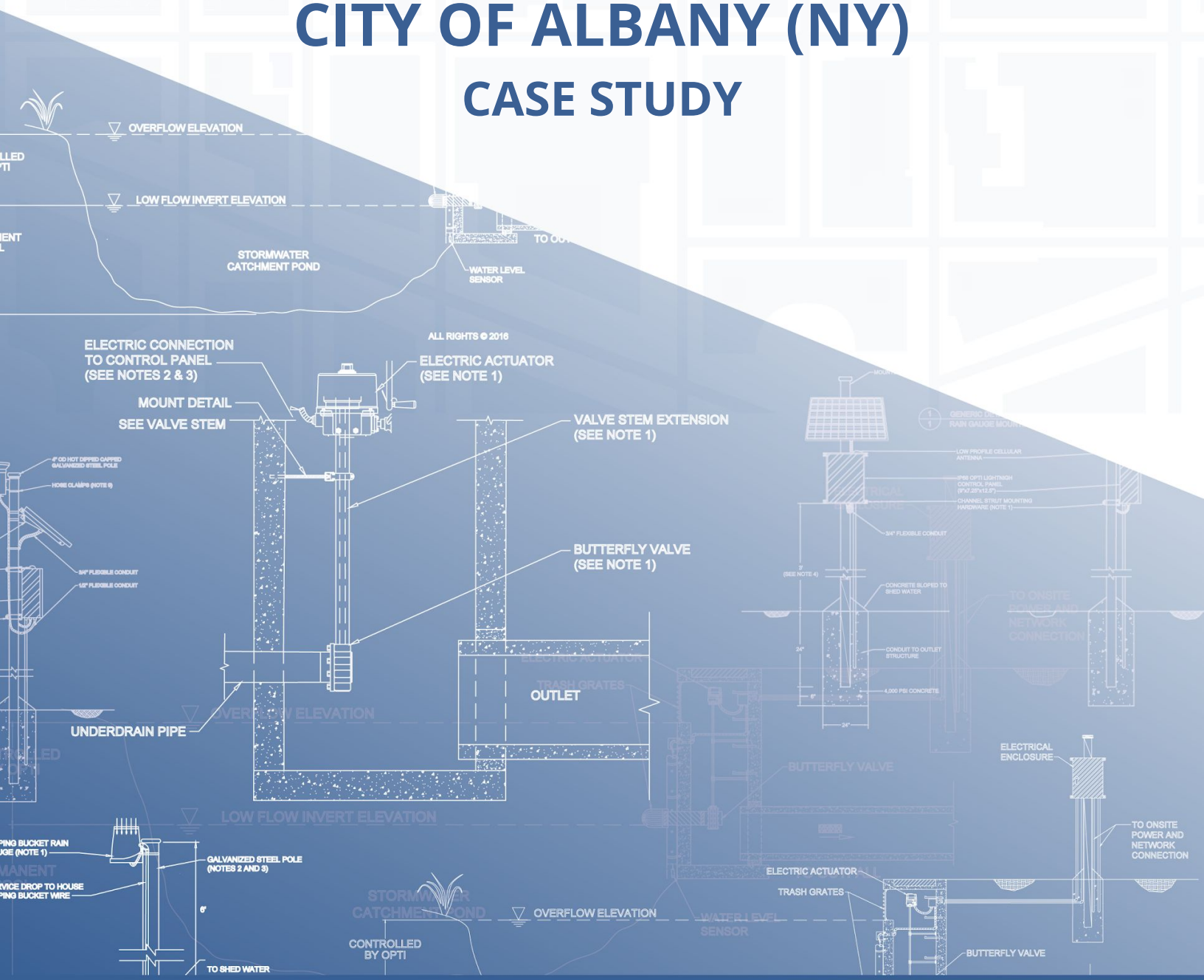
CITY OF ALBANY (NY)

CASE STUDY



Opti

active intelligence | clean water

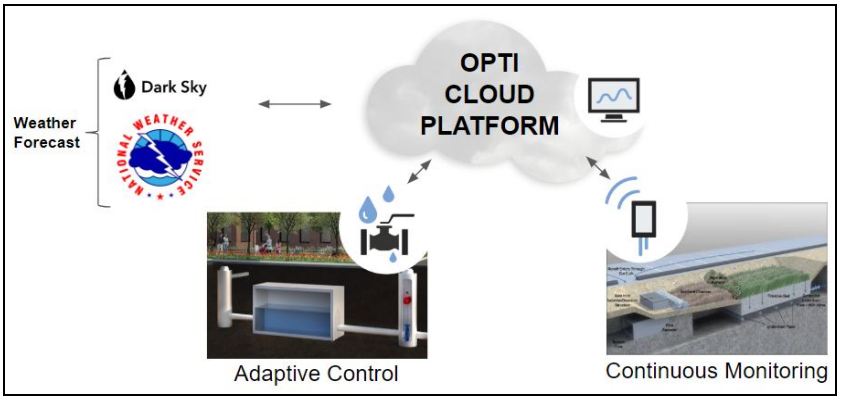
Executive Summary

> *"As we implement plans for future CSO abatement and flood mitigation projects, we will continue to expand this smart infrastructure network across the City."*
>
> -- Joseph E. Coffey, Jr., P.E.
> *Commissioner, Albany Water Board*

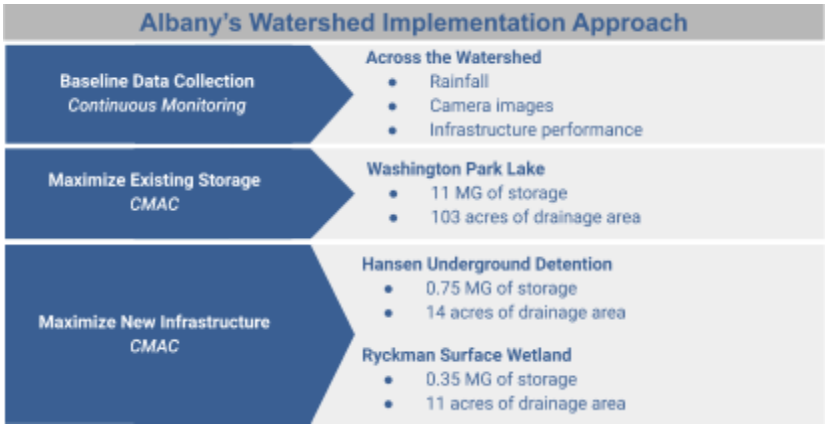
In an effort to mitigate flooding and combined sewer overflows (CSOs), the Albany (NY) Water Board implemented a smart infrastructure network utilizing the Opti® Platform and a number of interconnected continuous monitoring and adaptive control (CMAC) sites. The Platform has provided Albany with increased infrastructure performance, improved resiliency, and data-driven operations and planning. Using CMAC, the Board was able to **reduce wet weather flows by 6.5x** over a traditional passive design while **only increasing project capital cost by 6.5%**. With the ability to observe watershed behavior and optimize infrastructure performance, Albany is improving stormwater management for the community.

Overview of Solution

In the past, Albany's CSOs, flash flooding, and system surcharging issues caused significant damage and created potential health hazards in both the city and several downstream communities. The Albany Water Board and CHA Consulting, Inc. embraced a progressive approach in solving these issues by merging innovative technology with traditional grey strategies and green infrastructure practices. At the heart of the solution is a smart infrastructure network powered by the Opti Platform, with products that integrate sensors, flow controls, and the weather forecast to optimize discharge rates from stormwater storage infrastructure to the collection system. In addition, the Platform:

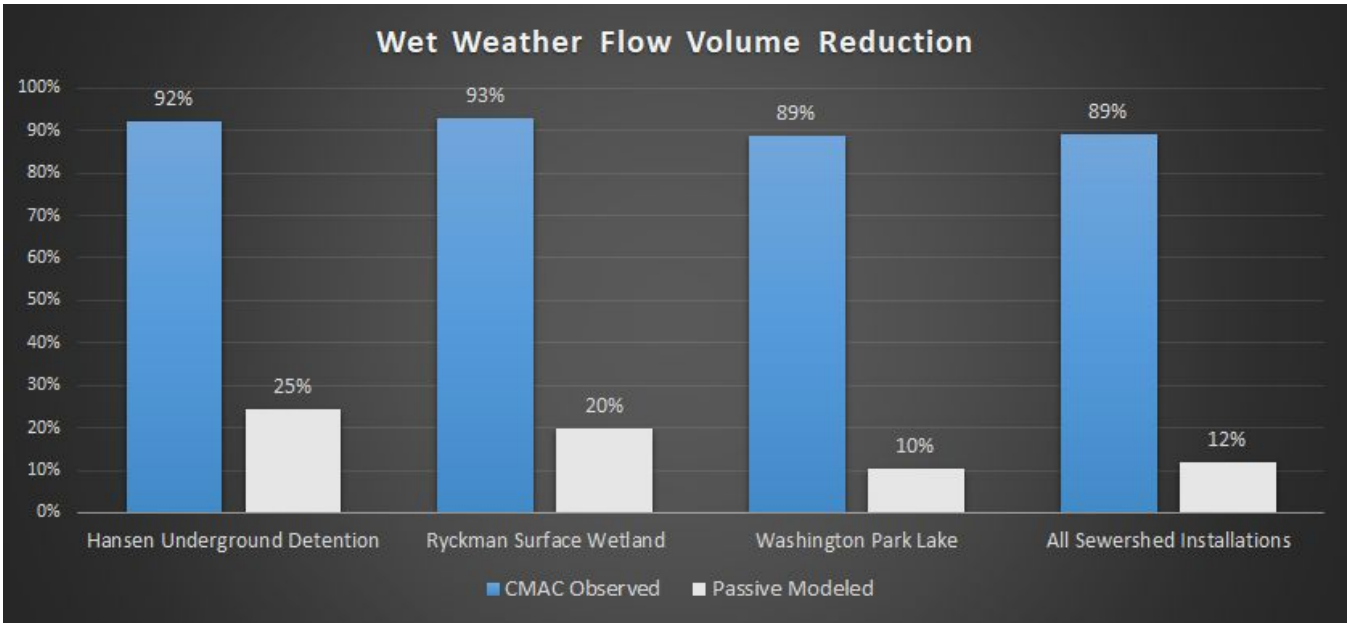


- Provides the City with visibility into asset status, performance, and maintenance needs
- Informs the City about pre-event planning activities and emergency management
- Provides autonomous control of flows during critical wet weather periods.



Results

Wet weather flow volume reductions were used to assess the performance of Opti technology ('CMAC Observed') as compared to a traditional passive design ('Passive Modeled'):



Dataset for all sites taken from March 1, 2018 to March 1, 2019

The addition of Opti technology enhanced wet weather performance of the storage infrastructure by 6.5x as compared to passive control at a fraction of the cost:

	Hansen		Ryckman		Washington		All	
Description	Passive	CMAC	Passive	CMAC	Passive	CMAC	Passive	CMAC
Capital Cost	$1.35M	$0.1M	$0.750M	$0.1M	$2.50M	$0.1M	$4.60M	$0.3M
Wet Weather Flow Reduction (million gallons/yr)	0.996	3.74	1.31	6.05	7.45	63.5	9.75	73.3
Unit Cost ($/gallon/yr)	$1.35	$0.03	$0.57	$0.02	$0.34	$0.002	$0.47	$0.06
CMAC Incremental Capital Investment	**7.4%**		**13.3%**		**4.0%**		**6.5%**	
CMAC Performance Improvement	**2.8x**		**3.6x**		**7.5x**		**6.5x**	

Strong performance and return on investment has supported Albany's decision to deploy additional monitoring and control sites, and grow the interconnected smart watershed — a resilient and data-driven approach to solving their most critical stormwater challenges.

AWARDS RECEIVED

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American Council of Engineering Companies of New York

2019 Winner in Smart Water Category

IDC Smart City

NORTH AMERICA AWARDS