ENVIRONMENTAL NEWS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Newsletter of the New Hampshire Department of Environmental Services January-February 2017

COMMISSIONER'S COLUMN

Moving from the first era of environmental protection to the second: Personal reflections as NHDES turns 30 years old

As 2017 begins, NHDES enters into its fourth decade of service to the people, environment and public health of New Hampshire, and it does so better equipped than ever to meet the challenges ahead. I say better equipped because the environmental challenges of the future are different from those of the past: we are in a transition phase from the first era of environmental protection, in which the focus has been on cleaning up the visible pollution legacies of the industrial revolution, to what I believe is the second era of environmental protection, in which we must confront and manage what have been the invisible, unknown or unrecognized impacts of our past and current ways of life. We are moving from an era in which we could conveniently deal with air, water and waste issues as separate and distinct matters, to a new era in which we see the interconnectedness of these matters and must take big picture, holistic approaches if we are to secure a healthy New Hampshire for future generations.

NHDES consists of its people, programs, partners and, perhaps most importantly, its culture, for it is the culture and the underlying ethos of an organization – supported by its people, programs and partners – that ultimately create success. As I prepare to step down to pursue new professional challenges after the privilege of serving as the NHDES Commissioner for the past 10 years, I want to share some reflections on how NHDES has been evolving and reinventing itself to

Commissioners's Column, cont. page 2

MtBE Remediation Bureau annual report and the Groundwater and Drinking Water Trust Advisory Commission

The NHDES MtBE Remediation Bureau's annual report is available at the following link: http://des.nh.gov/organization/commissioner/pip/publications/documents/r-wmd-16-1.pdf. The programs discussed in the annual report are funded using money obtained from the State's MtBE litigation. These settlement funds are restricted to use on MtBE cleanup activities by the court ordered settlements.

Funds obtained in June 2016 from the MtBE jury trial have been set aside by the State of New Hampshire in a separate Drinking Water and Groundwater Trust Fund (Trust Fund). The Trust Fund will be managed under the provisions of a recently enacted statute (RSA 485-F). The Trust Fund money will be used for drinking water infrastructure and contamination cleanup. Prior to establishment of programs funded by the new Trust Fund, NHDES will receive advice and help with prioritization of the use of the funds from an Advisory Commission established by the enacting legislation (SB 380). The Advisory Commission is chaired by Senate President Morse. An initial

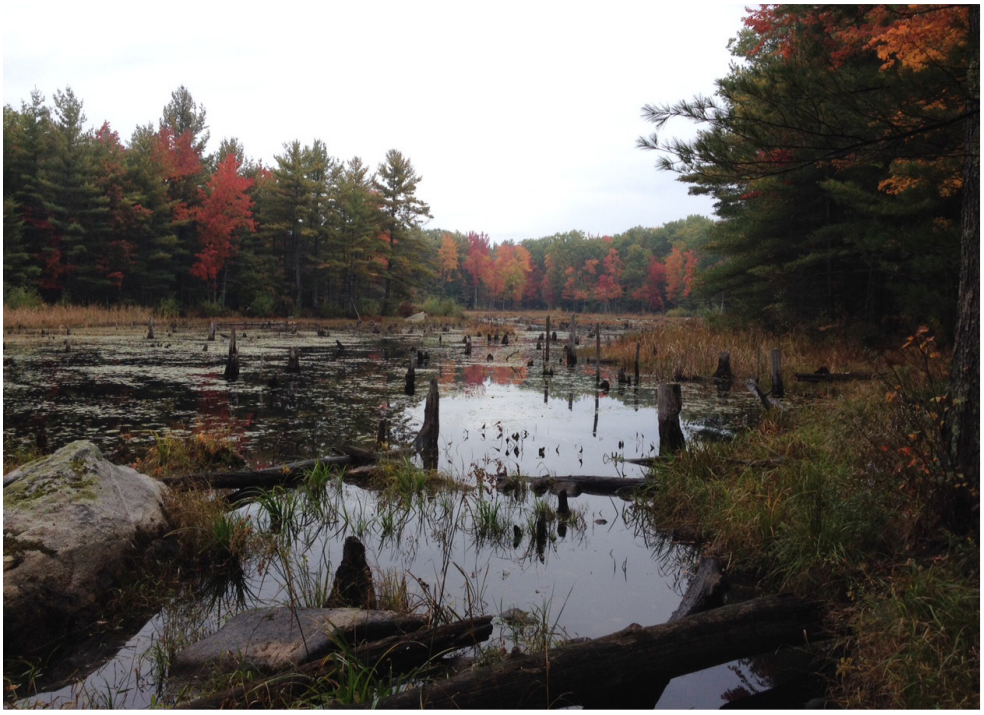
MtBE, cont. page 7

Commissioner's Column *continued from page 1*

reinforce its ability to continue to make progress on first era environmental challenges while also being effective and successful in meeting second era environmental challenges.

We've made huge progress in New Hampshire addressing the first era, one characterized by "gross" contamination: our lakes and rivers are now fishable, swimmable and drinkable because we've constructed wastewater treatment plants to prevent the disposal of raw sewage into our waters; our lands are usable again because we've remediated toxic waste sites littered with industrial wastes; our air is healthier to breathe because we've installed pollution controls on factory smokestacks; and our homes are less prone to flooding and our wildlife and vital habitats are protected because we control the filling of wetlands. Understanding that environmental and public health protection work is never done, we've put in place regulatory systems to help prevent the recurrence of environmental degradation. NHDES has played a key role in these efforts, providing direction, support and guidance to communities, businesses and residents. New Hampshire has become a more beautiful and healthy state as a consequence of these efforts, and along the way, NHDES developed a reputation as an agency that solves real problems in practical, cost-effective ways in service to its many constituents.

A decade ago, as NHDES began to look strategically at what was then its future, it became evident that some of the longer-term challenges would be different. We saw two broad categories of environmental and public health protection challenges that we needed to meet: first, the routine challenges, which include the day-to-day functions of processing permit applications, cleaning up legacy contamination, undertaking compliance assurance and providing guidance on best practices; and second, two all-encompassing, big picture challenges, including addressing a changing climate while promoting the transition to a clean



energy economy, and promoting the sustainable use and management of our state's vital natural resources, including our air, water and land. We recognized that to meet these challenges, NHDES would need to be stronger, more nimble and more responsive as an organization. To achieve that, we have begun to integrate our many programs and functions, cooperate more efficiently with all levels of government, focus on measurable environmental progress, ensure environmental compliance, build broad partnerships, provide high-quality customer service, continuously improve our processes, and make NHDES a desirable place to work. This strategic framework has been effectively implemented, enabling our employees, programs and partners to build a strong organization whose culture is focused on making our environment and public health a little bit better each day. NHDES also prides itself on communicating openly with its many partners, including the public, academia and the regulated community, and making vast amounts of previously inaccessible data and information available in person as well as through the internet.

For example, the past 10 months have witnessed an unprecedented level of coordinated efforts among staff from the NHDES Water, Waste Management and Air Resources Divisions to address the discovery of elevated concentrations of polyfluorinated compounds (PFCs) in public and private drinking water supplies in several

ENVIRONMENTAL NEWS

NHDES

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southern New Hampshire communities. NHDES staff quickly mobilized to notify the public and municipal officials of the situation through traditional and social media methods, undertook extensive sampling of public and private drinking water wells, ensured the provision of bottled water to affected homeowners, and investigated the sources, extent and pathways of potential contamination of soils, surface water and groundwater. NHDES and the New Hampshire Department of Justice (NHDOJ) worked with the responsible parties to ensure that they would voluntarily undertake and fund the necessary measures, including providing for the extension of public water supply systems and connections of affected homes to those systems. Throughout this effort, NHDES staff have worked collaboratively not only with municipal officials, but also with staff from other state agencies, including the Division of Public Health Services of the New Hampshire Department of Health and Human Services, the Pesticides Control Division of the New Hampshire Department of Agriculture, Markets and Food, NHDOJ, as well as USEPA. These integrated efforts have enabled rapid progress in providing a permanent replacement supply of clean drinking water for hundreds of affected homes.

This same kind of focused customer service has been delivered by NHDES in other arenas in recent years, of which the following are just a few examples: helping coastal communities to make themselves more resilient to higher sea levels and larger storms; developing a strategy in cooperation with municipal and other partners for the protection and restoration of Great Bay, an estuarine habitat of national significance; establishing a science-based approach for managing river water flows and uses during droughts; establishing and deploying a state-wide program to minimize, measure and remediate MtBE contamination; and creating the Aquatic Resource Mitigation Fund to help achieve the greatest possible environmental benefits as mitigation for permitted impacts to wetlands.

NHDES accomplishes all of this mission-driven work by staying true to four core principles: follow the science; follow the law; be transparent; and be collaborative. This enables NHDES to adhere to the highest standards of integrity, knowing that in every instance we consider all of the facts and circumstances in light of the applicable laws and regulatory frameworks to determine appropriate outcomes. Our goal is not and cannot be to make every person happy with every decision that we make, but instead to strive to ensure that every person affected by one of our decisions knows they had an opportunity to make their concerns known and that they were treated fairly through our process. We treat every person with whom we interact, and every employee, with dignity and respect, engendering a broad recognition that NHDES is staffed by dedicated professionals who strive to do their best every day in every matter that we address.

Ultimately, we seek to achieve as much accord as possible, recognizing that in New Hampshire, a strong economy and a healthy environment go hand-in-hand. Our economy and our environment are mutually supportive, not mutually exclusive. All of our work is predicated on the understanding that our state's environment and natural resources provide the very foundation of a pyramid. New Hampshire's society depends on those natural resources, and could be seen as the middle layer of that pyramid. Our society, in turn, has supported the development of our economy, which sits at the top of the pyramid. Without clean air, water and land, we cannot have a healthy population, and without a healthy population we cannot have a strong economy.

Clean air, water and land all add up and contribute to what we call "quality of life," and it's this quality of life that helps to attract and retain businesses, including manufacturers, to the Granite State. It's our quality of life that makes tourism and outdoor recreation major contributors to our economy. It's our quality of life that keeps some 84% of New Hampshire covered in beautiful forests, providing a myriad of ecological and economic benefits. And it's our quality of life that makes New Hampshire one of the very best states in which to live, work and raise a family.

As we enter the second era of environmental protection, I am confident that NHDES is better equipped to make the previously invisible environmental problems visible, to address new challenges as we gain deeper understandings of them, and to enlist the help of all of our residents, businesses, non-profit organizations, municipalities and sister agencies in ensuring that our environment and our earth stay healthy and continue to sustain us. It's been a deep honor to play a part in the evolution and reinvention of NHDES, and I look forward to seeing the environmental and public health progress and successes of the next decade. ■

Tom at his final Speechcrafter graduation. Thanks, Tom. You will be missed.

NHDES celebrates 30 years

2017 marks the 30th anniversary of NHDES. Much has changed in the last 30 years to help sustain a high quality of life for all citizens by protecting and restoring public health and our beloved environment. While the work in this effort is not complete, NHDES wanted to take a moment to recognize 30 accomplishments/achievements that have impacted our environment and public health for the better over the past 30 years. Each of the six issues of our Environmental News newsletter will focus on five of these achievements, under a specific theme for each issue. For our first issue, the following five achievements for "Our Environment" will be the focus.

The End of the Unlined Landfill

Why it matters: The connection between our municipal unlined landfills and the water we drink and the air we breathe has been, and continues to be, an important focus for the environment and public health of New Hampshire's residents, particularly in light of recent efforts related to emerging contaminants.

Concord, NH landfill before and after closing.

Progress in 30 years: For decades prior to the creation of NHDES in 1987, most residents brought their trash to the "town dump," where it was burned in the open or in low-tech incinerators, or dumped on the land directly. "Burning day" at the dump filled the air with noxious odors and smoke containing hazardous chemicals and particulates that traveled far and wide, and were a significant contributor to air pollution in our state. By the mid-1980s, the practice of open burning had ceased, and waste at town dumps was generally covered with soil at the end of each day. By 1991, groundwater protection laws encouraged many New Hampshire towns to cease operating unlined landfills. To help towns, the New Hampshire Legislature enacted the Unlined Municipal Landfill Closure Grant Program in 1994. Under this program, administered by NHDES, towns that agreed to properly close their unlined landfills became eligible for a 20% state matching grant. The program was tremendously popular and successful, and provided over $39 million to help 127 towns properly close 117 landfills. The program, in concert with responsible decisions and actions by our local governments, resulted in the investment of over $190 million statewide to address this critical environmental challenge. The last unlined landfill was successfully closed and capped in 2012.

New Hampshire Rivers

Why it matters: Thirty years ago, one of New Hampshire's most significant environmental concerns was the pollution of the state's rivers. While rivers no longer were open sewers as they had been, residents wanted ways to protect recent gains. The New Hampshire Rivers Management and Protection Program initiated a unique partnership between state government, citizens and municipalities that gives locals a voice in the management of the rivers that flow through their communities.

Progress in 30 years: Today, 18 rivers have been designated into the program, encompassing over 1,000 miles of rivers that flow through more than half of the municipalities in the state, and over 200 local designees serve as river champions. In addition, the Volunteer Rivers Assessment Program (VRAP) consists of 28 groups, monitoring 250 stations on New Hampshire's rivers and streams to determine water quality conditions. As a result of NHDES' analyses of these monitoring data, we know that our rivers have generally excellent water quality. However, in the places where water quality is suffering, the culprit is polluted runoff.

Coastal Habitat Restoration

Why it matters: Healthy salt marshes and rivers are not only rich with life, they are also part of nature's basic strategy of protecting our towns and coastlines from a changing climate, including a greater frequency of severe rain storms and rise in sea level. New Hampshire's coastal habitats are affected by historic impacts such as fragmentation by roads and wetland fill, and by current uses such as encroachment by development, stormwater pollution, non-native invasive species, and the effects of a changing climate. While our coastal ecosystems are resilient to disturbance and change, important coastal resources, such as tidal rivers and salt marshes, are degraded or at risk.

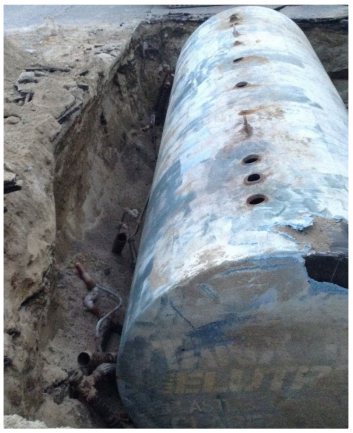
Progress in 30 years: With leadership from NHDES, nearly 90 coastal habitat restoration projects have been completed, restoring 675 acres of salt marsh, 35 acres of oyster reef, and 5 acres of dune, and reconnecting 33.5 miles of fish habitat through the removal of three dams on tributaries to Great Bay. None of these successes are the work of only one entity; rather, they are the result of partnerships between state and federal agencies, municipalities and nonprofit organizations.

Protecting New Hampshire Aquifers

Why it matters: New Hampshire's population is heavily dependent on groundwater as its source of drinking water. It is estimated that 60% of New Hampshire citizens rely on groundwater for drinking water, with approximately 580,000 people in New Hampshire using private water supply wells. New Hampshire's aquifers are among the most vulnerable in the U.S. The shallow depth to the top of bedrock and to the water table increases the potential impact of contaminant releases.

Progress in 30 Years: New Hampshire has made significant progress toward protection and cleanup of our groundwater

aquifers in the last 30 years. In 1991, New Hampshire created the Groundwater Protection Act (RSA 485) and eventually a variety of complimentary contamination cleanup statutes and regulations. Over the last 30 years, 620 hazardous waste, 6,550 petroleum sites and 33 solid waste sites have been cleaned up, and remaining contaminated sites are being managed. New Hampshire also has removed 19,909 underground storage tanks (USTs) and above ground storage tanks (ASTs). Many of these cleanups have been accomplished with state assistance through reimbursement funds, brownfields or methyl tertiary-butyl ether (MtBE) settlement funds.

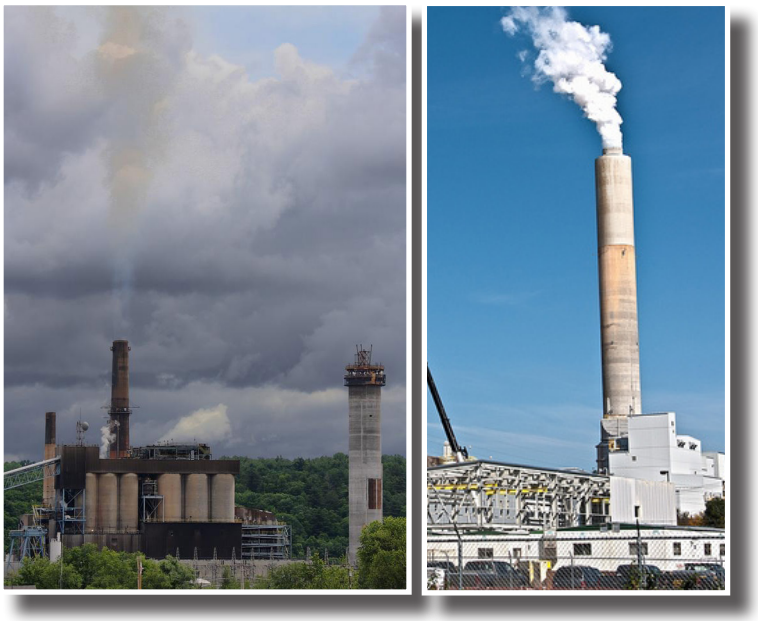


Removal of leaking UST.

The cleanup efforts have produced tangible improvements in New Hampshire aquifers in the last decade. For example, based on USGS randomized sampling conducted in 2005, over 20% of drinking water supplies in southern New Hampshire were contaminated with detectable levels of MtBE. The detections correlated with locations of USTs and the degree of development. After the removal of thousands of USTs and completion of hundreds of site cleanups, less than half of these water supply wells are still contaminated. Improvements in public water supply well detections of MtBE are even more dramatic.

Acid Rain

Why it matters: Acid rain, caused by air emissions of sulfur oxides and nitrogen oxides (largely from fossil fueled power plants), has long been known to negatively impact the state's forests, water, infrastructure and health.



Merrimack Station before and after stack scrubber upgrade.

Progress in 30 years: Title IV of the 1990 Clean Air Act (CAA) amendment addressed the growing acidity of rain falling in the Northeast in the 1970s and '80s by requiring large cuts in the emissions of sulfur oxides and nitrogen oxides "to reduce the adverse effects of acid deposition"—also known as acid rain. The benefits of the CAA's flexible market based approach are striking – since implementation, sulfur dioxide has decreased by more than 85% at a cost significantly lower than anticipated. To see if New Hampshire waterbodies were recovering, NHDES analyzed over 30 years of monitoring data for trends in pH (a measure of water acidity), alkalinity, sulfates and nitrates. Results showed the pH of rain has become significantly less acidic and sulfates and nitrates have significantly decreased. In our waterbodies, over 90% of the lakes and ponds analyzed also had lower levels of sulfates and nitrates. Alkalinity and pH either improved or remained stable in a majority of these waterbodies. These results are encouraging; however, New Hampshire's waters are still recovering from acid rain, a trend which is expected to continue for many years if not decades. ■

Longevity Awards

The following NHDES employees celebrated a milestone in years of service to the State of NH in 2016. Congratulations!

40 YEARS
William Haskell, WD

35 YEARS
Laurie Cullerot, WD

30 YEARS
James Berg, WD
Charles Corliss, WMD
Stephanie D'Agostino, CO
Karlee Kenison, WD
Robert Livingston, WD
Timothy Noury, WMD
Normajean Smith, CO
Wendy Waskin, WD

25 YEARS
Collis Adams, WD
Kimberly Boone, CO
Debra Brown, WD
William Comstock, WD
Tod Leeberg, WMD
Michele Roberge, ARD
Stephen Sawicki, WD
Wendy Stout, WD
Raymond Walters, ARD

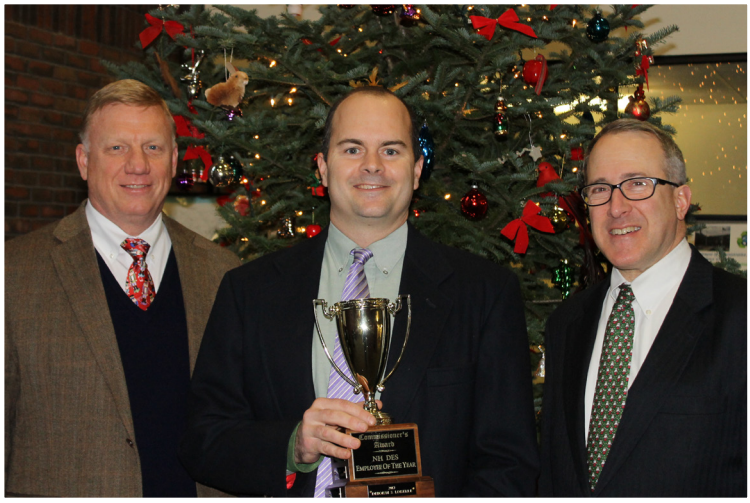
20 YEARS
Daniel Dudley, WD
Tricia Madore, WD
Andrew Chapman, WD
Ted Diers, WD
Lisa Landry, ARD
David Larson, ARD
Ridge Mauck, WD
David Reid, WMD
Jeff Underhill, ARD

15 YEARS
Eric Abrams, WMD
Linda Birmingham, WMD
Owen David, WD
Jason Domke, WMD
Barbara Dorschmidt, ARD
Ken Edwardson, WD
Sheri Eldridge, ARD
Christie Faro, WMD
Calolyn Guerdet, WD
David Healy, ARD
Linda Lester, WMD
Sally Soule, WD

10 YEARS
Thomas Burack, CO
Sherry Godlewski, ARD
Emily Jones, WD
Michael Little, ARD
Michele Regan, WMD
Lori Sommer, WD

RETIREMENTS
Richard Brock, WD
John Chwasciak, WMD
Maureen Estabrook, WMD
Sue Francesco, WMD
Gregory Helve, ARD
Brian Hillard, WD
John Liptak, WMD
Selina Makofsky, WD
Bob Minicucci, CO
Stanley Mitchell, WD
Tom Niejadlik, ARD
Dolores Rebolledo, ARD
Frank Richardshon, WD
Shephen Roberts, WD
Sharon Yergeau, WMD

NHDES 2016 Employee of the Year – Chris Skoglund



Chris Skoglund, climate and energy program manager in the Air Resources Division, has made numerous contributions in the field of addressing climate change at the department, state and regional levels over the course of his eight years working full time for NHDES. But it was the mass undertaking of coordinating a climate planning process for six New England states and five Eastern Canadian provinces in 2016 that put him over the top and made him a fine and deserving recipient of the 2016 NHDES Employee of the Year award.

In August of 2015, the New England Governors and Eastern Canadian Premiers adopted Resolution 39-1, which directed the states and provinces to establish a plan for collaborative efforts to reduce greenhouse gas emissions. Under Chris's direction and coordination, the committees formed a temporary staff working group to address the collaborative, cross-sector directives of the Resolution. This was a mammoth undertaking, coordinating the efforts of staff from 11 states and provinces and numerous topic experts over the course of a year to produce a strategic framework that will form the basis for a 2017 revision of the groups' 2001 Climate Action Plan. This effort will be a significant step forward and has been achieved in no small part due to Chris's efforts.

Chris personifies the definition of a dedicated public servant. His initiative, knowledge and talent for engaging others provide the leadership needed to get the job done without concern as to where credit is given.

In addition to all of this, his responsibilities include coordinating climate policy across the department, a/k/a the "Cookies and Climate Initiative," and helping to lead the State Government Energy Committee.

The Employee of the Year Award is part of the NHDES Rewards & Recognition program and highlights the outstanding work performed by NHDES staff throughout the year. Nominations for this award all come from entries submitted by NHDES employees. The criteria for the Employee of the Year Award are:

- Significant impact or innovation within NHDES or the state.
- Initiative Leadership.
- Improved efficiency.
- Improved interagency cooperation.

New Hampshire Coastal Risk and Hazards Commission releases its final report and recommendations

After three years of dedicated research, deliberation, and public input, the New Hampshire Coastal Risk and Hazards Commission released their final report, entitled "Preparing New Hampshire for Projected Storm Surge, Sea-Level Rise, and Extreme Precipitation." This report presents the best available science, identifies assets vulnerable to coastal flooding, and lays out 35 recommendations and associated actions for municipalities, state agencies, and state legislators to use as planning guidance. The report was unanimously accepted by all 37 members of the Commission. Visit the Commission website and dowload the report at: www.nhcrhc.org.

David S. Chase Award – Brandon Kernen

Brandon Kernen, the 2016 recipient of the David S. Chase Award for Extraordinary Achievement in Science, has a long history of conducting enterprising, science-based work in his time with NHDES. His technical expertise and ability to explain the importance of good data and science-based decisions has consistently brought together federal, state, local and private entities to work cooperatively toward achievable, data-driven solutions.

L-R: Assistant Commissioner, Clark Freise; Brandon Kernen; Governer Maggie Hassan; Commissioner Thomas Burack.

In the past, he has conducted groundbreaking research with the USGS to characterize the occurrence of over 100 pharmaceuticals and personal care products in groundwater at two health care facilities; worked to identify the extent of 1,4-dioxane in public water supplies by convincing water suppliers to voluntarily sample; and studied the potential for worker exposure to radioactivity in pump houses where radiological treatment occurs.

But the most recent example is his work associated with perfluorooctanoic acid (PFOA) contamination. During NHDES' "full court press" to identify and address contaminated wells in southern New Hampshire, Brandon, who was on the front lines and working all hours, found the time to notice and research why one lab was consistently reporting lower levels of PFOA. His work included compiling and analyzing scores of private well sampling results, designing and implementing a blind performance evaluation test of labs, and contacting USEPA and other national experts. His tenacity and analytical thinking ultimately led to the discovery, with the help of staff at USEPA's Chelmsford, Mass., lab, that some labs were not including all forms of PFOA. Brandon's discovery and documentation of the topic convinced USEPA to promptly issue a written clarification of the analytical method.

Brandon also spearheaded the revision of the Drought Management Plan and managed the associated technical contract with UNH. He serves as the lead for NHDES on drought, coordinating with all partners to address this significant statewide problem.

This award is named in honor of David S. Chase, the NHDES Radon Program Manager who passed away very unexpectedly in November 2008. Dave served as the Radon Program Manager at NHDES and the Department of Health and Human Services for 16 years. Dave was extremely dedicated and devoted to the radon program and, under his guidance, New Hampshire's radon program received national recognition by the Conference of Radiation Control Program Directors in 1994.

Recognition of such scientific achievements continues today and has been institutionalized as the annual David S. Chase Award for Extraordinary Achievements in Science. ■

MtBE *continued from page 1*

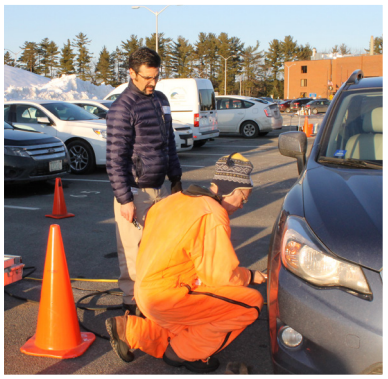
organizational meeting was held on September 20, 2016. Information on future meetings will be posted on the Senate website under Senate Bill 380 Statutory and Study Committees. NHDES expects important developments on the new Trust Fund in 2017 and will provide updates in future issues of the NHDES newsletter. ■

Winter Green Tip

Pump up your tires! Properly inflated tires prevents excessive tire wear and will improve fuel economy. The NHDES Green Team held a "Pump it Up!" event in December that was a huge success. Of 54 vehicles checked,

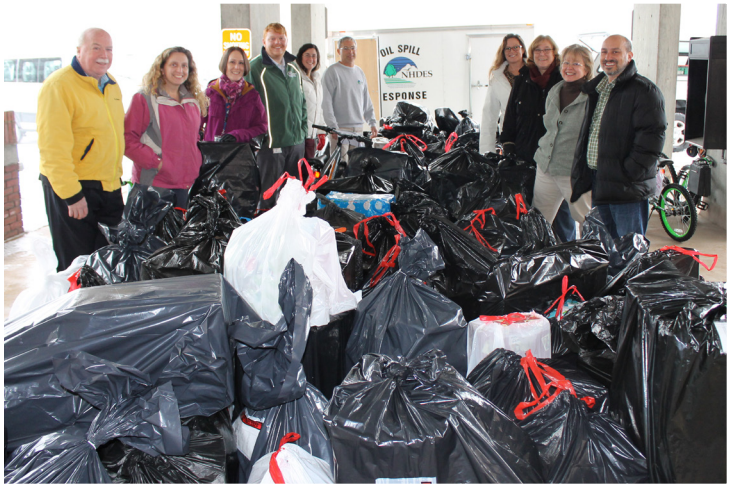
- 39 had underinflated tires.
- 11 had overinflated tires.

By returning these tire pressures to manufacturer specifications, 1.5 tons of CO_2 can be saved over the course of a year*, equivalent to a 14-yard-wide balloon!



* If tire pressure is properly maintained.

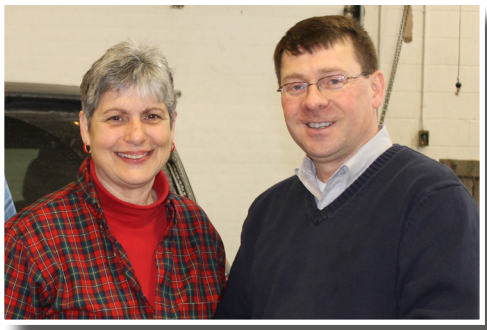
Operation Santa Claus



The NHDES Operation Santa Claus (OSC) Team works diligently each year to help address the needs of less fortunate children (and their families) during the holiday season and beyond. The OSC campaign is sponsored by the State Employees Association of New Hampshire (SEIU Local 1984). As a result of generous donations, NHDES was able to provide 103 children with Christmas presents in 2016. In addition to individual contributions, over $3,500 was also raised from basket raffles, a bake sale, 50/50 drawings and the annual Chili/Chowder Bowl contest.

NHDES finds comfort in knowing that many wonderful children across New Hampshire, who may be living in challenging conditions through no fault of their own, will be smiling during the holidays knowing that the SEA, NHDES, other state and local agencies, organizations and schools truly care about their happiness and well-being; not only for the holidays, but throughout the year. ■

Food Drive



NHDES employees once again helped the Capital Region Food Program's Holiday Food Basket Project by collecting 760 food items and donations in the amount of $1,001.23. Jim Martin, NHDES Public Information Officer, delivered the donations to Maria Manus Panichaud of the Capital Region Food Program, at the State Armory on December 16. ■

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