CASE STUDY

THE PEACE-OF-MIND CSO DIGITAL TWIN SOLUTION

How New Bedford, Massachusetts used waterCAST Sewer to detect system anomalies and automate combined sewer overflow (CSO) notifications.

SOLUTION

waterCAST™ SEWER

POPULATION SIZE

100,000 people

PRIMARY USE

Digital Twin and CSO Notifications

"The Trinnex team was incredibly responsive and attentive, configuring waterCAST Sewer to streamline our processes and integrate with required datasets to meet the state regulation requirements."

Jamie Ponte, Commissioner, City of New Bedford, MA

SUMMARY

The historic coastal city of New Bedford, MA has sewers dating back to the mid-19th century and is one of the ten largest cities in Massachusetts with over 100,000 residents. The New Bedford water system consists of 254 miles of sewer pipe, 72 CSO regulators, and 27 CSO outfalls, frequently requiring maintenance due to their age.

New Bedford, along with all other Massachusetts water utilities, must comply with the new MassDEP (Department of Environmental Protection) regulation (314 CMR 16.00) to make the public aware of any discharges containing untreated sewage and waste from their outfalls. New Bedford must send a public notification within 2 hours after the discovery of a CSO and continually report out until the CSO is stopped.

ENABLING PROACTIVE ANALYTICS

New Bedford's old water structures make the system susceptible to frequent maintenance challenges as well as potential overflows, which could result in fines, expensive fixes, environmental and social impacts to the local community, and decreased public confidence in utility operations. This makes it critical for New Bedford to use analytics to understand:

- **What is happening** in their system to automate public notifications of overflows and flag system anomalies
- **Why is it happening** to analyze capacity and inflow and infiltration issues in the system
- **When will it happen** and how can they predict overflows to drive proactive maintenance

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Trust in what's next.

ADDRESSING OVERFLOWS HEAD ON

New Bedford sought an innovative digital twin solution that could:

- Leverage their existing hydraulic model and flow sensors to identify anomalies and verify overflows
- Integrate their CMMS (computerized maintenance management system) and disable a sensor if it is due for maintenance
- Had built-in validation rules to rule out false positives
- Forecast overflows to know what's coming and for proactive maintenance

New Bedford selected waterCAST Sewer, a digital twin for sewer systems, specifically built to help utilities gain insight into the performance of their collection systems to proactively prepare and respond to the next extreme weather event as well as optimize O&M (Operations & Maintenance) activities.

The waterCAST Sewer tool has been used to identify sensor malfunctions, validate false positive overflow readings, and discover system anomalies including a broken flapgate that was introducing brackish water into the system.

Through waterCAST Sewer, New Bedford:

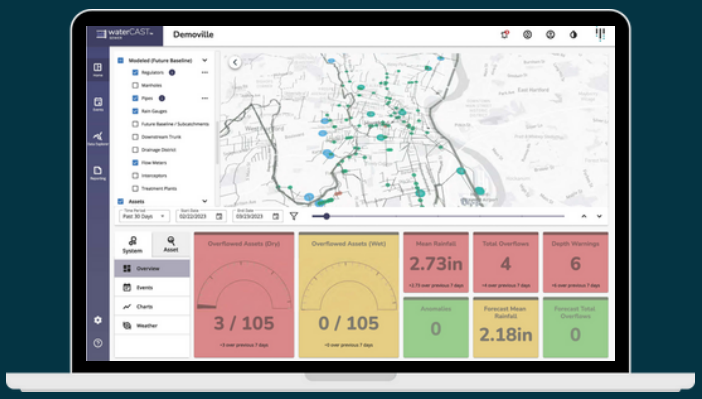
- Ties maintenance activity to CMMS data to identify actual flooding events
- Corrects false positive notifications from meter data by cross checking other systems
- Provides a single dashboard combining rainfall, overflow depth, simulated results, and forecasts

"This helps our operations team sleep better at night! It's an essential tool that has saved our team's time and resources, while also improving our community's health and safety."

Jamie Ponte, Commissioner, City of New Bedford, MA

BENEFITS

- Maximizes existing IT & data investments (e.g., GIS, sensors, models, CMMS, etc.)
- Automates overflow notifications to help validate equipment performance and enhance cross-department collaboration
- Seamlessly integrates with New Bedford's city website and reverse 911 system to comply with CSO notification requirements



New Bedford identifies anomalies and automates sewer overflow notifications using waterCAST Sewer.

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Visit www.trinnex.io to learn more

New Bedford, MA | Peace-of-mind CSO Digital Twin