CASE STUDY

North Hudson Sewerage Authority

Opti by aliaxis

Proactive stormwater design regulations mitigate flooding and reduce combined sewer overflows to the Hudson River.

The Challenge

NHSA faced considerable regulatory and community pressure to address CSOs and flooding. With nearly 190,000 customers in one of the most densely-populated urban areas in the U.S., limited land availability for stormwater runoff storage, and a constantly changing environment and watershed, the Authority needed to consider a new approach to advance their mitigation and water quality goals.

The Solution

With a dense urban service area and limited right of way, traditional approaches to create additional system capacity for addressing flooding and CSOs were not feasible. Instead, NHSA partnered with commercial developers to maximize storage and wet weather capture with smart detention.

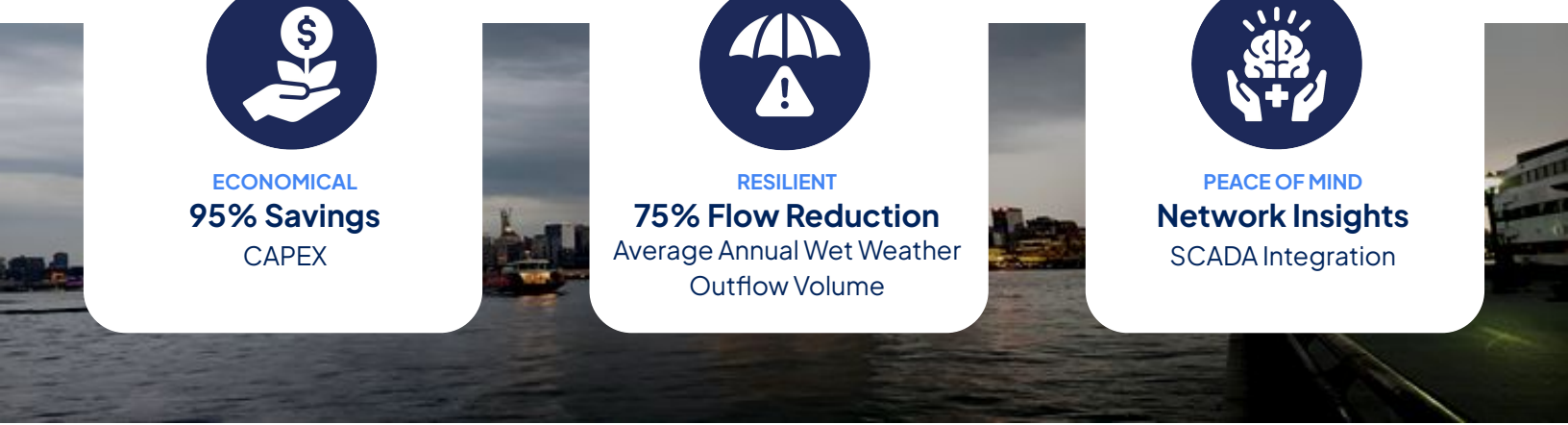
In 2018, NHSA implemented new stormwater design and connection rules requiring automated flow controls on new developments disturbing 10,000 SF or greater. The rule accelerated an integrated network of continuous monitoring and adaptive control (CMAC) sites across the sewershed, helping NHSA protect people, property, and environment while meeting regulatory compliance requirements.

At a Glance

- $0.04/gallon wet weather capture vs. >$1.00/gallon with passive controls
- 59–84% annual wet weather capture
- Real-time controls as a requirement for property development

"Opti provides a factor of safety for balancing what we can store with what we can treat downstream."

Fred Pocci, P.E.
Authority Engineer, North Hudson Sewerage Authority



ECONOMICAL
95% Savings
CAPEX

RESILIENT
75% Flow Reduction
Average Annual Wet Weather Outflow Volume

PEACE OF MIND
Network Insights
SCADA Integration

Results

Since 2018, Opti has been actively controlling several stormwater assets. Using weather forecasts, inflow models, and real-time data, Opti active controls improve wet weather capture and minimize peak flows to the combined sewer system, thereby mitigating CSOs and flooding. Over the course of two years, Opti-controlled sites fully captured 86% of storms with no outflow, saving capacity at the downstream treatment plant during peak loading times.

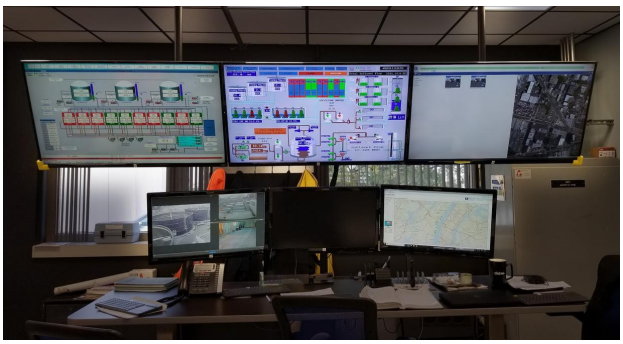
Opti prevented 75% of the stormwater runoff entering Southwest Park from reaching the combined sewer during wet weather.

The site combines passive green space with Opti adaptive controls to meet local stormwater management needs. It is New Jersey's first resiliency park with integrated green stormwater infrastructure (GSI) to mitigate flooding.

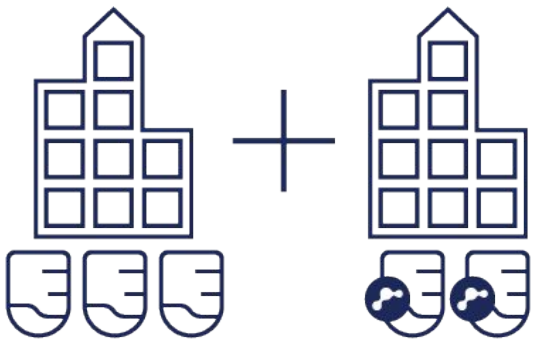
Storage Reduction

NHSA's new stormwater regulations put an emphasis on more storage. Meeting peak flow requirements with an undersized system could only be met by integrating active controls or constructing comparable storage elsewhere.

With Opti active controls, a building's detention tank could be downsized by an estimated 30% and continue to meet NHSA's volume capture requirements. This smaller, more efficient storage approach saves money and space in constrained projects. Opti's continuous monitoring and adaptive controls (CMAC) is now the primary smart active controls solution used by area developers.



NHSA SCADA Room. Operators manage upstream stormwater assets & wastewater treatment systems together.



About OptiRTC

Opti , an Aliaxis company, 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.

USNJHB24-CSD2 0123

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