



From CSO Liability to Public Asset: Beckley's Watershed Transformation

The Challenge

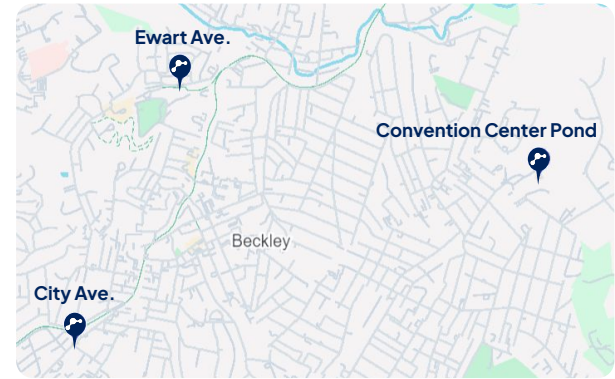
The City of Beckley, situated in a mountainous region of West Virginia, has historically struggled with severe drainage issues, including recurrent roadway flooding that endangered citizens and damaged public infrastructure. Compounding this, the city faced significant sewer capacity issues during wet weather, leading to non-compliant Combined Sewer Overflows (CSOs). A solution was urgently needed across multiple sites to achieve general flood mitigation and water quality improvement while specifically focusing on reducing roadway flooding, mitigating CSOs, and protecting local assets.

The Solution

The City of Beckley partnered with the Beckley Sanitary Board, Thrasher Engineering, and Opti to retrofit three key stormwater ponds – Ewart Ave., City Ave., and Convention Center – using Continuous Monitoring and Adaptive Control (CMAC) technology. The CMAC solution integrates field sensor data with real-time weather forecasts to deliver automated, predictive control. By continuously modulating a control valve, the system maximizes storage, proactively capturing wet weather runoff and temporarily retaining it to allow sediment settling and improve water quality. This adaptive network approach enables the city to dramatically reduce peak discharge rates and volumes entering local creeks and the combined sewer system.

At a Glance

- Operating since 2016
- Three CMAC Systems in operation
- Improved public safety and 6X reduction in flood frequency



Partners



ECONOMICAL
98% Savings
\$2M CAPEX reduction



RESILIENT
Flood Mitigation
Up to 92% wet weather capture

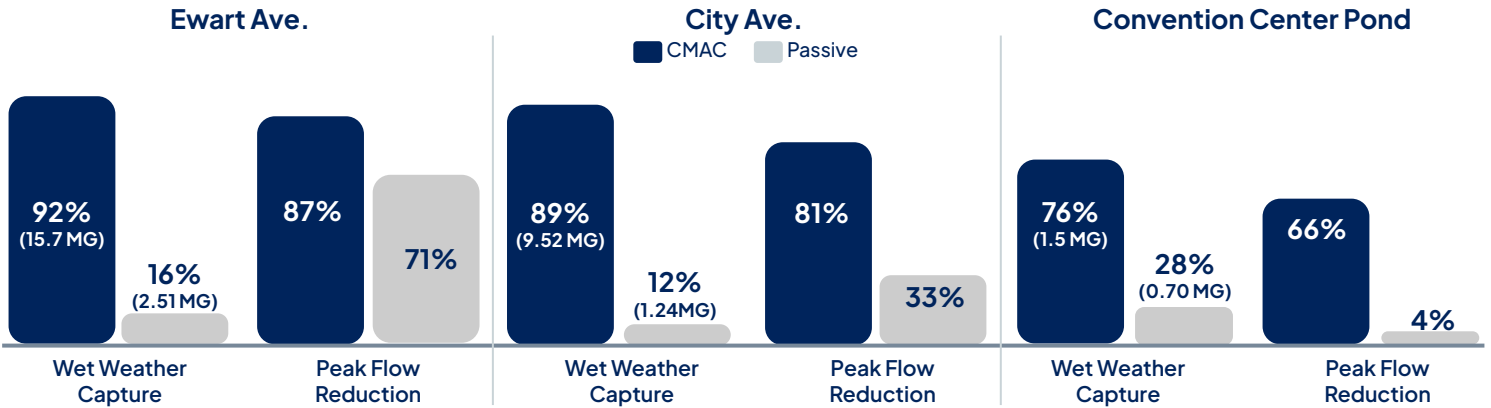


PEACE OF MIND
Public Safety
Up to 6X reduction in flooding frequency

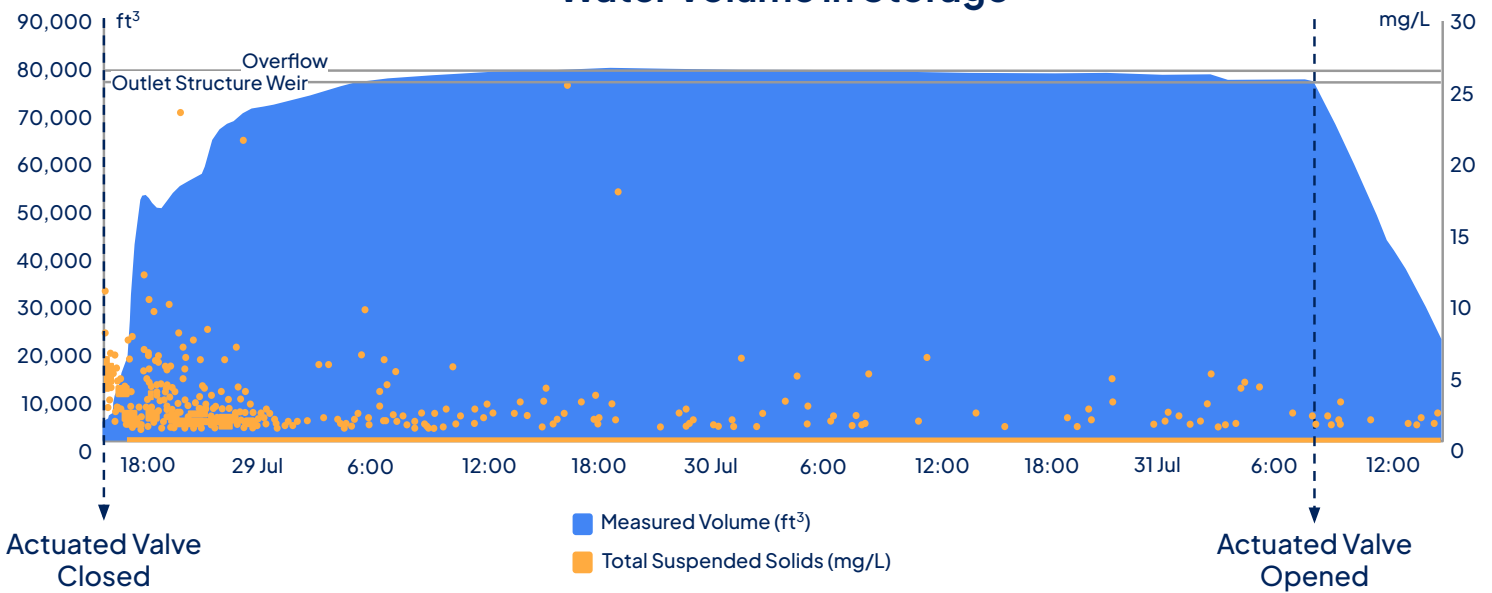
Results

The multi-site CMAC implementation successfully delivered significant reductions in flooding and CSOs while enhancing water quality and public safety.

“Opti allows us to be more thoughtful with our ratepayers’ money.”
Jeremiah Johnson
 General Manager, Beckley Sanitary Board



Water Volume in Storage



CMAC enhances the quality of stormwater by providing increased residence time for particle settling and nutrient uptake. The above figure shows the extended detention in the pond and the resulting removal of suspended solids.



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About OptiRTC

Opti is the leading provider of digital adaptive stormwater control solutions. With over 300 deployments to date, Opti empowers customers and partners to address the impacts of climate change, aging infrastructure, urbanization, and water pollution, enabling them to secure the sustainability of our communities and natural resources. Opti’s cloud-based platform optimizes stormwater asset performance through instant actionable insights to provide economic savings, resilient solutions, and peace of mind. With our commitment to innovation, we are driving a resilient and brighter future for all.



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