



“DOWN TO EARTH”

April 2007

A joint newsletter from Durham Public Works and the Durham Integrated Waste Management Advisory Committee

A Changing Climate By Jessie McKone

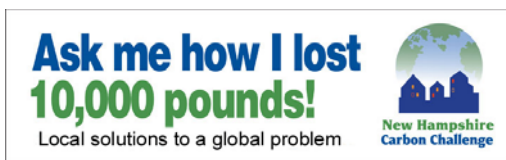
It's hard to miss the many news stories about climate change. Folks, from legislators to CEOs and from researchers to family members, are looking for solutions. Many agree that reductions of greenhouse gas emissions need to happen in all sectors of society worldwide. Government regulations are largely responsible for helping stem past environmental crises such as acid rain and the deterioration of the ozone layer. Assuredly, legislation will be needed on this new 'front'. Waste Management takes on new meaning when we start to examine those emissions over which we have individual control. About half of the U.S. greenhouse gas emissions come from individuals using fuel in their cars and electricity and heat in their homes. Throughout this edition you'll find articles describing strategies that help reduce your 'carbon footprint'. We hope you'll get excited about taking up 'The Challenge' described below and then share your successes with us. (See example e-mail on page 6.)



The Oyster River Carbon Challenge:

A Weight Loss Program That Really Works by Dale Valena

It's spring and time to lose those unwanted extra pounds. About 10,000 of them, we hope! While losing 10,000 pounds sounds daunting at first, by simply putting our lifestyles on a little "low carb" diet, we can effect significant weight loss -- pounds of global warming emissions, that is ! Roughly half of the carbon dioxide emissions that contribute to climate change come from our houses and cars. For example, every mile we drive, we put a pound of carbon dioxide into the atmosphere. However, by simply combining our errands so we drive just ten fewer miles per week we can prevent 520 lbs. of carbon dioxide (CO₂) emissions per year.



In Durham, Lee, and Madbury, the Oyster River Carbon Challenge, a grassroots effort to lose 100 million pounds district-wide is underway. The Oyster River Carbon Challenge (ORCC) is a pilot program of the NH Carbon Challenge (NHCC), started by two local women, Julia Dundorf and Denise Blaha. This grassroots initiative is the first of its kind in NH to address residential (including vehicle) greenhouse gas emissions. The ORCC

(Carbon Challenge continued on page 4)

Wood-fired Hydronic Furnace Comes to Town

by Kim Nadeau

Local resident, Mark Morong, has made a huge effort to reduce his carbon footprint. With the help and expertise of local plumber Dick Kearney, Mark has installed a wood-fired hydronic furnace that supplies on-demand hot water and forced hot water heat to his home, his workshop, and eventually his hot tub. This type of furnace performs at an astounding 87% efficiency rate, which means that the majority of the energy released by burning wood is captured and transferred into useable heat. Mark says the furnace burns so hot he can burn green bull pines.



Through a process called wood gasification, temperatures approaching 2000° F. convert the wood into a combustible gas that is then also burned. This means less wood is needed and that results in fewer trips to the woodpile. Because the wood is burned completely there are few by-products to create smoke, creosote, and ash. Mark says it took 3 weeks to fill a 5-gallon bucket with ash. Wood burned in this manner

(Furnace continued on page 2)

A Primer on Peak Oil by Shelley Mitchell

If you haven't heard of "Peak Oil," you will. The term refers to the maximum rate of the production of oil in an area, recognizing that it is a finite natural resource and subject to depletion. Back in 1956 a geophysicist named Marin King Hubbert correctly predicted that U.S. oil production would peak in 1970.



A majority of the power consumed in the U.S. comes from imported fossil fuels. This makes us reliant on other governments that may not share our values or may become hostile and cut off supplies. The fact is oil production is declining in almost every nation outside of the Middle East. In the U.S. domestic oil production peaked in October, 1970 at 10 million barrels per day. U.S. production now stands at about 5 million barrels per day.

The U.S. economy is particularly vulnerable to the coming oil shortage since we consume a greater proportion of the world's oil than any other nation. The unparalleled prosperity experienced by the U.S. during the last century was built on "cheap oil." In 1859 oil was discovered, but it didn't become an important industrial fuel until Henry Ford began mass production of automobiles in the early 1900's. This event became a cornerstone of our economy while allowing people to move out of the cities and into the suburbs. Today oil isn't cheap or unlimited and we must adapt to new realities.



What does all this mean to you? Well, you've already taken the first step by reading this article. Now you can continue to build your awareness while learning how to reduce your reliance on oil. Take the NH Carbon Challenge, grow a garden, Google "Peak Oil," attend the presentation by energy investment banker Matthew Simmons at 7 pm on April 23th at Huddleston Hall (on campus), and ask your elected officials what they intend to do about Peak Oil and it's effects on our energy, environment and economy. For additional information visit: www.globaloilwatch.com, www.energystar.gov, www.theoil drum.com, or www.drydipstick.com/peakoil-prepare.html.

Notice: The following items may be brought to the Transfer Station throughout the year: used motor oil, antifreeze, car batteries, household batteries, oil-based paints and fluorescent bulbs. **Other items of a chemical nature may only be disposed of during the annual collection of Household Hazardous Waste. (See details on pg. 4.)** Entrance permits to the Transfer Station may be purchased at the Public Works office on Stone Quarry Drive for \$10.⁰⁰. For a list of Transfer Station and Recycling Center guidelines visit www.ci.durham.nh.us or call 868-5578.

Wood Fired Hydronic Furnace

(continued from page 1)

releases the same amount of CO₂ that wood slowly decomposing on the forest floor would. Any impact on global warming from wood gasification is far less compared to the burning of fossil fuels.

Commenting on the efficiency of his new furnace Mark says that his natural gas furnace had been turned off for 3 weeks (which happened to be during that bitter cold spell we experienced in February). He used eight pieces of wood on the coldest day that measured 12" in diameter by 16" in length. When you drive by Mark's house and see the chimney puffing away, you'll see steam as opposed to the usual wood particulate we see and smell from traditional wood stoves.

We congratulate Mark for being a 'Climate Hero'. You may call him at 868-6025 with questions about

his project. He is happy to discuss energy innovations. IWMAC would like to report on more local success stories. Please consider sharing your ideas and real experiences with the Durham Integrated Waste Management Advisory Committee at IWMAC@ci.durham.nh.us.

Worth a Visit:

UNH Earth Day Fair: 1- 4:30 pm, April 20,
in front of UNH library -- no rain date
UNH Earth Day Forum: 3- 4:30 pm, April 20,
Hubbard Reading Room at UNH library.

<http://airmap.unh.edu> -- (Durham) Observing
Station -- get real-time air quality data

www.sustainableunh.unh.edu/climate_ed --
1990 to 2005 UNH Greenhouse Gas
Emissions Inventory report

RESIDENTIAL BULKY WASTE CLEANUP

LARGE ITEMS ONLY

PICKUP BEGINS MONDAY, APRIL 30, 2007

Please place materials curbside NO EARLIER than April 28th and NO LATER than 7AM on April 30th

Electronics/Appliances

*The following items will be picked up curbside but **REQUIRE** an electronics/appliance sticker.*

Stickers are available for **ten dollars** at the Department of Public Works or at the Transfer Station and Recycling Center.

- Refrigerators (doors must be removed)
- Freezers (doors must be removed)
- Air Conditioners
- Dehumidifiers
- Computer Monitors
- Televisions
- Copiers



Bulky Waste, Furniture, Painted or Stained Wood, Construction Debris, and Other Large Items

Bulky waste items include mattresses, box springs, upholstered chairs, couches, painted or stained decking, rugs/carpeting/padding, and pressure treated wood. Place bulky waste items curbside on or before the April 30th collection. *These items do not require a bulky waste coupon during spring cleanup.*

Metal

Place metal in a separate pile

- Bicycles (*remove tires & seat*)
- Rolled Wire Fencing (*minus wooden posts, etc.*)
- Metal Pipe
- Cast Iron Sinks and Tubs
- Metal Lawn Chairs (*stripped of wood, plastic and fiber*)
- Aluminum Screen Doors/Windows (*minus all glass*)
- Lawn Mowers (*wheels and fluids removed*)
- Bed Springs
- Washers/Dryers
- **Empty** paint cans
- Tires (*rims removed*)



NO plastic sheeting, plastic flower pots, or other **small items**. These items should be placed curbside as bagged trash for your regularly scheduled collection day.

Although you may compost brush, tree limbs, leaves, and garden waste in your yard, you may bring them to be recycled at the Transfer Station on Durham Point Road with your permit. These items are also picked up curbside in the fall during Fall Cleanup.

Landlords – Please share this information with your tenants



Household Hazardous Waste Day

Saturday September 15, 2007

This year's annual Household Hazardous Waste Day will once again be held **at the Department of Public Works facility** located at 100 Stone Quarry Drive. As in the past, all hazardous waste will be collected **by appointment only**. To register, you must call the Department of Public Works at 868-5578.

Common Household Hazardous Waste:

Household Items

- Aerosol cans (empty aerosol cans are safe to dispose of as regular trash)
- Bug spray
- Carpet and upholstery cleaner
- Drain openers/cleaners
- Flea and tick repellent
- Metal or furniture polish
- Mothballs
- Oven cleaner
- Photo chemicals
- Rubber cement
- Toilet/shower cleaners

Unmixed Waste Fuels

- Diesel fuel
- Kerosene
- Gasoline

Basement/Garage Items

- Paint thinner and turpentine
- Brake or transmission fluid & radiator flush
- Swimming Pool Chemicals
- Pesticides, weed killers and insecticides
- Charcoal lighter fluid
- Driveway sealer
- Furniture stripper
- Mouse or rat poison
- Carburetor Cleaner
- Adhesives
- Solvents
- Car Wax
- Wood stains

Mercury

- Old thermometers
- Old thermostats

<p>NO EXPLOSIVE MATERIALS, RADIOACTIVE WASTE, ASBESTOS, SILVEX OR INFECTIOUS/BIOLOGICAL WASTE WILL BE ACCEPTED.</p>
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Carbon Challenge continued from page 1: hopes some rapid 'weight loss' in Durham, Lee and Madbury will inspire the rest of the state to reduce residential CO₂ emissions.

Here's how it works: first, you need to assess your carbon footprint by assessing how much fossil fuel based energy you use in your house and car. By simply logging onto <http://carbonchallenge.sr.unh.edu/calculator.jsp>, you can identify your biggest sources of greenhouse gases and where you might make changes. Actions such as lowering your heat by 2 degrees, washing your clothes with cold water, changing 10 of your most used light bulbs to compact fluorescent bulbs, and buying Energy Star rated appliances when your old ones need replacing will help you to reach your residential goals. (More emission-saving actions are outlined on page 5). Next you will be asked to report back the energy savings that you realize from taking these actions. By taking the "Challenge" and making some moderate changes, you'll be part of the solution, and you'll be saving money on your energy bills.



The NH Carbon Challenge website has a special link for residents of Durham, Lee and Madbury since our district is the pilot program for the entire state. The Oyster River Carbon Challenge group plans to have information tables at several upcoming local events. If you see their sign, stop by and learn more about the steps you can take to reduce climate change emissions, or share your energy-saving stories. If you'd like to be on their e-mail list or join the ORCC committee, contact them at ORCC@NHCC.unh.edu.

Are We Carbon Challenged ? by Chuck Baldwin

For every "action" there is a "reaction". Of course we're grateful for the obvious reactions: hit a light switch and " Voila " ... put your car in drive and " Zoom...Zoom...Zoom ". Less obvious are the undesirable carbon dioxide emissions created through combustion in generating electricity or powering our vehicles.



At close to 300 million people the US represents less than 5% of the approximately 6.5 billion world population, yet we generate about 25% of the world's carbon dioxide emissions. Other developed countries are way ahead of us in taking steps to reduce their emissions. The Japanese, for instance, generate almost 50% less carbon dioxide per capita than the US !! That's just a tad embarrassing.

Our lifestyles have developed an unprecedented momentum supported by an infrastructure, which generates increasing amounts of carbon dioxide. The Intergovernmental Panel on Climate Change that is represented by some 600 scientists from 40 countries recently reported that human-generated carbon dioxide emissions are contributing to global climate change. So what can we do about this ?



The **Oyster River Carbon Challenge** (see feature article on page 1) was formed with the belief in **people power and simple solutions**. Making **small changes** in your routine activities and **good choices** in your purchasing decisions will **reduce your carbon dioxide emissions**, while **saving you money** !

The ORCC invites you to consider some of the actions listed below and **join them in taking the Carbon Challenge at <http://carbonchallenge.sr.unh.edu>**. You will find additional suggestions and resources at this website. Consider the possibilities for yourself.... then**pay it forward** by telling at least three of your neighbors and friends. Together, Durham, Lee and Madbury residents can pool their efforts toward achieving the regional goal of losing 100 million pounds of carbon dioxide annually.

SAMPLE ACTIONS

APPROXIMATE SAVINGS per YEAR

Reduce thermostat by 2 degrees in the winter	\$ 98.00	1,400 lbs. CO ₂
Wash clothes in cold water	\$ 60.00	500 lbs. CO ₂
Unplug an underutilized extra freezer	\$ 275.00	2,000 lbs. CO ₂
Replace 10 lights with compact fluorescent bulbs	\$ 120.00	1,000 lbs. CO ₂
Replace refrigerator with Energy Star unit	\$ 90.00	700 lbs. CO ₂
Purchase next vehicle with at least 5 mi./gal. better mileage	\$ 260.00	2,500 lbs. CO ₂
Install double pane windows (heat and AC savings)	\$ 400.00	10,000 lbs. CO ₂

There are many actions more difficult to quantify for savings because they vary according to degree of compliance and /or variations in equipment. These actions will garner you *additional* energy and cost savings:

Install door sweeps and caulking

Shop locally and buy local produce (save gas)

Turn off lights/ unplug electronics not in use



Take shorter showers

Install water saver showerhead

Reduce packaging and junk mail

Use Wildcat Transit / Mass transit/ Amtrak/ Bicycle/ Walk



Plant CO₂ absorbing deciduous trees for shade

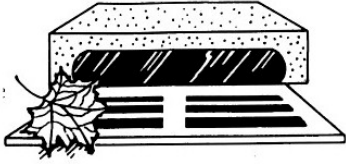
Increase Recycling and Composting

Vacation Locally

Line dry clothes

Add insulation to your attic and water heater

For even more ideas, visit: www.cleanair-coolplanet.org, or www.stopglobalwarming.org



PROJECT STORM DRAIN UPDATE and FAQs

by Town Engineer David Cedarholm

Last fall, the Department of Public Works introduced a new program called "Project Storm Drain" which is intended to allow residents opportunities to submit online reports of the stormwater drainage systems in their neighborhoods. Due to a lack of resources, construction of the new online reporting page on the Town Website was delayed. Hopefully, the new Project Storm Drain online form will be up and running just in time for you to submit your observations of the big spring rain events. Watch for the new online Storm Drain Report form in the on-line services portion of the Town Website, www.ci.durham.nh.us, and be the first to submit a report. Here are some answers to a few storm drain Frequently Asked Questions (FAQs):

What is the stormwater drainage system and what are storm drains? Storm drain is a common term that describes the drainage ditches by the road sides and the catch basins and drainpipes beneath the roads. Collectively they are called the stormwater drainage system. They help convey stormwater from the Town's roadways to the nearby rivers and streams.

Are sanitary sewers and storm drains the same thing? No. They are two separate systems. Wastewater from homes and businesses travels through the sanitary sewer system and to the wastewater treatment plant, where it is treated before discharge. Stormwater runoff from streets, parking lots, yards, etc. enters a separate storm drain system that flows directly to rivers and streams.

Why is it important to provide your observations? The Town of Durham is required by the US Environmental Protection Agency to maintain the stormwater drainage system and the more eyes checking on the storm drains the better. With over 600 catch basins and 25+ miles of drainage ditches, it is impossible for Town Staff to always know where the problems are. Identifying potential problems early will save on costly repairs and may prevent unnecessary impacts to receiving waters.

When should you make your observations? The best time to observe the storm drains is during a rain event or immediately after.

What should you look for? Report any unusual color or odors in the stormwater or lining a drainage ditch; let us know if a storm drain is clogged or in disrepair; keep an eye out for areas where erosion appears to be a problem; report any strange sink holes or accumulation of sediments.

Who should submit Storm Drain Report? Anyone of any age who is interested in protecting the rivers and streams from being impacted by contaminated stormwater and helping the Town keep our infrastructure in good working order is welcome to participate.

An e-mail from Durham resident (and 'climate hero') Elise Daniel

(Elise and husband Warren are among the founding members of the Oyster River Carbon Challenge, an initiative of the New Hampshire Carbon Challenge -- see related articles on pages 1, 5 and 7.)

"Since my introduction to the Oyster River Carbon Challenge last month, my family has been very diligent about our energy use both at home and in the car. Today, we were justly rewarded. Our February electric bill came in at a whopping 35% lower than January's bill, and our KWH use was 37% lower than the same period last year. And this year's average temperature was much lower than the same period last year. I can't remember the last time we had an electric bill this low. Aside from sending our daughter off to college this year (something I definitely recommend for great energy savings!), we pretty much focused on turning off lights, lowering heat, and unplugging items not in use, to decrease the 'snacking'. We run the dishwasher when someone is around to stop the drying cycle. I don't feel we were even diligent enough to warrant this much reward, but I'm sure glad it happened! This took little effort and we're now challenged to drop our electric bill below \$100. (\$18. more to go)!"

Hank and Clifford in "I See the Light" by Chuck Baldwin

It was a dark moonless night and unusually quiet after two days of heavy winds and relentless rain. There were no visible lights on at Clifford's house, so when Ol' Hank pulled into the driveway he had to think. Ayuh, it was Friday 7pm and the plan was to go to the hockey game -- so he got out, knocked on the door, and waited a few minutes. He was about to leave when suddenly a small light appeared bobbing about as it moved toward the door. Ol' Hank had to back up and shield his eyes as the door opened. "Clifford is that you?"

"Ayuh" was the reply as Clifford removed a headlamp. Hank asked when he had lost his power and Clifford said, " I didn't loose my power, I'm just saving on electricity. I figure I only need a light on where I'm at, so I bought me a headlamp and some rechargeable batteries."



A bit flummoxed, Ol' Hank said, "Clifford, I appreciate how frugal you've become but I think maybe you're going overboard. Why don't you just buy some of them compact fluorescent lights?" Clifford said he thought they were too expensive and Hank told him they used to be but they aren't so much anymore and they usually pay for themselves in a couple of months. After that you'll save over \$10.00 a year* for each light you replace and they last for 5-7 years.

Well, that had Clifford thinking. Maybe he could retire a little sooner if he kept on taking steps to save money. He recently stopped buying personal size drinks and was saving at least \$50.00 a month on that alone. Add up replacing 15-20 lights and he started wondering what else he could do.....

Whether you're on a tight budget or not, making the switch to compact fluorescent lights is cost effective and a great way to reduce your CO₂ emissions. Special promotions are frequently available to get a savings on purchases at local stores and through PSNH.com.

* Savings will vary depending on usage and wattage, but using 5 compact fluorescent bulbs in place of 5 incandescent bulbs, an average of 5 hours a day, will result in approximate savings of \$70 per year.

Durham Approves Climate Change Resolution by Jenna Jambeck

It was a sunny spring day; not a bad day to be standing outside of Oyster River High School holding signs encouraging the voters of the town of Durham to send a message to our President and the U.S. Congress by voting "yes" on Warrant Article #2. And send a message the voters did on March 13th, 2007 by approving the Durham Climate Change Resolution by a vote of 1447 to 254. In December of 2006, the Durham Town Council unanimously voted to put the Climate Change Resolution on the ballot. The resolution illustrates the Town's commitment to making energy conservation and carbon dioxide emission reductions a priority. The resolution was introduced throughout the state by the Carbon Coalition and now over 152 towns in New Hampshire have approved similar resolutions.

The Durham Climate Change Resolution directs the Town to request effective actions of the President and Congress to address the issue of climate change, which is increasingly harmful to the environment and economy of NH. These actions include: 1) establishment of a national program requiring reductions of U.S. greenhouse gas emissions while protecting the U.S. economy, and 2) creation of a major national research initiative to foster rapid development of sustainable energy technologies thereby stimulating new jobs and investment. It also urges the appointment of a local, voluntary energy committee.

ORHS student Zoey Frolking remarked, "Now that we realize the magnitude of the effect of excessive carbon in the atmosphere, it is important that we see what we can do to reduce our emissions and ecological footprint."

ORHS students Lucy Bicks and Zoey Frolking rally support during their free period on March 13th at the Durham polls.



tips

...The Durham Transfer Station and Recycling Center has an established **collection program for all fluorescent light bulbs**. With the surge in popularity of *compact* fluorescent light bulbs this program will expand accordingly. Please **DO NOT** throw compact fluorescent light bulbs in the trash. They contain a small amount of **mercury** and must be recycled. Please give any fluorescent **tube or bulb** discards to the Transfer Station attendant for proper handling.

... Compact fluorescent light bulbs may generally be used in enclosed fixtures as long as the enclosed fixture is *not recessed*. Totally enclosed recessed fixtures (e.g., ceiling **can lights** with a cover over the bulb) create temperatures that are too high to allow the use of a compact fluorescent bulb.-- GElighting.com

...Compact fluorescent light bulbs are available in discount, grocery and drug stores, as well as online. They are safe, cost-effective and energy efficient. But don't try to use a regular compact fluorescent bulb in a socket controlled by a *dimmer switch* (to avoid fire). **Special compact fluorescent bulbs are now made for use with dimmers**. Please read the package carefully to be sure you are getting a dimmable CFL bulb.

...UNH students have been documenting energy efficiencies (and deficiencies) in Town buildings and will present their findings on May 3rd from 9:40 am to 11:00 am at Theater #1 in the Memorial Union Building. The general public is welcome to attend and learn about the criteria for receiving an "Energy Star" rating based on EPA standards. Professor Ihab Farag's 'Energy and Environment' students have examined Town Hall and the Oyster River Middle School this semester in cooperation with Town Engineer David Cedarholm and Oyster River Cooperative School District officials Blaine Cox and Tim Knowles.

Community Volunteers



Helping prepare the Spring 2007 'Down To Earth' newsletter for the postal mail are (L to R) Richard Gallant, Maggie Bogle, Sally Hochgraf, Kim Nadeau and Kate Glanz.

Thank You!



Hard at work (L to R) are Neal Ferris, Joyce Sheffield, Linda Hollister and Maggie Bogle.

The Integrated Waste Management Advisory Committee would also like to thank some volunteers not pictured including: Dale Valena, Jane Lenharth, Donna Heald, Chuck Baldwin, Diane Woods and Jessie McKone.

Thanks also to Town employees: Karen Edwards, Lisa Beaudoin, Jen Berry and Luke Vincent.