

Building the Water Workforce: A UVM-Vermont Rural Water Association Partnership

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The Challenge

- Safe drinking water and wastewater treatment are critical for public health, environmental protection, commerce, thriving communities.
- Well-trained, experienced operators are vital to water and wastewater systems as they respond to natural disasters like Vermont's recent flooding, changing climate, population growth, and emerging contaminants like PFAS.
- In Vermont and across the country, the water resources industry faces significant challenges in maintaining a skilled workforce, especially in rural areas where workers are significantly older than the national median age.
- The water workforce is not only aging but also lacks diversity.[†] Currently, two-thirds of the national water workforce is white, and less than 15% is female. These demographic imbalances limit the sector's potential to innovate and adapt to emerging challenges.

Project participants

This capacity grant supports a partnership between the Vermont Rural Water Association (VRWA) and the University of Vermont's Water Resources Institute (WRI) with three key goals:

- provide exposure opportunities for UVM students and faculty to visit and learn about Vermont's drinking water and wastewater treatment facilities and career paths
- collect data on Vermont's water treatment workforce in support of future grant applications
- explore student perceptions and barriers to entering the rural water workforce.

Operators

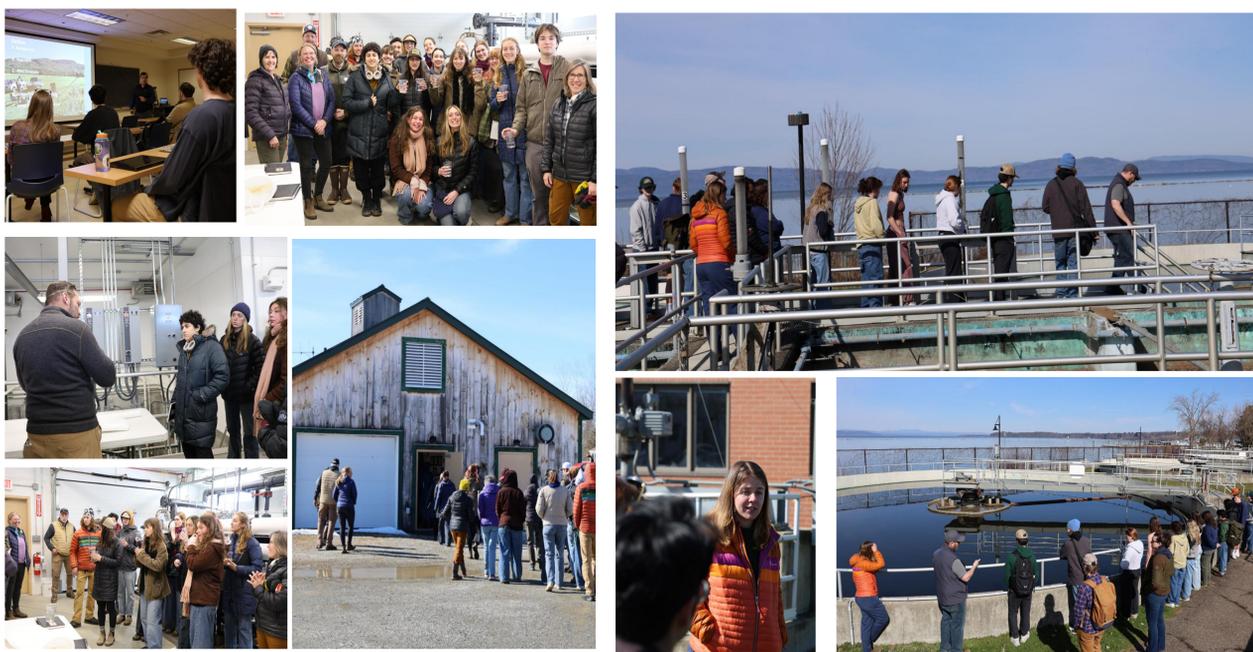
- Hinesburg Water Department
- Champlain Water District
- Burlington Wastewater

UVM Faculty

- Cheryl Morse, Geography & Geosciences
- Kennedy Brown, Civil & Environmental Engineering
- Laura Webb, Geography & Geosciences
- More in Fall 2025

UVM Students
Undergraduates in 3 courses, Spring 2025

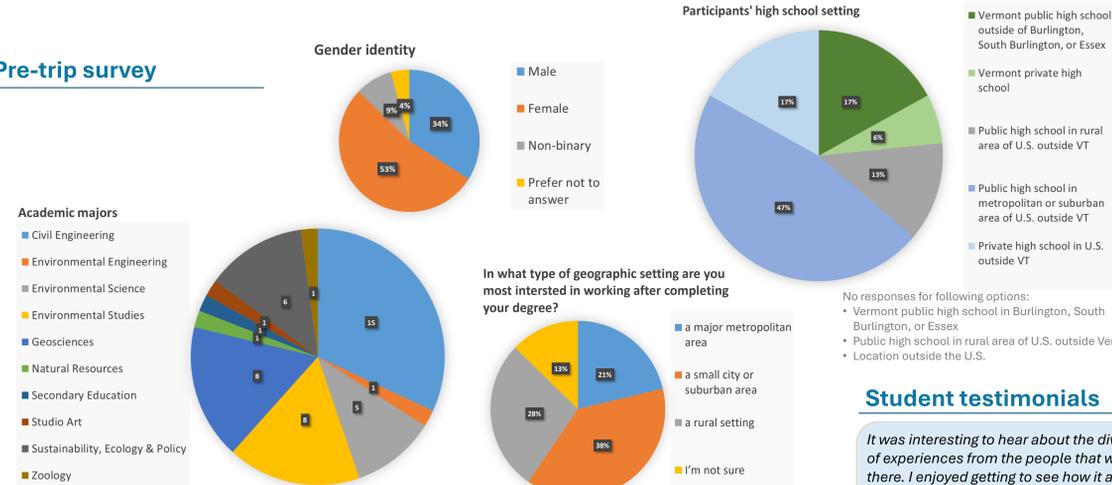
- GEOG 2707: Restoration Cultures (17)
- CEE 3610: Hydraulics Lab (20)
- GEOL 3105: Earth Materials (14)



Preliminary Findings

We offered plant visits to students enrolled in three courses at UVM in Spring 2025. Prior to trips, students engaged in course content relevant to drinking water or wastewater challenges. We conducted a survey prior to the facility visits to glean information on student demographics and awareness of water facility services. Following the visits, we conducted a survey to gauge student learning and attitudes towards work in water facilities. In sum, 47 students responded to the pre-trip survey and 45 responded to the post trip survey.

Pre-trip survey



No responses for following options:
 • Vermont public high school in Burlington, South Burlington, or Essex
 • Public high school in rural area of U.S. outside Vermont
 • Location outside the U.S.

Student testimonials

It was interesting to hear about the diversity of experiences from the people that worked there. I enjoyed getting to see how it all works and the experience in general added to my appreciation of water resources.
 - Sustainability, Ecology & Policy major

I enjoyed hearing about the intake from the lake and how the plant monitors incoming water quality and forecasted changes. I also enjoyed seeing the labs and some of the projects that aim to replicate what happens to water that sits in pipes in homes for extended periods..
 - Environmental Sciences major

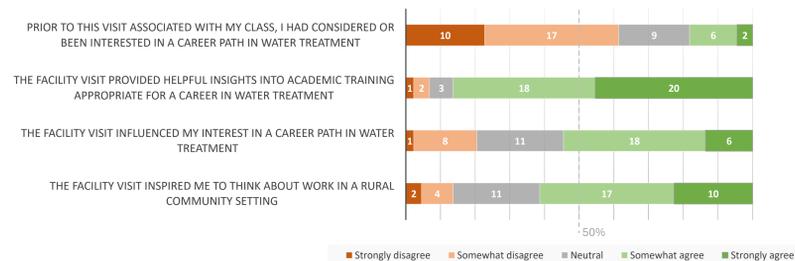
I love seeing what we learn in class translated to something that has an impact on people's lives.
 - Civil Engineering major

It was super eye opening for me personality [sic] and talking with other classmates we had no idea the type of work that went into this profession. It seemed very appealing after taking a visit. I also took note of how the workers at the plant mentioned over and over how fulfilled they felt in this line of work, it was really neat to hear and drove my interest.
 - Sustainability, Ecology & Policy major

...explaining the importance of water access and conveying how water can be the limiting force to a community's growth was eye opening to me. It helped me see how I had taken this line of work for granted.
 - Sustainability, Ecology & Policy major

I enjoyed hearing about the day to day and their academic/professional journey.
 - Environmental Studies and Political Science major

Post-trip survey



Key Findings:

- Nearly one third of participating students indicated interest in working post degree in a rural setting.
- More than one third of participating students responded that their family's home uses services provided by water facilities, but few had ever visited a facility.
- Fewer than half of student participants had considered a career in water treatment prior to visits. More than half indicated interest following visits.

[†] Kane, J. and A. Tomer, 2018. Renewing the Water Workforce: Improving water infrastructure and creating a pipeline to opportunity. The Brookings Institution, Metropolitan Policy Program. 72 pp. Available at <https://www.brookings.edu/articles/water-workforce/>

