

COMMISSIONER'S COLUMN

One good thing happened in 2020

Every new year comes with a time of reflection. Looking back on a challenging 2020, there was often little occasion for celebration. However, there was one good thing that happened, specifically regarding New Hampshire's air quality: there were no air quality exceedance days in 2020! This has never happened in the history of NHDES' record keeping. An exceedance day is a day when air quality exceeds the level of the National Ambient Air Quality Standard, (NAAQS). It should be noted that the NAAQS allow for a few exceedances each year for most air pollutants. An actual NAAQS violation is triggered when enough days exceed the level of the NAAQS occur over a several-year period. New Hampshire has not had any NAAQS violations in recent years. We should also remember that the NAAQS are reviewed periodically and tend to get more stringent over time as new and improved scientific studies find evidence of negative impacts of air pollution on public health at lower concentrations.

What led to the great air quality in New Hampshire during 2020? There are a few factors to consider; one of them is reduced emissions, from long-term efforts to reduce emissions. New Hampshire has been measuring a trend of lower pollution concentrations for over 20 years. The emission reductions in 2020 were unique, particularly during the beginning of the COVID-19 pandemic when stay-at-home orders were issued in New Hampshire and other jurisdictions. While people were staying home more and commuting

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Protecting and restoring aquatic resources

The Aquatic Resource Mitigation (ARM) Fund program is preparing for the 2021 grant round with an announcement of \$2 million available in the Salmon Falls – Piscataqua River watershed. New Hampshire's aquatic resources are under threat from development, land conversion, and climate change. As these important features are lost from the landscape, so are the valuable functions they perform for water quality, flood storage, and wildlife habitat. To offset losses to these resources, the NHDES Wetlands Bureau manages the state's In-Lieu Fee (ILF) compensatory mitigation program, which provides grants to projects that will protect, restore, and enhance wetlands and streams. When there are significant unavoidable impacts, a permittee may make a payment to the ARM Fund and the monies are pooled into nine watershed accounts. NHDES oversees the ARM Fund program and works with a nine-member Site Selection Committee and coordinates closely with the Army Corps of Engineers and other federal partners to disburse the funds as competitive grants. The program supports projects that protect resources of high ecological value and promotes restoration efforts where functions can be sustained over the long term.

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The 30-acre Walker Property is an ARM-funded conservation project in Durham, NH. The project will protect important wildlife habitat and create critical connections between other conserved lands. Image credit: Jan McClure, The Nature Conservancy.

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less, emissions from mobile sources dropped. Traffic count data showed that total vehicle miles traveled were clearly lower in 2020 than in previous years. Lower nitrogen oxide emissions from motor vehicles could have contributed to less production of ozone and secondary formation of particle pollution.

Another factor, one that is more out of our control, is the weather. Certain meteorological conditions can either support good air quality or contribute to elevated levels of air pollutants. During the summer months, when ozone is the primary pollutant of concern, winds from the west and southwest, where there are an abundance of fossil fuel-fired power plants, can transport ozone and its precursor pollutants into New Hampshire. Similarly,

winds from the southwest can carry ozone and its precursors from the "Urban Corridor," a region that stretches from Washington, D.C. to Boston. This pollution transport, combined with New Hampshire's own emission sources, can lead to poor air quality and exceedances of the ozone NAAQS. Even though record-breaking warm temperatures were seen in New Hampshire and across the nation during 2020, it is possible that other meteorological conditions, such as wind direction, did not align with the direction of upwind pollution sources, resulting in cleaner air and no exceedance days.

In the winter, when particle pollution (PM_{2.5}) is the primary air pollutant of concern, valley communities such as Keene can experience temperature inversions. These inversions occur when warmer air aloft traps colder air below it, along with pollutants, at ground-level. These inversions can be particularly strong and long-lived in valleys. Residential heating with wood can contribute to higher levels of PM_{2.5} when thermal inversions occur. Analogous to summertime ozone in 2020, it may be that winter meteorological conditions were not conducive to PM_{2.5} buildup. Keene has experienced lower PM_{2.5} concentrations over the past few years, as a result of cleaner wood burning stoves replacing older dirtier stoves and less air pollution transport from upwind areas.

Whether the particularly good air quality of 2020 was a result of long-term local and regional air pollution reduction efforts, the reduced human activity due to the pandemic, coincidental meteorological phenomena, or a combination of all of these factors, the first-ever year without a single exceedance day is a significant milestone. This achievement is great for our residents, but we must remain watchful as unhealthy air pollution levels still exist in neighboring areas of southern New England, and the NAAQS, which serves as our benchmark, are subject to review and revision. While 2020 was a challenging year for everyone and one that will not soon be forgotten, NHDES will remember it as the year of No Air Quality Exceedances! ■



NEWEA recognizes NHDES staff



The New England Water Association (NEWEA) recognized Ray Gordon, Water Treatment Facility Administrator for the Winnepesaukee River Basin Program, with their Alfred E. Peloquin Award on February 23, 2021. Established in 1990, the award is given annually to an individual who has shown a high level of interest and performance in wastewater operations and who has made a significant contribution to the wastewater field. The award honors NEWEA's former Executive Director for his initiatives in training programs for wastewater treatment and

his many years of dedicated service to the Association. Congratulations, Ray! ■

ENVIRONMENTAL NEWS

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The ARM Program recognizes the potential for long-term environmental results from mitigation that considers watershed goals, assists conservation efforts important to a town, and targets efforts toward important and vulnerable wetlands in a region. To date, the program has provided funding to 124 projects statewide, that have achieved 28,000 acres of land protection, over 100 acres of wetland and stream enhancement, and preservation of critical habitats for threatened and endangered species. To review a comprehensive dataset of grant awards provided to date, go to the new [ARM Conservation Dashboard](#).

Another key factor to the program's success is the use of data that has been collected on habitat and stream conditions. This information is consolidated into the [Aquatic Restoration Mapper](#). These tools help target candidate locations for protection, restoration, flood resiliency, and public safety.

All of the mitigation resources, updated application materials and information on the program are posted on the [Wetlands Mitigation page](#) and ready for review. For more information, contact Lori.Sommer@des.nh.gov, (603) 271-4059. ■

Electric vehicle purchasing information

Did you know that municipalities, school systems, and some nonprofits can purchase electric vehicles (EVs), plug-in hybrid electric vehicles (PHEVs), and other higher fuel-economy vehicles off the New Hampshire state contract?



EVs and PHEVs make sense for light-duty fleet diversification and have been shown to have a lower total cost of ownership than conventional gasoline and diesel vehicles. Plus, there are the added benefits of using less energy and emitting fewer greenhouse gases and other air pollutants.

To see the vehicles available, check out the [2021 Vehicle Index](#), which includes purchase price, a total-cost-of-ownership analysis, fuel-economy values, and CO₂ emissions per mile traveled. The vehicle contract is located at this link on the [New Hampshire Department of Administrative Services website](#). Use the search term "vehicle."

If you have questions regarding the contract process, please direct them to Alan.Hofmann@nh.gov. Questions concerning the vehicles should be directed to the vehicle dealers.

ELIGIBLE PARTICIPANTS:

Political sub-divisions (counties, cities, towns, school districts, special district or precinct, or any other governmental organization), or any nonprofit agency under the provisions of section 501c of the federal internal revenue code, are eligible to participate under this contract whenever said sub-division or nonprofit agency so desires. These entities are autonomous and may participate at their sole discretion. In doing so, they are entitled to the prices established under the contract. However, they are solely responsible for their association with the Contractor. The State of New Hampshire assumes no liability between the Contractor and any of these entities. ■



Revitalizing “Shoe City’s” Past

GZA GeoEnvironmental, Inc. and Russ Lagueux, NHDES Oil Remediation and Compliance Bureau

The Factory on Willow, LLC took ownership of a former shoe manufacturing factory in Manchester, in 2018 and, along with environmental consultant GZA GeoEnvironmental, Inc. (GZA) and NHDES, has made considerable strides toward cleaning up one of the state’s oldest legacy petroleum-contaminated sites. The company obtained the site with the vision to develop it into a collaborative space to live, work and play.

The Factory on Willow, built in 1880, first operated as McElwain Shoe Company’s Cohas Factory and later as Johnson Shoe Company. The site was used for manufacturing shoes until 1972, contributing to the “Shoe City” nickname of Manchester’s past.

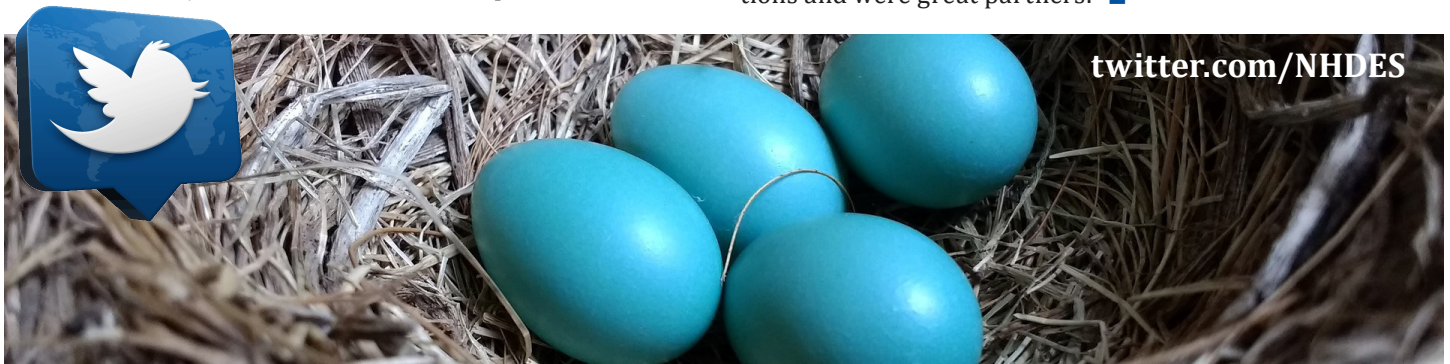
Historically, during its shoe manufacturing days, the building was converted from coal to fuel oil supplied from underground storage tanks. In the 1970s, leaks from a tank were discovered and monitoring of the site conditions began. However, the leaking tank, having released an estimated 200,000 gallons of fuel oil, was located under a building addition and contaminated soil could not be easily removed. Over the years, remediation efforts at the site have included installing wells to recover oil from the ground, but no large-scale excavation had been conducted because of the leaking tank’s location.

With the plans for The Factory on Willow redevelopment taking shape in 2019, the project team, including GZA, saw an opportunity to take advantage of the planned renovations and applied for funding through the NHDES Petroleum Reimbursement Fund to initiate an ambitious soil excavation project. The redevelopment plans included removing the building addition over the leaking tanks, which allowed access to the contaminated soil for removal. Russ Lagueux, the NHDES project manager, stated, “For nearly 50 years, soil and groundwater at the property has been negatively impacted from heating oil that leaked from the tank. The redevelopment of the site by The Factory on Willow group provided an opportunity to access the contamination and remove it in conjunction with the redevelopment work.”



Shallow soils that were not contaminated with petroleum were excavated and staged on site for reuse as backfill. The petroleum-contaminated soil, more than 5,000 tons, was excavated and transported off site for thermal treatment recycling. Once excavation advanced below the water table, groundwater was pumped from the excavation to allow excavation in the dry. Over 600,000 gallons of water were pumped to an on-site activated carbon treatment. Excavating up to 23 feet below ground adjacent to the historic brick building required braced sheet piles to support the excavation and real-time settlement and vibration monitoring of the building.

The Factory on Willow is currently in the final stages of redevelopment and leasing is underway. In the end, the extensive improvements to the building and the remediation in the ground are providing this central Manchester neighborhood a revitalized community space at a former shoe manufacturing property. The Factory on Willow’s Elizabeth Hitchcock remarked, “Projects like these highlight the potential for the south end of Elm Street and while the environmental mitigation is daunting, GZA was quick to answer our questions and were great partners.” ■



A new leader for Land Resources Management



The NHDES Land Resources Management (LRM) Program gained a new leader in January of this year when Philip Trowbridge returned to the agency after leaving in 2014 to work in California. Serving as the LRM Program Administrator, Trowbridge will oversee the permit programs that regulate land

development activities throughout the state, including the Alteration of Terrain Bureau, Subsurface Systems Bureau, Wetlands Bureau and the Shoreland Program.

During his first stint at NHDES, Trowbridge was in the Watershed Management Bureau, serving as the staff scientist for what is now the Piscataqua Region Estuary Partnership and as Water Quality Standards Program Manager. Trowbridge said he spent a lot of time out on boats collecting samples and wading through icy waters to measure chlorides near Interstate 93.

“This work gave me a great appreciation for the complexity and importance of water and water quality in New Hampshire, from rainfall to groundwater to wetlands to lakes, rivers and estuaries,” he said.

Trowbridge was honored with NHDES’ David S. Chase Award for Science in 2013.

Trowbridge left NHDES in 2014 to be the manager of the Regional Monitoring Program for San Francisco Bay. His role was to manage the overall program from strategic goals to day-to-day operations and everything in between, including finances and the particularly complex and important area of governance.

#ThisIsNH Earth Day Photo Contest!

What are your plans for celebrating Earth Day on April 22?

Whether you are picking up roadside litter or visiting your favorite spot in the great New Hampshire outdoors, we want to hear from you!

Submit your Earth Day photos for a chance to get your image as the NHDES Twitter and Facebook banners. One lucky winner will have their image displayed as the homepage banner on the new NHDES website.

Photos must be taken and submitted during the contest period from **April 22-May 2**. There is no submission limit. Submit through the [#ThisIsNH Story Map](#).

Returning to the East Coast 2018, Trowbridge served as the Assistant Director for the Water Planning and Management Division at Connecticut Department of Energy and Environmental Protection (DEEP). He supervised a team that did many of the same functions as the NHDES Watershed Management Bureau.

“DEEP is interesting because it is the equivalent of NHDES, Fish and Game, Public Utilities Commission, and parts of Department of Natural and Cultural Resources all in one big agency,” he said. “It was a great arrangement for integrating water quality programs with wildlife conservation and energy programs.”

Trowbridge sees a lot of opportunities for the LRM Program, starting with the caliber of people on the staff.

“First and foremost, we have great people,” he said. “One benefit of leaving NHDES for a while is gaining perspective on the quality of our staff. With great people we can do great things.”

One of those great things is keeping up with demand for permits, within statutory timelines, while making process improvements recommended by an external audit of the Wetlands Program. Secondly, the LRM Program is poised for more e-permitting solutions, capitalizing on the experience of having already transitioned the Subsurface Systems Bureau to e-permitting. Finally, the COVID-19 pandemic has highlighted strong public support for nature, water and economic development, and Trowbridge emphasizes that LRM staff are essential workers at the interface of these three things.

“I want to take advantage of this moment in time to show the value of our programs in people’s lives,” he said. ■



2020 Asset Management Awards

On January 19, NHDES presented the 2020 Asset Management Awards to the Town of Salem Asset Management Team (municipal award) and to Tony Cavaliere from the Towns of Marlborough and Jaffrey (individual award).

The Asset Management Awards were established to promote and encourage communities to implement Asset Management Programs (AMPs). AMPs are a holistic plan to manage total infrastructure systems over the life cycle of assets in the most cost-effective way. NHDES believes that by providing assistance to communities for the development and implementation of AMPs, New Hampshire residents will benefit from more sustainable water, wastewater and stormwater systems throughout the state.

Since the start of the NHDES asset management initiative in 2012, NHDES' expectations have been surpassed as communities have embraced the challenge of asset management. With each day that passes, asset management is increasingly becoming the accepted and expected way of doing business within the water industry and New Hampshire is certainly on the right path with adopting this philosophy.

Individual Award



Tony Cavaliere received the individual award for his work associated with developing and/or administering AMPs in two communities – Marlborough and Jaffrey. He is the mover and shaker that brought attention to the value of developing an AMP for community water assets. Tony has said, “Nobody ever expects that

their community needs to spend millions and millions of dollars over the next 10-20 years until it is all laid out on paper staring you in the face. That is when the real work begins... I think most people get sticker shock when they see the replacement costs of a stretch of water main. However, once you realize how much time, money and effort is spent every time an old water main breaks you begin to understand how it can actually be cheaper to replace an old asset before failure than after. This becomes more apparent if large industrial users, and high-risk users, are relying on an outdated asset.” Tony has embraced the concepts of asset management,

sees the value of it, effectively communicates the purpose and need, and is a true believer in the benefits. He is an Asset Management Champion and should be recognized for his exemplary work and commitment to the mission. For these reasons and many more, Tony Cavaliere has won the 2020 NHDES Asset Management Individual Award.

Municipal Award

The Town of Salem received this award in acknowledgement of the work it has done to develop Salem's AMP and communicate the value of that AMP to the public. The Town of Salem has embraced the idea and the concepts of turning data into dollars by using its resources and most importantly, its AMP. As part of the AMP, the town confirms that any capital investment improves or adds Level of Service to the Town, or shows that the capital investment is extending the life of an asset beyond its normal life span. Life Cycle Cost Analysis information is collected every day through work orders linked to the assets. This information, plus the cost of the asset, allows for financial information to be collected. The data allows the staff to see where their time and expenses are going. This information also shows what the failure mode will likely be and predicts when to replace the asset. For these reasons, and many more, the Town of Salem has won the 2020 NHDES Asset Management Municipal Award.

As NHDES continues with the journey of promoting asset management throughout the State of New Hampshire, exemplary work like that of the Town of Salem and Tony Cavaliere will propel NHDES' vision into reality. NHDES urges communities throughout New Hampshire to continue their asset management work or to contact us to find out how to get started. Perhaps you or your community will be presented with the NHDES Asset Management Award next.

In 2019, the NHDES Asset Management Award was established by the NHDES Drinking Water and Groundwater Bureau (DWGB), Wastewater Engineering Bureau (WWEB) and Watershed Management Bureau (WMB). The award recognizes exemplary AMPs within the state. Solicitation of nominees provided exceptional candidates and, as a result, NHDES decided to recognize two winners for this year's Asset Management Award. The Individual Award is for an individual who stands out for high achievement and understanding of asset management concepts and who has put that knowledge and energy into work on the ground. The Municipal Award goes out to a Municipality that has not only implemented Asset Management but continues to expand its program, and along the way, is cementing the cultural shift needed to create successful AMPs.

For more information about Asset Management and funding opportunities, please visit our Asset Management webpage or email Luis.Adorno@des.nh.gov for drinking water, Sharon.Nall@des.nh.gov for wastewater, or Deborah.Loisselle@des.nh.gov or Katherine.Zink@des.nh.gov for stormwater. ■

\$45 million in energy costs saved

The State of New Hampshire has reduced its total annual building energy use by 7% and its building fossil-fuel use by 12% in comparison to the baseline year, state fiscal year (FY) 2005, according to the recently released 2020 Annual State Energy Report. As a result of the State's energy management efforts between FY2009 and FY2020, the State has avoided over \$45 million in energy costs. These avoided energy costs are dollars retained within the state's economy and represent a monetary savings to New Hampshire's taxpayers.

The Annual State Energy Report is produced annually in conjunction with the New Hampshire Department of Administrative Services' State Energy Management Office, NHDES, and the Governor's Office of Strategic Initiatives.

"Energy management is one of the ongoing success stories of state government. We continue to move to less costly, more efficient resources and use fewer of them each year, saving precious taxpayer dollars and continually improving the State's footprint. The citizens of New Hampshire can be very proud of a dedicated cadre of state workers dedicated to pinching not just pennies but kilowatt hours," said Charlie Arlinghaus, Commissioner of the Department of Administrative Services.

The State of New Hampshire is one of the largest energy users in the state. Since FY2004, staff have been documenting the State's total building energy consumption and working to reduce both total energy use and the State's reliance on fossil fuels. Despite significant fluctuation in energy prices since 2004, the State has managed to keep its total building energy costs relatively stable during that time frame. This was accomplished through a combination of energy efficiency projects, such as transitioning to LED lighting and more efficient equipment, and other energy management initiatives, including switching to lower-cost fossil-fuel resources, strategic electrification (e.g., heat pumps), and switching to renewable electric and thermal sources through the installation of solar panels and the construction of a thermal biomass facility.

"Reducing the State's total energy consumption has positive public and environmental health benefits by lowering the emissions of smog-forming compounds and particle pollution, mercury and greenhouse gases. The reduction in these pollutants protects our most vulnerable populations, as well as our lakes, streams and forests," said Bob Scott, NHDES Commissioner.



Going forward, the State Energy Management Office expects to see additional reductions in building energy use and expenditures as energy management investments are implemented to meet these ambitious fossil-fuel reduction targets. The full State Annual Energy Report is available on the Department of Administrative Services website. ■

New NHDES website

The completely redesigned NHDES website has been live for three months. If you have not yet visited it, here are a few tips to keep your visit simple.

- **Site search.** Located at the very top of the site, the new search engine will help you find both pages and documents.
- **OneStop.** There is a link for OneStop at the top of the site and the familiar logo is also near the bottom of the homepage.
- **Rules.** Find all NHDES rules in the Admin Rules library, under Rules and Regulatory. Use the Subcategory and Document Type drop-downs to narrow your search.
- **Forms and Applications.** All NHDES forms have been moved to the New Hampshire Online Forms platform. Find specific forms on environmental topic pages or look for NHDES Forms under Resource Center. Navigate using the Form Finder or the Organization drop-down.

More information and a full guided tour of the site can be found on the [NHDES YouTube channel](#). ■



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New England Water Works Association honors NHDES staff

Richard “Rick” Skarinka of Concord, NH, recently received the 2020 Jerome J. Healey Award from the New England Water Works Association (NEWWA), the region’s largest and oldest not-for-profit organization of water works professionals.

The Jerome J. Healey Award acknowledges the contributions of an individual or a group of individuals, who have promoted the drinking water profession by reaching out to other NEWWA members and the public and have enhanced the relationship between the regulated community with state and federal personnel to protect water supply and public health.

Rick serves as manager of the Engineering and Survey Section of the NHDES Drinking Water and Groundwater Bureau. He manages drinking water engineers, sanitary surveyors, and is responsible for the drinking water technical review and oversight of 2,500 public water systems in New Hampshire. Rick has promoted staff networking opportunities so that the regulatory staff in New Hampshire know the operators, managers, and water works service community.

Rick is a regulator who understands that communication is key to ensuring safe and reliable drinking water. He approaches difficult conversations with respect and the true desire to understand where people are coming from and what their interests are. By practicing this approach, he has mentored many engineers along the way and has the respect and trust of the water systems he regulates.

Rick was recognized with this award on September 23, 2020, during the virtual 139th NEWWA Annual Conference. ■

