

COMMISSIONER'S COLUMN

Historic regional water agreement reached

April 17, 2019 will be remembered in the history of New Hampshire water systems as the day that seven parties (Manchester Water Works, Pennichuck East Utility, Inc., The Hampstead Area Water Co. Inc., and the Towns of Derry, Plaistow, Salem and Windham) executed an agreement that made possible the Southern New Hampshire Regional Water Interconnection Project. A project of this scope has never been done before in the State of New Hampshire. It will serve as a model for other drinking water interconnection projects where individual municipalities, or private water companies and their neighbors, work together to deliver safe, reliable drinking water.

The agreement is a testament to the complicated aspects of construction, operation and maintenance of a regional water supply interconnection project of this magnitude. The project taps into the Manchester Water Works drinking water supply, wheels the water through the town of Derry to the water recipients in Windham, Salem, Hampstead and Atkinson through the Hampstead Area Water Company, Inc. (HAWC), and then is sent on to Plaistow. The agreement required many months of work and a tremendous amount of collaboration, negotiation and the common desire to achieve success by all parties involved.

The project's goal is to deliver safe and reliable drinking water to the region to address MtBE impacts to private wells in Windham and Plaistow and the loss of

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Sand dune project helps restore and protect natural buffer to storms

Each season is drawing close and momentum for restoring and protecting sand dunes is growing as a result of a project initiated by NH Sea Grant Extension with the support of two NHDES Coastal Program resiliency grants. Sand dunes are important because they create a natural buffer from storms and shield communities from flooding, as well as provide habitat for coastal wildlife and plant species.

New Hampshire's Hampton-Seabrook Estuary has lost 86% of its historic sand dunes since they were first mapped out in 1776. Storm surge, human use and development on the dunes, and dune die-off continue to put pressure on what remains in Hampton and Seabrook.



Seabrook sand dunes – credit: Gregg Moore.

Storms, wind and waves are part of life on the sand dune, but the dunes can't recover naturally and build their sand back up after a storm without the beach grass and other native plants to anchor them down. The restoration project has focused on replanting and protecting vulnerable and eroded areas at the Harborside Dunes and Hampton Beach State Park in Hampton.

So far, work has included the installation of signs showing where people can access paths across the sand dunes to the beach without damaging the dunes; and revegetation through community volunteers, including the NH Sea Grant Extension Coastal Research Volunteer program. During the most recent phase of the project, 78 volunteers and 132 students from grades K-12 helped plant 15,000 plants to

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supply capacity in Salem due to contamination of two water supply wells. This vision could not have become a reality without the establishment of the MtBE Settlement Fund in 2016, with the approximately \$82 million New Hampshire was awarded in a lawsuit against 22 gasoline manufacturers and refiners, and then the creation of the Drinking Water and Groundwater Trust Fund (DWGTF) with verdict monies from the remaining defendant, ExxonMobil Corporation.

MtBE Settlement Fund money was used to evaluate the feasibility of the regional interconnection in 2016. A project budget was presented to the DWGTF Advisory Commission at its April 2018 meeting at which the commission appropriated approximately \$19.6 million in grant funds for capital improvements related to the project. Then, a conceptual design was completed last summer that identified the potential infrastructure needed in each community to deliver up to 3.13 million gallons per day to the region.

With the funding in place and the project supported by the DWGTF Advisory Commission and Governor and Executive Council, the real work began: development of the Southern Interconnection Agreement (SIA), which outlines the roles and responsibilities of each party involved in the project. Among many particular terms and provisions, the key aspects of the agreement include identification of the infrastructure each party will design, construct and maintain; presenting the water rates and the terms of the rates for the interconnections; and defining the volumetric flow that must be made available to each water recipient.

This agreement is a significant milestone in the progression of a project of this magnitude and the steps that were taken to get here were not easy ones.

Throughout the remainder of 2018 and deep into this winter, the SIA was drafted, reviewed, negotiated and re-drafted many times over by a team of NHDES employees, state attorneys, and representatives from each town, city, and water works. A final version of the agreement was sent out on April 9, 2019, and all parties had signed off by April 17, 2019.

The staggering level of effort put into drafting the final version of the SIA paid off! It took a little over one week to receive the signatures from all seven parties, which executed the agreement and helped the Southern New Hampshire Regional Water Interconnection Project take a giant step forward. While this agreement is monumental in New Hampshire, it is still only another step in the project. The next step is designing and constructing the infrastructure. I am excited by each participant's drive to achieve the mission of building a regional water system and am confident that the collaboration each party showed during the drafting of the SIA will continue during this next phase. ■

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NHDES celebrates inaugural “Lean Week”

NHDES hosted its first Lean Week celebration on April 1 – 5, 2019. What is Lean? According to Dan Hrobak, NHDES Lean Coordinator, “Lean is a set of tools and techniques to identify and eliminate waste, ultimately improving customer service and protecting public health and the environment.” Lean is more than a methodology – it is a way of empowering staff to become critical thinkers to challenge the “because we’ve always done it that way” existing approach to doing things.

Lean Week, with the support of NHDES Commissioner Robert Scott, offered daily “Lunch ‘n Lean” presentations on critical thinking, problem solving and Lean for Leaders. A workplace re-organization, or 5S, contest was conducted. Staff received daily Lean tips and participated in a “Plan-Do-Study-Act” event to identify waste, understand the concept of standard work and to engage in team problem solving. The week’s activities concluded with the announcement of Dean Robinson being named as the 5S contest winner.

“I think the NHDES Lean Week was a success,” Dan notes. “Speaking with my Lean counterparts across the country, this type of event has not taken place before. Thanks to the creativity and hard work of our NHDES Lean team, our staff viewed some fantastic Lean videos, learned strategies on process improvement, and participated in a 5S contest, all on a zero budget. All of this really helps our organization move towards being more efficient and effective. I look forward to working with our Lean team to do more Lean and continuous improvement activities, including conducting Lean Week annually, to help NHDES work to better protect the environment and public health.”

The hard-working planning team for this event was Linda Magoon, Tom Guertin, Sara Johnson, Felice Janelle, Debra Sonderegger, Jana Ford and Stacey Herbold. For more information on Lean, visit the NHDES Lean webpage at <https://www.des.nh.gov/organization/commissioner/lean/index.htm> or the New Hampshire state Lean website at <http://lean.nh.gov/>.

Dunes *continued from page 1*

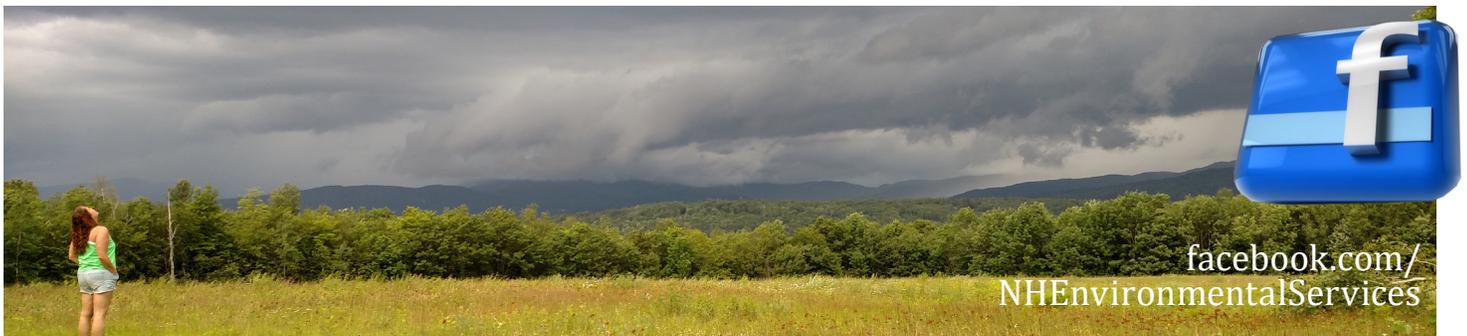
stabilize eroded areas. Additionally, the Hampton Conservation Commission revegetated an area at Plaiice Cove in Hampton through their Adopt-A-Spot program.

When the project began in 2015, a common dune grass garden was established at Hampton Beach State Park to provide a low cost way to supply native plants to revegetation efforts. The common garden is in a high profile area and attracts attention, providing an educational opportunity to passersby and building interest and capacity in dune restoration. Last year, the common garden was expanded to include private landowners who showed interest in using the plants on their properties. Eleven landowners inquired and three utilized the garden to harvest dune grass plants to vegetate and protect their properties.

Monitoring shows that the replanted dunes are in a restoring stage. They still need time to recover their ecosystem and protective functions, but are on a positive trajectory, which will benefit both habitat and resiliency. The community revegetation program will continue to engage volunteers and school groups this spring and summer, and beyond. ■



The NH Arsenic Consortium, a diverse group of 70 academic researchers, public health advocates, water treatment experts, and state and local officials, met on March 22, 2019 to share research and program updates, and to map out strategies to reduce private well users’ exposure to arsenic in drinking water. Over 160,000 New Hampshire residents are served at home by private wells with arsenic levels at or above NHDES’ proposed limit of five parts per billion, with health effects ranging from bladder and lung cancer and cardiovascular disease to adverse birth outcomes. ■



Recycling is not dead

Recently, it seems there has been a flood of news stories about the recycling “crisis.” Municipalities are seeing rising costs due to contamination problems and market restrictions, causing some to make tough choices about whether or not to continue recycling. There’s no doubt about it, these are tough times for recycling. However, it isn’t the end of the world.

mills see opportunity in this glut of feedstock and have announced facility upgrades to increase use of mixed paper in pulp-making. It will take two to three years before these infrastructure projects come online, but they point to a brighter future for domestic market capacity. Similar developments are in the works for recycled plastics infrastructure as well.



Additionally, it’s important to keep a little historical perspective amid all “the-sky-is-falling” news coverage. This is not the first time that recycling markets have faced a rough patch. Including the current collapse, there have been six recycling market downturns since 1990. According to industry veterans, the markets typically sour every four to five years, but rough patches are followed by corresponding rebounds. As the old saying goes, “what goes up must come down,” and vice-versa. The current downturn may be one of the worst in recent memory, and the market certainly won’t rebound overnight, but, as mentioned above, there is already evidence that the industry is adapting to the new reality with additional domestic processing capacity coming online over the next few years.

It’s true that the import restrictions imposed by China’s “National Sword” policy have caused a disruption in the recycling marketplace. However, some media reporting might lead one to believe that the U.S. was shipping the vast majority of its recyclables overseas. In fact, in any given year over the past 20 years, only about 30-40% of U.S. recyclables was exported, while the majority has been, and still is, handled by domestic markets. Nevertheless, there’s no doubt that we need to increase our domestic processing capacity in the wake of China’s blockade on certain recyclable materials, most notably mixed paper and mixed plastics.

Until recently, China was the world’s largest consumer of recycled paper. Mixed paper by itself is the largest single component of the recycling stream, at roughly 40-50% by weight. As such, the value of recovered paper has traditionally been the backbone of U.S. recycling programs. Unfortunately, China’s recent import restrictions have led to an oversupply of mixed paper in the global market, which has had a drastic impact on the overall economics of recycling. However, to date, at least seven North American paper

This doesn’t mean, however, that we can just sit on our laurels and expect the industry to fix everything for us. It’s important to remember that contamination is one of the primary reasons the Chinese government shut its doors to our recyclables. Luckily, contamination is something that we as individual consumers can control by paying attention to what we put in the recycling bin. Admittedly, it’s not always clear what is or isn’t recyclable, and the rapid evolution of packaging materials over the last decades has added to the confusion. However, waste management companies, municipalities, states and regional organizations, have started outreach efforts to communicate what should and shouldn’t go in the recycling bin. One example is the Massachusetts “Recycle Smart” campaign. Keep in mind what is recyclable in one town or region may not translate to another locality – always check with local authorities to confirm what’s applicable in your area. Nevertheless, the current challenges being faced by the recycling industry present an opportunity to fix what’s broken, and we can all make sure we’re part of the solution. ■

Dover, NH success story

In the world of underground storage tanks (USTs), commercial real estate developers and NHDES personnel alike encounter surprises. During renovations of a historic commercial lot, sometimes a developer is met with an unwelcome surprise. A development was well under way with all site buildings demolished when five fuel oil USTs, ranging in capacity from 500 to 1,500 gallons, were found. An additional complication was that the discovery revealed petroleum had leaked from the tanks into the subsurface. Unknown and uncharacterized contamination is not an issue a developer wants to deal with during a site renovation. Understandably, the news was a shock and could have derailed the project.

Enter the NHDES Oil Remediation and Compliance Bureau (ORCB). After the tank discovery was reported to the bureau, the ORCB team stepped into action. The Oil Compliance Section completed the tank registrations based on the project findings. With the tanks registered, the Petroleum Fund Management Section confirmed remediation reimbursement eligibility. With financial assistance for the cleanup secured, the Petroleum Remediation Section worked with the property owner's environmental consultant to guide completion of the site soil remediation and groundwater monitoring.

This site cleanup was a perfect example of the benefits of a true private-public partnership. NHDES employee Stan Bonis shepherded the project through the corrective action process for NHDES, from tank discovery to ultimately contamination removal. Bonis, a Professional Geologist in the Petroleum Remediation Section, is responsible for technical review and regulatory management of 125 petroleum contaminated sites found across New Hampshire. His work on this project, and many more, was honored by NHDES Commissioner Robert Scott with the quarterly NHDES Customer Service Award. Commissioner Scott shared this email from the satisfied customer:

"Thank you for your help throughout the entire process from discovery of the USTs, to remedial ac-



Fuel oil spreads across groundwater beneath the former underground storage tank location.

tivities and groundwater sampling, to navigating the reimbursement program. I have worked with several other State regulatory agencies in the past and the NHDES has by far been the most helpful, accessible and friendly agency I have worked with. I look forward to working with the NHDES team in the future.

My client has been dealing with struggles during the construction process and the discovery of five, previously unknown, leaking USTs was terrible news. The UST removals, and remedial activities brought the construction activities to a stop and had significant scheduling impacts to our client, however we were able to successfully excavate and haul approximately 2,900 tons of petroleum impacted soil and have clean endpoint samples. Our client is very happy that we were able to remove the petroleum impacted soils and they are very thankful that the NHDES Petroleum Reimbursement Fund is reimbursing them for a majority of the remedial work. When I spoke with my client this morning they said, 'The one bright spot on this project has been the successful remediation of unanticipated petroleum soils and the NHDES Reimbursement program.'

Again, both myself and my client thank you and NHDES." ■



NHDES Snapshot: Stream Crossing Initiative

NHDES staff can't fulfill the agency's mission only from our desks. To protect environmental quality and public health in New Hampshire, we are out in the field every day: testing water quality in our ponds and lakes, sampling private well water, monitoring air emissions, assessing storm damage, responding to oil and chemical spills, training water works and solid waste operators, and so much more. "NHDES Snapshot" is an occasional series that takes a quick look inside the day of one of those employees.

NHDES intern Sebastian Strong and NHDOT interns Griffin Parodi and Sam Lanternier worked last summer within the New Hampshire Stream Crossing Initiative, an interagency effort between NHDES, NHDOT, Homeland Security & Emergency Management, New Hampshire Fish and Game and the New Hampshire Geological Survey to identify and replace culverts before they become problematic. The goal of the initiative is to address flood risks by assessing which stream crossings need to be repaired or replaced in order to improve public safety, ensure infrastructure resilience and restore habitats.

"Culverts are a big deal," Sebastian said. "There are over 17,000 of these crossings in the state, so just documenting them is an ongoing challenge. If they are too small or are damaged or blocked, they can cause flooding, risking property and human lives. They also have implications for the health of fish, other aquatic organisms and the surrounding ecosystems."

On this day last summer, Sebastian, Griffin and Sam were assessing a culvert on Route 11 in Farmington. Their first task was to record a review of the surrounding area, assessing any safety issues or potential hazards they may encounter, such as beaver dams which can indicate parasites in the water.

They checked each side of the culvert to determine the water flow and to figure out if they were assessing a stream or wetland environment. This specific site was identified as a wetland because of the undefined banks and vegetation. This meant a series of parameters needed to be reviewed, such as the dimensions and condition of the structure, signs of erosion, and certain attributes of the culvert important for the free flow of aquatic species, or Aquatic Organism Passage (AOP). The parameters they evaluate will give state agencies and other groups information on how well these culverts are doing their job. Sebastian explained why assessing the size of the culvert is important: "If a culvert is too small for the stream, the pressure building on the upstream side will cause the water to move faster, eroding material and creating a pool on the downstream side."



After the initial review, Sebastian and Sam put on their waders and navigated their way to the edge of the water to begin their culvert assessment. Using a depth rod to predict the depth and direction of their next step, they made their way through the water to the side of the culvert. Measuring the dimensions and noting the culvert's features, they shouted answers to Griffin, who stood by the road recording data on the iPad. Data collected included the physical condition of the structure, its ability to effectively let fish and wildlife pass through, and let the water flow. After finishing the upstream portion of the wetland – including taking pictures of the culvert and the surrounding environment – the team moved on to the downstream side to complete the assessment.

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2019 Grant funds available for Aquatic Resource Mitigation

The NHDES Aquatic Resource Mitigation (ARM) Fund is now accepting pre-proposals for a 2019 Grant Round for wetland and stream preservation and restoration projects in the Merrimack River Service Area. The ARM Fund has \$1,680,000 to award for this grant round.

The ARM Fund Program provides wetlands permit applicants with the option to contribute payments to this fund in lieu of implementing a permittee-responsible mitigation alternative. These mitigation options might include restoration of existing impaired wetlands, land acquisition and preservation, or construction of new wetlands. In many circumstances, these other options may be more costly, time consuming or complex to implement for the wetlands permit holder as compared with an ARM Fund contribution.

The ARM Fund Program has been a successful option for permit applicants and has resulted in the funding of many significant wetland and stream preservation and restoration projects across the state. Since 2006, the ARM Fund has awarded grant money to 106 projects that include preservation and habitat restoration as well as stream passage improvement projects. These projects have resulted in approximately 16,000 acres of land conservation, 100 acres of restoration, protection of 290 vernal pools, and 50 miles of stream passage improvements.

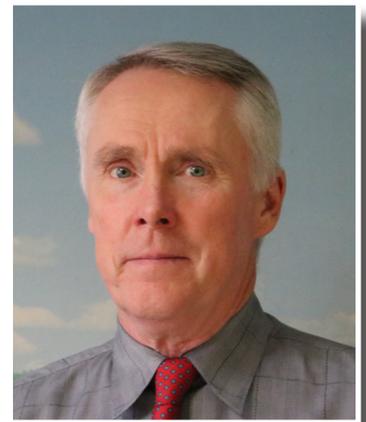
NHDES accounts for ARM Fund payments on a major watershed basis. Projects must consider the specific goals of the service area and replace, restore or protect similar wetlands and streams, and their functions and values, lost in the watershed. The functions and values to be replaced in the Merrimack service Area for 2019 are: wildlife and fish habitat,

water quality, flood storage, shoreline stabilization, shoreline anchoring, bank impacts and vernal pool buffer impacts.

Pre-proposals are due May 31, 2019. The pre-applications will be reviewed the month of June and feedback given to each applicant. Full applications are due August 30, 2019. Please see our website <https://www.des.nh.gov/organization/divisions/water/wetlands/wmp/index.htm> for application forms and for additional information about the program. For more information, please contact Lori Sommer, NHDES Wetland Mitigation Coordinator, at lori.sommer@des.nh.gov or (603) 271-4059. ■

NHDES welcomes new Water Division Director

Tom O'Donovan of Bow was confirmed unanimously by the Governor and Executive Council in March to serve as the NHDES Water Division Director. Tom brings a wealth of experience to NHDES, with over 33 years of public service, in positions of increasing responsibility. Tom has served as a commissioned officer in the US Army Corps of Engineers, a senior manager within the Department of Energy and as a Project Director in the construction industry. Most recently, he helped with Hurricane Maria recovery in Puerto Rico. His career highlights include leadership of the largest hydro-power, and most advanced regulatory Districts in the Corps, responsible for major strategic changes at the Bonneville Power Administration, and delivery of a \$4 billion construction project. His credentials include a Master's in Civil Engineering, registration as a Professional Engineer and certification as Project Management Professional. He is married with two children, and both are engineers. ■



Snapshot *continued from page 6*

After the three finished recording their findings, they set out to drive to the next culvert. The team conducted five or six assessments each day, about twice a week, over the course of the summer. This summer, a new team of interns will continue the assessment work as part of the Stream Crossing Initiative. ■



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Annual Discover Wild New Hampshire Day

Despite the rain, thousands gathered for Discover Wild New Hampshire Day on April 20, 2019. It is the New Hampshire Fish and Game Department's largest free event of the year. As part of its Earth Day celebration, NHDES had upcycling activities where kids of all ages made beads from chopped up cereal boxes and shopping bags from old t-shirts. There was a portable vernal pool complete with frogs, frog eggs and tadpoles, and visitors learned how chemicals can be transported into groundwater with the "aquifer in a cup" activity. Some very happy kids even went home with new fishing poles thanks to the New England Water Pollution Control Association. ■

