

CASE STUDY

Restored Water Infrastructure After Helene

Project Type: Municipalities / Emergency Relief

Location: Spruce Pine, North Carolina

HIGHLIGHTS

BLU|BOX Modular MBR Systems® restored essential wastewater services post disaster.

Swift action mitigated a public health crisis and lifted a “do not flush” order.

75,000 to 150,000 GPD made by each unit serving about 300 households in the affected area.

RAPID RESPONSE ENABLED COMMUNITY RECOVERY

The catastrophic impact of Hurricane Helene across the Southeast created an urgent need for infrastructure recovery, exemplified by the crisis in Spruce Pine, North Carolina. This case study highlights the swift and effective response of Veyra, detailing their solutions and the positive outcomes achieved in rapidly restoring critical wastewater treatment services to the affected community.

CHALLENGES FACED

- **Wastewater Treatment Plant Destruction & Public Health Crisis:** The destruction of the primary wastewater treatment plant triggered a “do not flush” order, creating an imminent public health crisis due to lack of sanitation and contamination of water sources.
- **Urgent Need for Rapid Remediation:** Immediate and effective restoration of wastewater treatment was crucial to protect the community, a challenge compounded by logistical difficulties including road/ infrastructure damage and equipment and personnel shortages typical after a natural disaster.
- **Inoperable Infrastructure & Extensive Damage:** Wastewater treatment plant was buried under silt after the flood. Months of work were needed to restore its operations. City officials urgently sought ways to bring the plant back online while addressing damage to the city’s old sewer infrastructure.



SOLUTIONS IMPLEMENTED

- **Rapid Deployment of Modular MBR Systems:** Veyra deployed pre-engineered modular BLU|BOX systems, leveraging their compact and modular design for quick installation and operation.
- **Integrated Treatment Capabilities:** Deployed systems included EQ tanks for flow management, advanced membrane filtration for high-quality effluent, and onboard UV disinfection for safety without harmful byproducts.
- **Strategic Multi-Site Implementation:** Veyra deployed BLU|BOX MBR systems across two Spruce Pine sites to expand coverage and strengthen infrastructure resilience.



OUTCOME AND IMPACT

- **Rapid Restoration of Vital Services:** At two critical breaks, Veyra's BLU|BOX units replaced full-scale wastewater treatment, each processing 75,000–150,000 GPD for ~1,000 residents. This fully restored service in two weeks, averting a major public health crisis.
- **Protection of Public and Environmental Health:** The advanced MBR technology delivered high-quality effluent, safeguarding both the community's health and the nearby streams. The solution directly addressed the public health risks associated with the "do not flush" order.
- **Enhanced Community Resilience:** The rapid restoration of essential infrastructure significantly aided Spruce Pine's overall recovery from the devastating hurricane.

When wastewater infrastructure failed, threatening a public health crisis, Veyra rapidly deployed high-performance treatment technology. This intervention eliminated immediate health and environmental hazards, directly supporting the community's recovery. The shows how agile technology and expert disaster response build resilience against devastating natural events.

"After the storm, we were working frantically trying to take care of our wastewater since our system had been flooded. We placed BluBox units at crucial places in our wastewater system. If we didn't have these units, we'd have no chance of our business community being able to open back up. Our schools are going to be able to have regular days where our little guys won't have to go to portable units, and we couldn't be more appreciative."

Darlene Butler, Town Manager



DOWNLOAD