NewsLeaks

Vermont Rural Water Association
Spring 2026

Hinesburg's New WWTF p.4

Training Calendar p.8–9

The Vermont Rural Water Association promotes public health and environmental protection through technical assistance and education for drinking water and wastewater systems.

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Table of Contents

On the cover: Hinesburg's new wastewater treatment facility. Photo by John Alexander.

Improving Cybersecurity at Small Systems

by Liz Royer
Executive Director

I recently testified to the Vermont Senate Natural Resources Committee regarding smart meters and cybersecurity. I thought it would be important to share some of my testimony as it is relevant for many in our industry:

RECENT INCIDENTS

Multiple security incidents have been reported recently at Vermont water and wastewater facilities, and there are likely many more that we haven't heard about.

In one town, a former administrator gained access to wastewater facilities and equipment —both physically and online—after he was no longer employed there.

In another example, an operator noticed unexplained mouse movements on their computer. While they initially dismissed the movement as IT maintenance, an investigation revealed multiple interconnected systems were compromised.

An industrial pretreatment facility lost process control due to a cyber attack. They were eventually forced to report loss of data. But, they were not planning to notify the downstream municipal wastewater plant of the potential impacts because they did not realize the threat could be compounded.

Finally, a potential threat actor posed as an industry salesperson to gain physical access to a municipal wastewater plant. This person was given a tour and took photographs of facilities and equipment, then disappeared without providing any contact information.

The Town of Brandon held a tabletop exercise to practice responding to a cyber attack.

SMALL SYSTEM TROUBLES

Vermont Rural Water began working on cybersecurity a few years ago by partnering with experts and hosting classes that would resonate with small water and wastewater systems. Most cybersecurity trainings are tailored to an audience of IT professionals. In Vermont, most water systems do not have an IT professional.

In assisting with cybersecurity evaluations and assessments at small systems, we became aware of other concerns. Even for systems that have an IT consultant or company through their town office, those providers are focused on emails and file storage, not SCADA and other operational technology and controls. The operators we spoke with were frustrated that their town managers and other system officials didn't understand the need to budget for upgrades and improvements to address current and future cyber threats.

In October 2024, Vermont Rural Water was selected as one of two states to host a pilot project focusing on cybersecurity at small,

CONTINUED ON PAGE 13 »

Hinesburg's New WWTF Goes Live

by Forest Anderson
Water & Wastewater System Specialist

John Alexander

If you drove past Hinesburg's new wastewater treatment facility on any given night during those first few weeks of operation, you might have noticed a light on in the control room. That was John Alexander, the chief operator, watching over the plant like a new parent hovering beside a crib.

There were no ribbon cuttings when the new Sequencing Batch Reactor went live in December, just a brief mention in the town manager's report and the quiet hum of equipment on the outskirts of town doing exactly what it was designed to do. But behind that seamless transition was John, who had spent many early mornings and late evenings monitoring every stage of the process, studying the computer screens that tracked aeration cycles, settling times, and effluent quality in real time.

"I love this job," John said during a recent tour of the facility. "I want to finish out my career here."

That kind of dedication doesn't come from nowhere, or from just anyone. After seven years of planning and four years of construction, John understood that the plant's first weeks would determine whether all that work had been worth it. The old lagoon system—with four open ponds where solids settled and bacteria slowly break down waste before chlorination, ultimately being discharged into the LaPlatte River—has served Hinesburg for decades. But between the desire for community growth and the State issuing stricter discharge limits, demanding drastic reductions in phosphorous and ammonia, the town had no choice but to upgrade.

The $19 million facility that rose from the footprint of those old lagoons represents the largest infrastructure project in Hinesburg's history. Engineers from Aldrich & Elliott spent years designing a system that could meet modern standards while accommodating the town's growing population. Construction crews battled wet clay sixty feet underground, inserting wick drains and hauling in mountains of sand to stabilize the soil. Town manager Todd Odit secured nearly $9.4 million in grants and zero-interest loans to keep the project financially afloat.

But equipment and engineering only get you so far. Someone has to know the system inside and out, which valves have personalities (yes, even new ones), which readings signal trouble before trouble arrives, and how the bacteria are settling into their new home. That someone is John Alexander.

During those early days and nights, he watched the effluent improve incrementally, each test showing lower nutrient levels than the day before. By the 37th day of

Left: The new treatment facility on a snowy February morning

Center: “Can’t argue with that effluent!” John Alexander and Forest Anderson examine the plant’s effluent.

Right: Forest Anderson and operator Mark Lund

operation, results were consistently exceeding state water quality requirements across all permit parameters. The discharge flowing toward Lake Champlain was cleaner than anything Hinesburg had ever produced with no chlorine, minimal phosphate, and barely a trace of ammonia.

The plant now handles around 190,000 gallons daily, with capacity to spare for the hundreds of new housing units breaking ground this spring. Ratepayers now look forward to financial reprieve; the burden will ease when the customer base grows.

For John, though, the reward isn’t in the permit limits or the rate structure. It’s in knowing that the water leaving his facility is safe for Vermonters, the LaPlatte, and the lake beyond. Some clock in and clock out. Others, like John, truly make a difference for the community they serve through dedication and diligence. Thank you, John.

YANKEE INGENUITY

by Wayne Graham
Wastewater Specialist

This column details unique solutions operators come up with every day to problems large and small. Below are several cases of operators finding solutions, saving money, and making life at their second home—the treatment plant—a little easier.

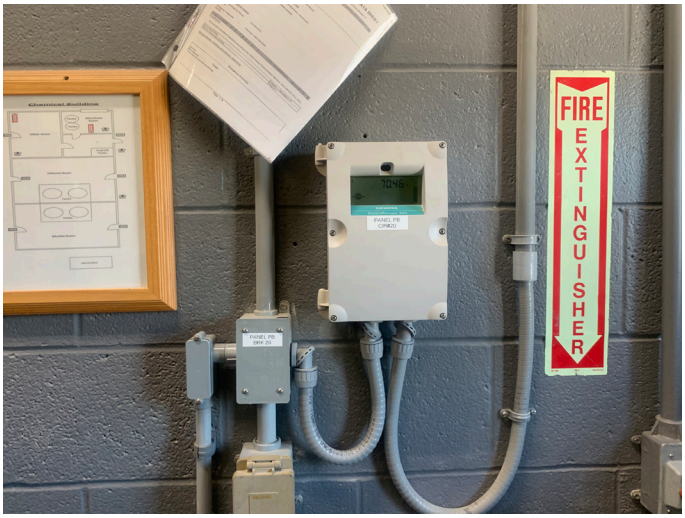
CHEMICAL PUMP MONITORING

I love going to visit John and Jeff at the Wilmington WWTF. Every time I do, I get subject matter for this article! To ensure that their disinfection system is delivering chemicals to the chlorine contact tank, they have installed a pressure sensor to monitor that the metering pumps are actually moving liquid. The operators receive an alarm if the sensor detects an issue. There are several manufacturers of this equipment, reach out to me if you want some information.

St. Johnsbury operators use a different approach to pump failure issues. If a tube fails on their peristaltic chemical feed pumps, the pump shuts off and the backup pump automatically starts.

PUSH CAMERA NOZZLE

While still at the Wilmington WWTF, John was excited to show me a new tool that he knew I would be interested in: a push camera nozzle. Anyone who has ever tried to get a push camera more than 150 feet through a sewer line will appreciate this one. The device goes on the end of your jetter, and allows you to attach a push camera head to it so you can pull the camera head the full length of the sewer line. These are custom made to your jetter hose size, pressure and capacity. Give me a shout if you want more details and contact information.



Ultrasonic level unit

Chemical tank located within leak-proof concrete containment walls.

CHEMICAL ROOM UPGRADES

The Rutland WWTF has added a few custom chemical room features. They use ultrasonic sensors to measure the chemical levels in their storage tanks. This accuracy is especially useful with larger diameter tanks. They have also sealed the chemical containment walls with a chemical resistant coating, ensuring no leaks if the containment was ever needed.

Send your interesting ideas to me for future columns. I also encourage you to tour other facilities and share ideas; you will find that networking with other operators can be very beneficial. Several organizations can also help: VT WARN, GMWEA, VT Watershed Management Division, and of course, Vermont Rural Water!

Stay safe out there, we need you! 💧

Training Calendar

Spring 2026

Date	Course	TCHs	Location	Cost (Member/Non)
Tue, April 7 9 am – 12:30 pm	Coagulation, Jar Testing, and Chemical Handling	3 **W WW**	Montpelier[1]	$24 / $48
April 14 – 23 9 am – 1:30 pm	Small Systems Class 2 Water Treatment Course	16 **W**	Hybrid (Zoom/Essex[2])	No cost Textbook sold separately
Tue, April 14 9 am – 12 pm	SRF Funds for Drinking Water, Wastewater, and Stormwater **New!**	2.5 **W WW**	Montpelier[3]	No cost
Tue, April 21 9 am – 12:30 pm	PFAS & Water Supply Rule	3 **W**	Zoom	No cost
Wed, April 22 8:30 am – 12 pm	Wastewater Operator's Guide to NPDES Permits and Facility Inspections	3 **WW**	Montpelier[1]	$24 / $48
Thur, April 23 9 am – 3 pm	Wastewater Microbiology: A Monitoring Program for Operators	5 **WW**	Zoom	$60 / $120
Thur, April 23 1 pm – 4 pm	First Aid, CPR, AED	3 **W WW**	Lyndon[4]	$100 / $200
Tue, April 28 8:30 am – 1 pm	Class 3 Exam Preparation	4 **W**	Essex[2]	$32 / $64
Wed, April 29 8:30 am – 1 pm	Class 4 Exam Preparation	4 **W**	Essex[2]	$32 / $64
Thur, April 30 8:30 am – 1 pm	Distribution Exam Preparation	4 **W**	Essex[2]	$32 / $64
Tue, May 5 9 am – 12:30 pm	First Aid, CPR, AED	3 **W WW**	Williston[5]	$125 / $225
Thur, May 7 9 am – 12:30 pm	Operation and Maintenance of Groundwater Systems	3 **W**	Zoom	$24 / $48
Thur, May 14 8 am – 3 pm	Vermont Rural Water's Annual Conference	3.5 **W WW**	Fairlee[6]	$90 / $140
Tue, May 19 9 am – 12:30 pm	Personal Protective Equipment, Ladder, and Electrical Safety	3 **W WW**	Zoom	$24 / $48
Wed, May 20 9 am – 12:30 pm	Operation and Maintenance of Distribution Systems	3 **W**	Zoom	$24 / $48
Tue, May 26 9 am – 12:30 pm	Water Treatment: Filtration Processes	3 **W**	Zoom	$24 / $48
Wed, May 27 9 am – 12:30 pm	Permit Required Confined Space Entry	3 **W WW**	Zoom	$24 / $48
Wed, May 27 9 am – 12:30 pm	Model Sewer Use Ordinance (SUO) and Fats, Oils, and Grease (FOG) Guidance	3 **WW**	Essex[2]	No cost

TCH = Training Credit Hour **W** = Approved for Water Credit **WW** = Approved for Wastewater Credit

Register Online: vtruralwater.org/training

Date	Course	TCHs	Location	Cost (Member/Non)
Thur, May 28 9 am – 12:30 pm	Trench and Excavation Safety	3 **W WW**	Zoom	$24 / $48
Tue, June 2 9 am – 12:30 pm	Wastewater Lift Stations From an Operator's Perspective **New!**	3 **WW**	Montpelier[1]	$24 / $48
Wed, June 3 9 – 11:15 am	Preventing Heat Illness in the Workplace	2 **W WW**	Zoom	$16 / $32
Tue, June 16 9 am – 12:30 pm	Issuing a Boil Water Notice	3 **W**	Zoom	$24 / $48
Wed, June 17 10 am – 2 pm	Hands-on Pipe Repair Training **New!**	3.5 **W WW**	S Burlington[7]	$28 / $56
Thur, June 18 9 am – 12:30 pm	Safety: Water and Wastewater Facility Flooding	3 **W WW**	Zoom	$24 / $48
Wed, June 24 9 am – 12:30 pm	Water Treatment: Coagulation	3 **W**	Zoom	$24 / $48
Tue, June 25 9 am – 12:30 pm	Operation and Maintenance of Distribution Systems	3 **W**	Zoom	$24 / $48

TCH = Training Credit Hour **W** = Approved for Water Credit **WW** = Approved for Wastewater Credit

Locations

1. Montpelier: Dewey Building – 1 National Life Dr, Montpelier, VT (furthest building in National Life Complex)

2. Essex: Vermont Rural Water's office – 20 Susie Wilson Rd, Suite B, Essex Junction, VT

3. Montpelier: Associated General Contractors – 1 Graves St, Montpelier, VT

4. Lyndon: Public Safety Facility – 316 Main St, Lyndonville, VT

5. Williston: Courtyard – 177 Hurricane Ln, Williston, VT

6. Fairlee: Lake Morey Resort – 82 Clubhouse Rd, Fairlee, VT

7. South Burlington: EJP – 1235 Airport Parkway, South Burlington, VT

Renewal Reminder

Class 2 and 4 water treatment certifications will be up for renewal in 2026. The renewal form is due by May 31 and can be found at bit.ly/DWOpCertForm. Class 2 operators need 10 training credit hours (TCHs) and Class 4 operators need 20 TCHs.

Registration and Payments

Register online at vtruralwater.org/training. Members of the Vermont Rural Water Association receive a 50% discount on most registration costs.

Cancellations/Refunds

Cancellations received at least 24 hours in advance can receive a refund or transfer to another class. No-shows will be charged the full course fee.

Small Water Storage Tank Inspections

by Tim Russo
Deputy Executive Director

We're sometimes asked if Vermont Rural Water Association can perform water storage tank inspections. The short answer is yes, but first, a bit about what constitutes an "official" inspection.

The Water Supply Rule states:

> All water storage tanks shall be comprehensively inspected, inside and out, every 5 years, except for newly constructed, newly painted (inside), or newly reconditioned tanks (inside and outside), which shall be inspected within 10 years of service and every 5 years thereafter. The inspection of the outside of a buried or partially buried tank may be limited to exposed portions. The inspection, findings, and servicing documentation shall be retained in the water system's files for review upon request.

Anyone can perform these inspections effectively, providing they know what to look for. EPA offers comprehensive checklists, but for small in-ground storage tanks, here are a few basic suggestions.

A dead mouse stuck to the wall of a tank after an access hatch was left open.

Root infiltration into a storage tank.

Bioslime before (bottom) and after (top) power washing.

Sludge from over-coagulation in a clearwell.

Operators should routinely open the hatch and shine a flashlight inside to see if there are signs of anything obvious such as floating debris, insects, or animals. If the bottom or sides of the tank can be illuminated, the operator should take note of the appearance.

Don't forget to also inspect the hatch, vents, and overflows. The hatch—which should normally be kept locked—should have an adequately functioning seal/gasket to prevent outside infiltration, such as insects and spiders. Overflows should be located in areas where they will not be affected by flooding (18" above grade). Vents should be downward facing. Overflows and vents must be covered with a minimum #24 mesh non-corrodible screen.

When it comes to more thorough tank inspections, you may want to reach out to us. Vermont Rural Water has several types of cameras that can be used to take videos and pictures of the conditions inside a tank, with no need to enter or drain the tank. We do recommend shock

chlorinating the tank after a camera inspection.

We will supply the operator with these photos and videos so that they can then present them to the appropriate Drinking Water and Groundwater Protection personnel if asked, such as during a sanitary survey. (We do not provide a report of our findings to DWGPD unless requested to do so by the operator.)

If the tank is found to be in need of a cleaning—a determination which will initially be made by both Vermont Rural Water and the operator at the time of the inspection—then next steps can be discussed at that time.

To request a tank inspection, email info@vtruralwater.org

Storage tank before (left) and after (right) cleaning.

Photos provided by Paula Jackson.

Coming Together to Reduce Project Costs

by Harry Dunn-Davenport
Water System Specialist

I think we can all agree that the cost of just about everything has gone up significantly recently, especially in the water and wastewater fields. Projects that were quoted just two years ago have almost doubled in price. I understand that the cost of materials has gone up significantly along with the cost of construction and engineering.

So where can we cut costs? In today's world it is more important than ever to look for ways we can save a few dollars.

I have traveled to countless water systems throughout the state, and a few things have really stood out to me about working relationships. Some towns work very nicely between different departments. They have a cohesive understanding that by working together, they can save taxpayers a significant amount of money.

However, there definitely are towns that have contentious relationships between departments, so this sort of collaboration doesn't happen. Fire districts may not have a working relationship with town government.

Whether it is a fire district or a water department, both are responsible for keeping costs affordable for the users of the system. Working together can be a way to save money. For example, the town's public works department, town garage, or highway department could help with excavation during a repair project, rather than hiring a private company to do this.

Fire districts could establish a working relationship with the town(s) they serve, and contract with the public works department for services like excavation.

I asked some operators at different systems about what works well and doesn't work well in regards to inter-departmental relationships. Here is some of the advice I got from Alan-Glen Burnell, chief operator for the Town of Poultney, and Mitchell Gallison, chief operator for Vergennes-Panton Water District:

1. Towns are already beginning to ask water departments, highway departments, and town garages to work more closely together. So start building and cherishing those bonds.

2. Cohesive relationships come from a place of mutual respect. If your water system includes multiple towns and multiple road crews, let the appropriate department know of any work that might happen on their road, regardless of what time it is. Sometimes even a text will do, like for an emergency repair at 2 am. Understand that people are busy and it's best to have projects scheduled well in advance.

3. Pop in to chat from time to time. We all know those people who tend to make an appearance only when they need something. Don't be that person. Stop in even if it's just to share a stupid joke.

The rise in project costs is coming as water systems are entering phase two of the Lead and Copper Rule Revisions, which requires systems with lead, galvanized, or unknown service lines to develop a Service Line Replacement Plan by 2027. Systems must identify the

materials of unknown service lines and replace all lead and galvanized pipes within 10 years.

These tasks come with big sticker prices. I have been to multiple systems and have seen the estimates for phase two of the lead and galvanized pipe removal projects. One item that really sticks out to me is the cost for locating and identifying unknown service lines. Sometimes the cost for this is $20k or more, and that is just identifying the pipe material. Most of these estimates are for outside contractors to come in and do the digging.

If towns and fire districts can bridge the gap between departments and work together, they can significantly reduce the cost of lead service line replacements. We are all on the same team and we should all have the same goal of reducing costs for the users of the system in a safe and compliant way.

As projects get astronomically more expensive, let's try to reduce costs where we can. Building constructive, lasting relationships not only creates a better team but also reduces costs to the end user. Who doesn't like saving a little cash?💧

» CYBERSECURITY CONTINUED FROM PAGE 3

municipal drinking water systems. We were trained by EPA headquarters staff, CISA, Water ISAC, and other leading agencies and organizations to provide on-site technical assistance for cybersecurity. This experience has expanded our knowledge and awareness of the many threats faced by small water systems. We learned that the threat actors cast a wide net, and while Vermont systems may not be specifically targeted, cyber criminals look for anyone that has an easy path to infiltrate.

NEXT STEPS

Regulation and enforcement of cybersecurity would be a mistake, in our opinion. Cybersecurity is multi-faceted, multi-layered, and constantly evolving. Federally, EPA has backed away from mandates and requirements and has focused their programs on outreach.

We have seen the need for more on-site technical assistance and accessible funding to maintain equipment, update software, and provide additional training. Training is needed not just for the system operators, but also for town officials, engineers, and service providers who may be called on for assistance.

While many resources already exist, there are very few options for small Vermont systems who want to design practices and procedures that work for the unique needs of their operations and management.

We view townwide tabletop exercises as the best way to communicate, plan, and coordinate local resources during a cyber threat. Water and wastewater systems are often left out of local and regional conversations on many topics, including emergency planning, hazard mitigation and cybersecurity. It may not be clear to town officials why the water or wastewater operators should be involved, but the water or wastewater plant and infrastructure are likely the number one target in many towns.

So what is the solution? Operators are overwhelmed with a growing number of threats. We suggest that they focus on the basics: personal cyber hygiene, developing protocols for when an employee departs, password management, and ongoing training and awareness for very small systems.

Moving forward, the best option for building ongoing relationships and sharing resources is a townwide cybersecurity tabletop with involvement from the local emergency management director (EMD), selectboard, fire, police, water, wastewater, and other local officials and legislators.

We believe cybersecurity at Vermont water systems can be improved by partnering with the many organizations and agencies offering training and outreach, along with direct technical assistance from a trusted and knowledgeable provider.

Operators at the Table
Advocacy in Action for Water and Wastewater

by Allison Smith
Training Administrator

Legislative advocacy is becoming an increasingly important part of water and wastewater roles. In the absence of operators telling their stories and sharing their expertise, important legislative, regulatory, and funding decisions can be made without the critical information and lived experience that only working in the industry can provide.

In December, the Vermont Rural Water Association held its second annual gathering of mentors and apprentices, and the focus was on building advocacy skills.

Karen Horn, who works closely with the Green Mountain Water Environment Association on legislative advocacy, provided an overview of the state-level legislative process. Apprentices and mentors then took part in a mock committee hearing centered on House Bill 286, which addresses conservation and development, water supply, maximum contaminant levels, and PFAS. Participants stepped into roles such as committee chair, community advocates, environmental experts, state staff, and water and wastewater operators. The goal was to give attendees the experience of how committee hearings work and to build confidence in speaking up on issues that directly affect the industry.

The afternoon session expanded the conversation to include decision makers. The group was joined by Bryan Redmond and Ben Montross from the Vermont Drinking and Groundwater Protection Division, Heather Collins from the State of Vermont Wastewater Program, and Morgan Nichols from the Office of Representative Becca Balint. Apprentices and mentors shared both the opportunities and challenges they experience in the industry and offered practical insight into what would best support operators and systems across Vermont.

For a few of us, advocacy efforts also extended to the national level through participation in the Rural Water Rally in Washington, D.C. in February. I attended the Rally alongside Vermont Rural Water board members Margaret Dwyer and Jon Thornton.

Left to right: Margaret Dwyer, Allison Smith, and Jon Thornton at the Capitol building in Washington, D.C.

Each year, the National Rural Water Association asks Congress for federal funding through USDA, EPA, and DOL. These funds benefit small, rural water and wastewater systems through grants, loans, and technical assistance.

During the Rally, we met with all three offices of Vermont's federal delegation—Senators Sanders and Welch, and Representative Balint—to request continued funding for Rural Water programs. Our conversations focused on the need for full funding of the State Revolving Funds, cybersecurity concerns, flood and drought resiliency, and workforce challenges. Vermont's delegation showed strong support for our work and a clear understanding of the realities faced by small and rural water and wastewater systems.

There are many ways to get involved in advocacy for both the water industry and your own system. If you are interested in learning more about how you can help share the most critical challenges, needs, and successes of the water and wastewater sector, please reach out. We are always happy to connect you with opportunities to make your voice heard.

2026 Conference & Trade Show

May 13–14, 2026

Lake Morey Resort • Fairlee, VT

Trainings • Vendors • Golf Tournament

Class Topics:

- SCADA – EOS Research
- Crisis Communications – Water PIO
- HDPE Infrastructure – FW Webb
- Metering Technology – EJP
- Drinking Water Regulatory Updates – DWGPD
- Wastewater Regulatory Updates – Wastewater Management Program
- Drought Response & Emergency Response – VEM & DEC
- Cyber Threats – CISA & FBI

Register at
vtruralwater.org/conference

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