

Integrated Planning Implementation – *Don't Let Compliance Initiatives Bankrupt Your Organization or Build the Wrong Project*

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October 30, 2018



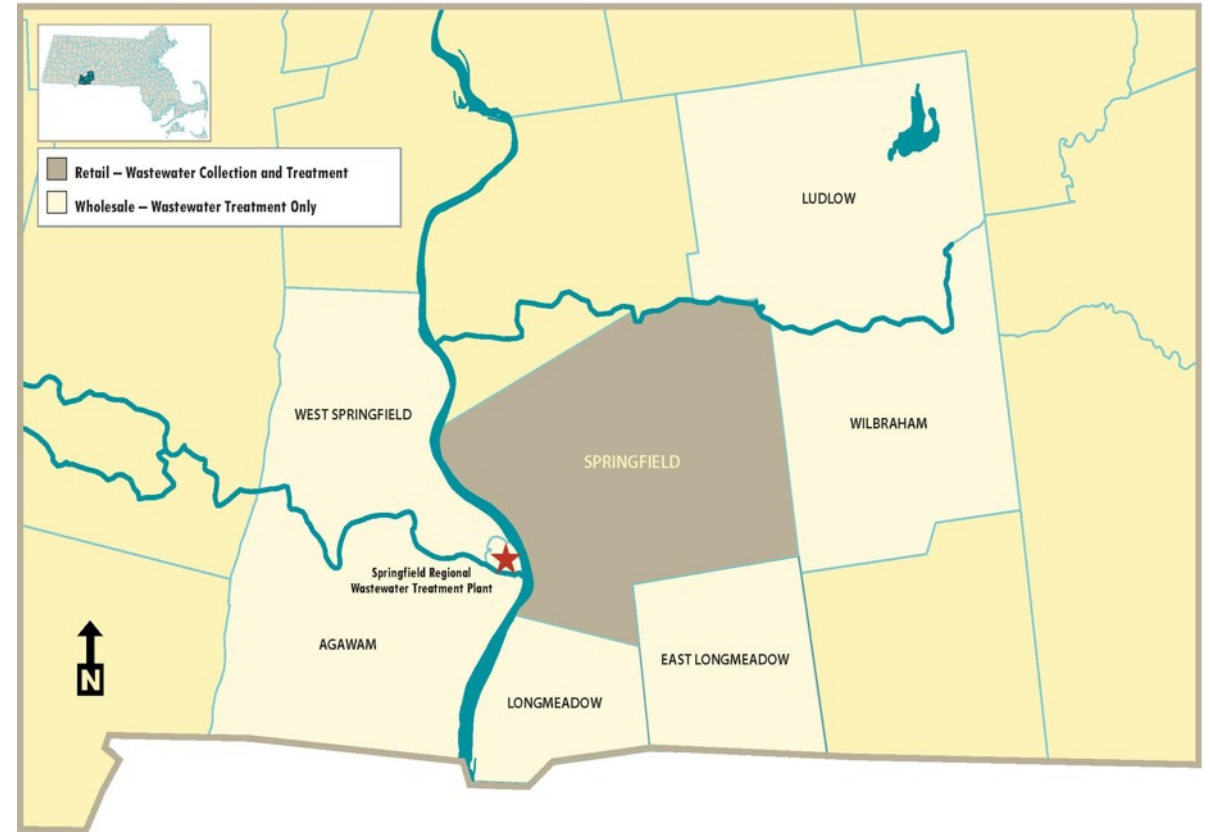
Agenda



1. Introduction
2. Process
3. Outcomes
4. Benefits
5. Lessons Learned
6. Acknowledgements
7. Questions

Introduction

- SWSC was established in 1996 as a new agency with old infrastructure
- Provides water and wastewater services for Springfield and 6 surrounding communities



250K
people served

30 mgd
water plant

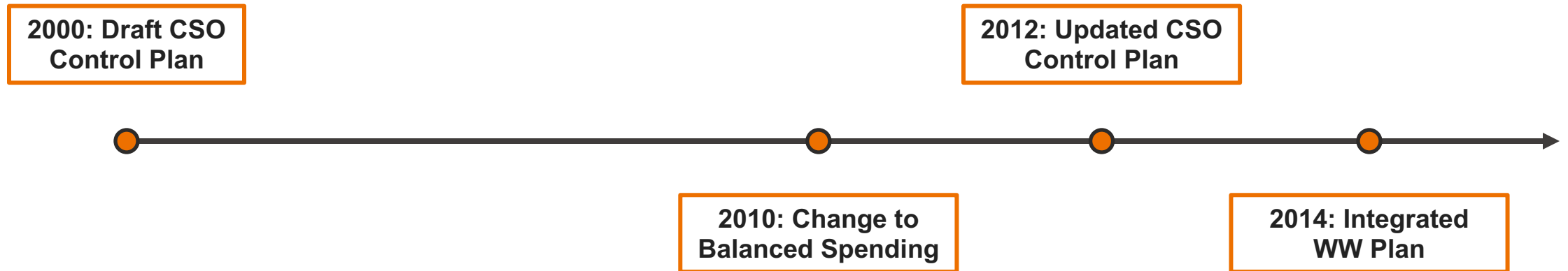
600
miles of
water
pipe

40 mgd
wastewater
plant

480
miles of
sewer

Introduction

- SWSC has been operating under CSO Control Administrative Orders since 1998. Timeline of compliance initiatives:



- The groundwork for the IWP and establishing combined priorities was the system assessment and financial modelling efforts.

Process

- Pressure from enforcement actions can distract agencies from other priorities in the organization.
- By being proactive an agency can do the projects they want while maintaining compliance.

Steps to Achieve Priorities

Step 1. Developed a comprehensive understanding of infrastructure condition and needs

Step 2. Developed an organizational framework that defines financial goals and identifies flexibility

Step 3. Used integrated planning, supported by data, to plan and implement the agency's priorities

Process

Comprehensive Wastewater System Assessment

- Enabled SWSC to clearly define other needs and priorities beyond Consent Order requirements and provided a defensible basis for those priorities.
- Cost for these initiatives ranged from \$125K to \$17M.



Process

Enhanced Financial Modeling

- Clearly defined the financial framework SWSC could operate in and what they could afford.
- Initial investment was \$250K and the annual investment is \$45K for financial modeling.



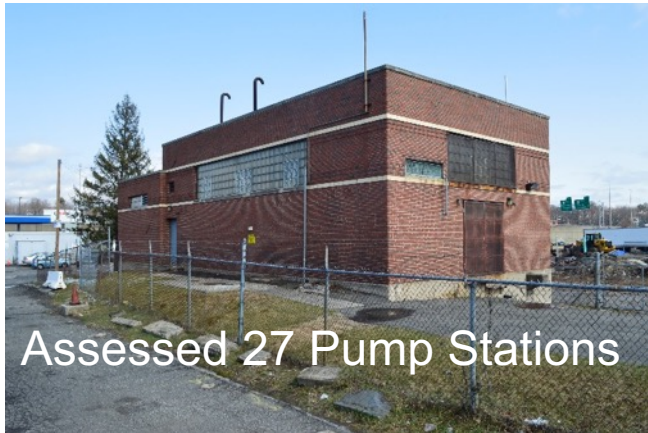
Process

Integrated Wastewater Plan 2014

- Identified a comprehensive CIP including both infrastructure and regulatory compliance projects.
- Prioritized those projects based on criticality and consequence of failure.
- Identified the need for increased O&M in addition to capital projects.
- Used the financial model and FCA to develop an implementation approach and schedule.
- Included Adaptive Management to reevaluate priorities after each project implementation.

Outcomes

Asset Management and Infrastructure Renewal



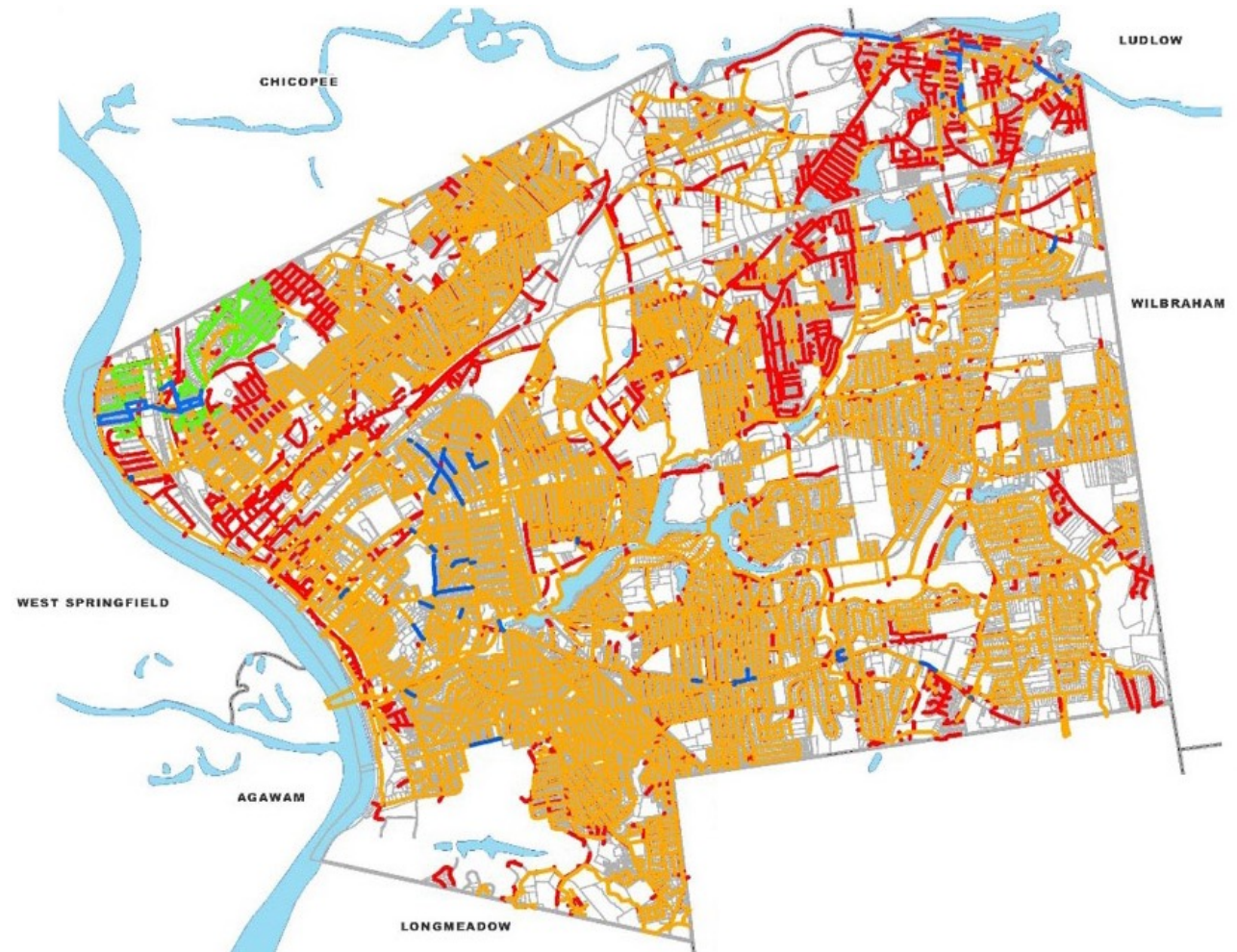
Assessed 27 Pump Stations



Assessed the WWTF

Legend

- Unassessed pipes installed about 1999
- Pipes previously inspected by others
- All unassessed pipes
- Assessed pipes



Outcomes

Asset Management and Infrastructure Renewal

System Knowledge

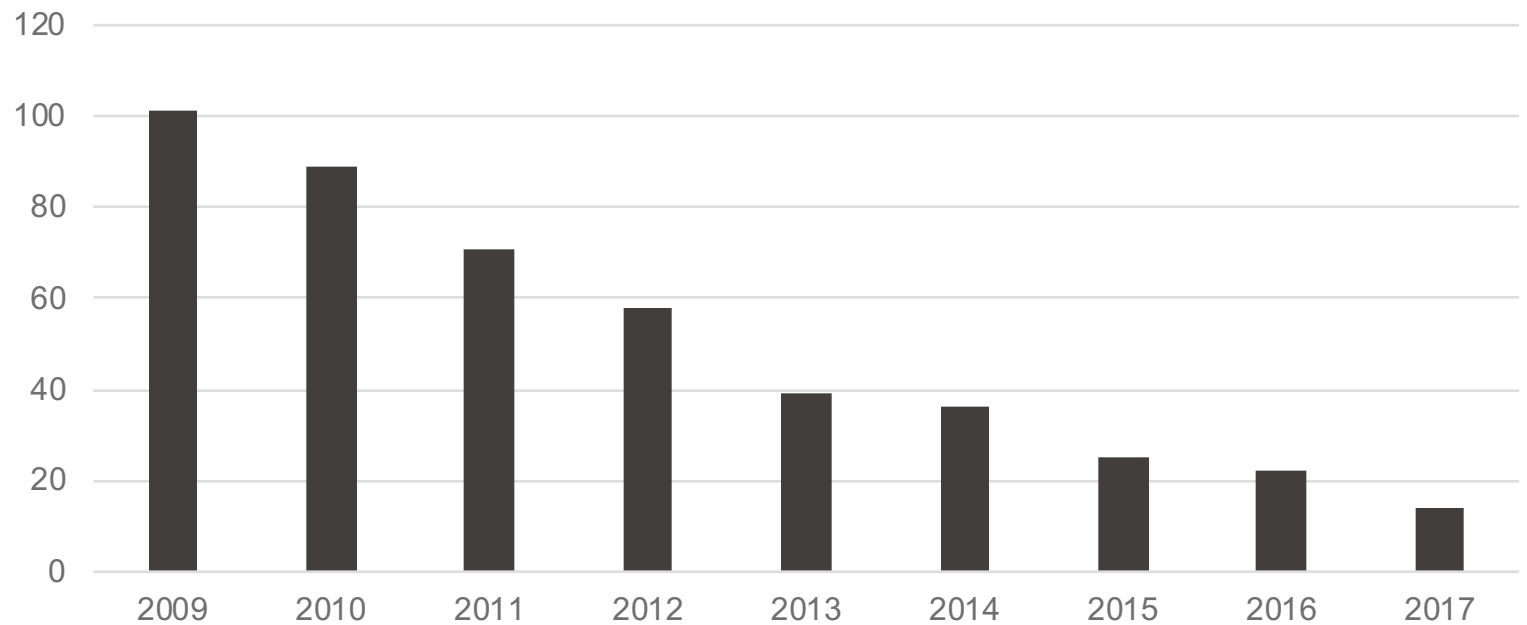
- Risk and consequence of failure now understood in the collection system and at all wastewater facilities.
- Developed a list of clearly identified needs and prioritized projects outside of the consent order projects.
- Enhanced system knowledge has driven O&M priorities for cleaning and repair.
- Institutional knowledge is captured in a centralized database.
- This work has been performed while continuing to meet Administrative Order requirements.

Outcomes

Asset Management and Infrastructure Renewal

Collection System Performance

SSO Trend from 2009 to 2017 for Springfield Water and Sewer Commission

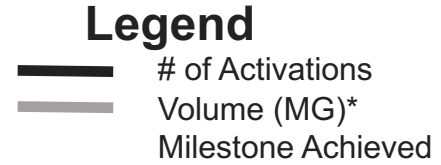


Outcomes

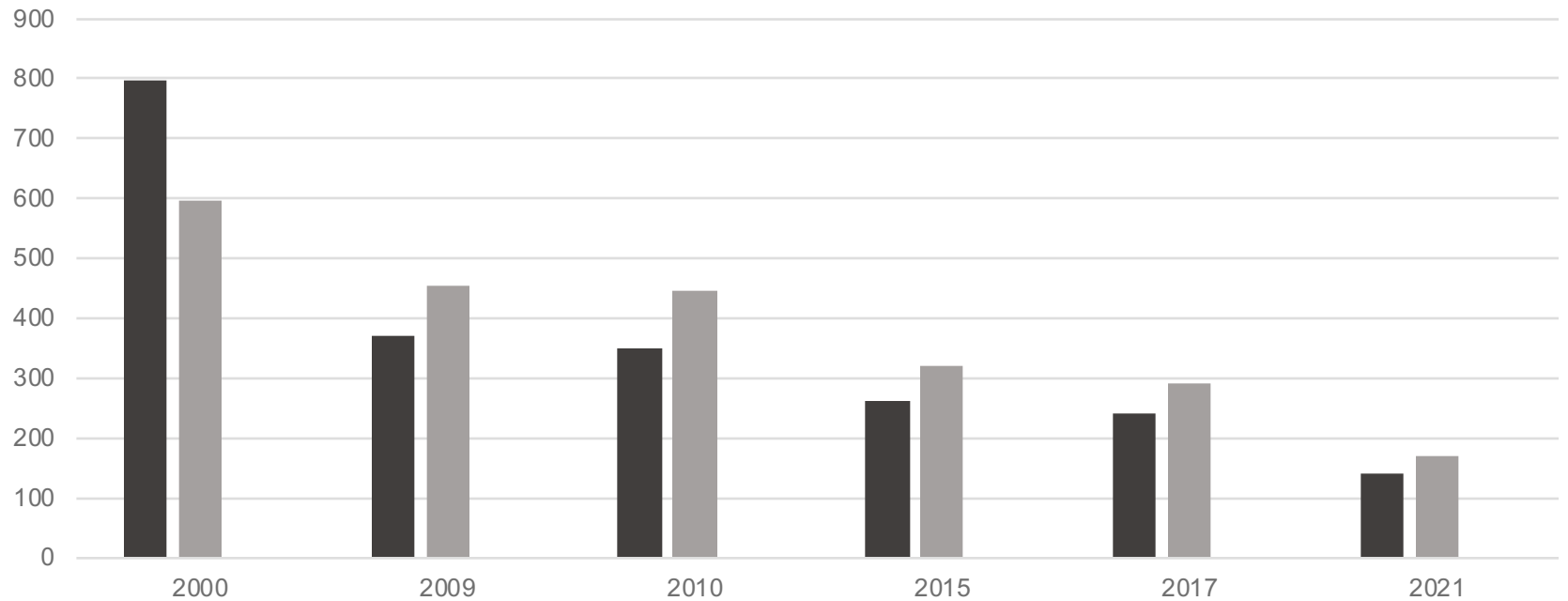
Administrative Order Compliance

Continuous AO Compliance

- 2015: 100 MG reduction from \$15m cleaning program
- 2021: Multi-faceted YSPS project



*Volumes reflect predicted CSO for the 1976 Typical Year storm series, million gallons
**Predicted CSO volume for Typical Year upon completion of the York Street Pump Station and River Crossing Project



Progression of CSO Activations and Volume Reduction

Outcomes

Financial Modeling

Financial Clarity

- Improved investment performance - \$1.3M in income.
- More detail and certainty around capital spend – 10 year look-ahead tied to system knowledge.
- Higher confidence in rate projections.
- Improved risk protection – stabilization, plan for future.
- Improved bond ratings AA- to AA with stable outlook.

Outcomes

Main Interceptor Sewer Rehabilitation Project

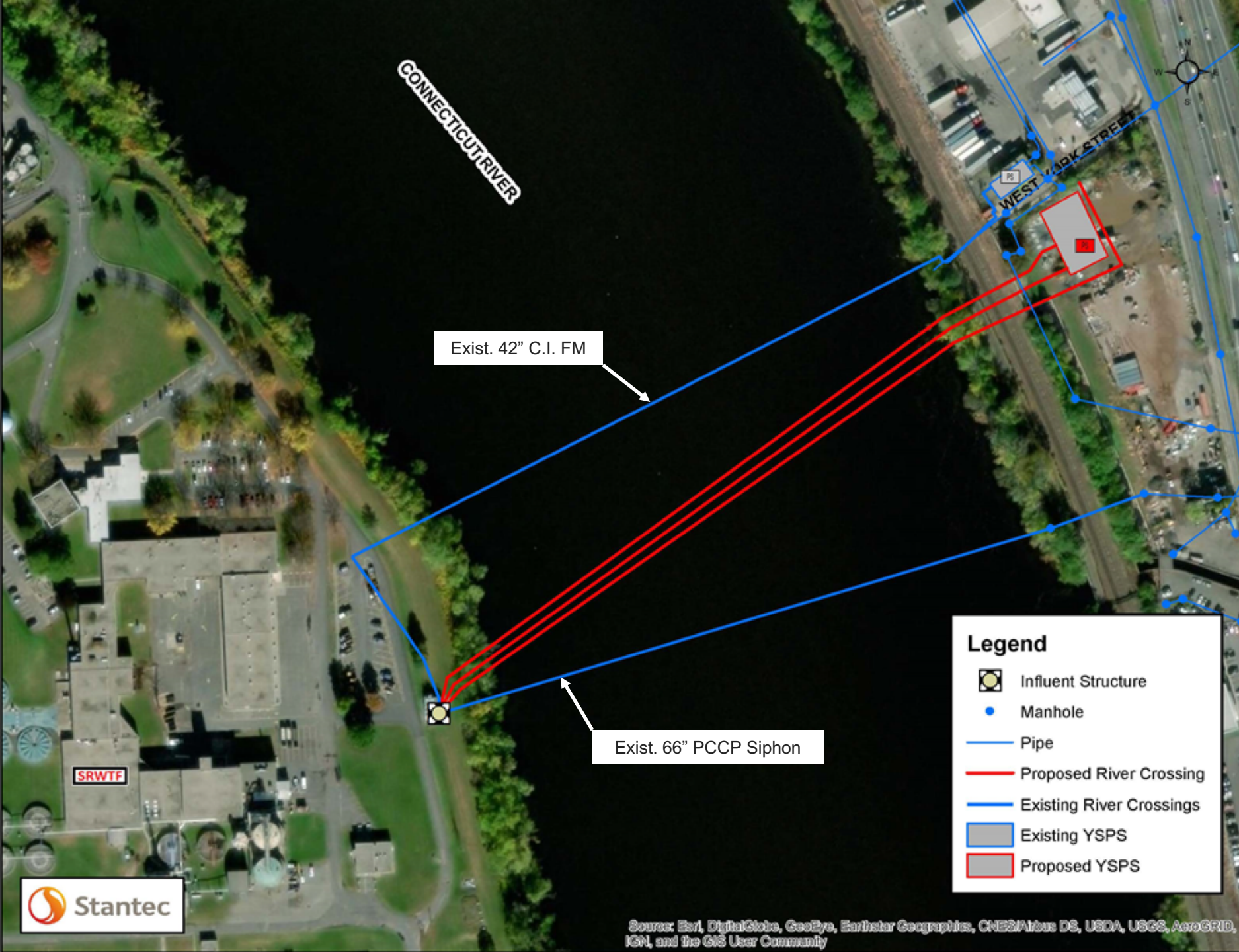
1. 66-Inch CIPP Lining
2. Most Critical Pipeline Asset in the System
3. Existing Infrastructure Renewal



Outcomes

York Street Pump Station and River Crossing Project

1. 62 MGD PS and 3 River Crossing Pipes
2. Most Critical Pumping and Pipeline Asset in the System
3. Provides River Crossing Redundancy
4. CSO Control and Upgrades Existing Infrastructure



Outcomes

Shift in Spending Distribution and Future Focus

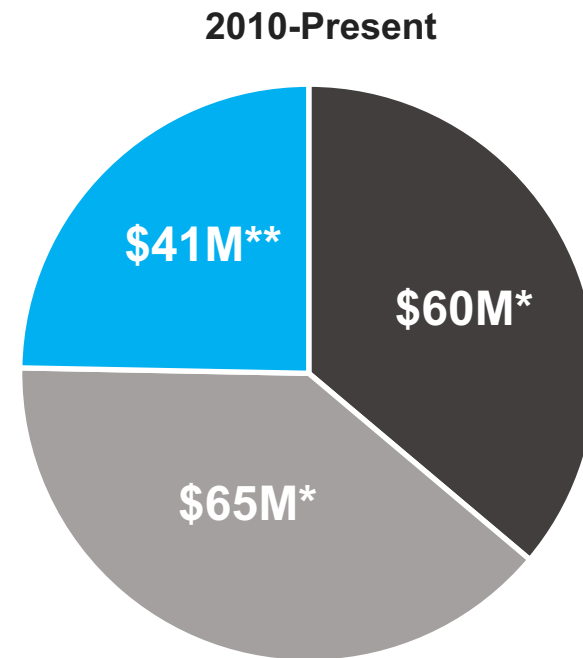
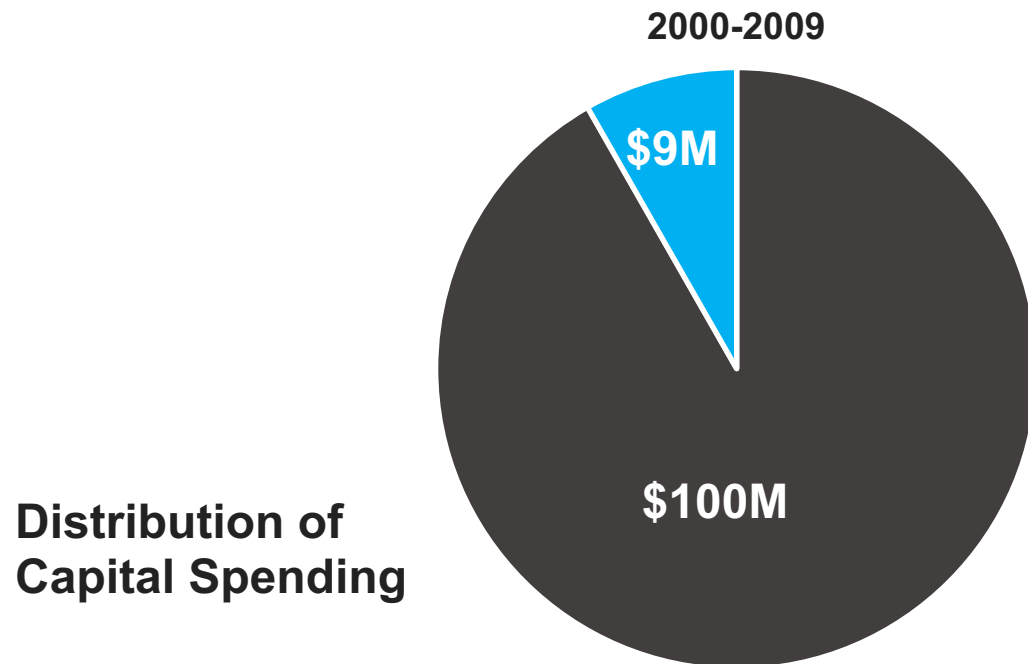
More Balanced Investment

Legend

- CSO Compliance Projects
- Large WW Capital Projects
- Collection System Renewal

*Total includes estimated cost for current York Street Pump Station and River Crossing Project

**Total includes system assessment and development of asset management system



Summary of Benefits

- Shifted priorities from exclusively CSO compliance to a balance of CSO compliance with other equally important priorities such as existing infrastructure renewal.
- Transformed distribution of capital spending from 92% CSO compliance and 8% collection system renewal to 36% CSO compliance, 39% large wastewater capital projects, and 25% collection system renewal.
- Created significant and consistent downward trend in SSOs – 86% reduction over a nine-year period.
- Yielded significant reduction in CSO volume – 100 million gallons per year reduction for the typical year.
- Improved collection system maintenance capability and capacity to prevent problems and respond more quickly to service calls and emergencies.
- Advanced wastewater collection system understanding and institutional knowledge of Commission staff.

Lessons Learned

<p>Ratepayers: An unbalanced investment approach prioritizes regulatory initiatives over ratepayers.</p>	<p>Board Buy-In: Important decisions impact rates, debt service, cash-on-hand, need for additional employees, O&M investments.</p>
<p>Complimentary: Prioritizing infrastructure renewal and maintenance can also advance regulatory compliance.</p>	<p>Flexibility: Adaptive approach to capital, operation & financial planning and practice.</p>
<p>Evidence: Regulatory agencies and leadership boards will need convincing – data collection is crucial.</p>	<p>Business Culture: Change central mission from managing cost and compliance to understanding and mitigating risk.</p>

Acknowledgements

A black and white photograph of a water treatment plant. In the foreground, a large, dark, cylindrical pipe runs diagonally across the frame. Below it, there are several rectangular basins filled with water, with metal walkways and railings. In the background, a city skyline is visible under a clear sky. An orange square is located in the top right corner of the image.

1. Springfield Water and Sewer Commission
2. Kleinfelder/Stantec Program Team



QUESTIONS / COMMENTS

