ENVIRONMENTAL NEWS

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Newsletter of the New Hampshire Department of Environmental Services September-October 2020

COMMISSIONER'S COLUMN

Septic Smart Week

Septic Smart Week, which is held every September, is a very important week for us to get the word out to the public about protecting public health and the environment in New Hampshire. More than 65% of the state's wastewater is first processed by a septic system. You may have one in your back yard. As owners of these septic systems, it's important to know of the negative impacts that these systems can have if not operated and maintained properly.

If a septic system is neglected, there can be a failure, which would be expensive and a health hazard, for your family and your community. A failed septic system could impact your groundwater and surface water around your home, and the landscape of that property. That's why NHDES has worked so hard to educate people about their septic systems. Along with social media campaigns around Septic Smart week, we have worked with the New Hampshire Association of Septage Haulers to launch a Get Pumped! campaign last year that promotes regularly pumping your septic system.

It is recommended that you get your septic tank pumped every 3 to 5 years, though it depends mostly on how many bathrooms and how many people live in the home. With many more people working from home during the current pandemic, it is a good idea to check your septic tank and consider getting it pumped. A typical pumpout can cost between $250 and $500, which is a far cry from the $6,000 to $15,000 it could cost to replace your leach field if your septic system fails. Additionally, it could cost you extra when selling your home, since septic systems are inspected

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NHDES releases 2020 lake trend report

New Hampshire's surface waters are vital natural resources that provide habitat for aquatic life, recreational opportunities, tourism and economic benefits. NHDES is responsible for monitoring and reporting on the condition of the state's surface waters. The Water Monitoring Strategy, published by NHDES in 2016, details the agency's approach for monitoring the condition of the state's inland surface waters. One component of this strategy is to provide regular reports on the status and trends of water quality conditions. As directed by the Water Monitoring Strategy, 12 water quality parameters were examined and the results summarized in the 2020 Lake Trend Report.

Data from 150 lakes and ponds, over ≥ 10 years from 1991 to 2018, were analysed. The majority was contributed by the Volunteer Lake Assessment Program (VLAP) but in some cases, data from additional programs were utilized to evaluate waterbody condition. Data were analyzed to examine current conditions, long-term trends and short-term changes for individual waterbodies as well as by trophic class and region.

Water quality parameters alkalinity and specific conductance had the greatest

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during every real estate transaction in New Hampshire.

There are every-day things you can do to protect your systems, too, such as:

- Learn more about what's flushable and what isn't. Many products that claim to be "flushable" actually clog up your system.
- Conserve water. Fix leaky faucets and toilets ASAP to extend the life of your systems, saving you even more money.
- Only wash clothes when you have full loads. Be mindful of large water uses, and stagger the use of water-generating appliances, such as washing machines, showers and dishwashers.
- Eliminate or limit the use of a garbage disposal system. Wastes from disposals fill up your systems more rapidly, which means more frequent pumping.
- Don't pour cooking grease or oil down the sink or toilet.
- Don't park or drive on your drainage field. The weight can damage drain lines.

This year, the EPA Septic Smart Week is September 14 through 18. NHDES will be posting on social media each day with tips on how to protect your septic system. Also, keep an eye out for the "Where's Septic Sam?" postings (our version of Where's Waldo for Septic Smart Week).

If you have a septic system, take some time to double check if you and your family are doing the right things when using your septic system to protect others and our environment. If you do not have a septic system at your home, the chances that you know someone who has one are pretty good. Sharing this information with others can go a long way to help protect human health and the environment. ■

Want simple tips for being green? Sign up for GREENWorks

GREENWorks is a monthly e-newsletter that contains ideas for a cleaner environment. Last month's issue dealt with cleaning laundry habits.

The National Park Service estimates that the average family does about 300 loads of laundry per year, which amounts to about 12,300 gallons of water per household. That's a lot of water, not to mention the heavy energy use that comes with using washers and dryers, and the hazardous chemicals that can be found in certain detergents and dryer sheets. Thankfully, there are many ways you can change your laundry habits to protect your family's health and the environment.

Be an Energy Star: Energy Star machines use 33% less water each cycle, and they often have a longer life span, saving an average of $380 in maintenance and operating costs, according to the Energy Star website.

Fully Loaded: Waiting to do laundry until you have a full load is another way to help the environment. Many washing machines have cycles for smaller loads, which use less water. So, if you need to wash before a full load, be sure to adjust your machine cycle.

Hang it out to dry: Save money and energy by line drying your clothes. Since one dryer emits about a ton of carbon dioxide each year, it will really make a difference.

Want more? Read the full article for a DIY laundry detergent recipe and sign up to receive GREENWorks direct to your inbox. ■

ENVIRONMENTAL NEWS NHDES

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percentage of individual waterbodies showing significant changes over time, while total phosphorus and chlorophyll-a had the lowest change. Increases were found in the number of days beaches were closed due to bacteria and the total number of cyanobacteria advisories issued. Changing water quality parameters were attributed to road salt use, recovery from acid rain inputs, and climate change. Access the full 2020 Lake Trend report. ■

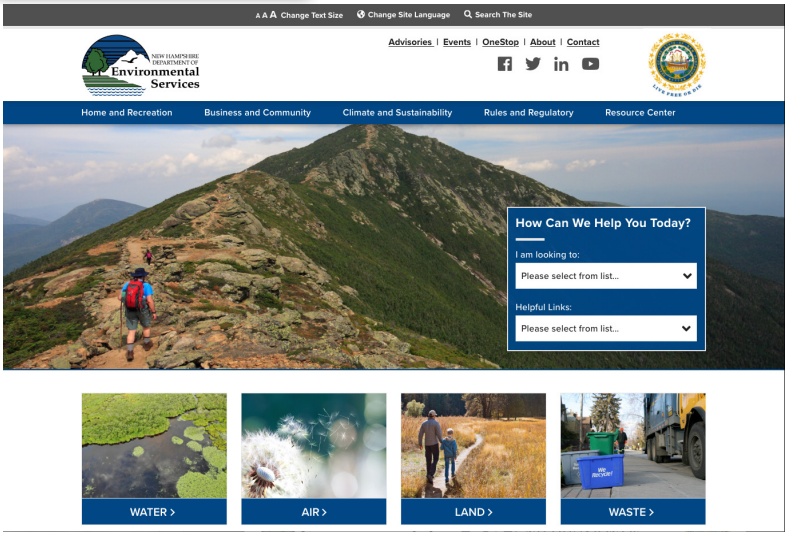
Jellyfish!

Did you know that freshwater jellyfish have been reported in 63 of New Hampshire's waterbodies? Have you ever seen freshwater jellies at NH lakes or ponds? A swarm of jellies was spotted by NHDES staff at Wheelwright Pond in Lee, NH, in August while they were out conducting fieldwork.

See the video on our Facebook page. Learn more about freshwater jellyfish in New Hampshire! ■

Ribbon cutting ceremony for construction milestone

The Southern New Hampshire Regional Water Interconnection Project met a significant construction milestone with the completion of the Manchester Road Pump Station. The Pump Station is critical to increase the Town of Derry's flow capacity from the Manchester Water Works, which is required to deliver 1 million gallons per day now, and up to 3.13 million gallons per day in the future, to downstream water recipients to address groundwater contamination and supply issues. The Towns receiving the water include Windham, Salem, and Plaistow, and Hampstead Area Water Company's services in the Towns of Atkinson and Hampstead. The project received funding from both the MtBE Settlement Funds and the New Hampshire Drinking Water and Groundwater Trust Fund (DWGTF). These funds were established to address groundwater contamination using money from settlements and lawsuits with the companies that produced MtBE, a gasoline additive. ■



The NHDES website is getting a makeover

Coming soon! The NHDES website will be getting a fresh new look, complete with an update to the navigation system. All the information you need and want will still be there but will be organized in a much more intuitive way, based on environmental topics. There will also be a keyword searchable document library that will put all NHDES fact sheets, reports, guidance documents, outreach materials and more at your fingertips. The site will be fully mobile-ready, making accessing the information you need even easier. Keep an eye out for more information about when the new website will be going live. ■

Rockingham County coastal flood maps become effective in January 2021

On July 29, 2020, the Federal Emergency Managemenr Agency (FEMA) issued the Letter of Final Determination (LFD) to finalize the preliminary Flood Insurance Rate Maps (FIRMs) for certain communities in Rockingham County. FEMA originally issued the preliminary maps in 2014 followed by revised preliminary map panels for several communities in 2016. The LFD establishes the effective date of the new FIRMs and Flood Insurance Study (FIS) report and provides communities six months to adopt them prior to the January 29, 2021 effective date.

The FIRMs are produced for communities that participate in FEMA's National Flood Insurance Program. They are used by:

- Community officials to determine where and how their community floodplain ordinance applies for development.
- Lenders to determine if a building must have a flood insurance policy as a condition of a loan.
- Insurance agents to determine the cost of a flood insurance policy for a building.
- People interested in understanding what the risk from flooding in their area is.

The new maps reflect an updated coastal flood hazard analysis. Light Detection and Ranging (LiDAR)-derived topographic data was used to delineate updated floodplains based on the results of the analysis. Zone A (approximate) floodplain boundaries were also updated based on limited engineering analyses and the same topographic data.

Ocean Blvd., Rye, NH – image credit: Kim Reed

The preliminary maps can be viewed via FEMA's Map Service Center or the NH Flood Hazards Viewer. The final maps (with no additional flood hazard changes) will be available through the same sources by the new effective date.

For more information about the project, visit the NH Office of Strategic Initiatives' (OSI) Coastal Mapping Project webpage. OSI will be coordinating with affected communities in the coming months about the map adoption process and is planning related training about the new maps for the fall. ■

How Cool is That?! – Environmental education for pre-K to 99

What do stumps, mosquito netting, rain shelters, tents and fire pits all have in common? They are low-cost infrastructure to get students into an "outdoor classroom." K-5, middle school science, art, music and PE teachers, guidance counselors and others are interested in teaching outdoors to keep everyone safe from COVID-19. Getting students and teachers outside to learn can also help them deal with the stresses of the pandemic. This is just one focus in the *How Cool Is That?!* educational series that started in April.

Preparing and building an outdoor classroom. Credit: Cindy Hanson.

Even more environmental education resources and ideas for teachers and parents are now available on NHDES Facebook, Twitter and Instagram sites. The *How Cool is That?!* series offers lessons, resources, teacher training opportunities and readings for all grade levels and adults who want to learn more about how the natural world works. Let curiosity and wonder be your guide! Minimize screen fatigue and get outside. We will share *How Cool is That?!* items regularly to support teachers and parents, and the kid in us all during this time of remote learning and beyond. Search social media sites for "How Cool is That" to find earlier posts. If you would like your organization to be tagged, please send your social media handle to Lara Hooper at lara.hooper@des.nh.gov. ■

Drought conditions worsen in portions of New Hampshire

Recent hot and dry conditions, following lack of snow pack and below average precipitation, have caused designation of portions of southern New Hampshire to escalate from moderate to severe drought, according to the U.S. Drought Monitor. Areas experiencing severe drought include Rockingham County, Merrimack County, over half of Strafford County, as well as a small area of Belknap and Hillsborough county. Overall, 20% of the state is experiencing severe drought, 49% is experiencing moderate drought, and 31% is experiencing abnormally dry conditions. The short-term forecast and longer term precipitation outlooks provide no assurance of receiving the widespread rain needed to mollify drought conditions. Additionally, groundwater levels across the state continue to fall. To continue to meet the basic water supply needs of the state's communities, the New Hampshire Department of Environmental Services (NHDES) urges residents to eliminate outdoor water use for lawn watering in areas experiencing moderate or severe drought and practice other conservation measures.

As water shortages are more common during drought, to protect public water supplies and residential well supplies, NHDES is urging community water systems and municipalities to impose strict mandatory outdoor water use restrictions, such as banning lawn watering and washing of cars. Currently, 143 community water systems and one municipality are implementing outdoor water use restrictions. Community water systems have the authority to restrict many types of outdoor water uses and the governing body of a municipality or village district has the authority to restrict lawn watering within political boundaries. The general public should abide by restrictions and if a restriction is not in place, take responsibility for limiting their own water use. The public is also encouraged to report any residential well shortages to NHDES using the Residential Well Impact Survey. For a link to the survey and more information related to drought conditions and drought conditions, go to www.des.nh.gov and use the "A-Z list" and scroll down to Drought Management.

For more information related to the drought, please contact Stacey Herbold, NHDES Water Conservation Program, at stacey.herbold@des.nh.gov or (603) 271-6685. ■

The Bellamy Reservoir is the primary water supply source for Portsmouth, NH

Residential fuel oil storage tank assistance available

With summer just winding down, it is hard to believe that heating season is just around the corner. Do you use an aboveground or underground heating oil tank to heat your home? Do you know if it is in good condition or meets today's standards? NHDES strongly encourages oil heat customers to evaluate their system, correct any problems, and remove underground tanks before it's too late. We have a program that may be able to help: the Safetank Program. Safetank is a financial assistance program available to income-qualified homeowners in New Hampshire to upgrade or replace their residential fuel oil storage tank system. Now is the time to start the process so you are ready for fall's colder weather. Check out the On-Premise-Use fuel Oil Storage and SafeTank webpage for more information about the program, the requirements to qualify for assistance and the application form. ■

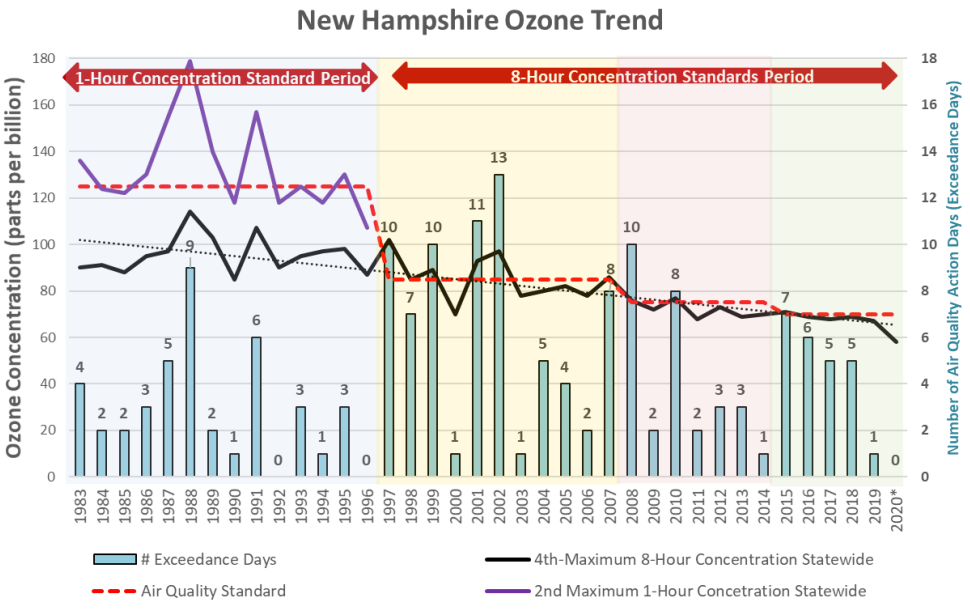
2020 New Hampshire Air and Water Conference to be held remotely

This biennial conference, to be held this year as a webinar, hosted jointly by NHDES and the Business & Industry Association (BIA), represents an opportunity to learn firsthand from the experts about how New Hampshire is meeting the challenges in the nexus between contemporary environmental challenges, economic development and potential impacts during a pandemic. Topics include; NPDES and Air permitting, energy efficiency measures being instituted at infrastructure and industrial facilities across the state, public health impacts influenced by emerging contaminants and program updates by key leaders from NHDES, EPA and industry. For information about the conference and to register, visit the Conference webpage. ■

It's summer and it's hot! So where is the ozone?

New Hampshire residents have learned that when summer's hot and humid weather arrives, an Air Quality Action Day (AQAD) for ozone, might be issued by NHDES. And this year, a very hot and humid summer, no AQADs have been issued to date. What makes this year different?

The air is cleaner because air agencies, industry, and others have worked for decades to lower emissions from vehicles, power plants, industry, and other human activities that emit nitrogen oxides or volatile organic compounds, the chemical ingredients needed to produce ozone. Ozone-producing emissions in New Hampshire are down by about 70% from 1990 levels and ozone itself is down by about 30%.



** 2020 data to date of publication*

Although ozone has decreased, AQADs have been issued because the National Ambient Air Quality Standards (NAAQS) have changed. The NAAQS for criteria pollutants, including ozone, are reviewed by EPA every five years in consideration of the most current health studies. The ozone NAAQS has been revised to more stringent levels three times since it was first established in 1979. Therefore, even though ozone concentrations are lower, AQADs have still been issued because of the lowering standard. The chart below shows how the NAAQS and ozone concentrations in New Hampshire have changed. The black line tracks the annual maximum 4th highest ozone concentration among all monitors in the state from 1983 to 2020. The ozone NAAQS were made more stringent in 1997, 2008, and 2015, each shown in different background colors. The number of exceedance days reflect the standard that was in place during each time period. Note that the ozone NAAQS for 1996 and earlier was based on a 1-hour averaging period. Since 1997, the NAAQS has been based on an 8-hour averaging period.

Another factor to consider is how wind transport patterns and regional emissions buildup influence the local ozone levels. In the past, when emissions were at higher levels over broader regions of the Midwest and Northeast, winds could come from many different directions carrying enough emissions, that when combined with New Hampshire's own, created high ozone concentrations in the state. Now that emissions are much lower over a broad regional area, there are fewer different upwind locations with enough emissions to contribute to high ozone concentrations here. Winds carrying enough ozone producing emissions for high ozone in New Hampshire are now mostly limited to those passing over the "Urban Corridor," which stretches from Washington, DC over Philadelphia, New York City, and Boston. This year, high ozone concentrations have been measured in other areas of the Northeast but wind transport has not brought high ozone concentrations to New Hampshire.

The COVID-19 pandemic may also be an influence on ozone levels this summer. Emissions from cars dropped by nearly 50% when we started working from home in March. This has recovered to within 20% of normal, but lower emissions throughout the region and across the country have resulted in lower nitrogen oxide concentrations and has nudged ozone levels downward, even if only temporarily.

In summary, ozone forming emissions are down significantly and there is less ozone in New Hampshire's air. However, we still experience Air Quality Actions Days because health standards have become more protective. The COVID-19 pandemic may have contributed to some reductions in emissions, but it is difficult to say how much it was truly responsible for the lower ozone and lack of AQADs this summer. Whatever the case may be, NHDES staff and air quality scientists from across the country and the world, will be studying the summer of 2020 for a long time to come. ■

In-person Review of Public Records Service Restored

Contact Sarah.Chance@des.nh.gov or (603) 271-2919, or Jenna.Wilson@des.nh.gov or (603) 271-0399, or visit des.nh.gov and follow the Quick Links for RSA 91-A: Right-To-Know.

This Old Tank

Hydropneumatic tanks are bladderless pressure vessels typically operating below 75 psi (pounds per square inch). Hundreds of aging public water systems in New Hampshire depend on these tanks for pressure and storage; and most hydropneumatic tanks are either of unknown age or older than their estimated design life of 30 years. Many have not been recently inspected, cleaned, or otherwise maintained. When these tanks fail, they usually fail by leaking through highly corroded bottoms – meaning that systems are paying electrical bills to pump the water directly back into the ground, never reaching consumers. Very rarely, hydropneumatic tanks fail by explosion. This happened in Stonington, CT in 2015 (see "before" and "after" photographs at right).

Although the hydropneumatic tank was externally maintained and under normal operating pressure, forensic investigation found that the explosion was caused by internal corrosion and a manufacturing technique using only one-sided welds around the face of the tank.

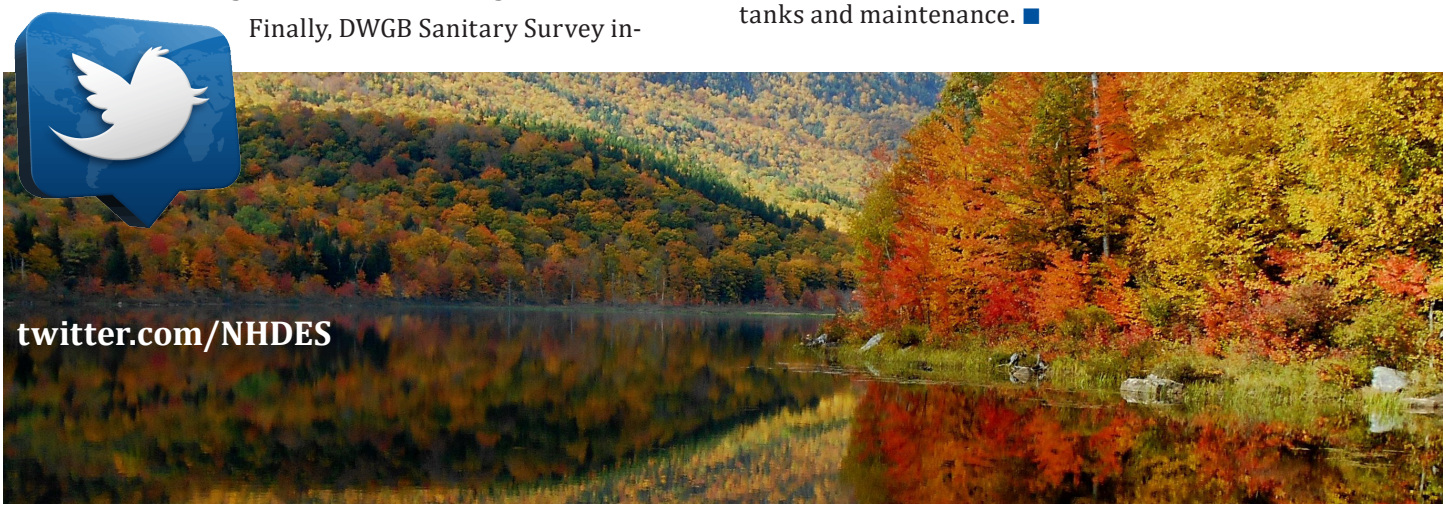
NHDES strongly recommends that owners and managers of aged tanks contract with certified, professional tank inspectors to comprehensively evaluate their tanks' interiors and exteriors – perhaps even consider a tank replacement.

NHDES offers community public water systems a 50% Tank Inspection grant up to $4,000 per atmospheric and hydropneumatic tank, with a maximum of $10,000 per water system, to evaluate tank structure and potential for rehabilitation. Applications will be processed subject to availability of funds. Please contact Luis Adorno at luis.adorno@des.nh.gov or search the NHDES website for Asset Management for Drinking Water and Wastewater.

Alternatively, the annual Drinking Water State Revolving Loan Fund offers community and non-transient, non-profit public water systems low-interest loans for proactive tank replacements, typically when coupled with upgrades of other system infrastructure. Pre-applications are due annually on June 15. For more information, please search the NHDES website for Drinking Water State Revolving Fund.

Finally, DWGB Sanitary Survey inspectors will be citing Significant Deficiencies for poorly maintained or significantly corroded storage tanks of any type as part of our regular Sanitary Survey visits or Site Inspections. Tanks are one of the most critical assets within a water system. Properly maintaining them should be a top priority. Contact Luis Adorno for more information about tanks and maintenance. ■

Hydropneumatic tank before and after failure, Stonington, CT, 2015. Connecticut Department of Public Health.



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Local source water protection grants available

NHDES offers grants to water systems, municipalities, planning commissions, county conservation districts, watershed associations, educational institutions and non-profits to protect lakes, rivers and aquifers used as sources of drinking water. Among other things, grants can be used to identify areas to protect, inventory and assess contamination risks, pay for land conservation transaction costs, and improve security systems (e.g., fencing, alarms, lighting) for public water supply sources.

Out with the old tank and in with the new.

Local Source Water Protection (LSWP) grants can play an important role in protecting valued drinking water sources. In 2019, the Stony Brook Cooperative in Rochester, New Hampshire received a LSWP grant to address the risks presented by aging residential heating oil tanks at a 50-and-older community, serving a population of 167 with 127 service connections. The objective was to protect wellhead areas from potential contamination due to failing fuel tanks at a system that could not afford to do so on its own. Working with Granite State Rural Water Association (GSRWA) they identified tanks with issues (e.g., in poor condition or lacking concrete slabs), ranked them as high or low risk, and addressed the high-risk tanks. The project assessed 18 sites, replaced 13 tanks with new double-walled Roth tanks with weather hoods and tie-down cables, and installed 13 concrete slabs. The community was also educated about best management practices resulting in the implementation of an annual tank inspection day.

LSWP grants can also help increase the level of protection for sources that are already protected. The City of Keene used a grant to improve security for a wellfield and pump house. The wellfield was accessible to the public and on several occasions over the past two years, staff observed unauthorized vehicles and evidence of illicit dumping in the vicinity of the wells. By constructing a security fence at main access points and gating the entrance drive, the City reduced ease of entrance to the property and potential contamination at the wells.

The 2021 application form is available online at des.nh.gov – search for Local Source Water Protection Grants. The deadline for submitting applications is November 2, 2020. Applications will be processed subject to availability of funds. For more information, contact Bess Morrison at bess.morrison@des.nh.gov or (603) 271-2950. ■