.

Feds on Bikes

By Bruce Moody

How can employees help cut emissions? By using an alternative means to commute to work, such as bicycling.



Motorists might not have known exactly what they were seeing, but WFLHD's Greg Kwock certainly made sure he was visible.

When the Bicycle Transportation Alliance of Portland, Oregon, hosted a "Bike to Work" challenge in September 2012, I teamed up with Max Severeid of the NHTSA Region office in Seattle, Washington, to co-captain a Federal team. Feds on Bikes has 70 active riders, including 17 who were participating this year for the first time. Our riders made 599 trips during September for a total of 9,031 miles.

All told, there were 522 federal employees taking part in the web-based challenge. We

logged a grand total of 61,571 miles over 5,430 bicycle commute round trips. That translates into an estimated 60,340 pounds of CO2 that was not pumped into the air. The cyclists (including more than 50 Feds who were first time bike commuters) also benefited by burning over 3 million calories.

Successful challenges like this one combine exercise, commuting alternatives, and environmental protection: a win-win-win situation.

Congratulations and thank you to team captains, riders, and supporters.

How can your office support employees who bike to work? Don Wolfe, captain of the 125-member team

from the EPA's Bonneville Power Administration, credits management and the Workplace Services unit for the success of BPA's bike commuters. "They provide secure parking, lockers, showers, repair stations, financial incentives, and sustained interest in the needs of our bike commuters. Whenever there is an issue concerning bike commuting, they are ready to go to work to resolve it."

Find out more:

The Bicycle Transportation Alliance (<http://btaoregon.org/>) has safety tips and other resources for bicyclists.

Bruce Moody is a Program Analyst and the Going Green Coordinator in FHWA Oregon Division.

"Over 5,430 bicycle commute round trips meant that 60,340 pounds of CO2 was not pumped into the air."

Green Work: By the Numbers

Increasing the number of times we use recyclable items — or cutting back on some items altogether — can result in substantial savings.

Once: the number of times that most of the more than 25 billion cardboard cartons manufactured in the U.S. are used.

55 percent: the amount of water saved by producing

recycled paper as compared to virgin paper. Recycled paper also takes 60-70 percent less energy to produce than paper from virgin pulp.

120: the number of tons of steel saved if every UK office-worker used one less staple a day.

8 billion: the number of gallons of gas saved if every

commuter car in the U.S. carried just one more person.

Find out more:

These facts and other green ideas that can be found at www.treehugger.com



State Highway Agencies are Getting Leaner and Greener

State Departments of Transportation have been practicing some innovative ways to protect our environment while lowering costs, thanks in part to a self-evaluation tool offered by FHWA. The Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) is a tool for transportation agencies to help them evaluate their own steps toward sustainable practices in the areas of system planning, project development, and operations and maintenance. A recent report issued by the American Association of State Highway and Transportation Officials' (AASHTO) Center for Environmental Excellence in conjunction with FHWA and the Federal Transit Administration, highlights many of these success stories. Here are some examples from *Leaner and Greener: Sustainability at Work in Transportation*:

A mowing policy adopted by the Kansas DOT in consultation with the Audubon Society and other groups promotes the regrowth of prairie habitat adjacent to the state's highways. KDOT has added more native grass and wildflowers to its seed mixture; promotes more focused use of herbicides over broad applications; and

has adjusted the frequency, seasonal timing, and width of its mowing operations along roadsides. The result is improved visibility for increased driver safety, a restored native ecosystem that provides wildlife habitat, and a \$1.5 million reduction in agency fuel costs.

Minnesota met the winter of 2010-11 and the region's "third highest total annual snowfall" in the past 40 years with about 32,000 fewer tons of salt than it typically uses. Snow plow drivers now receive training in using the right amount of salt "at the right time and in the right way;" a liquid brine is applied to the roadway prior to snows to prevent freezing; and snow fences of live trees, grass, and shrubbery are being planted where they can stop drifts from reaching the roadway. MnDOT saved an estimated \$2.2 million in salt costs alone, and enhanced driver safety. Meanwhile, the living fences have improved wildlife habitat and water quality, help control erosion and reduce springtime flooding, and "sequester carbon to reduce levels of carbon dioxide in the atmosphere."

Environmentally conscious practices are not necessarily a new thing in transportation

practices. As the report notes, for the past 30 years, state DOTs have typically used up to 20 percent reclaimed asphalt pavement (RAP) in their paving projects. Around 100 million tons of asphalt is reclaimed each year, and RAP is quickly becoming the most recycled material in the nation. Not only does recycling keep the old asphalt out of our landfills, but the practice reduces the negative environmental impacts of the production and transport of new paving materials.

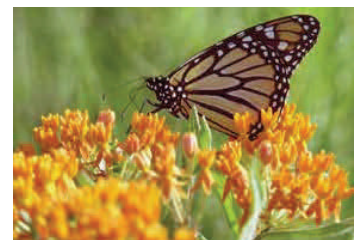
In the introduction to the report, FHWA Administrator Victor Mendez makes the observation about INVEST that "a key to being successful is the ability to evaluate both the process and the results...This tool can evaluate all the initiatives highlighted in *Leaner and Greener*, and we would like to see it used for every project."

Find out more: Read the report at <http://aash.to/LAG-1> or purchase a printed copy from the AASHTO Bookstore at <http://aash.to/LAGPrint>



Plows clear the roads in Minnesota. Photo courtesy Leaner and Greener and MnDOT.

"A key to being successful is the ability to evaluate both the process and the results."



Wildlife is returning to Kansas roadsides. Photo courtesy Leaner and Greener and Kansas DOT.

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“As the largest consumer of energy in the U.S. economy, the Federal government can and should lead by example when it comes to creating innovative ways to reduce greenhouse gas emissions, increase energy efficiency, conserve water, reduce waste, and use environmentally responsible products and technologies.”

President Barack Obama

We're on the Web!

[www.wfl.fhwa.dot.gov/
resources/green-team/](http://www.wfl.fhwa.dot.gov/resources/green-team/)

Share solutions, recycle ideas, and initiate actions for a greener office.



Take the Green Initiative is published quarterly to provide a forum where government agencies can share best practices. Reader contributions are welcome. Share your organization's experiences by sending photos, articles, web-links, or other ideas to the email address at left.

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FHWA Administrator's 2012 Going Greener Awards



*Going Greener Award recipient,
George Snyder, Facility Manager at
Western Federal Lands Highway
Division.*

Congratulations to the winners of the FHWA Administrator's Going Greener Awards for 2012.

George Snyder, Western Federal Lands Facility Manager, is the recipient of the individual award.

The Washington Division was the winner of the office award.

As Facility Manager, George Snyder continually incorporates sustainable features throughout WFLHD. The

organization has installed LED lighting, has embarked on office-wide recycling and composting programs, and has used recycled paint and sustainable building products for recent remodels. George's efforts have allowed WFLHD to achieve energy reduction goals mandated by Executive Order in half the required time.

Keep up the good work, George!

FHWA's Washington Division in Olympia is a shining exam-

ple of a green office. Employees are actively engaged in efforts to conserve, including recycling paper, glass, cans, plastic, and even Styrofoam. In addition to turning off lights and computers to conserve electricity, over 30 percent of employees use alternative forms of transportation to commute to the office.

Great job Washington Division!