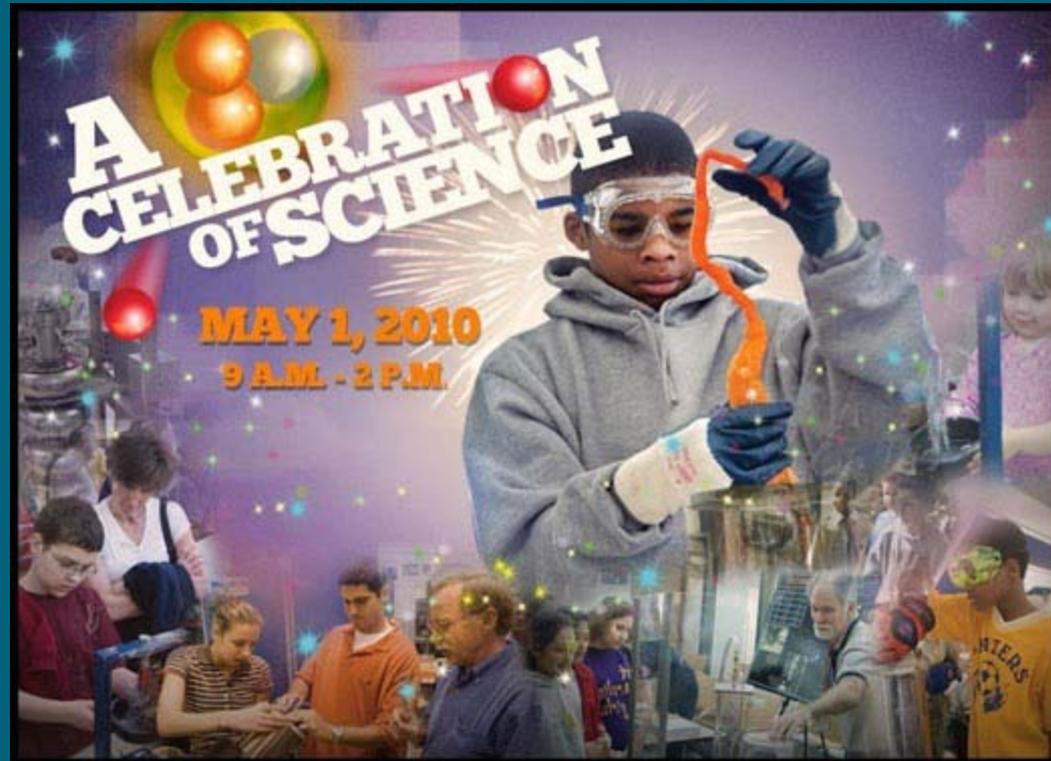


Jefferson Lab's Environmental Protection Program



At Jefferson Lab we strive to be good stewards of
the Environment.



Acres of wildflowers...

Reduce the need to mow, therefore reduce gasoline engine emissions ...



And are beautiful!



The Lab encourages alternative forms of transportation...

Bicycles



Golf Carts

some are solar-powered!



And, of course. . .

Walking

Many of the Lab's environmental efforts are related to energy savings.

- Thermostats are set to moderate temperatures.
- Energy audits have been completed site-wide for all buildings.



Highly innovative Energy Savings Initiatives have won awards from the Department of Energy (DOE) and the White House.



These engineers invented a helium refrigeration system that saves over \$25,000 a day in electricity – the Ganni Cycle.



The installation of Quad-Core Processors in the Lab's computing center has also won awards.

Energy savings of over 10% were gained when our computer scientists and engineers discovered a way to get the same computing power out of far fewer machines.

Capital expense was reduced too!



CEBAF Center Addition

A **geothermal well system** controls heating and cooling in part of this building.

The system is **saving more than 515 million BTU*** of energy per year, or about \$7,600 a year.

That's the equivalent of about 23 tons of coal or roughly 3,900 gallons of heating oil.

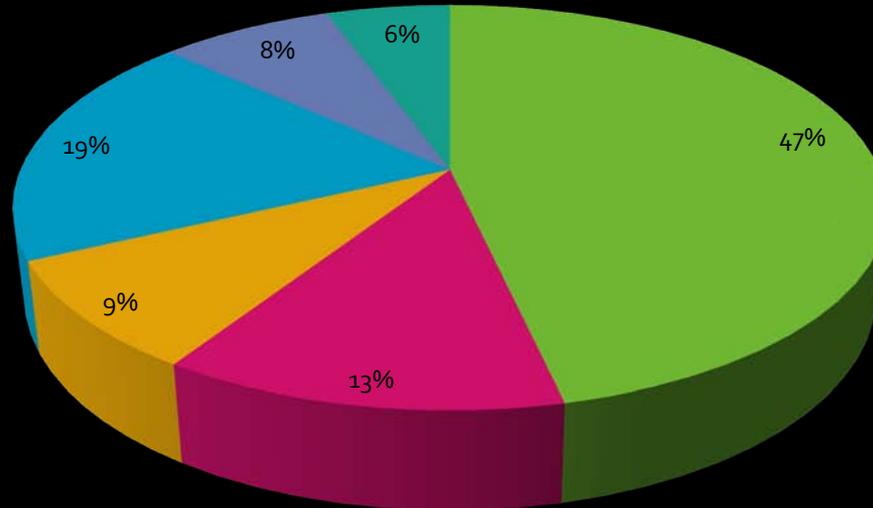
*BTU=British Thermal Unit
(a measure of energy)



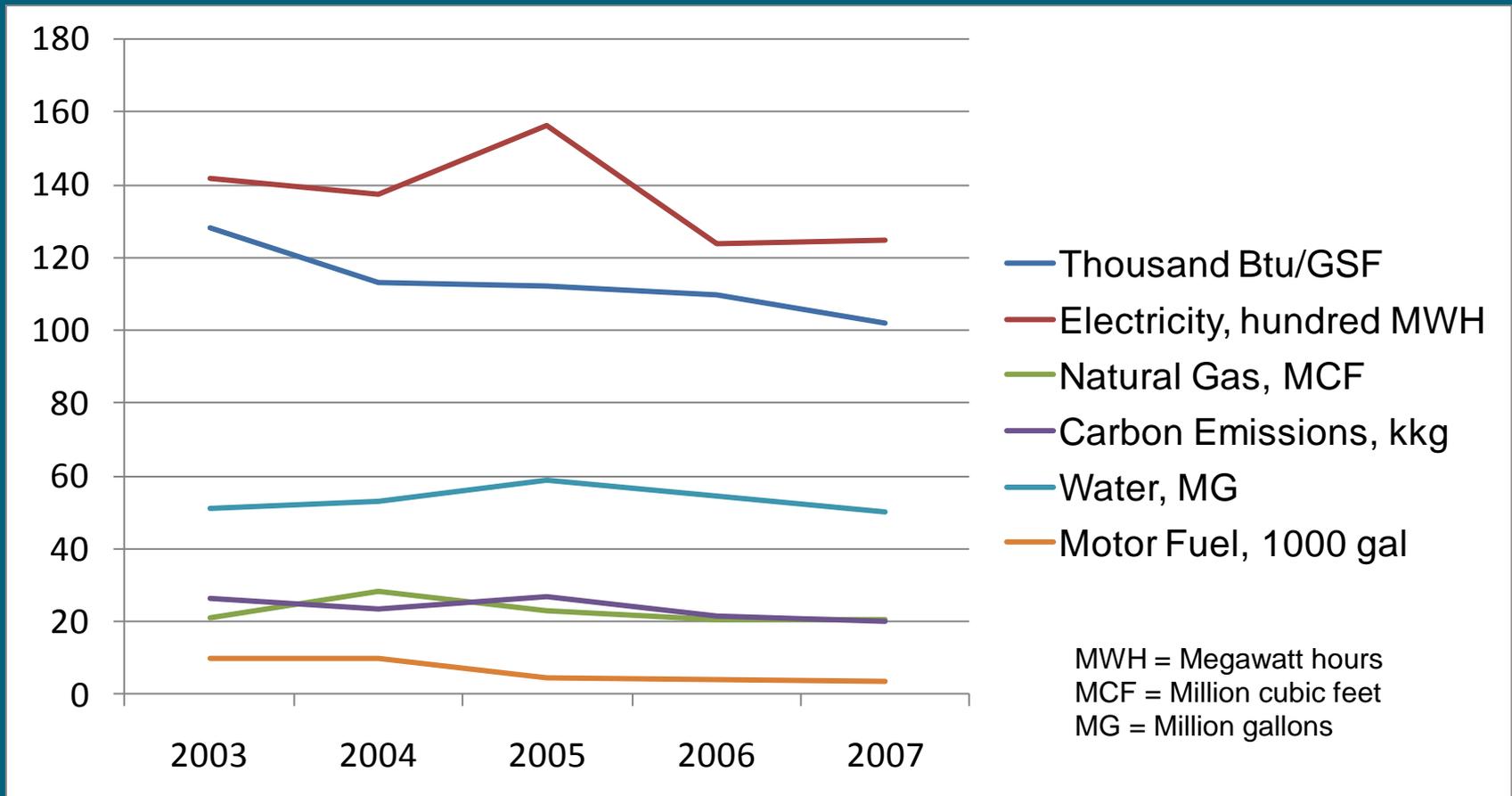
Electrical Power Use at Jefferson Lab

Fraction of Consumption:

- Traditional uses
- Industrial and laboratory
- Cryogenics
- Supercomputing
- Electromagnets
- Other accelerator use



Trends in Jefferson Lab's Energy Consumption



Protection of Water Resources is a Priority at Jefferson Lab

Almost all stormwater at the Lab flows to the Big Bethel Recreational Area, a popular local fishing destination.



Chemicals are stored in Chemical Storage Lockers to prevent spills from leaving the immediate area.



Any oil spilled from this transformer will be captured in the “moat.”



Drainage channels are protected from erosion.



Silt fencing and other measures control sediment from construction areas.

As few trees as possible are harvested for timber value.

Small branches are made into mulch.

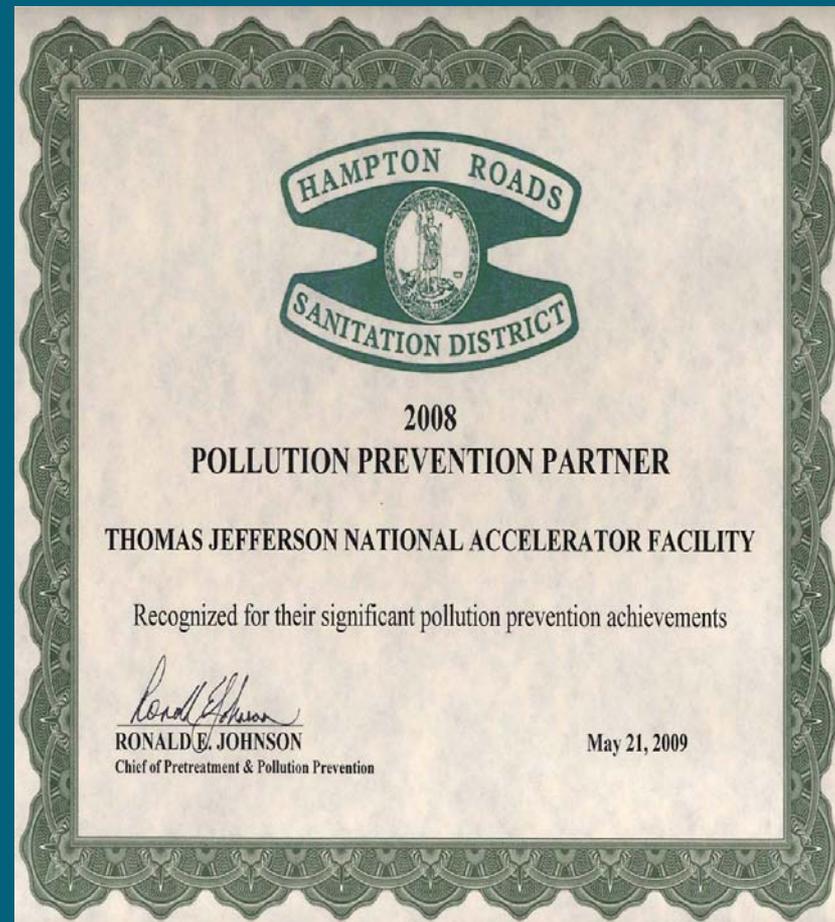


Working With HRSD

(Hampton Roads Sanitation District)

Our wastewater is treated by HRSD under an industrial permit.

HRSD has recognized Jefferson Lab as a Gold or Silver Pretreatment Award winner every year.



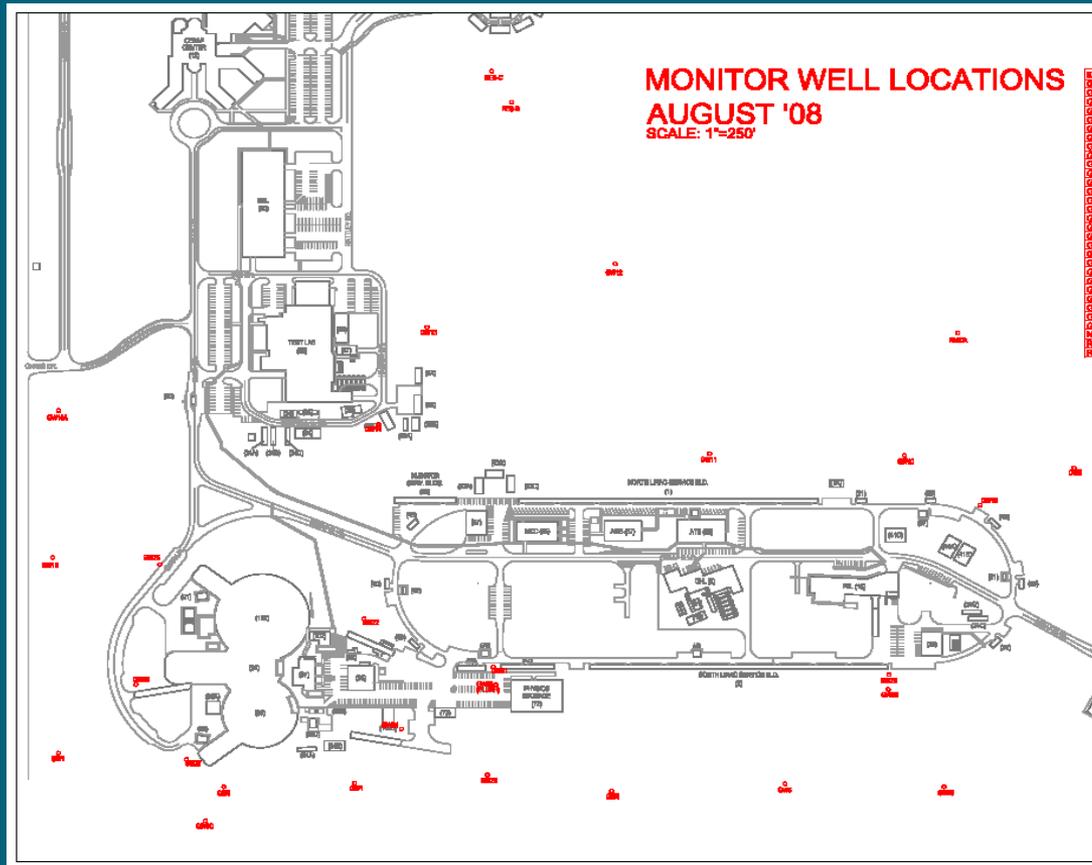
Groundwater is another important resource we protect.



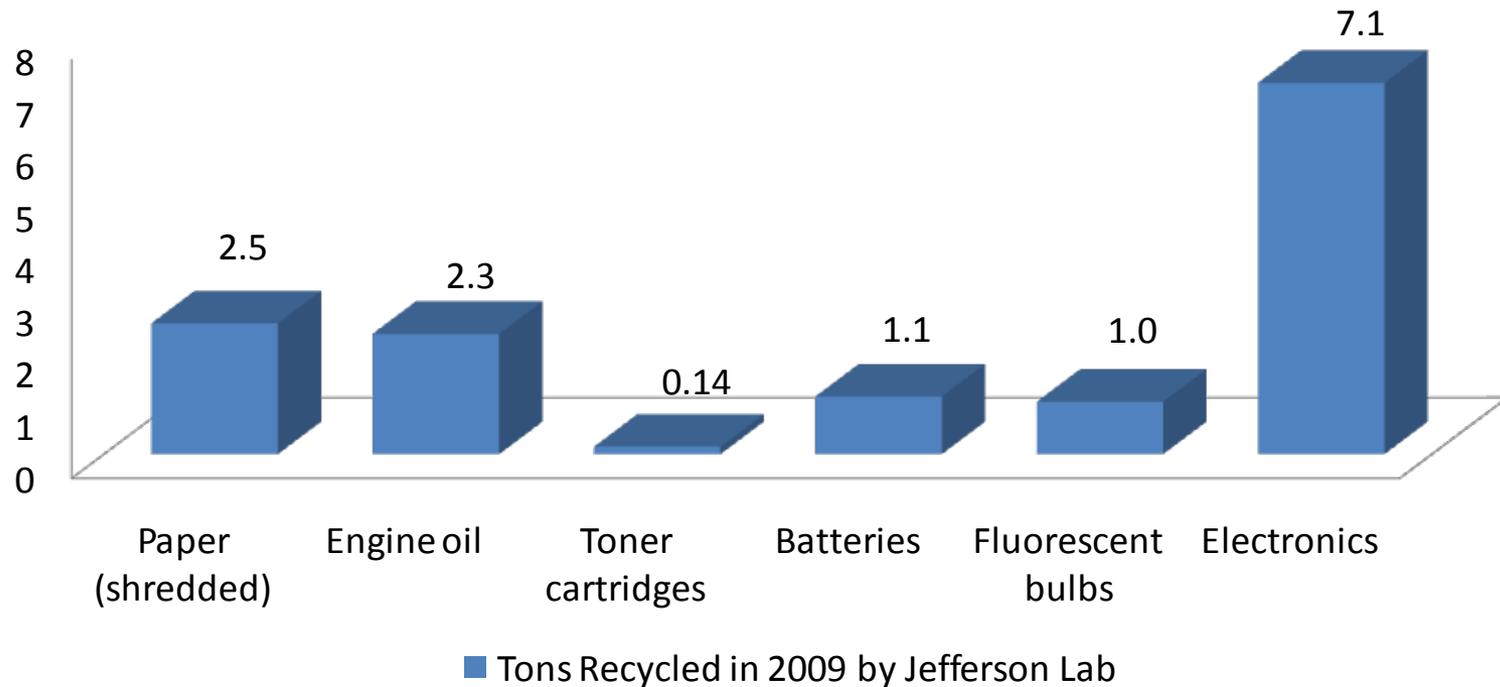
This is the Yorktown Formation, which lies about 20 feet below ground level.

Groundwater flows through the sand and fossil shells to the aquifer below.

A system of monitoring wells helps the Lab verify that our stewardship is functioning at a very high level.



The Lab recycles almost everything!



We also recycled:

87 tons of commingled paper, aluminum, cardboard, and plastic
215 tons of construction waste

A small amount of waste containing low levels of radioactivity is generated yearly.

Before it is shipped, it is carefully packaged and checked with radiation detection instruments.

Low-level radioactive waste is strictly regulated by DOE, other Federal agencies, and the state.

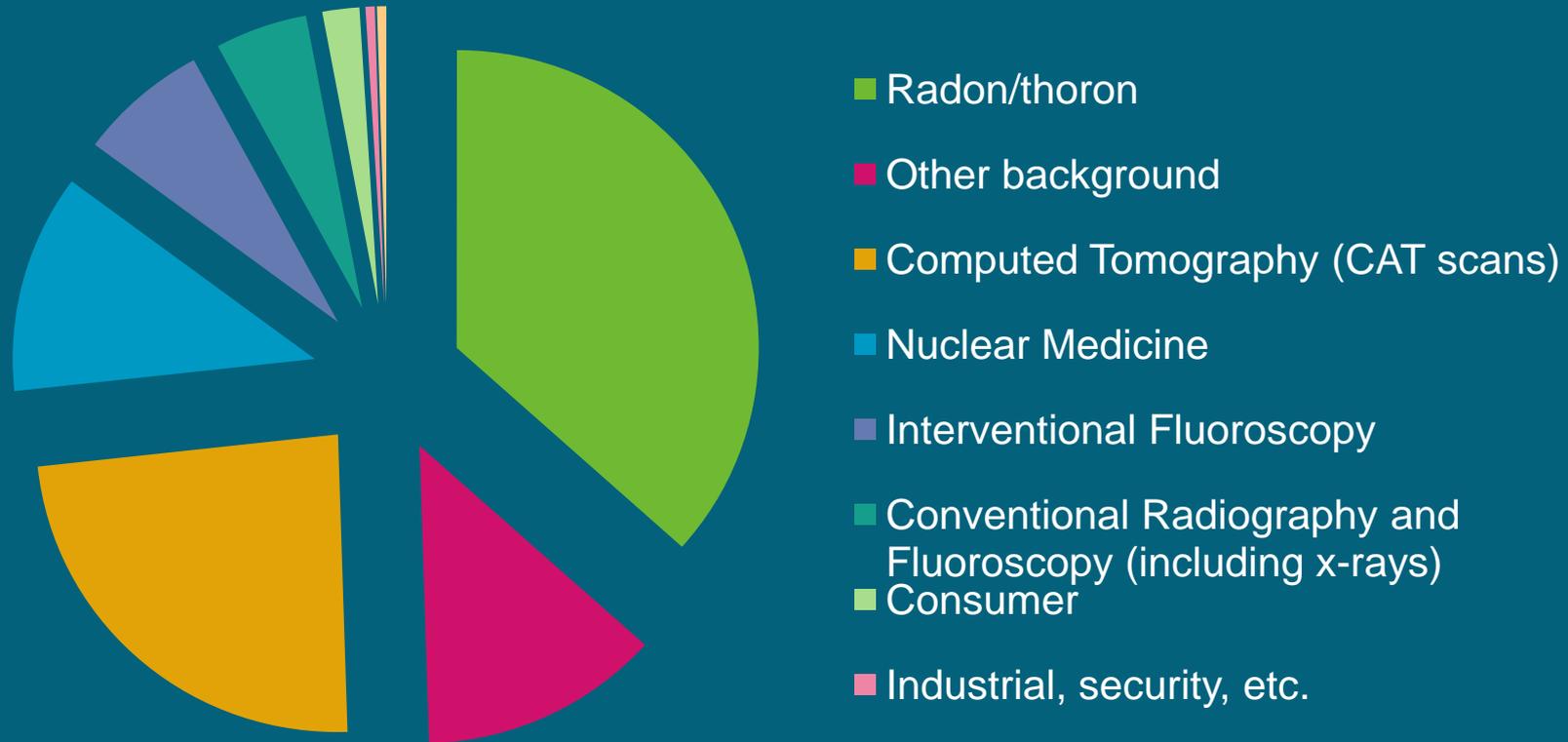


The research activities at the Lab generate some radioactivity... but it's FAR below regulatory levels.

Public Radiation Dose from JLab Activities, mrems



Sources of Individual Radiation Exposure



Recent research puts the 0.136 mrem dose into perspective... an average person's dose is 620 mrem/year

Of course, protecting the environment includes protecting our local wildlife.



Lab volunteers also participate in the Adopt-a-Spot program, picking up litter along Jefferson Avenue four times a year.



If you're interested in learning more...

Visit our annual **Site Environmental Report**
on our website at:

<http://www.jlab.org/ehs/ser/>

It's written for the general public and is also
available in the Jefferson Lab Public Reading
Room.

What you can do to help!

Suggestions to work into your daily routine...

Calculate your carbon footprint:



- University of California at Berkeley's [Cool Climate Calculator](#)
- [CarbonFootprint.com](#), [CarbonCounter.org](#), [Conservation International](#), [The Nature Conservancy](#), and [BP](#), among others, also offer carbon calculators.
- [CarbonFund.org](#) even allows you to offset your emissions by investing in clean energy initiatives.

Green Laundry



Get an *energy-efficient* washer... and a *solar-powered* dryer!

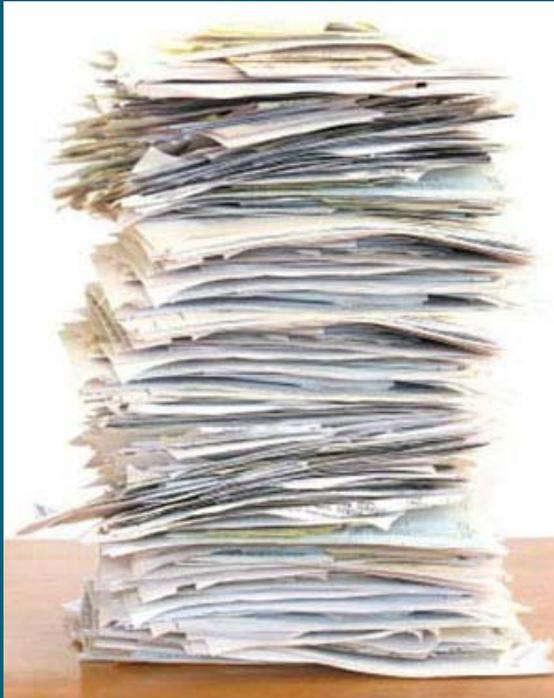


Use *cold water* to wash and rinse; *run full loads*; and wash what is washable – then choose *environmentally-responsible* dry cleaners.



Go Paperless

Receive and pay bills online
Cancel unwanted, unneeded catalogs
Recycle that junk mail



Shop Environmentally-Responsible:

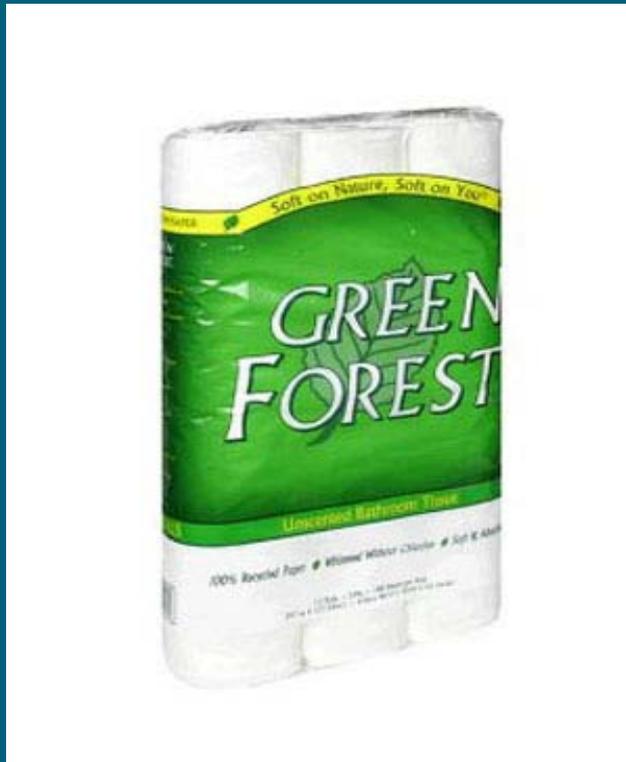
Suggestion 1: Reusable bags



Buy them. Use them.



Suggestion 2: For recycling to work, you have to **BUY recycled**, such as...

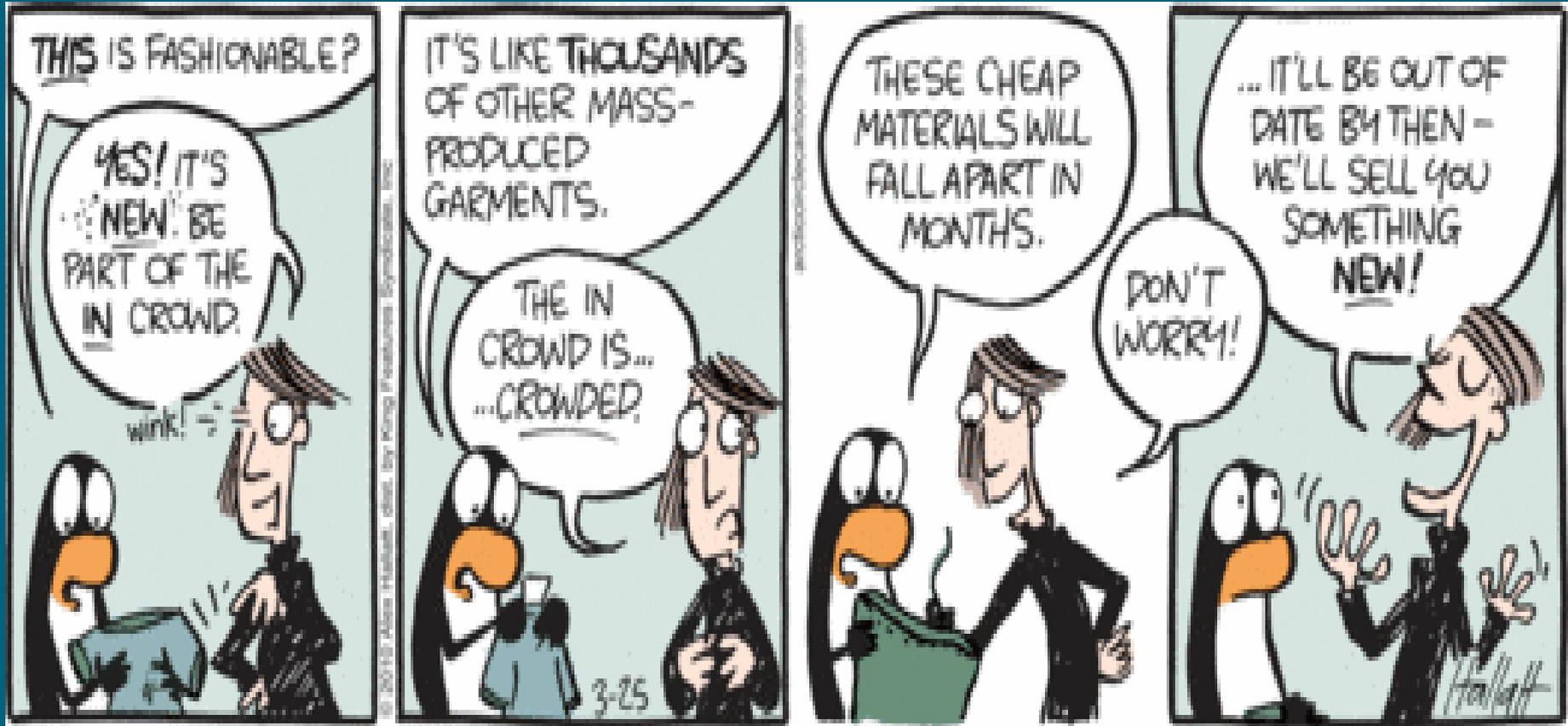


Or better yet: **REUSE.** (One man's trash is another man's treasure!)



Suggestion 3: Think!

(Did you ever think about... FASHION?)



Tap Water vs. Bottled Water

Tap water is distributed through an energy-efficient infrastructure.

Bottled water is sometimes transported long distances which involves massive quantities of fossil fuels.

Water weighs 8 1/3 pounds a gallon. It's so heavy you can't fill an 18-wheeler with bottled water -- you have to leave empty space.



The most commonly used plastic for making water bottles is polyethylene terephthalate (PET), which is derived from crude oil and is not readily recyclable.

Making bottles to meet Americans' demand for bottled water requires more than 17 million barrels of oil annually, enough to fuel more than 1 million U.S. cars for a year.

Buy Local - Sustainable Food

A shorter food chain:

1. Cuts down on oil consumption;
2. Puts money in the pockets of local farmers.



Another Benefit of Patronizing Local Businesses:



Less Driving
Around

This area has several Farmers' Markets:

Chesapeake Farmers' Market

City Park , Chesapeake

Downtown Hampton Farmers' Market

Carousel Park, 610 Settlers Landing

Five Points Community Farm Market

1132 Norview Ave., Norfolk

Newport News Farmers' Market

28th Street and Jefferson Avenue

Norfolk Community Farm Markets

300 Monticello Ave

Suffolk Farmers' Market

162 Main Street

Surry Farmers' Market

Courthouse Square

Virginia Beach Farmers' Market

3640 Dam Neck Road

Williamsburg Farmers' Market

In Merchants Square
on Duke of Gloucester Street

Yorktown Farmers' Market

Riverwalk Landing, Water Street

Let's work together to be good stewards of the Environment.

