ENVIRONMENTAL NEWS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Newsletter of the New Hampshire Department of Environmental Services July-August 2019

COMMISSIONER'S COLUMN

Wetlands rules milestone achieved

NHDES is pleased to announce that the New Hampshire Joint Legislative Committee on Administrative Rules (JLCAR) issued final approval of the new wetland rules on May 17, 2019. This approval was the culmination of a significant, multi-year initiative to improve the technical review standards and decision-making processes of the NHDES Wetlands Bureau through consensus-based rulemaking while ensuring consistency with New Hampshire's wetlands statute and NHDES' mission. The initiative engaged a variety of groups and individuals with diverse interest in wetland rules, including the Associated General Contractors, Local River Advisory Committees (LACs), The Nature Conservancy, New Hampshire Association of Conservation Commissions, New Hampshire Association of Natural Resource Scientists, New Hampshire Farm Bureau, New Hampshire Timberland Owners Association, utility providers, and New Hampshire state agencies such as Fish and Game, the Department of Transportation, and the Department of Natural and Cultural Resources. NHDES activities included substantial outreach, numerous public meetings, several rulemaking hearings, and response to 2,000 comments on the draft rules.

The new wetland rules will become effective December 15, 2019.

While still protecting the environment, the new rules streamline review for a number of project types, allowing applicants to begin projects sooner and reducing associated costs. More projects will be eligible to be performed without a traditional permit, by statutory permit-by-notification (SPN) and by permit-by-notification (PBN). While preserving the rights of conservation commissions and LACs to intervene, PBN processing times will be reduced from ten to five

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$1.4 million in Brownfields grants awarded

On Thursday, June 6, 2019, Deborah Szaro, the Acting Regional Administrator for EPA Region 1, visited Nashua to meet with state and local officials to discuss and celebrate EPA's 2019 Brownfields funding for assessment and cleanup projects locally and throughout New Hampshire. In total, $1.4 million in grants were awarded – aimed at helping to assess and clean up brownfields sites in four areas of the State.

A site is considered a brownfield if current or future use of the property is complicated by the presence or possible presence of hazardous substances, pollutants, or contaminants. According to EPA, the "Brownfields Program empowers states, communities, and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfields." EPA awards brownfields assessment and cleanup grants to communities with the intent to repurpose former industrial or commercial sites.

Grants were awarded to the Nashua Regional Planning Commission (NRPC), Strafford Regional Planning Commission (SRPC) and Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC). Each Planning Commission received $300,000 to conduct site assessments within their region. The Town of Walpole also received $500,000 to conduct cleanup activities at a former plating site in the central part of town.

This award marks the second assessment grant SRPC has received from EPA. With its initial award, SRPC provided

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days, allowing more projects to become shovel-ready sooner. Additionally, a new option for processing of wetland-shoreland applications will increase efficiency and reduce costs for the applicant by allowing for one point of contact per project.

The new rules also align New Hampshire's wetlands regulations with statute and federal requirements. They include changes to reflect the many revisions to RSA 482-A that have been enacted since the last major rules overhaul in 1991, and they capture existing practices and help to achieve consistency between state and federal program requirements. Specifically, the new rules include many existing Army Corps of Engineers (ACOE) requirements in the federal general state permit, which in many cases eliminates the need to apply for separate approval from ACOE and so streamlines the permitting process for applicants.

The new rules support public safety and coastal resiliency, which is essential for assisting with New Hampshire's preparedness for ongoing increases in rainfall intensity and sea level rise associated with climate change. Because of the demonstrated increased frequency of flooding in floodplain wetland and coastal areas, and associated risks to public safety, the rules require additional vulnerability assessments for these areas.

Additionally, the new rules provide clarity and consistency in the permitting process by clarifying existing terms, defining new terms and processes, adding project-specific criteria and general permit conditions, referencing updated and new best management practices, and incorporating references to scientifically recognized technical manuals and methods.

We look forward to administering the new rules because they will better serve regulated entities and the environment by streamlining permitting, enhancing clarity and consistency, and ensuring scientifically-based decisions that protect public safety, public health, and valuable aquatic resource areas. To assist in the transition to the new rules, NHDES is developing a new online mapping tool, the wetland permit planning tool (WPPT), to coincide with rules rollout. The WPPT will provide users with a wide array of information at their fingertips regarding inland and coastal resources, to help applicants visualize their projects from a broader landscape perspective. The new rules require applicants to review certain map screening layers and the WPPT will assist in determining whether their project will trigger a different permit process.

Highlights of the WPPT include: for the first time, wetland permit map locations, municipally designated prime wetland maps in digital format; location of "priority resource areas" (a new term in the rules including sand dunes, tidal waters, peatlands (bogs), prime wetlands, and floodplain wetlands adjacent to tier 3 streams), point and click ability to easily determine the stream tier classification of a proposed stream crossing projects; ability to explore a suite of coastal layers including projected sea level rise, marsh migration, eelgrass and shellfish beds.

Other NHDES transition work for the new rules includes updating and writing new application forms, processes, guidance, fact sheets, database systems, reorganizing and updating the NHDES website, internal training, and public outreach. Public outreach planned for this fall will be geared toward: regional planning commissions, conservation commissions, LACs, timberland owners, environmental consultants, road agents, state agencies, and farmers and county conservation districts. Additional outreach and external training for 2020 is also planned. If you have any questions about the wetland rules, please contact Mary Ann Tilton at (603) 271-2929 or maryann.tilton@des.nh.gov, or Craig Rennie at (603) 271-0676 or craig.rennie@des.nh.gov. ■

Wastewater treatment plants recognized

Over the past four years, NHDES and NHSaves have made an organized effort to help New Hampshire wastewater treatment plant (WWTP) operators and owners improve the energy efficiency of their facilities because WWTPs are commonly the highest energy user for municipalities.

While this initiative has existed for the last four years, these are the first annual NHDES/NHSaves WWTP energy efficiency awards. To recognize their hard work, Winnipesaukee River Basin Program and Somersworth were awarded

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Image of storm clouds over Great Bay by Melissa Brogle from #ThisIsNH Storymap

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over $362,000 in contracted environmental assessments and technical assistance to their local communities. Some of the sites assessed through SRPC's program, the Hilltop School and old police station in Somersworth, are currently being renovated with private funds or actively marketed for redevelopment.

With the continued funding from the latest EPA grant round, SRPC will work with downtown Rochester as a focus area but all 18 SRPC communities will be considered for assessments. The City was identified as a focus area in part because of two opportunity zones that improve the potential for cleanup and redevelopment.

The UVLSRPC grant will be used to conduct environmental site assessments and develop cleanup and reuse plans for sites in Claremont and Lebanon. Reuse planning will also be conducted for the Westboro Railyard in Lebanon, including designing an appropriate engineered cover system and park.

The NRPC grant will fund environmental site assessments for sites in downtown Nashua and Milford. They will also be used to update an existing brownfields inventory, prioritize sites for assessment and conduct community engagement activities.

The Town of Walpole will use its grant funds to clean up the now Town-owned former Central Plating site, which is contaminated with chromium and other metals. This is the largest cleanup grant awarded for a site in New Hampshire, in part, because EPA increased the limit this year and also because of the extensive cleanup activities needed at this site, with limited other funds available to address the contamination. Cleanup activities include removing a dilapidated industrial building and impacted soil, and replacing it with clean fill. This landlocked parcel will ultimately become a parking lot, creating up to 40 public parking spaces in the Village area, which includes restaurants, shops, a bank, a health clinic and residences.

The redevelopment of this property will be an important economic development project for the Town of Walpole. The lots comprising the sites are landlocked within the commercial/residential center of Walpole. According to Peggy Pschirrer, a Walpole selectperson and strong advocate for the project, in reference to the parking lot: "That's not very sexy, but that's exactly what we need in the center of town." The Town is also looking into charging stations for electric vehicles and a small public seating area at the parking lot.

The NHDES Brownfields Program works closely with EPA and grant recipients to achieve these outcomes by providing technical support, participating in outreach activities and acting as a liaison between the recipients and EPA. ■

Walpole Selectboard Chair Steve Dalessio and Selectwoman Peggy Pschirrer accept a Brownfields Assessment Grant award from EPA. (L to R: Steve Dalessio, Town of Walpole; Deb Szaro, EPA Region 1; Mike McCluskey, NHDES; and Peggy Pschirrer, Town of Walpole) (Photo Courtesy of EPA)

Wastewater *continued from page 2*

the Overall Most Energy Efficient WWTPs, the former based on flow and the latter related to pollutant loading. Most Improved (based on flow) were Pittsfield and the North Conway Water Precinct. Troy and Epping won Most Improved (based on pollutant loading).

The WWTP energy audits have identified $5.5 million worth of projects estimated to save approximately $1.5 million annually in energy costs. Moving forward, the program will use available NHSaves incentive programs and Clean Water State Revolving Fund principal forgiveness to encourage the implementation of these projects.

For more information about this initiative, please contact Sharon Nall at sharon.nall@des.nh.gov or (603) 271-2508.

NHSaves is a collaboration of New Hampshire's electric and natural gas utilities working together to provide New Hampshire customers with information, incentives and support designed to save energy, reduce costs and protect our environment statewide. ■

Living Shorelines Site Suitability mapping tool and report released

Newly planted marsh grasses grow at the Cutts Cove living shoreline restoration site with the Sarah Mildred Long Bridge in the background in Portsmouth, New Hampshire. Credit: UNH

Increasing erosion and inundation of coastal wetlands due to sea level rise and storms threaten property and natural resources in New Hampshire. Historic shoreline stabilization practices of rip rap (rock walls), revetments, and seawalls can, in some cases, make erosion worse, destroy intertidal habitat, and alter sediment transport patterns. For these reasons, hard structural solutions are either the least preferred alternative or prohibited in sensitive coastal areas.

In suitable areas, living shorelines – a stabilization technique that uses nature-based elements – present a resilient approach to addressing erosion that can protect people, property and important coastal habitats. Its purpose is to minimize erosion, however, it can be designed to adapt to sea level rise – naturally building elevation as water levels increase, and eventually moving upland if water rises too quickly and space allows. A living shoreline uses a variety of structural and natural materials, such as wetland plants, submerged aquatic vegetation, oyster reefs, sand fill and stone.

Recently, the NHDES Coastal Program and partners published the New Hampshire Living Shoreline Site Suitability Assessment (L3SA) mapping tool and associated technical report with the goal of identifying sites that may be suitable for specific living shoreline approaches in order to address erosion issues along the New Hampshire tidal shoreline.

L3SA evaluates living shoreline suitability using spatial data about the state's tidal shoreline and characteristics unique to the Northeast, such as a short growing season, effects of ice, nor'easters and large tidal range. It assigns a suitability index number between 1 (less suitable) and 6 (highly suitable) to points along the shoreline.

The assessment's results are intended to inform a range of end-users including, but not limited to, NHDES staff, municipal staff and volunteers, other regulatory agency staff, technical assistance providers, grant managers, consultants, and owners of land and property along the New Hampshire tidal shoreline as they consider appropriate stabilization actions for eroding shorelines. L3SA is a screening tool used for planning purposes only and sites of interest should be further evaluated with a site-specific survey.

L3SA was published by the NHDES Coastal Program, in partnership with the NOAA Office for Coastal Management, the Great Bay Stewards, the New Hampshire Fish and Game Department, Great Bay National Estuarine Research Reserve (GBNERR), The Nature Conservancy – New Hampshire, and the Northeast Regional Association of Coastal Ocean Observing Systems.

Find links to L3SA resources and learn about other Coastal Program living shoreline initiatives on the NHDES living shorelines webpage, or contact Coastal Program staff Kirsten Howard at kirsten.howard@des.nh.gov or (603) 559-0020. ■

Successful 2018 lead tackle buyback pilot leads to 2019 expansion

By Caroline Hughes, LPC Staff Biologist and Outreach Coordinator

Last summer, the Loon Preservation Committee (LPC) partnered with New Hampshire Fish and Game, AJ's Bait and Tackle in Meredith, and The Tackle Shack in Newbury to conduct a pilot version of a lead tackle buyback program. The program, which ran from June through Labor Day 2018, was intended to protect loons by encouraging anglers to turn in their illegal lead fishing tackle (sinkers and jigs weighing one ounce or less). LPC's loon mortality data have revealed that lead poisoning resulting from the ingestion of sinkers and jigs within this size range is the single largest cause of documented adult loon mortality in New Hampshire, accounting for 44% of known loon deaths since 1989.

The lead tackle buyback pilot program offered anglers the opportunity to safely dispose of their illegal lead fishing tackle and provided a financial incentive to do so. Buyback participants were able to exchange one ounce or more of illegal lead fishing tackle at the two participating shops for a $10 voucher, which they could then use to purchase loon-safe, non-lead tackle or other fishing supplies. LPC's partners at New Hampshire Fish and Game designed and printed uniquely numbered vouchers, which allowed LPC to track all transactions. Analysis of the data collected from these transactions revealed that the program was an incredible success. Between the two participating shops, 124 vouchers were issued. In addition to the exchanges, several people turned in their lead tackle without claiming a voucher! In total, LPC collected 4,786 individual pieces of lead fishing tackle weighing a cumulative total of 29 pounds. Every piece of tackle collected had the potential to kill a loon. As part of the exchange process, LPC asked lead tackle buyback participants to complete a short questionnaire. The results of this questionnaire indicated that that the lead tackle buyback program gained participation from both casual and avid anglers.

The success of the lead tackle buyback program in 2018 prompted LPC to greatly expand the scale of the program in 2019. This summer, LPC has improved the accessibility of the program by increasing the number of participating retail locations at which anglers can exchange one ounce or more of illegal lead fishing tackle for a $10 voucher. Participating retailers were chosen to maximize spatial coverage of the state, with particular focus given to areas near lakes with high fishing pressure and a high number of documented loon deaths caused by lead poisoning from ingested lead sinkers and jigs.

Although the sale and freshwater use of lead sinkers and jigs weighing one ounce or less was officially banned in June 2016, LPC has continued to collect loons that have died from ingesting lead tackle within that size range since the ban went into effect. This indicates that illegal lead fishing tackle remains in active use. In 2018 alone, eight adult loons died of lead poisoning due to the ingestion of illegal lead fishing tackle. Through the lead tackle buyback, LPC hopes to provide an incentive for anglers to come into compliance with the lead tackle ban in New Hampshire and prevent future deaths of loons and other wildlife. Please help us help New Hampshire's wildlife by turning in your lead tackle and encouraging others to do the same. For a list of participating retailers, please visit LPC's Look Safe website. ■

NHDES Snapshot: Volunteer Lake Assessment Program

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.

Julie Loosigian steps out of the car and into a slow drizzle to recalibrate the temperature and dissolved oxygen reading equipment. She checks her watch and her clipboard, confirming that she is on schedule to meet Jerry Cooper at his home on Kolelemook Lake at 10 AM. Today, she will be joining Jerry for a boat ride to test the water quality of his community's lake as part of NHDES' Volunteer Lake Assessment Program, also known as VLAP.

VLAP helps coordinate volunteers to assist NHDES in evaluating lake quality. The data collected by VLAP volunteers and NHDES employees are used to provide lake residents, on over 170 lakes and ponds in New Hampshire, with complete reports on the health of their lake. These reports help NHDES and residents make more educated plans and decisions regarding lakes and ponds.

As one of VLAP's two summer interns, Julie is working to make this possible. She and other program staff visit nearly 130 lakes and ponds in the program each summer to ensure volunteers are taking data measurements accurately and that they have the support they need.

After the equipment is calibrated and loaded into the boat, Jerry starts the motor and steers toward the deepest part of the lake, where it reaches a depth of 22 feet. Jerry has been testing Kolelemook Lake as a VLAP volunteer since 2007. He collects data three times each year, June through August, to assess overall water quality. There have been volunteers collecting data on the lake before him, dating back to 1987.

One of the first tests Jerry preforms is for water clarity, using the "Secchi Disk." This black and white disk is lowered over the side of the boat until it is out of sight, and then it's slowly tugged upwards until barely visible once more. The depth is recorded and the measurement is taken again, this time using a mask to look below the water. Depending on lake depth and other factors, water clarity is generally considered "poor" when the Secchi Disk is visible fewer than two meters below the surface, "good" from 2-4.5 meters and "exceptional" when it is more than 4.5 meters. Water clarity is affected by algae, color and particulate matter in the water. Here on Kolelemook Lake, water clarity is usually considered "exceptional."

While Jerry measures clarity, Julie sits at the bow of the boat to measure temperature and dissolved oxygen levels, recording the data every half-meter down. She explains that dissolved oxygen is important to note because it's necessary for the survival of aquatic plants and animals. She also notes that temperature is important when identifying "whether or not the lake is stratifying (separating into layers), and if so, at what depths." This information allows Julie and Jerry to decide how many samples are necessary, and at what depth they should be taken.

Jerry and Julie then collect water samples to measure chlorophyll levels, an indicator of algal abundance; phytoplankton, microscopic algae used as an indicator of general lake quality; and levels of phosphorus, a nutrient that encourages algae growth. The water samples will also be used to test the lake's conductivity, turbidity, Acid Neutralizing Capacity, chloride levels, apparent color and pH levels.

After all the data are collected, Jerry drives Julie over to Kolelemook Lake's public beach to test for E. coli levels before finally heading back towards Jerry's dock. With charts filled with data, and the cooler heavy with water samples, Julie confirms with Jerry that his data are being collected correctly, and that he's doing great work to protect his little Kolelemook Lake.

As Julie reloads the car to head back to NHDES headquarters, she expresses just why she feels her job is so important.

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NHGS summer mapping efforts

The peak geologic mapping months are April through September and a team of consulting mappers and survey staff are out in the field. Whether in rural or urban areas, the fieldwork can be challenging, and requires detail-oriented geologists to produce successful and accurate maps.

The NHDES New Hampshire Geological Survey (NHGS) mapping efforts are made possible in part by the federal STATEMAP Program, which provides an annual source of matching funds to support the State's effort to map the surficial deposits and bedrock geology of New Hampshire. The program is designed to create or update geological maps in areas of the state where there is a critical need for geologic data.

The works produced are routinely used by the public, including (but not limited to) hydrogeologic consultants, engineers, scientists, planners, local officials, groundwater protection initiatives, infrastructure expansion, and natural resources and natural hazards inventories (just to name a few!).

The current list of quadrangles being mapped this summer include both surficial and bedrock. They are as follows and are detailed on the most up-to-date progress maps:

Surficial

Lancaster, Hillsborough Upper Village, Mount Grace, Royalston

Bedrock

Mount Crescent, Isles of Shoals

If you see a vehicle pulled over next to an outcrop this summer, it may by one of the state's mappers, such as Woodrow Thompson, Ph.D., whose work to update the Lancaster Quadrangle was featured in The Salmon Press.

Please visit the NHGS Geologic Mapping Program webpage for more information. ■

Snapshot *continued from page 6*

"Long-term water quality monitoring is critical; if we have a good idea of what's normal for a particular waterbody, we can act as an alert system when there are changes that seem to exceed normal or expected fluctuations," she said. "And this type of monitoring wouldn't be possible without our amazing group of citizen scientists, many of whom have been involved for decades. Hanging out with them on the waterbodies they love is the best part of my job." ■

Drinking water festival

The 27th Annual New Hampshire 4th Grade Water Science Fair and Drinking Water Festival was held on Wednesday, May 8, 2019, in Manchester. More than 400 students from 11 different schools across New Hampshire participated. In conjunction with this event was the second annual Water Poetry Contest. Students composed poems relating to the theme "The Power of Water."

The Festival celebrates National Drinking Water Week and was sponsored by the New Hampshire Drinking Water Coalition and NHDES to encourage future leaders and scientists to learn about one of the world's most precious resources, water! Experts in a variety of different fields, ranging from artists to scientists to state and federal agencies, joined together to share their expertise with students.

Students explored ways to keep water clean, conservation, water testing, groundwater pollution, how climate change is affecting water systems and many other topics. The water festival is supported by volunteers and donations from many local organizations.

For more information about the event, please contact Lara Hooper at lara.hooper@des.nh.gov or (603) 271-4071. ■

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CommuteSmart challenge

For the month of June, NHDES staff have been participating in the CommuteSmart NH Statewide Challenge to reduce their carbon footprint when coming to work by riding bikes, carpooling, telecommuting or using any other sustainable mode of transportation. NHDES was split into four teams, Air Resources, Water Division, Waste Management, and the Commissioner's Office, to see which team could save the most miles. NHDES competed against other state agencies, such as NHDOT and the Public Utilities Commission.

There are more benefits of CommuteSmart than winning a competition. Avoiding single vehicle trips saves money, reduces traffic and lowers emissions. At the time of writing, NHDES employees had avoided 9,717 miles (about 324 trips to work), saving approximately $885 in gas money and preventing more than 8,834 pounds of CO_2 from being emitted into the air. ■

Bi-State EV Connector

Attention Fleet Managers, municipalities and workplaces! Granite State and Vermont Clean Cities Coalitions are co-hosting the **Bi-State EV Connector**, an electric vehicle and electrification event on **Friday, September 27** from **9 AM-3 PM** at **Hypertherm in Lebanon, NH**. Event highlights include discussion panels, vendor displays and demos, and ride-and-drives.

Interested in sponsoring and showcasing your product? We are seeking light-, medium- and heavy-duty, on- and off-road electric vehicles, technology and equipment, including solar and hybrid. EV charging stations are on-site! Contact Jessica at jessica.wilcox@des.nh.gov or (603) 271-6751 with interest. Event and sponsorship details are available on the Granite State Clean Cities Coalition website. Attendance is limited so register today! ■