

CASE STUDY

The Metropolitan St. Louis Sewer District



Optimizing Capacity Management to Mitigate Flooding and CSOs in St. Louis, MO

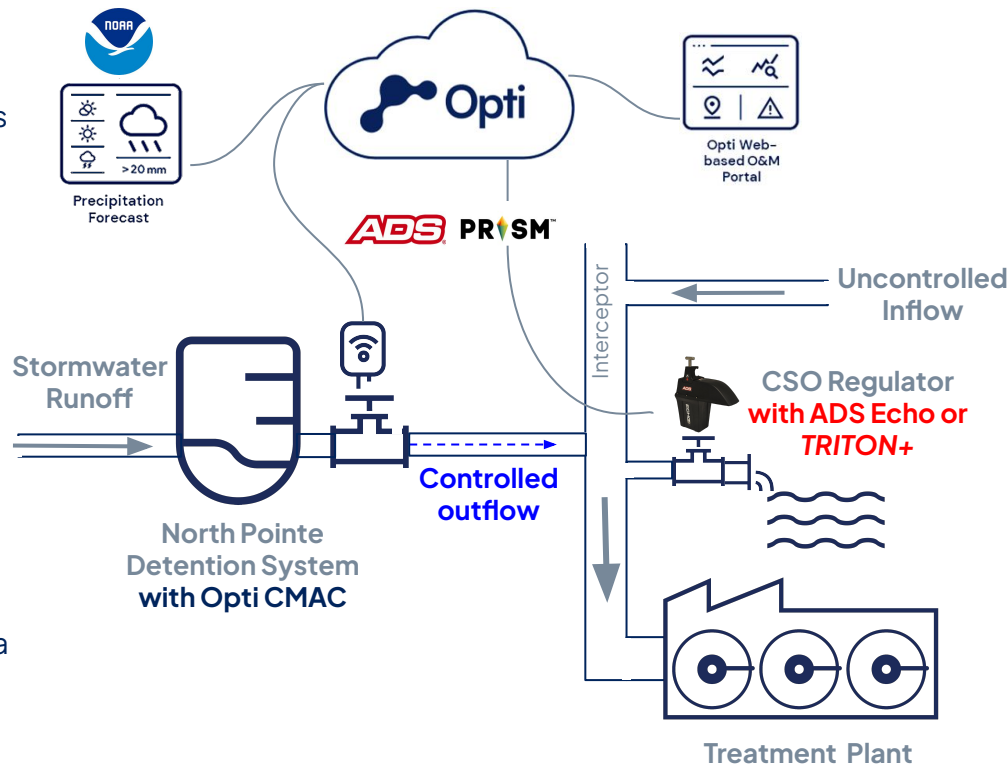


The Challenge

Combined sewer overflows (CSOs) remain a significant environmental challenge in many urban areas, often resulting in the discharge of untreated wastewater and stormwater into waterways during heavy rainfall events. Traditional mitigation strategies, such as sewer separation, are typically expensive and disruptive. This is true for St. Louis, MO as well, where The Metropolitan St. Louis Sewer District (MSD) needed a cost-effective solution that could mitigate CSOs, expand infrastructure capacity, and provide real-time visibility and control of their stormwater infrastructure.

The Solution

MSD implemented an Opti continuous monitoring and adaptive control (CMAC) system at the North Pointe detention basin to strategically manage the release of stormwater to the CSO network. Opti collaborated with ADS Environmental Services (ADS) on an API data integration. ADS provided the critical foundation of continuous level and flow monitoring, while Opti focused on adaptive control elements. The combined solution is hosted on a robust software platform with advanced data visualization and analysis capabilities, coupled with essential field monitoring and control hardware.



ECONOMICAL
\$0.02 per gallon
for CSO reduction



RESILIENT
82% Wet Weather Capture
and adaptive management



PEACE OF MIND
Regulatory Compliance
CSO mitigation

Results

The system at North Pointe demonstrated significant improvements in stormwater management:

- 82% of wet weather runoff was captured with the CMAC system compared to only 10% in a passive system.
- Peak flow rates were reduced by 85% (30.3 cfs for passive system vs. 4.6 cfs for CMAC system)



This case study demonstrates the potential of predictive wet weather capacity management using CMAC as a sustainable and cost-effective solution for addressing CSOs in urban environments, offering a promising alternative to traditional, more costly and disruptive mitigation strategies. By orchestrating the release from multiple ponds, the system gains greater control over the timing and volume of flows released into the downstream sewer system, minimizing the impact on downstream facilities and significantly reducing the likelihood of CSO occurrences.

ADS and Opti are partnering to provide continuous monitoring and adaptive control (CMAC) for proactive and predictive wet weather capacity management.



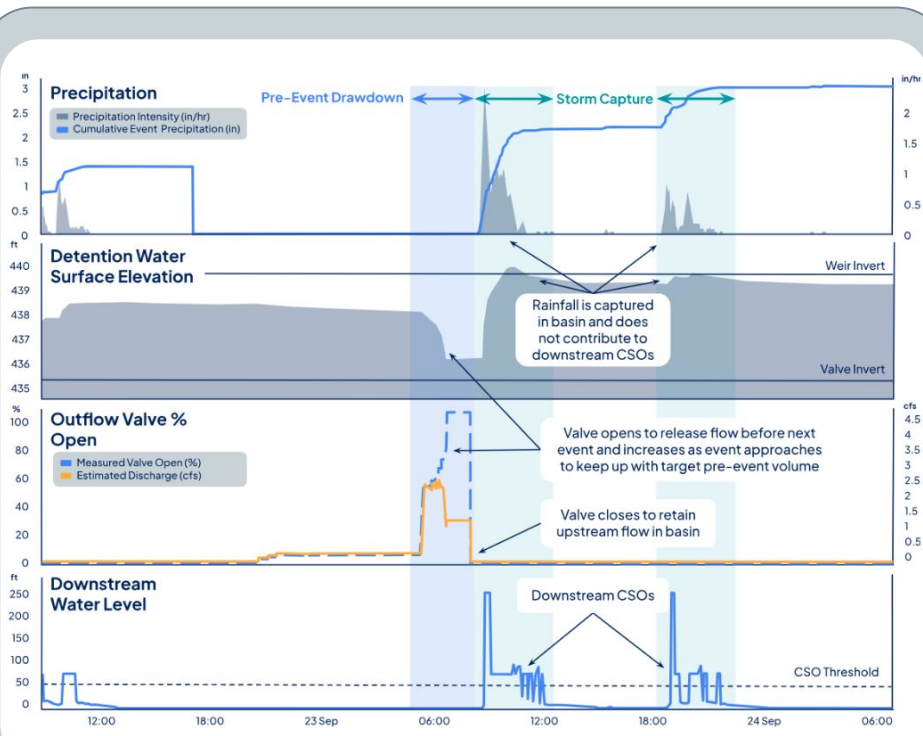
Maximize Asset Performance. Proactively detect and address performance issues with ADS continuous monitoring systems.



Sewer Overflow Mitigation. ADS real-time alarms guard against fast developing events. Adaptive controls dynamically manage flow before, during and after event.



Flood Mitigation. Long-range monitoring solutions allow for downstream conditions to be represented in upstream decisions, enhancing the effectiveness of flood management strategies.



The CMAC system was designed to capture a 1-inch storm event. The system's performance for an event of this magnitude is shown above, which occurred on September 23, 2024. By draining prior to the predicted event, the system is able to retain the 1-inch storm as to not contribute to the flows in the trunk sewer during wet weather.

About OptiRTC

Opti, an Aliaxis company, leads in digital adaptive stormwater control with over 300 deployments. We help customers tackle climate change, aging infrastructure, urbanization, and water pollution, ensuring sustainable communities and natural resources. Our cloud-based platform optimizes stormwater performance, offering cost savings, resilience, and peace of mind.

About ADS

For 50 years, ADS has helped thousands of municipalities improve wastewater infrastructure efficiency and comply with environmental regulations. Our flow monitoring programs save millions by pinpointing problem areas, focusing repairs, and delivering a ten-fold return on investment. We go "Below and Beyond™," providing actionable underground intelligence for substantial ROI.



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