

COMMISSIONER'S COLUMN

Another step towards preventing childhood lead poisoning

The passage of the Preventing Childhood Lead Poisoning from Paint and Water Act (Senate Bill 247), which was signed into law on February 8, 2018, represents a major step forward in protecting New Hampshire children from lead poisoning. This new law, aimed at testing, reducing, mitigating and preventing children's exposure to lead from paint and water, brings a number of changes to the state's childhood lead poisoning statutes. It also affects a wide range of parties, including pediatricians, property owners/landlords, parents, child care centers and public schools.

Lead is highly toxic and affects virtually every system of the body. It can damage a child's kidneys and central nervous system and cause anemia. At very high levels, lead can cause coma, convulsions, and death. Even low levels of lead are harmful. Low levels are associated with decreased intelligence, behavior problems, reduced physical stature and growth, and impaired hearing. The law follows a push by NHDES, in the spring of 2016, for voluntary testing of lead in drinking water at all schools and child care centers, which came in the wake of increased awareness of lead toxicity from the water crisis in Flint, Michigan. According to the 2016 Lead Data and Program Report by the New Hampshire Department of Health and Human Services (DHHS), only 51% of one-year-old and 29% of two-year-old children

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Suncook River stabilization project update

The Mother's Day Flood of 2006 caused the Suncook River in Epsom, NH, to create a new channel to the east of Bear Island, between the Huckins Mill Dam and the U.S. Route 4 Bridge. The valley floor in this area is almost entirely composed of sand to a depth of roughly 50 feet. With no bedrock or any other kind of geology to support bank stability, the intense flooding caused an avulsion event – dramatically changing the course of the river and threatening bridge supports.

In 2017, NHDES began construction activities on the Suncook River stabilization and infrastructure protection project, in coordination with the New Hampshire Department of Transportation (NHDOT), design contractor Inter-fluve, Inc. out of Cambridge, MA and construction contractor F.L. Merrill Construction, Inc. out of Loudon, NH. Construction is now nearing completion.



The view downstream along the Suncook River in its post-avulsion channel migration into Cutter's Corn Field (2012). The banks are 30 feet high and the river claimed another acre of corn field by 2016 at this location, for a total of two acres of impact to private property.

When the construction began, the Suncook River was continuing to adjust to its shorter channel length by migrating across a sand-dominated valley and down-cutting steadily. This ongoing process was visible just downstream of the U.S. Route 4 Bridge where the shortened length of the Suncook River threatened the structural integrity of the bridge footings and damaged agricultural fields adjacent to the river. There were two construction sites on the Suncook River; the first was located immediately downstream of the U.S. Route 4 Bridge, and the second just downstream of the confluence with the Little Suncook River.

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were tested for blood lead levels. Statewide, fewer than 19% of children under the age of six years had been tested. To remedy the State's low testing rates, the new law requires universal testing for blood lead levels, which means all children at age one year, and again at two years, are required to be tested.

Among New Hampshire children tested in 2016, 741 had elevated blood lead levels equal to or above 5 mcg/dL, the recommended action level from the U.S. Centers for Disease Control and Prevention (CDC). Currently, follow-up services are provided to children with blood levels of 10 mcg/dL or higher. Starting July 1, 2019, the new law requires these follow up services for all children with blood lead levels of 7.5 mcg/dL and up, and, from July 1, 2021 forward, all children with elevations from 5 mcg/dL and up. To date, all state lead poisoning cases have been traced to children's exposure to lead in paint and/or soil, such as from home renovations or paint chipping or flaking on window sills or door frames. New Hampshire's percentage of housing stock built before lead paint was banned in 1978 is 55% – higher than any other state in the nation. In several of the state's highest risk communities, the percentage of housing stock built before 1978 is greater than 83%.

With respect to drinking water, the goal is to reduce and prevent any additional lead exposure. In this regard, the new law requires lead testing at all private and public schools and licensed child care facilities where "water is available for consumption by children." The first

round of testing is required to be completed by July 1, 2019, and every five years thereafter, until at least three rounds are below the standard. Such testing completed from 2016 forward is acceptable for the first round of sampling.

To meet this directive, the NHDES Drinking Water and Groundwater Bureau coordinated with DHHS and the New Hampshire Department of Education to issue sampling and remediation requirements in July 2018 to approximately 630 private and public schools, and about 800 licensed child care facilities. The testing requirements apply whether the facilities use town water or their own well water. Testing results must be communicated to parents and guardians within five days of receipt from the laboratory. Any locations testing at 15 parts per billion lead or higher must immediately provide alternate safe water, and must be remediated per a state-approved plan within 30 days, or as specified by the state.

On August 30, the Drinking Water and Groundwater Trust Fund Advisory Commission approved \$1.6 million for the New Hampshire Department of Education to reimburse public, public-charter



and non-public schools for 80% of lead abatement costs if they have lead present in their drinking water. This funding is pending Governor and Executive Council approval.

The water testing guidance can be found by visiting des.nh.gov and clicking A to Z List > "Lead in Drinking Water." Questions may be directed to DWGBInfo@des.nh.gov or (603) 271-2513. For a summary of all of the changes that come with Senate Bill 247, visit the DHHS Healthy Homes and Lead Poisoning Prevention Program webpage at <https://www.dhhs.nh.gov/dphs/bchs/clpp/index.htm>. ■

Coming Soon! **PROTECT YOUR TAP** 10 minute lead test

NHDES has partnered with EPA to create a web-based guidance document targeted at homeowners to help them determine if they have lead pipes and show them how they can reduce lead in their drinking water. The guide is in pilot testing and almost ready for public distribution so stay tuned to the NHDES website and social media platforms for the latest news! For more information about this guide, please contact Amy Rousseau at (603) 271-0893 or amy.rousseau@des.nh.gov. ■



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29 Hazen Drive • Concord, NH 03301
(603) 271-3503
www.des.nh.gov
editor@des.nh.gov

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EPA awards NHDES \$192,000 for beach monitoring

EPA is providing \$192,000 to NHDES to support beach water quality monitoring and public notification efforts throughout the state.

“Protecting New Hampshire’s beaches is critical to safeguarding public health and sustaining local economies, especially during the summer tourism season,” said EPA New England Regional Administrator Alexandra Dunn. “This funding enables our partners in New Hampshire to have the tools and resources they need to adequately monitor beach water quality and deliver timely information to the public.”

“New Hampshire takes great pride in our clean coastal waters and beaches,” said Bob Scott, Commissioner of the New Hampshire Department of Environmental Services. “Funds from the federal BEACH program are critical for conducting hundreds of inspections annually for the purpose of providing daily updates on bacteria levels at 16 coastal beaches in New Hampshire in order to protect public health for some of the state’s most popular recreational resources.”

EPA is making funds available to New Hampshire to strengthen the state’s monitoring and notification programs, and make monitoring results readily available to the public. The funding is authorized under the Beaches Environmental Assessment and Coastal Health (BEACH) Act.



The state will provide funding to coastal towns, which will continue to protect beach goers from pollution by collecting water samples at major recreation locations, providing outreach to citizen groups, and posting advisories when beaches are unsafe for swimming because of poor water quality.

New Hampshire’s beach monitoring data can be found at: <https://www.des.nh.gov/organization/divisions/water/wmb/beaches/index.htm>. ■

NHDES launches on Facebook

NHDES launched its official Facebook Page in early August. The page will be used to post information about NHDES events, publications, programs and more.

The page is expected to help provide insight into the valuable work NHDES staff are performing in local communities each day. From field workers testing water bodies for bacteria and industrial stack testing, to spill response workers and shellfish monitors, the NHDES Facebook page is sure to be full of interesting content.

“Like” NHDES on Facebook to stay updated on new content, and be sure to tag @NHEnvironmentalServices on Facebook to show how you’re working to protect and enhance the environment in New Hampshire.

Find us at <https://www.facebook.com/NHEnvironmentalServices/>.

Also be sure to check out the NHDES [Twitter page](#) and [YouTube channel](#) for even more online content. ■



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The following series of photos will give you a view of what the two sites looked like before, during and after the stabilization project.

Avulsion Site Upstream View

Start Construction (October 2017)

This image depicts the Suncook River up against the newly-eroded valley wall on Cutter's property. The Suncook River is visible in the lower and middle right of the photo as it flows from the top of the image toward the bottom (north to south). All of the fallen trees were undercut by the Suncook River as it migrated laterally across the valley floor to the east, through woods and a corn field. As a reference point, note the small pine tree in the lower-left of all three images.



Mid Construction (November 2017)

About halfway through stabilization and construction at the Avulsion Site, crews work to deliver fill, spread it, and compact it to re-create the land that was obliterated by the migrating river. This image shows the Suncook River moved back into the new channel that was created after the avulsion, where it flows over a large riffle, or deposit of boulders and cobble left behind by retreating glaciers nearly 10,000 years ago. This stable bed material will mesh together with the bank stabilization practices shown here to prevent the river from migrating again across the valley into private property.



Post Construction (July 2018)

Here, the finished project area at the avulsion site shows the Suncook River flowing at summer low-flow conditions, contained well within the channel. The work site has been planted with grasses, trees and shrubs in an effort to re-establish a wooded buffer between the river and the corn field. Corn has been planted where there was a 30-foot deep, two-acre chasm just last summer (see image on page 1). This image documents the paired project goals of stabilizing the Suncook River while restoring working, agricultural lands essential for the local economy and New Hampshire rural community character.





U.S. Route 4 Project Site

This is the site most visible to the public as they travel over the U.S. Route 4 Bridge in Epsom, just east of the traffic circle. Prior to the avulsion, the Suncook River was impounded behind two manmade dams adjacent to Bear Island. These dams slowed the river down and raised its surface elevation considerably. The river at this location was deep and slow moving, and the bottom was made up of sand. Since the avulsion, the channel elevation dropped nearly 10 feet, and the no-longer-impounded river moved sediment out of this reach, exposing gravel, cobble, boulders and even some layers of clay that are remnants of Glacial Lake Hooksett that covered this valley 10,000 years ago. Many of the exposed boulders seen in the middle of the river have not seen daylight since the late 1800s or early 1900s, when the dams were built.



Pre-construction (Fall 2016)

The top photo, taken from the U.S. Route 4 Bridge, looks downstream on the Suncook River and clearly depicts the over-widening that occurred as a result of the 2006 avulsion. The floodwater felled trees and swept them downstream, and the continual down-cutting or incision of the river bed exposed riffle areas (channel bed where rocks/boulders are exposed and water cascades through them as elevation drops quickly).

Mid Construction (October 2017)

High flows tested the designs and provided a comparison between the stabilized section of river bank on the east and the unstabilized river bank on the west.



Post Construction (July 2018)

Today, the river is more dynamic, provides improved habitat for fish and other aquatic life, and boasts improved water quality conditions along this reach. The dynamic nature of the river bed created by the 2006 avulsion triggered the impetus for stabilizing the banks and bed at this location to protect the U.S. Route 4 Bridge from being undermined. The project goals at this site were to provide grade control downstream of the U.S. Route 4 Bridge to halt the upstream migration of river bed erosion or incision from continuing, stabilize the banks, and to provide subsurface protection or a failsafe in case the downstream project area at Cutter's Field should become compromised in the future. Both project sites have been sized to accommodate the 100-year flood event to ensure the safety of the traveling public across the U.S. Route 4 Bridge. ■

NHDES Snapshot: Coastal Beach Inspector

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.

Danielle MacConnell fills up the red worn-out cooler with ice and lines up her labeled sampling bottles. After placing the cooler and sampling pole into the signature white NHDES car in front of Concord headquarters, Danielle starts her journey to the Seacoast. Today, she will be taking water quality samples at coastal beaches, to ensure that the water is safe for recreation.

Danielle has been a summer intern with the Coastal Beaches program for three years now. Her job is to visit coastal and freshwater beaches about two times a week, to collect water samples, take the temperature of the water, and count the amount of people, birds, etc. on the beach.

Each water sample is tested for enterococci, bacteria commonly found in the intestinal tract of humans and animals. Enterococcus usually enters bodies of water following heavy rains. It can also originate from bird and pet waste, human fecal waste, or sewage runoff. NHDES will issue an advisory if the sample exceeds the state standard of 104 counts of Enterococci per 100 ml of water. If an advisory is issued, the beach will be tested daily, or at the town or beach manager's discretion, until bacteria levels decrease to safe amounts. After this, the advisory is removed.

On this trip, Danielle first visits Hampton Harbor Beach. She heads down to the waves and collects a water sample from each testing location. This particular beach requires a sample from the left and right side of the beach. Wading into water past her knees, Danielle waits for the waves to pass and reaches down to scoop a sample. After she screws on the cap, the sample is placed neatly in the cooler packed with ice, to discourage further bacteria growth.

Beachgoers tend to be curious about a person wearing a badge and NHDES shirt stepping into the water with a clipboard in hand. More than once, Danielle is stopped and asked about what she was sampling for. She says, "A lot of people usually ask what I'm doing here and it serves as a great way to spread awareness and let the public know that this information is available for everyone."

After taking her last sample of the day at New Castle Beach,



Danielle packs the final sample into the full cooler before beginning her trip back to Concord. When she arrives, Danielle carries the cooler back into the NHDES Limnology lab, placing each sample on a cart with accompanying documentation, and wheels it to the NHDES microbiology lab for testing. Now, all Danielle has to do is wait for the results.

The next afternoon, Danielle's coastal beach inspection results come in revealing good news: no elevated Enterococci levels, and no new advisories for any of the coastal beaches she visited. As expected, Danielle is relieved. "My job is always rewarding when I can deliver good news. And while the news isn't always good, it's always important. The Beach Inspection Program makes sure that people are aware of the water quality when they go swimming. It's all about safety, education and peace of mind." ■



Just say “no” to PFAS

The Bedford, NH School District learned recently that sometimes good deeds are rewarded with more research and effort.

When members of Bedford High School’s “Destination Imagination” team wanted to eliminate the use of polystyrene foam trays in the cafeteria, the district’s food services director, Emily Murphy, was impressed with their enthusiasm and passion. She quickly got on board to find a better alternative. Cost was the biggest issue. Compostable fiber trays cost three times as much as the foam, but it was determined that they would be the best alternative.

Melissa Zych and Cynthia Nelson from the NHDES Pollution Prevention Program (NHPPP) read a local newspaper article about this effort in Bedford, and while they were excited to see a proactive measure taken to reduce waste at the school, it raised some red flags for them. The two had recently become aware of a study by the Center for Environmental Health (<https://www.ceh.org/wp-content/uploads/CEH-Disposable-Foodware-Report-final-1.31.pdf>) revealing that most compostable fiber trays and containers contain per- and poly-fluorinated alkyl substances (PFAS). These chemicals are commonly used in disposable/compostable foodware because of their grease- and water-repelling properties. PFAS are potentially harmful to human health and the environment, and most people are unaware that they are in these types of products. By composting or landfilling these items, there is a risk that the chemicals may make their way into the environment.

Melissa reached out to Emily, the food services director, sharing the study’s findings and discussing the benefits of using reusable foodware. They both agreed that reusable trays would be the best solution but the dishwashing machines had been removed years ago, and Emily said the capital investment in new machinery and added staff would be very costly. Passing on that option,



NHPPP staff began a search for PFAS-free food trays. They contacted their national network of pollution prevention technical assistance providers for any input they might have. After much discussion and searching, NHPPP was connected to a relatively new and growing California-based company that produces compostable, PFAS-free Polyactic Acid (PLA) foodware from plants that uses 30%-50% less material than most comparable technologies. This material is designed to be compostable in a commercial composting facility. Unfortunately, there are very few commercial composting facilities currently in New Hampshire, but that could change as more need for composting arises. Emily is in the process of finding a waste hauler with composting options.

As with any single-use item, these compostable PLA trays still use valuable resources and create a waste that needs to be managed. Looking forward into the future, Emily hopes to switch to reusable foodware and eliminate this waste stream completely. But for now, they have a safe, compostable alternative to both the polystyrene foam and pressed fiber containing PFAS for their lunch trays – a great success. ■



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#ThisIsNH photo contest winner

Congratulations to Joe George for winning our #ThisIsNH photo contest with his submission titled “Lake Days,” taken on the shores of Profile Lake in Franconia Notch. Joe George’s photo is now our new Twitter cover photo and #ThisIsNH website cover! Every photo submitted to the photo-sharing story map in the month of July was entered into the contest and then voting was open for the first week in August on Twitter. Take a look at the story map online at arcg.is/2o8Ms5J, and submit your photos, too. Keep an eye out for more photo contests in the future! ■



NHDES “Can-opoly” summer food drive



In mid-July, NHDES hosted a 3-week long internal “Can-opoly” food drive to collect food and hygiene items for children and families in need. This year, the can drive was inspired by the popular board game Monopoly. The NHDES building was divided into five different game pieces: racecar, thimble, battleship, iron and boot. Donated food represented Monopoly currency and, as game pieces moved around the board, teams purchased New Hampshire-specific properties. After three weeks of fun yet competitive game play, a total of \$1,121 and over 3,700 items were donated by NHDES employees. The donations were delivered to Friends of Forgotten Children, a local organization that provides assistance to children dependent on free or reduced-cost lunches. ■