

Rock blasting and the effort to protect groundwater

By Brandon Kernen, PG, Supervisor, Hydrology & Conservation Program

Blasting of crystalline bedrock can contaminate water resources. In some instances, materials such as detonators and explosives are not entirely combusted during blasting and result in the release of soluble substances into the groundwater. The mechanisms in which the substances may not be destroyed during the blasting process include: a) incomplete combustion within the blasting borehole; b) the injection of substances used for blasting into blasting boreholes that intersect a fracture network, resulting in the release of substances beyond the influence of blasting area; c) poor storage, transfer and handling procedures of substances associated with blasting; and d) residual substances associated with blasting occurring on the face of blasted rock materials located at the blasting site, or when a stockpile of

Blasting, continued on page 3

GOVERNOR'S MESSAGE

Excellence in Energy Efficiency Awards presented at state agency energy conference

Across our state, we are working to reduce energy use and increase the use of renewable fuels. State government and its agencies are helping to lead the way.



New Hampshire is committed to acquiring more energy from renewable resources for all state operations. For the first time, the state contract for electricity guarantees that 25 percent will come from renewable sources.

And across state government, we've seen an overall drop in our energy use per square foot. Since I issued my energy efficiency Executive Order, state energy use per square foot has dropped by

Governor, continued on page 8

COMMISSIONER'S COLUMN



Green Your Commute!

Join Commute Green NH • May 15 to June 25

What started eight years ago in New Hampshire as just a single Bike/Walk to Work Day in mid-May, has expanded into a six-week, "Commute Green" promotion to encourage active and inter-modal transportation whenever possible, not just commuting to work. This year's statewide promotion, sponsored by the Bike-Walk Alliance of New Hampshire (BWA-NH) and the New Hampshire Department of Transportation's Bicycle/Pedestrian program, encourages less use of single occupancy vehicles and more walking, bicycling, carpooling, and use of public transit to reduce pollution and develop healthier lifestyles.

Once again, DES is proud to help coordinate, promote and participate in the Commute Green events. All employees from the departments of Environmental Service and Health & Human Services who work at 29 Hazen Drive are challenged to walk, bicycle, carpool, or take public transit during their commute to work. A special "commuter breakfast" is planned for the morning of May 21, the traditional Bike/Walk to Work Day. I have been proud to join in this event

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Above, Commissioner Burack signs-in after commuting to work by bicycle on last year's Bike/Walk to Work Day.

Commissioner

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over the last few years and have been encouraged to see participation at DES steadily increase each year.

New for 2010 will be a series of “Bicycling Awareness Rides” to be conducted in all regions of the state over the six-week period. Multiple loop rides – from family-friendly short routes to more challenging loops for experienced cyclists – will highlight rail trails, scenic and historic locations. Also promoted will be helmet use (a state law for those under 16 years of age), proper cycling techniques, rules of the road (including the “3-foot rule”), and ways cyclists and motorists can safely share the roadways. Giveaways and snacks are planned for each ride location. Check the BWA-NH web site at www.bwanh.org for a complete schedule and details.

The sponsors of the Commute Green promotion have created other incentives to increase participation, including a raffle drawing in June. Anyone completing six round trips in a “green” way during the six week promotion will be eligible for prizes. An on-line survey, provided by BWA-NH, or a paper mail-in version, will be used to capture some information about trips taken, problems encountered, the enjoyment factor, and similar items. Event organizers can submit their planned activities to Bike-Walk Alliance of NH and Department of Transportation to receive free publicity and to be included in a master listing of events.

I encourage you and your business to consider joining in this effort to “green” everyone’s commute. For information on carpooling and state transit providers, see www.rideshare.nh.gov or call 800-462-8707. For Commute Green questions and to submit your event plans and schedules, contact BWA-NH, info@bwanh.org or call (603) 898-9926.

Tom Burack, *Commissioner*

GREENING YOUR HOME

The saga of the “Barney Bag”

By Donald E. Maurer

You’ve seen them, Barney Bags, lurking by the road-sides in Concord, poised to attack the tires of a passing vehicle. Not really. The purple bags are part of Concord’s new, highly successful “pay as you throw” system for waste disposal. Faced with rapidly rising costs for waste disposal and flat recycling rates, the city of Concord looked to pay as you throw (PAYT) as a way to rein in costs.

Concord had curbside waste collection for many years. Unfortunately, curbside recycling was not provided. Residents had to take their recyclables to either the facility on Old Turnpike Road or to a satellite facility in Penacook. For most, it just was not convenient and Concord’s recycling rate hovered around 10 percent for years. Concord began to provide curbside recycling several years ago but this did not provide much of an increase in recycling. In the meantime, the contract with the waste-to-energy facility was renegotiated and there was a substantial increase in the cost to dispose of waste on the horizon. It quickly became evident that only by reducing the amount of waste disposal could the city reduce or at least contain the solid waste budget.

The city put together a committee of stakeholders to work on the problem. Melanie Doiron, a DES employee and Concord resident, volunteered to be on the committee. After about a year, the committee presented a number of options to the City Council and recommended PAYT as the best choice of these. The council chose to implement PAYT on July 1, 2009. After an educational campaign, the purple bags appeared on the streets for the first time last summer.

And how did it work? Last week, Concord General Services sent DES a copy of its report to the City Council. In the second quarter of 2008, total waste disposal was 3,839 tons. In the same quarter of 2009, the total was 2,113 tons, a 45 percent reduction in waste disposal. Recycling went up 57 percent, from 544 tons in the second quarter 2008 to 855 tons in the second quarter 2009.

New Hampshire has 47 towns using PAYT as an incentive to recycle. The newest is Hopkinton, scheduled to implement in November 2010. DES has seen remarkable results in Canterbury and Lyme recently, and across the state the PAYT towns have a 39 percent recycling rate, against a state average of 21 percent. Certainly, PAYT is not the only tool in the box that can increase recycling, but it is one of the best. The city of Concord is to be congratulated for its implementation and the great results so far. ■



ENVIRONMENTAL NEWS



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PROTECTING PUBLIC SAFETY

NHGS launches river erosion hazard program

By Shane Csiki, fluvial geomorphologist

The multi-million dollar damage caused by floods in New Hampshire during recent years is fresh in the minds of Granite Staters. Much of the damage was caused not only by inundation from floodwaters, but also from bank erosion and collapse, caused by the power of the water flowing against the riverbanks. Many state residents experienced property losses during these flood events, particularly as the unconsolidated, glacially-deposited sand and gravel found in many of our floodplains are susceptible to removal by high velocity water.

As a result, New Hampshire Geological Survey (NHGS), in cooperation with the DES Rivers Management Program and the Department of Safety (DOS), created a program that delineates those areas most susceptible to erosion damage during floods, called fluvial erosion hazard (FEH) zones.

The data collection protocols are based on those developed by the Vermont Rivers Management Program, which is one of the first in the nation programs for quantitatively

evaluating erosion hazards. The NHGS modified and optimized the protocols for the specific geologic conditions found in New Hampshire.

FEH zones identify areas that are at high risk for erosion that may cause impacts to life, property and infrastructure. Zones can be included in community hazard mitigation plans as a higher standard than National Flood Insurance Program floodway maps. Assessments began in New Hampshire in the Exeter River watershed in 2008, which was precipitated by intense local interest in collecting river data in support of these goals. Subsequent to the success of the Exeter River project, the state expanded the program utilizing funds from DOS to complete the Isinglass River watershed. This year, the program will assess approximately 120 river-miles in the Cocheco and Lamprey watersheds (both main stems and select tributaries). After which, the focus will be on the Piscataquog and Souhegan watersheds, both of which have experienced erosion issues during recent years. ■



Shane Csiki, a fluvial geomorphology specialist (river scientist), joined the NHGS in May 2009, upon completion of a doctoral program at the University of Illinois, to supervise this new initiative.

At left, a recent "slump" on the Souhegan River.

Blasting

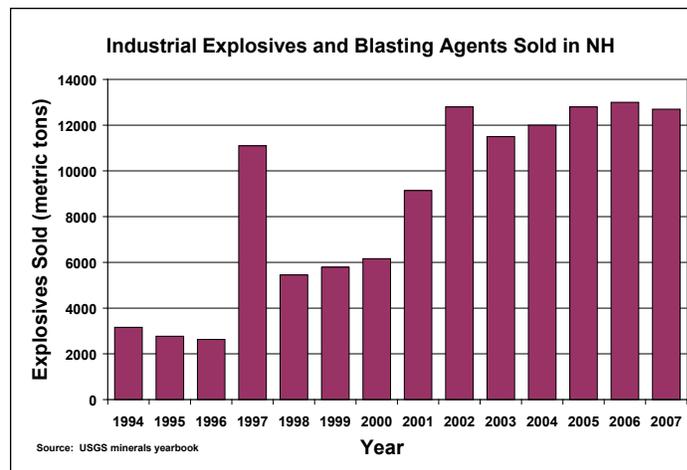
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waste rock comes into contact with precipitation, which results in the substances being leached into the groundwater.

Contamination of groundwater caused by the release to the environmental or spillage of blasting chemicals have been occasionally associated with the detection of nitrate and nitrite. To a lesser extent, volatile organic compounds and semi-volatile organic compounds have been detected at blasting sites.

With the assistance of the public, the New Hampshire Department of Transportation and industry stakeholders, DES has developed a guidance document, titled "Rock Blasting and Water Quality – Measures that Can Be Taken to Protect Water Quality and Mitigate Impacts." This document describes measures that should be implemented when large scale blasting projects occur near drinking water supply wells. The document also provides municipalities with model language to incorporate in local regulations to ensure that blasting best management practices are developed and implemented and that water quality monitoring is occurring if drinking water supply wells are located nearby.

According to the annual *Minerals Year Book*, published by the U.S. Geological Survey, the use of explosives in New



Hampshire has increased by 400 percent from 1994 through 2007. The increase in the use of explosives is likely due to land development trends, a lack of remaining suitable building sites in the southern part of the state, and the development of mobile rock crushing technology. Increased use of explosives in developed areas, coupled with over 230,000 drinking water supply wells in New Hampshire, increases the importance of implementing measures to protect drinking water sources. ■

PROTECTING PUBLIC SAFETY

DES participates in SONS 2010 exercise

On March 24 and 25, DES staff participated in a “Spill of National Significance” exercise, or SONS 2010. A spill of national significance is defined



Unified Command post, Portland, Maine.

in the National Response Plan as an oil spill that due to its severity, size, location, actual or potential impact to the public health and welfare or the environment, or the necessary response effort, is so complex that it requires extraordinary coordination of federal, state, local, and responsible party resources to contain and clean up the discharge. Every three years the nation must exercise a SONS-level incident. The U.S. Coast Guard Sector Northern New England area was chosen for this exercise, which includes Maine and New Hampshire.

The exercise scenario was set in March, and it was scripted that it had been a brutal winter of extreme cold and several severe storms. Inventories of home heating oil, vehicle fuels and jet fuels were in short supply. A collision

of two vessels 15 miles off the coast of Portland ultimately resulted in the spillage of approximately 3 million gallons oil. The resulting oil plume impacted Maine, New Hampshire and Massachusetts, with New Hampshire’s coastline being oiled 48 hours after the collision.

Rick Berry, Carroll Brown and Jen Thompson contributed many hours as members of the exercise design team during the 18 months preceding the exercise. A total of 23 DES staff from the Oil Remediation and

Compliance Bureau, the Water Division and the Public Information Office participated in the table top portion of the exercise, playing the roles that they would actually fill during an event of this type. A “Unified Command” was set up in Portland, which included over 400 participants. In addition, a “Forward Operating Base” with over 80 people was set up at the DES offices in Portsmouth, which was designed to manage the cleanup efforts in New Hampshire. DES also provided exper-



Boom Deployment in Rye Harbor.

tise at the Unified Area Command in Maynard, Mass. It is estimated that over 800 participants from federal, local, state, industry and non-governmental agencies were involved.

In addition to the table top exercise, the SONS 2010 exercise included several on water equipment deployments to test the effectiveness of pre-determined protective oil boom strategies. In New Hampshire, the Rye Harbor protection strategy was deployed, which included a total of 1,700 feet of oil containment boom located in seven different critical areas.

DES is currently assessing the lessons learned from its participation in the SONS 2010. These lessons will guide the department in its ongoing efforts to plan for and respond to an event of this magnitude. ■



DES Portsmouth offices serve as the Forward Operating Base.

Hanover Water Reclamation Facility Recognized for Excellence

The Hanover Water Reclamation Facility was recently selected by the EPA for a Regional Wastewater Treatment Plant Excellence Award. The facility’s staff, led by superintendent Kevin MacLean, was recognized by EPA’s New England Office for exceptional work in operating and maintaining the plant. The plant was among six facilities in New England acknowledged for exemplary performance during 2009. DES was instrumental in nominating this facility. ■

Hazardous waste remediation cost recovery

Under New Hampshire law, owners and operators of facilities or property contaminated with hazardous substances are responsible for remediating that contamination. They are also strictly liable for all costs incurred by the state in responding to a release of hazardous waste or hazardous materials from such a facility.

DES is responsible for ensuring that the cleanup is done in a manner that protects both human health and the environment. It does so by overseeing and reviewing the work of consultants hired by the responsible party, or by utilizing its own consultant if the responsible party is either unable or unwilling to do the necessary work.

In addition to recovering state funds, the U.S. Environmental Protection Agency has authorized DES to recover expenses associated with the State Response Program Cooperative Agreement, and to treat those recovered federal funds as program income in accordance with 40 CFR 31.25(g)(2). A condition of that approval is that the recovered federal funds must be used in a timely manner for assessments and cleanups at sites qualifying under the guidelines of the Cooperative Agreement.

Recovered funds are deposited in the Hazardous Waste Cleanup Fund, which is a non-lapsing fund that pays for oversight and cleanup. The federal portion allows DES, through its consultants, to focus on assisting municipalities in the assessment and cleanup of contaminated sites that have immediate potential for redevelopment or reuse. The objective is to foster the economic revitalization of downtown areas and reducing urban sprawl by reusing existing sites instead of virgin property.

From the start of the current fiscal year (July 1, 2009), through mid-March, DES has recovered \$236,289 for the Hazardous Waste Cleanup Fund and \$97,222 in State Response Program funds. Funds from these sources have been used to help support remedial work in Berlin, Chester, Gilford, Hillsborough, Jaffrey, Lebanon, Lempster, Merrimack, Nashua, Northfield, Northumberland, Pelham and Peterborough. ■



Steve Beyer, supervisor of the OSHA Consultation Program, presents HP Hood Concord Plant Manager Mike Anderson with a plaque commemorating SHARP status. The Safety and Health Achievement Recognition Program is given to employers who have excellent safety and health programs and low injury and illness rates.

PUBLIC OUTREACH

May 20 symposium: A road map to invasive plant control

Are you a natural resource professional, conservationist or concerned citizen who wants to learn more about projects to control the growing threat of upland and wetland invasive plants in New Hampshire's coastal watershed? If so, attend a day-long symposium on May 20, 2010, hosted by the Coastal Watershed Invasive Plant Partnership, at the Seacoast Science Center in Rye from 8:30 a.m. to 3 p.m.

The symposium will provide the nuts and bolts of invasive plant control projects, including permitting rules, specific techniques and case studies. CWIPP will also use the symposium to gather information on the issues and questions facing on-the-ground project managers, which will be vital in guiding future CWIPP activities.

The cost is \$10 to attend, which includes refreshments and box lunch. The symposium has been approved for two wetland science CEUs and one soil science CEU, as well as four recertification credits for private and commercial pesticide applicators. Additional credits have been applied for New Hampshire licensed foresters and arborists. Contact Joanne Ward at (603) 679-2790 or rcdd@rockinghamccd.org with registration questions; a brochure is available at http://extension.unh.edu/Forestry/Docs/Invasive_CWIPP.pdf. ■



Air Monitoring Program focuses on efficiency and performance *Responds to new federal requirements*

New Hampshire's Air Monitoring Program has undergone some significant improvements over the past several years in order to maximize network efficiency, improve performance and meet new EPA ambient air monitoring regulations. DES currently oversees the operation of 14 air quality monitoring facilities statewide, some of which are operated in cooperation with UNH, DRED, the Appalachian Mountain Club and the US Forest Service. Air pollutants and parameters monitored at the various sites include, but are not limited to: ozone, carbon monoxide, nitrogen oxides, sulfur dioxide, particulate matter, air toxics, mercury, air temperature, wind speed, and wind direction.

The overall purpose of the network is to capture reliable and accurate air quality data in order to protect public health and the environment from the harmful effects of air pollution. DES uses the data to issue timely air quality alerts and to track and evaluate air quality trends for comparison to the National Ambient Air Quality Standards. In recent years, DES has improved the overall network efficiency by consolidating/relocating sites, eliminating duplicate efforts, and streamlining operations whenever possible. For example, DES closed the air monitoring station in Claremont because Claremont is located geographically between two existing sites (Keene to the south and Lebanon to the north) and its data compared well with both sites, tracking most closely with Lebanon.

In response to changes in the federal ambient air monitoring regulations, the most significant of which is to establish National Core (NCore) multi-pollutant monitoring stations, DES is adding one new air monitoring site and upgrading an-

other – Londonderry and Peterborough, respectively. NCore stations will provide data on several pollutants at lower detection limits, and generally enhance timely forecasting/reporting of data to the public and support long-term scientific data analysis.

The NCore site in Londonderry is located near the Moose Hill School. DES is coordinating closely with the Londonderry School District to install and operate this air monitoring station, which lies in the middle of a wide-spread suburban region that is highly representative of the population of southeastern New Hampshire. The NCore site in Peterborough is a modification of an existing site at Miller State Park atop Pack Monadnock Mountain. This site is located in a highly rural area at 2,288 feet above sea level. The combination of the two sites allows researchers the rare opportunity to connect high and low elevation monitored parameters in a similar air mass.

DES is building both NCore facilities to maximize energy efficiency, including the installation of solar panels on the roof of the Londonderry station. The site locations are ideal for providing educational and outreach opportunities on air quality and energy efficiency – one on school property and the other on a highly visited mountain top.

The continued improvements in the air monitoring network, including the development of the two very visible and important NCore sites, are a tribute to the hard work day-in and day-out of the state's air monitoring staff to maintain the best monitoring program possible. To learn more about the air monitoring program, contact Program Manager Kendall Perkins at (603) 271-1384 or kendall.perkins@des.nh.gov. ■

Go Team! DES runners dominate annual SEA 5K

DES runners showed up in force to compete against other state agencies in the 17th Annual SEA 5K race held at 29 Hazen Drive in early April. DES took the "First Place State Agency Team Award" yet again, earning bragging rights 15 out of the last 17 years! And this year's title was won with only a 50-second margin of victory.

DES boasted 16 runners on its team, which is believed to be the largest state agency team at this year's race. Our

leading DES runner laid down a blazing 17:33 finish time on a 5:33 pace as the first state employee to cross the finish line, more than a minute in front of the second place state employee.

The DES running team would like to dedicate the 2010 First Place State Agency Award to fellow DES colleague and runner, Bob Lyon. Bob has been the SEA 5K race director for the past 16 years and has done a phenomenal job of it. Without his efforts, there would

have been no SEA 5K and DES would not be the state agency team to beat. Look for Bob at next year's SEA 5K.

Great job to everyone who competed! Complete results can be found at coolrunning.com. (DES staff are welcome to check out all of the DES running awards at the "Wall of Glory" on 3 West.) ■

Air Quality Awareness Week, May 3 – 7

Learn about air quality and how you can protect your health and the environment from the harmful effects of air pollution at www.airnow.gov/airaware/. For daily New Hampshire air quality forecasts, visit DES web site at www.airquality.nh.gov or call 1-800-935-SMOG. ■

TRAINING OPPORTUNITIES

New candidate school being planned for wastewater operators

DES, along with the New Hampshire Water Pollution Control Association (NHWPCA), is organizing a Wastewater Management Candidate School. The program is designed to help the next generation of wastewater operators gain the skills they need to successfully fill management positions as older, experienced supervisors retire. The program also helps to ensure that wastewater operators better understand current and future issues within the industry.

Modeled after similar, successful programs in Maine and Rhode Island, the school will begin in December 2010 with the naming of the first 15 students at the NHWPCA winter meeting. Classes will be held once a month over 12 months, ending at the 2011 NHWPCA winter meeting.

Although it's designed to provide candidates with essential management skills at a wastewater facility, the program cannot guarantee participants a future supervisory position. However, graduates of the program will gain vital skills to continue the work of managing the state's critical wastewater-treatment infrastructure and making clean water.

Wastewater operators and managers who are interested in this program are encouraged to contact Ray Gordon, DES, at ray.gordon@des.nh.gov or (603)271-3571 for more information. ■



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Beach Closures at
twitter.com/nhdes_beaches



Gretchen Rich

Gretchen R. Rich, of the DES Water Division, passed away Sunday, March 7, 2010, after a short battle with cancer. Gretchen was a consulting environmental scientist for many years and was a licensed professional geologist. She worked heroically to the end, and was a key player in DES's successful implementation of the Clean Water Act ARRA initiatives this past year.

Gretchen was an avid dog trainer, competing successfully in obedience trials, agility trials and hunt tests with her Labrador retrievers. In her spare time, she loved skiing, gardening, beekeeping, the outdoors, and restoration of her 1800s home, including the building of a post and beam barn. She is survived by her husband and partner of 28 years, Daniel Fenno, and her beloved Labs.



Gretchen is greatly missed by her friends and colleagues.

UST facility operator training initiated

DES's Compliance Bureau now offers classroom training for owners and operators of DES-regulated fuel oil underground storage tanks. All states are required to have operator training in place per the Federal Energy Act of 2005. New Hampshire is currently in the process of getting legislation passed to meet the Energy Act requirement.

Once legislation has passed, all facilities will be required to have at least one A, B and C Operator. The A Operator is generally the owner of the facility; the B Operator is the person who provides maintenance for the facility; and the C Operator is the person who is on site most of the time, such as a store manager. DES will be providing training for A and B Operators, who, upon completion of the program, will be able to train the C Operators for their respective sites.

Class space is still available for the coming months. If you would like to attend or get more information on the program, please contact Matthew Jones at matthew.jones@des.nh.gov. ■

Governor

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6 percent. The New Hampshire Excellence in Energy Efficiency awards recognize the agencies and individuals who are making that progress possible. The recipients this year are the New Hampshire Veterans Home, the interagency Fleet Policy Workgroup and Robert Lozeau, a technician at New Hampshire Hospital.

The Veterans Home was recognized for its overall, comprehensive energy efficiency improvements throughout the facility. The most significant of the various projects at the facility was the recently completed closed-loop geothermal heating system. This new heating system uses a renewable source and is expected to reduce heating fuel use by 65 percent. Other energy and cost-saving improvements at the facility include energy-efficient lighting replacements, use of an ozone injection laundry cleaning system and water saving measures such as low-flow flush toilets and sensor-activated sinks.

The members of the Fleet Policy Workgroup, under the leadership of chair Kathleen Brockett of DES, have diligently worked to improve procurement policies, increase fuel efficiency of state vehicles, and evaluate ways to streamline the reporting process. The group is currently evaluating ways to maximize fleet maintenance capabilities, providing opportunities to not only improve fleet performance and safety, but to reduce operating costs as well.

At New Hampshire Hospital, HVAC and Alarm Technician Robert Lozeau is being recognized as an energy champion for making improvements to the buildings he oversees on the Hospital campus in Concord. He has been instrumental in pursuing energy saving opportunities and identifying problems. His efforts have resulted in a better campus wide energy management



Kathy Brockett, DES Air Resources, was presented with this governor's energy award.

system and cost savings for the state.

New Hampshire state government is proud to be a leader in reducing energy use. Our efforts will help protect New Hampshire's environment, lessen the impacts of climate change and promote development of clean energy technologies. Through my Executive Order, we have been able to reduce state energy usage by 6 percent, but we can and will do better.

I encourage all New Hampshire citizens to continue to find ways to reduce energy use at work and at home and I urge state employees to continue working together to save energy and money, and to continue to make our state government a leader in energy efficiency.

John Lynch, *Governor*



29 Hazen Drive; PO Box 95
Concord, NH 03302-0095

Upcoming events!

MAY 3 - 7

Air Quality Awareness Week

May 11

USEPA Mapping Water Infrastructure Workshop, Merrimack; 9am - 12pm; contact: cohen.deborah@epa.gov

MAY 13

The Road Less Salted: Water Quality & Salt Reduction Seminar; Greenland; 8:30am - 12pm; contact: Barbara McMillan, (603) 271-7889

MAY 15

VLAP's 25th Anniversary Celebration and Workshop; Concord; 8:30am - 2:30pm; contact: sara.steiner@des.nh.gov

MAY 15 - June 25

Commute Green New Hampshire; see Commissioner's Column, p. 1

May 20

Invasive Plant Symposium; see p. 5.

MAY 21

Bike/Walk to Work Day, see p. 1

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