

WATER TREATMENT PLANT ON WHEELS: NEW YORK CIRCUIT RIDER BUILDS FILTRATION TRAILER FOR TOWN IN NEED

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There is a quote by Jennifer Pahlka that says, “When one neighbor helps another, we strengthen our communities.” When the Town of Essex needed help, Morris Coolidge, New York Rural Water Association (NYRWA) Circuit Rider, stepped in to help, he exemplified the Rural Water way of helping communities.

The Town of Essex, near Lake Champlain in New York, began preparing to replace and upgrade its water treatment facility. The catch: due to space, the project required the new plant to be in the same space as the old one, which meant the plant must be decommissioned. Essex needed to find a way to provide drinking water to its more than 600 residents for the duration of the project, with an estimated completion time of three to four months.

When they began planning this project, the town’s board of directors asked Coolidge to attend their meetings since he had an established relationship from helping with leak detection, emergency response plans, and other needs over the years. Coolidge helped the town apply for New York’s Department of Homeland Security temporary filter trailers; however, they were denied the request because they considered this to be a planned outage, not an emergency.

After being denied the state’s filters, the board of directors explored the option of renting temporary filters from a private company, which came with a price tag of \$225,000, Coolidge said. At this point, they were unsure if they could move on with the project due to this cost which got Coolidge thinking: why don’t we just build our own trailer?

“I started scribbling on a piece of paper and getting a rough idea of the materials I would need to build a trailer myself and I came up with a preliminary price of under \$50,000,” Coolidge said.

He met with the Department of Health, the Essex water operator, Tina Gardner, the town supervisor, Ken Hughes, and the engineers to propose a design for the trailer, and the idea was approved! From there, the engineers took Coolidge’s design and developed the engineered design before sending the plans to the Department of Health for approval. The town of Essex also applied and was awarded a grant to help offset the costs of building the trailer, said Jamie Herman, Executive Director for NYRWA.

The town of Essex asked Coolidge if he would be willing to build the trailer on their behalf, to which he agreed.

“It was really something that I wanted to do for the community,” Coolidge said.

Once they received the green light from the Department of Health, Hughes ordered the trailer and had it delivered to Coolidge’s

residence, where his idea became a reality. It took Coolidge approximately four months, he estimates about 100 hours, to build the trailer with most of that being personal time.

The first step was to insulate the trailer to make it usable during the winter months. Then, Coolidge began building the filters and installing the necessary equipment. In the trailer there are four banks of filters: 5-micron, 1-micron, and an absolute micron filter, along with three ultraviolet light units, which can handle 27 gallons a minute each, a chlorination system, SCADA system, turbidity meters, and particle counters for raw or unfinished water. The trailer is also equipped with a heater to prevent freezing.

“It really is a complete water treatment plant on wheels,” Coolidge said.

At full capacity, the trailer can filter up to 116,000 gallons of water per day. The filter banks can be run individually or all together, providing flexibility depending on the water system’s needs. This also allows a bank of filters to be shut off and replaced if the need arises. The trailer can be set up to be run offsite with a computer or phone and it can be used with a variety of water sources to filter, including fire hydrants, lakes, and ponds. Depending on the water source, the trailer can be up and running within an hour. For other sources, it may take up to four hours, Coolidge said.

After the trailer begins to filter water, Coolidge said they test the chlorination, total coliform and E. coli before the water can be used. Sometimes, waiting on test results and the location of the closest lab is what holds up being able to use the trailer. Then, water operators at the plant where it is deployed will continue to test daily as they would normally with their treatment plant.

With so many details and complex parts, Coolidge needed some assistance during the building process. Todd Hodgson with the Essex County Department of Public Works helped install the SCADA system and ensure the components worked.

“Without him, we probably wouldn’t be where we are with the trailer,” Coolidge said.

Steve Freeman, another NYRWA Circuit Rider, assisted with the plumbing in the trailer, but Herman said Coolidge did it all for the most part.

“I have to give kudos to Morris because a majority of that filter trailer, he built on his own time in his own garage,” Herman said. “He was very dedicated on his part.”

Coolidge has served rural systems with NYRWA for the past 18 years. “My favorite part about my job is meeting really nice people and getting to assist people in need and rural communities,” Coolidge said. [Continued on next page >>>](#)

Once their project is completed, Herman said the Town of Essex's Board of Directors agreed to sell the trailer to NYRWA for \$1 so it can be used when other systems are in need.

"Rural Water is very thankful for what Essex has done by offering to sign the trailer over to us," Coolidge said. "In the end, we were able to come in under the \$50,000 mark, which saved the Town of Essex money. It's a win-win situation for everybody, and we will have a portable water filter unit that we can take around to help other systems in New York State."

The trailer brings a new level to emergency response in New York State during natural disasters and everyday emergencies, Herman said.

When natural disasters happen, filtration tends to be the largest need. Because of funding requirements in New York, utilities are required to have a redundant power source to receive funding, so many utilities in the state have generators installed.

[Caption Here](#)
For this reason, Herman said NYRWA is looking into building an additional trailer to have to use during disasters and other emergencies.

"It takes a more proactive approach," Herman said. "We are able to deploy the trailer before it becomes a dire emergency by allowing the system to make necessary repairs without cutting off water and without being cost-prohibitive."

If a system is down for any reason, the trailer can be beneficial in providing water. If a system is under a boil advisory, Coolidge said they can take the trailer and set it up in a parking lot to provide water to the impacted community.

"There's not a week that goes by that I don't get a call from somebody looking to use it," Coolidge said.

The filtration trailer was deployed for the first time in early June 2023. A neighboring town close to Essex had their wells go down. After asking permission, the Town of Essex allowed them to use it. Essex's project is scheduled to take place until the winter of 2023. And thanks to the help from Morris Coolidge, they will be able to continue providing safe drinking water to the community. 💧💧

Photos of this project are on Page 19.



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