Springfield Water and Sewer Commission

Fiscal Year 2017 Budget
and Capital Plan Public Hearing

June 7, 2016

Joshua Schimmel

Executive Director

Introduction

Overview of System

Presentation Summary

- Commission Goals and Services
- Systems Overview
- Capital Projects
- Water System Infrastructure Improvements
- Wastewater System Infrastructure Improvements
- Combined Sewer Overflows
- Commission Financials
- Proposed Changes to Rules and Regulations
- Summary and Closing Remarks

Commission Goals

Provide safe and reliable services through sustainable management:

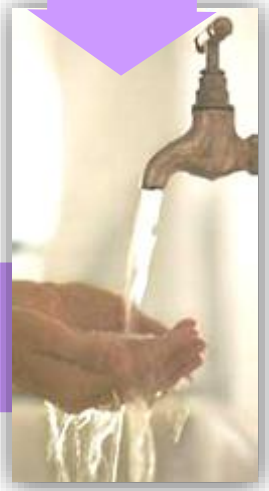
- Meet federal and state standards for water and wastewater quality
- Maintain high quality drinking water
- Properly collect and treat wastewater
- Invest in our water and sewer systems
- Keep rates affordable

The Commission Provides Essential Services
All Day, All Night, Every Day

Cobble Mtn. Reservoir

Water Treatment Plant

Transmission, Storage & Distribution System

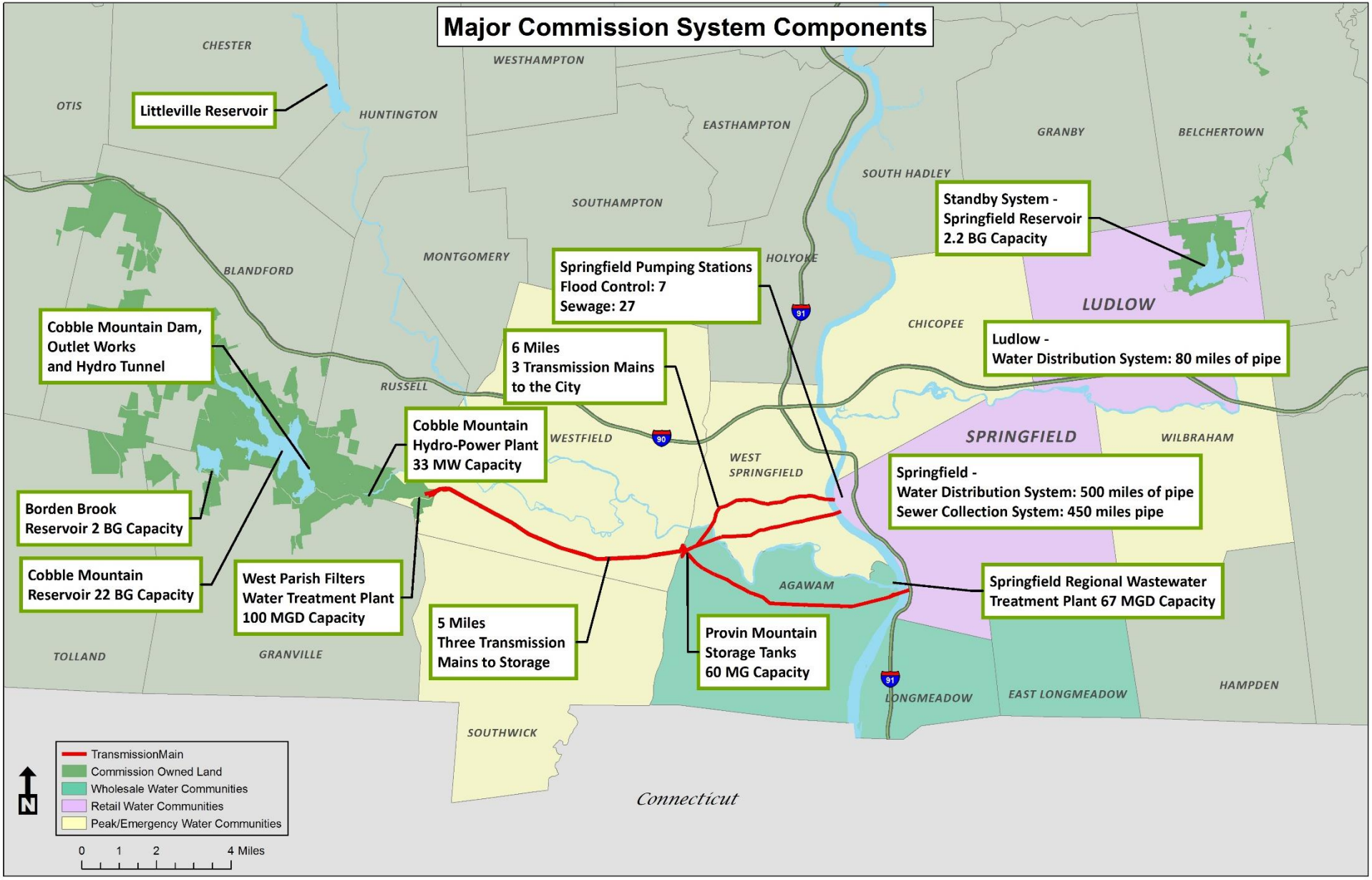


Collection System

Wastewater Treatment Plant

Discharge to River

Major Commission System Components

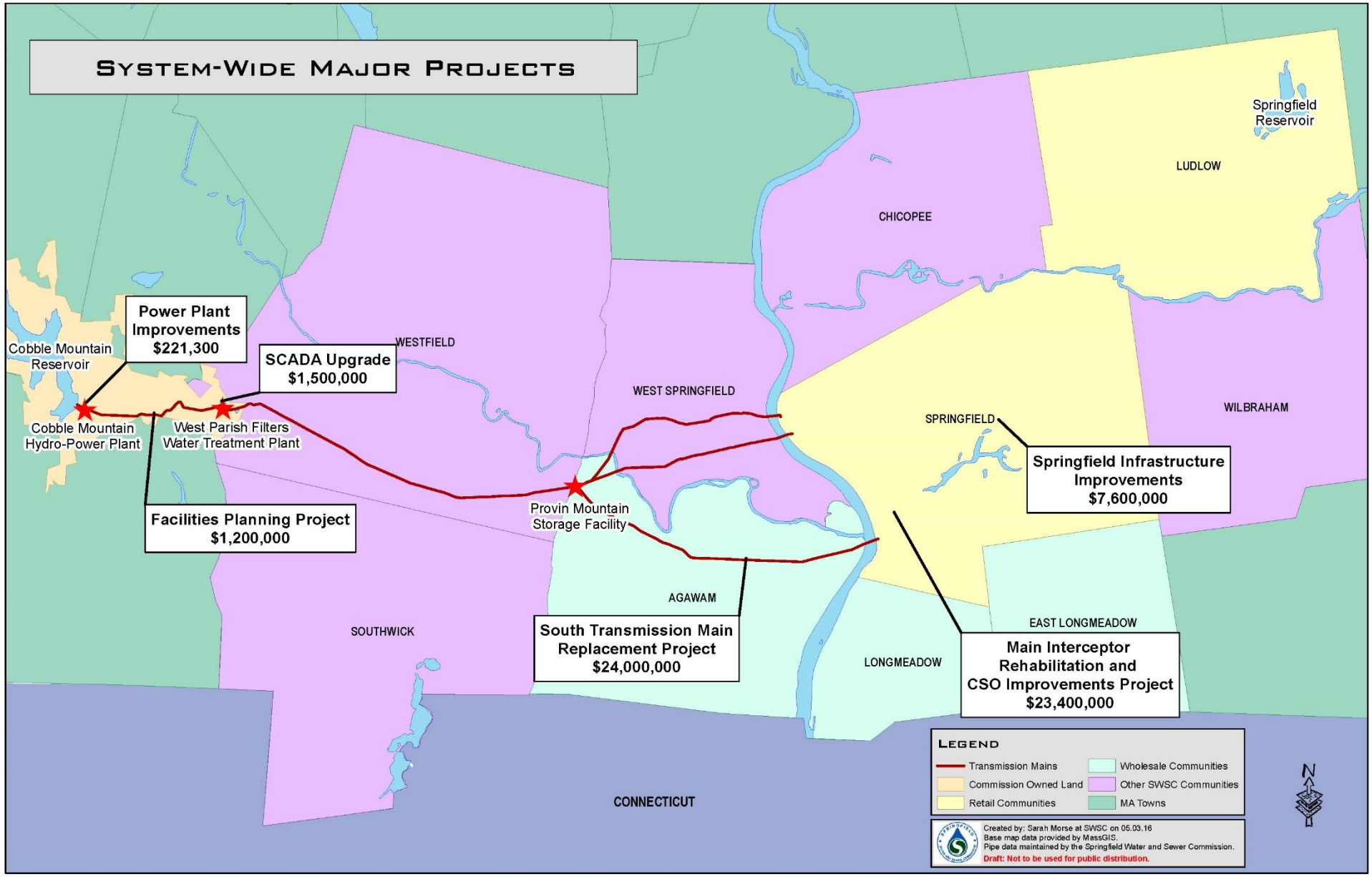


Robert Stoops

Chief Engineer

Capital Projects

System-Wide Major Projects



Facilities Plan

Dams, Raw Water Conveyance System, Treatment Plant, Transmission Mains, and Storage Facility

Phase 1

- Assess asset condition, hydraulic capacity, structural integrity, redundancy, and reliability - complete
- Implement improvements based on findings in next 1-3 years

Phase 2

- Assess systems in context of meeting and exceeding water quality criteria, regulatory criteria, and operational optimization in FY 18
- Implement improvements in the next 3-10 years

Facilities Planning Project Cost (Phase 1 & 2) = $1.2 million

Green Energy Production & Plant Improvements

33-MW Cobble Mountain Hydro Power Plant

Energy production in FY 2015 = 21,800 Megawatts

Enough to supply power to 25,000 homes

Improvements in FY 15 = $221,300

FY 2015 Net Revenue $1,480,656

Intake Dam Assessment

Repair Project

Circa 1910 290-ft x 59-ft Concrete Gravity Dam and Spillway

- Performed a detailed Mechanical and Structural Condition Assessment
- Findings indicate significant mechanical repairs required within 3 to 5 years and structural concrete repairs required within 5 to 10 years
- Preliminary design to be complete in 2016

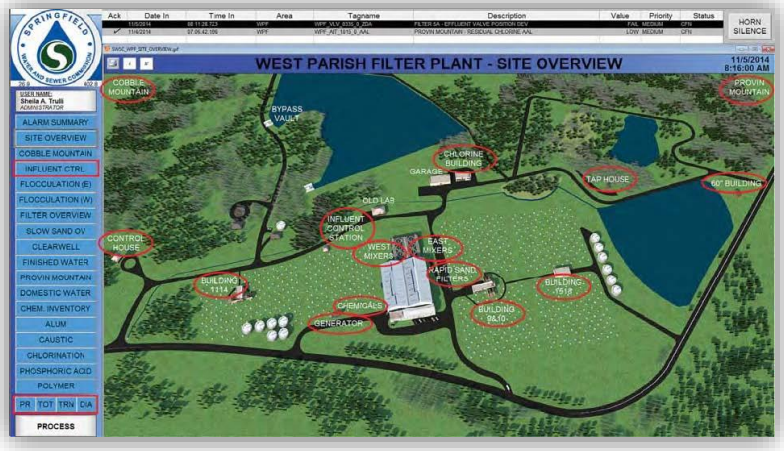
Estimated Project Cost = $12 million

Water Treatment Plant Projects

SCADA Upgrade

- Computer system that automates and monitors Treatment Plant operations
- Completed in Nov. 2015

Total Project Cost = $1,500,000

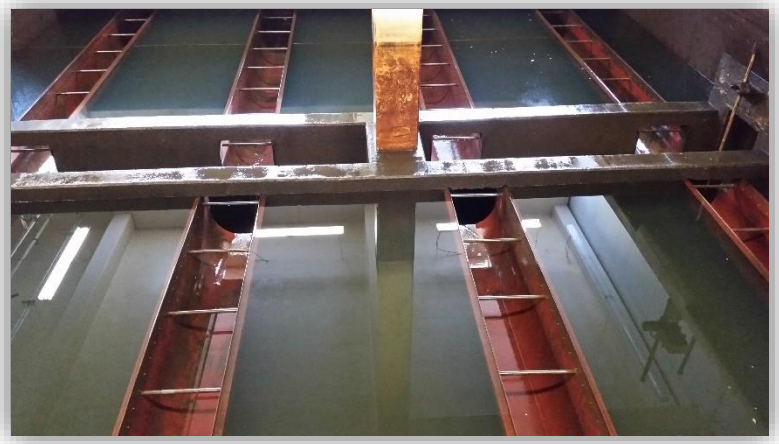


SCADA System Interface

FRP Backwash Troughs

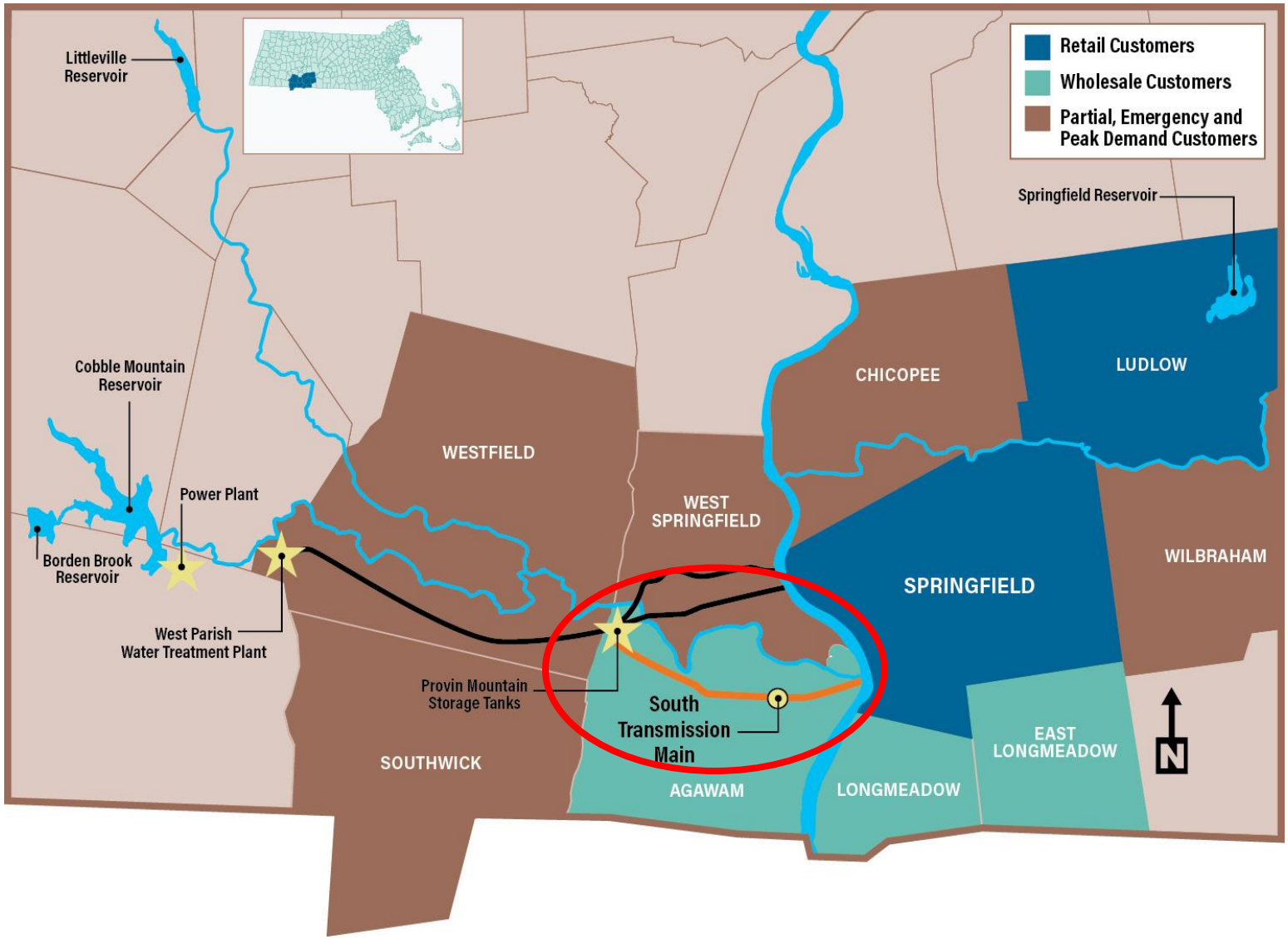
- Filters 1, 4, and 6 replaced in FY 16
- Remaining filters to be completed in FY 17-18

Estimated Project Cost = $480,000



Existing FRP Backwash Troughs

South Transmission Main Replacement Project



South Transmission Main
Replacement Project

- A leak detection survey, internal inspection, and lab analysis of the main were performed, concluding that the pipe reached the end of its useful life
- Project consists of replacing the 6 mile pipeline from Provin Mountain to the Route 5 rotary by the South End Bridge
- Completion in Summer 2016

Total Project Cost = $24 million

Installation of 48-inch PCCP along Route 57

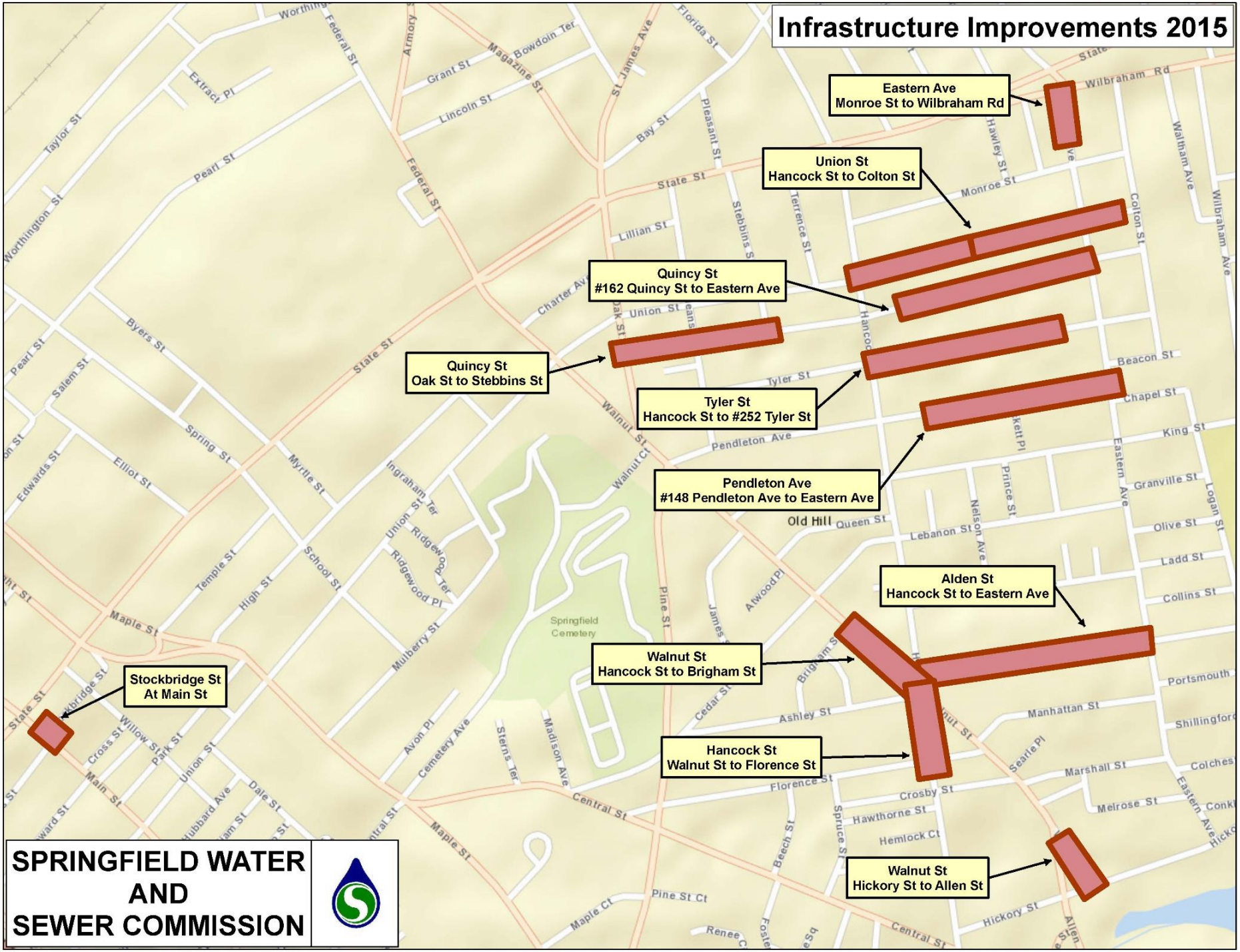
Infrastructure Improvements - Completed

Program Developed from Asset Management Information

- Rehabilitated:
  - 8,345-ft of sewer main
  - 44 manholes
- Replaced:
  - 334-ft of sewer main
  - 80-ft of water main
- Multiple sites throughout the City
- Completed in FY 16

Replacement of 18-inch sewer within Stockbridge Street

Total Project Cost = $1,600,000

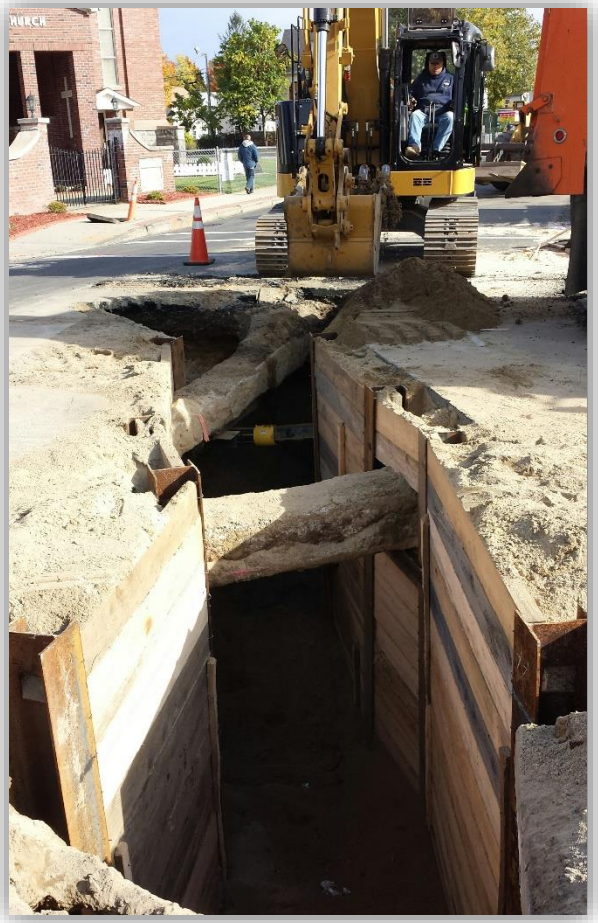

Infrastructure Improvements 2015
Eastern Ave
Monroe St to Wilbraham Rd
Union St
Hancock St to Colton St
Quincy St
#162 Quincy St to Eastern Ave
Quincy St
Oak St to Stebbins St
Tyler St
Hancock St to #252 Tyler St
Pendleton Ave
#148 Pendleton Ave to Eastern Ave
Alden St
Hancock St to Eastern Ave
Walnut St
Hancock St to Brigham St
Hancock St
Walnut St to Florence St
Walnut St
Hickory St to Allen St
Stockbridge St
At Main St
SPRINGFIELD WATER
AND
SEWER COMMISSION

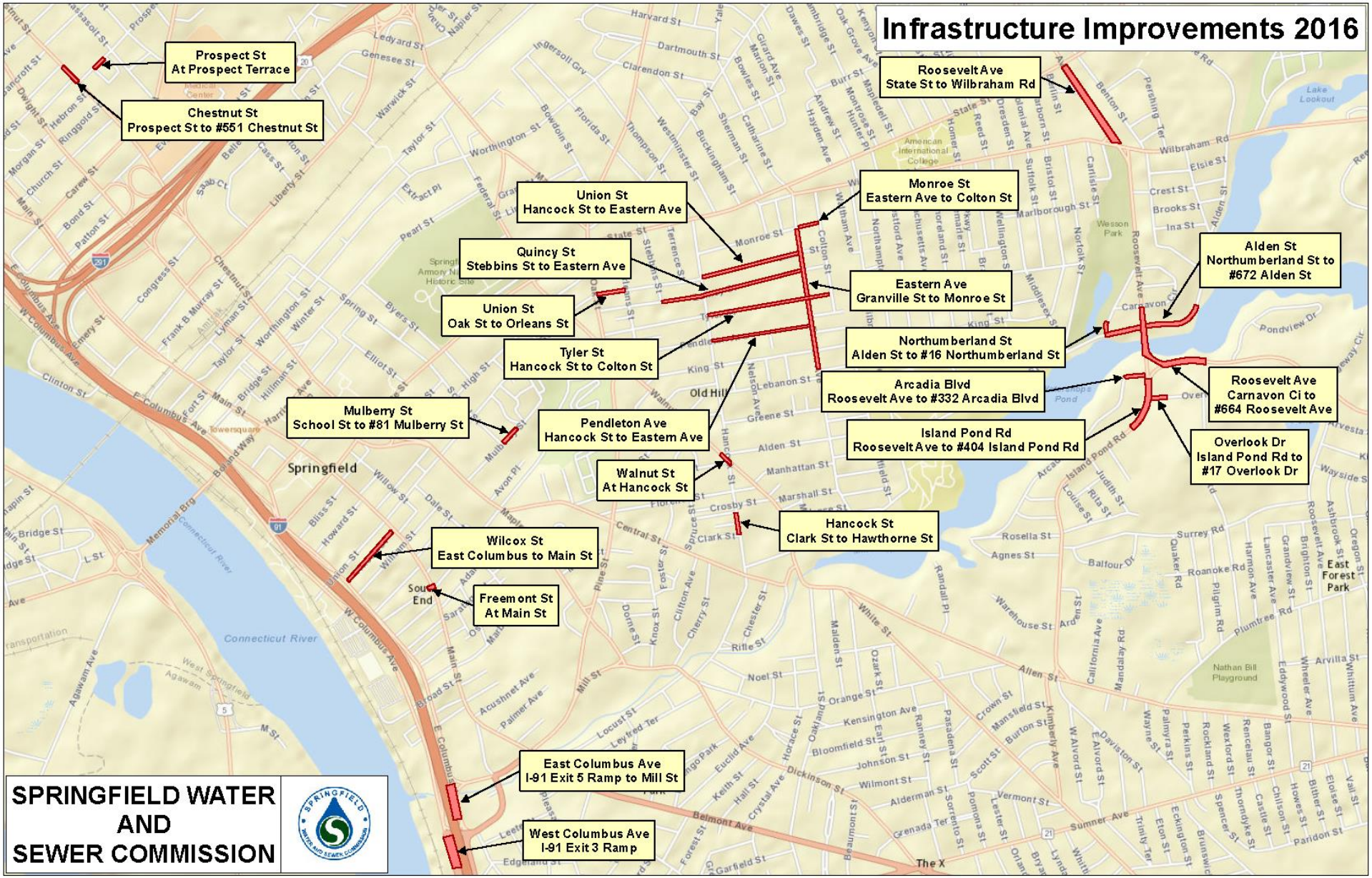
Infrastructure Improvements - Upcoming

Program Developed from Asset Management Information

- Rehabilitating approximately
  - 6,300-ft of sewer main
- Replacing approximately
  - 3,700-ft of sewer main
  - 7,400-ft of water main
- Multiple sites throughout the City
- Project to begin in Summer 2016

Estimated Project Cost = $6,000,000




Infrastructure Improvements 2016
Prospect St
At Prospect Terrace
Chestnut St
Prospect St to #551 Chestnut St
Roosevelt Ave
State St to Wilbraham Rd
Union St
Hancock St to Eastern Ave
Monroe St
Eastern Ave to Colton St
Quincy St
Stebbins St to Eastern Ave
Union St
Oak St to Orleans St
Eastern Ave
Granville St to Monroe St
Alden St
Northumberland St to
#672 Alden St
Tyler St
Hancock St to Colton St
Northumberland St
Alden St to #16 Northumberland St
Arcadia Blvd
Roosevelt Ave to #332 Arcadia Blvd
Roosevelt Ave
Carnavon Ci to
#664 Roosevelt Ave
Mulberry St
School St to #81 Mulberry St
Pendleton Ave
Hancock St to Eastern Ave
Island Pond Rd
Roosevelt Ave to #404 Island Pond Rd
Overlook Dr
Island Pond Rd to
#17 Overlook Dr
Walnut St
At Hancock St
Hancock St
Clark St to Hawthorne St
Wilcox St
East Columbus to Main St
Freemont St
At Main St
East Columbus Ave
I-91 Exit 5 Ramp to Mill St
West Columbus Ave
I-91 Exit 3 Ramp
Springfield
Connecticut River
SPRINGFIELD WATER
AND
SEWER COMMISSION

Main Interceptor Rehabilitation and CSO Improvements Project

Rehabilitation of a Critical Combined Sewer Pipeline

- Pipeline located in Springfield's South End
- Carries flow for more than 60% of the City
- Inspection identified need for immediate rehabilitation
- Project consists of rehabilitating:
  - 3,200 feet of 60 and 66-inch diameter sewer pipe and associated manholes
  - Three CSO structures along the Connecticut River
- Anticipated Completion in FY 2017

Installation of Cured-in-place-pipe (CIPP)

Estimated Project Cost = $23,476,000

CT River Crossing and York Street Pump Station

Required under USEPA Administrative Order

Design and Permitting Phase 2017-2019 for the pipe crossing, new wastewater pump station, CSO Throttles and Influent Structure

Estimated Project Cost = $6,000,000

River Pipe Crossing Construction 2019-2022 includes three redundant conduits open cut across the CT River

Estimated Project Cost = $31,500,000

New York Street Pump Station Construction 2020-2022

Estimated Project Cost = $36,300,000

CSO Throttle Controls and Influent Structure Construction 2018-2020

Estimated Project Cost = $6,600,000

Daniel DiRienzo

Director of Field Services

Water Distribution System

Springfield and Ludlow Water Systems

- Approximately 580 miles of distribution mains
- Many distribution mains are unlined cast-iron 75 to 100 years old:

  77 miles of 6-inch diameter

  125 miles of 8-inch diameter

	Springfield	Ludlow
Hydrants	5,584	673
Valves	16,697	2,270
Pipes (miles)	494	90

Distribution System

Infrastructure Maintenance

Water Quality Statistics		
Year	FY 15	Total*
Hydrants Inspected	3,924	28,312
Hydrants Rebuilt/Repaired	627	5,062
Hydrants Painted	1,071	9,828
Valves Exercised	3,194	32,875
Pipe Flushed (miles)	103.75	759

*Since program began, 2006

Water Distribution System Updates	
New Hydrants	17
Replacement Hydrants	97
New Valves Installed	151
Valves Replaced	45

Water Main Replaced FY 15
= 7,009 feet

Water Main Breaks		
2014	2015	2016*
57	67	20

*through May

Meter and Field Service Statistics	
Residential Water Consumption Surveys Performed	391
Primary Meters Installed/Replaced	5,542
Secondary Meters Installed/Replaced	366

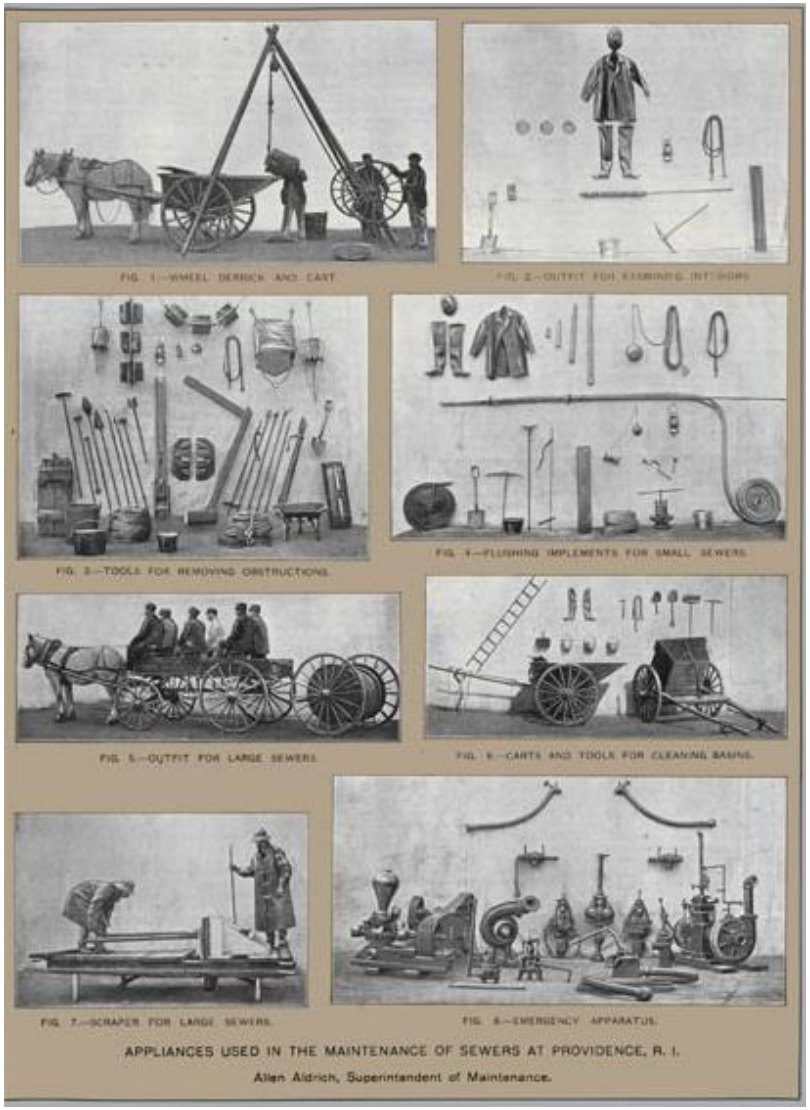
Joshua Schimmel

Executive Director

Wastewater Collection System

Wastewater Collection System

- 461 miles of sewer and combined sewer pipe
- 11,000 manholes
- Portions of pipe network up to 120 years old
- Partially separated storm and combined sewer system
- 27 sewage pumping stations
- 7 flood control pumping stations



Appliances used in the maintenance of sewers, 1899

Sewer Collection System

2015 Metrics & Performance

2015 Collection System Statistics	
Sewer Mains Jetted by the Commission	581,729 ft.
Sewer Mains Jetted by Contractors	161,002 ft.
Service Connections Rodded	284
Sewer Backup Complaints Responded To	759
Sanitary System Repairs	17
House Connection Repairs	129
Standing Mains Cleared	50
Manholes Washed and Cleaned	1,215
Cave-ins Repaired	171
Siphons Checked	266
Siphons Cleared	0

71% reduction in sanitary sewer overflows (SSO) as a result of O&M optimization and investment

Asset Management and Maintenance Program

2015 Metrics & Performance

- CCTV assessment of 109,000-ft of sewer system
- Removal of 305 tons of grit
- GIS mapping of 2,035 manholes and pipe segments
- Creation of maintenance maps for roots, grease, and structural defects
- Creation of Prioritized Capital Project List

Project Cost = $3,000,000 annually

Interior of Sewer Mains Identified for Improvements Through Program

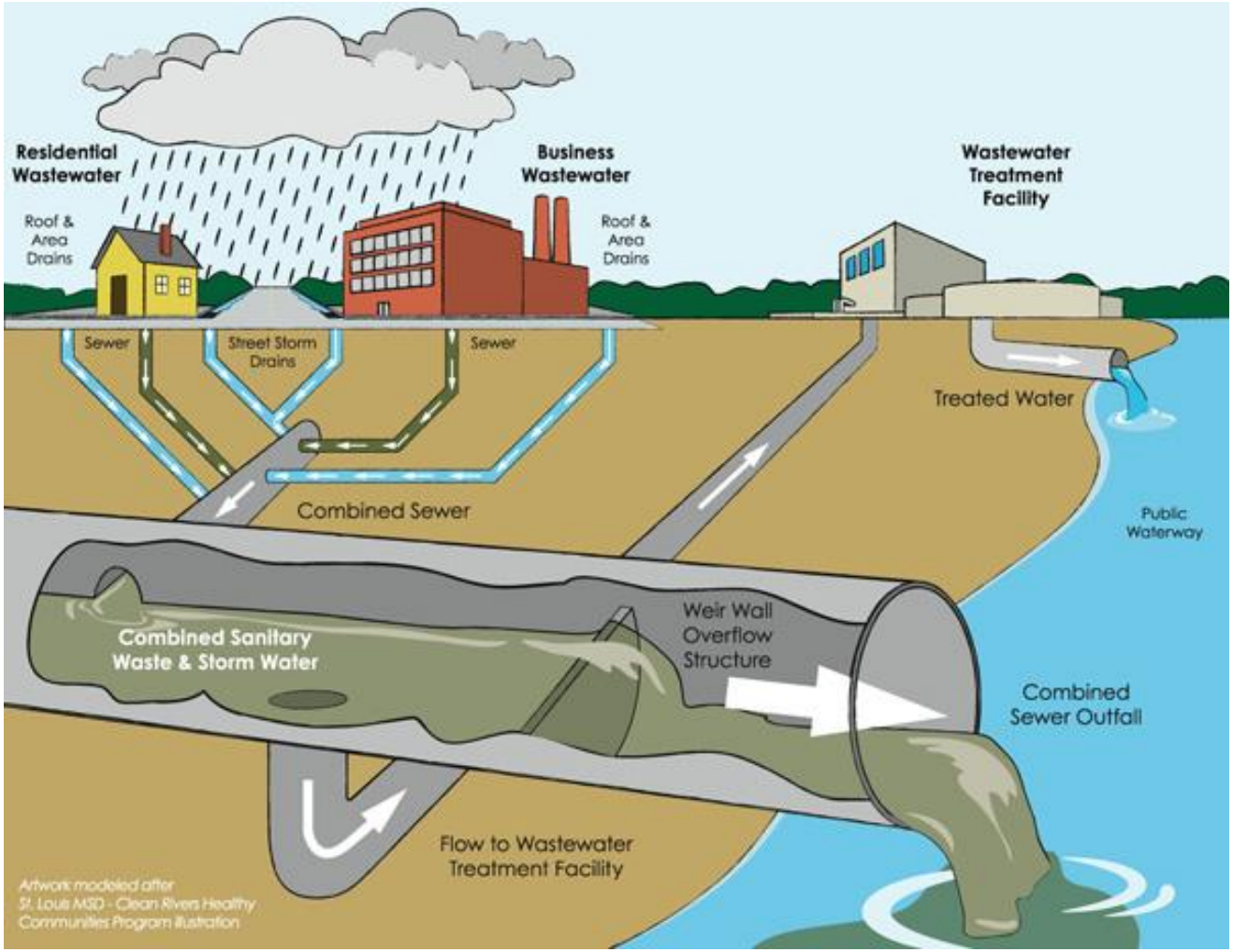
Wastewater Treatment Facility

- Completed in 1977
- 95% federal funding grant
- Service population of 250,000

Improvements in FY 15 = $340,000

- Design flow = 67 MGD
- Average flow = 38 MGD
- 13.8 billion GPY treated
- 24/7/365 operation

Combined Sewer Overflows



- 700+ CSO communities across US
- CSO Discharges regulated by USEPA and MADEP
- 23 CSO Locations in Springfield
- Program administered via series of USEPA Administrative Orders

CSO Program History

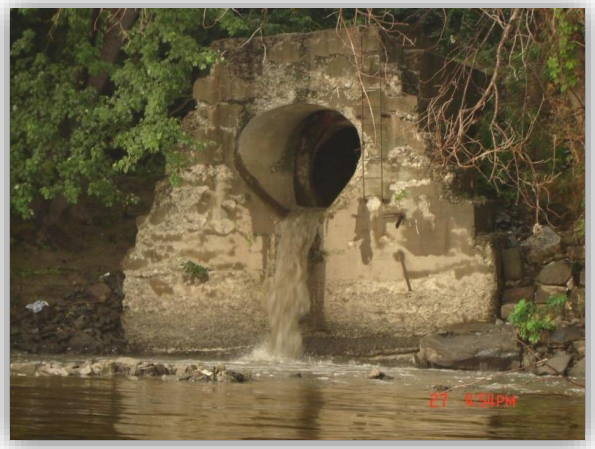
Required under EPA National Compliance Program
Driven by EPA Administrative Orders

Mill River CSO	**2003-2004**	**$ 4,800,000**
Watershops Pond	**2003-2006**	**$ 1,200,000**
Washburn CSO Replacement	**2006-2007**	**$ 7,900,000**
Chicopee River CSO	**2004-2009**	**$ 36,400,000**
Phase I Connecticut River CSO	**2005-2012**	**$ 18,352,000**
Washburn CSO Phase II Design	**2009-2012**	**$ 2,500,000**
Washburn CSO Phase II Construction	**2012-2016**	**$ 20,536,000**
Integrated Wastewater Plan	**2009-2014**	**$ 8,700,000**
Main Interceptor and CSO Project	**2015-2017**	**$ 9,126,000**
		$109,514,000

Integrated Wastewater Plan (IWP)

Balancing Regulatory Requirements with Sustainable Investment

- Plan balances regulatory requirements with investment in the Commission's wastewater infrastructure
- Identifies and prioritizes more than $300 million of wastewater infrastructure investment over 40 years which satisfies USEPA and MassDEP existing regulations
- Includes Combined Sewer Overflows, Wastewater Treatment, and the Wastewater Collection System
- Financially feasible and affordable to customers
- Approval of the plan received in 2015



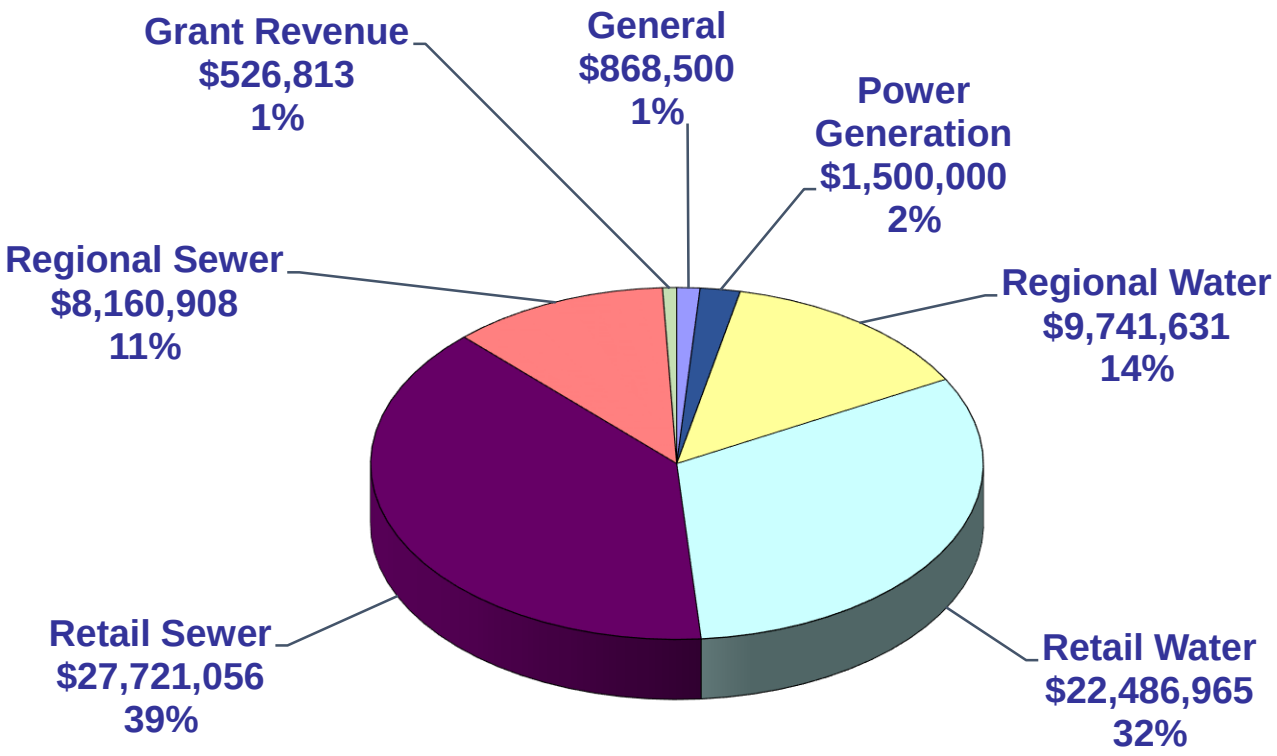
Anthony Basile

Comptroller

The Financial Plan

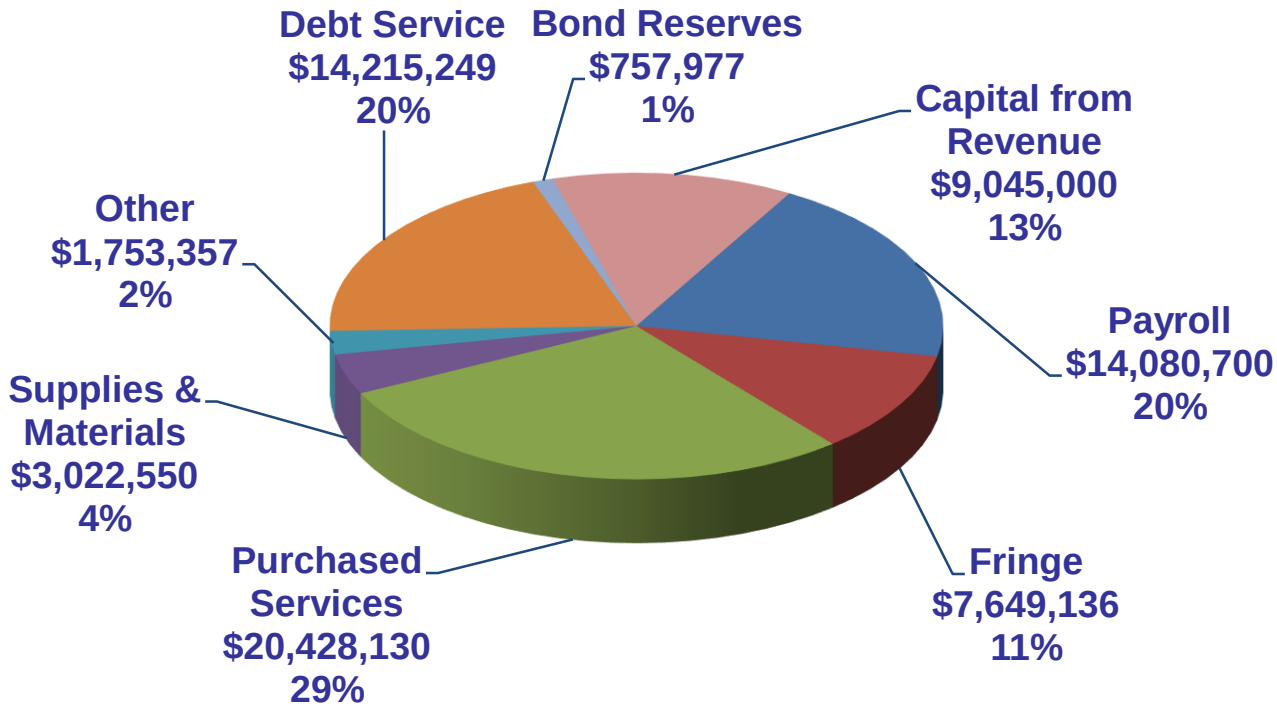
Revenue Fiscal Year 2017

Estimate - $71,005,873



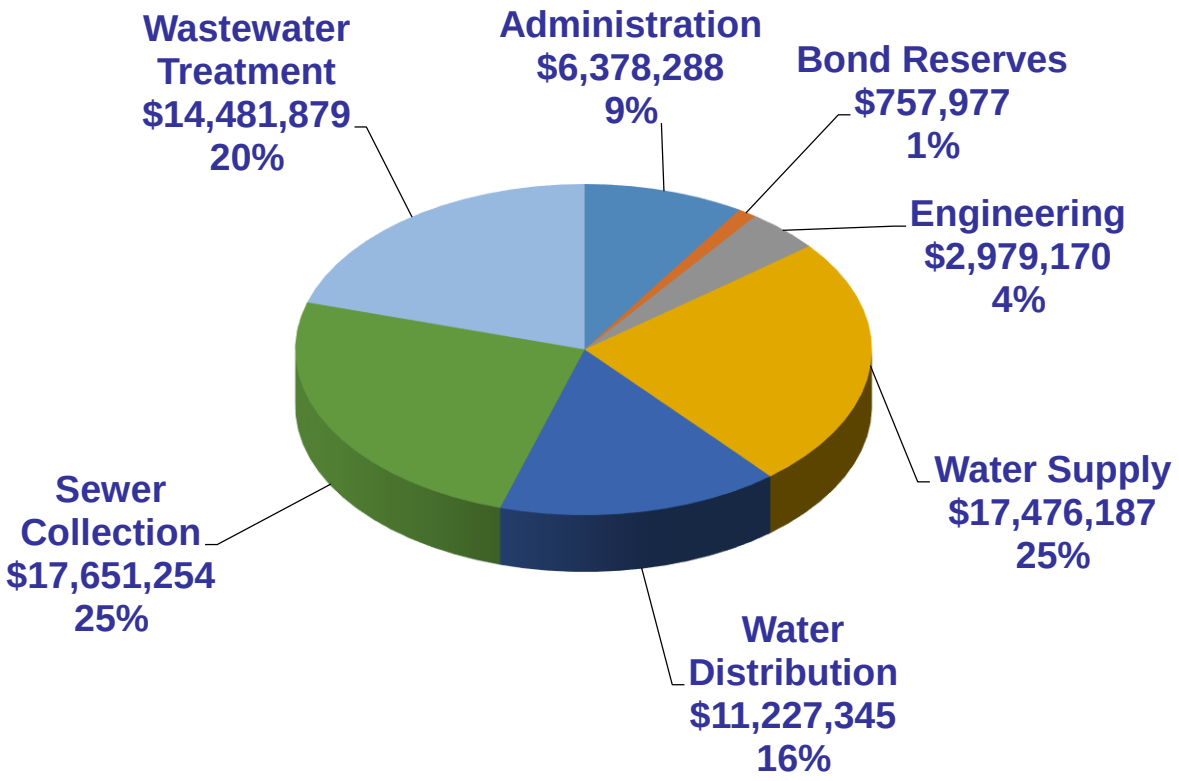
Spending By Category FY2017

Budget - $70,952,099



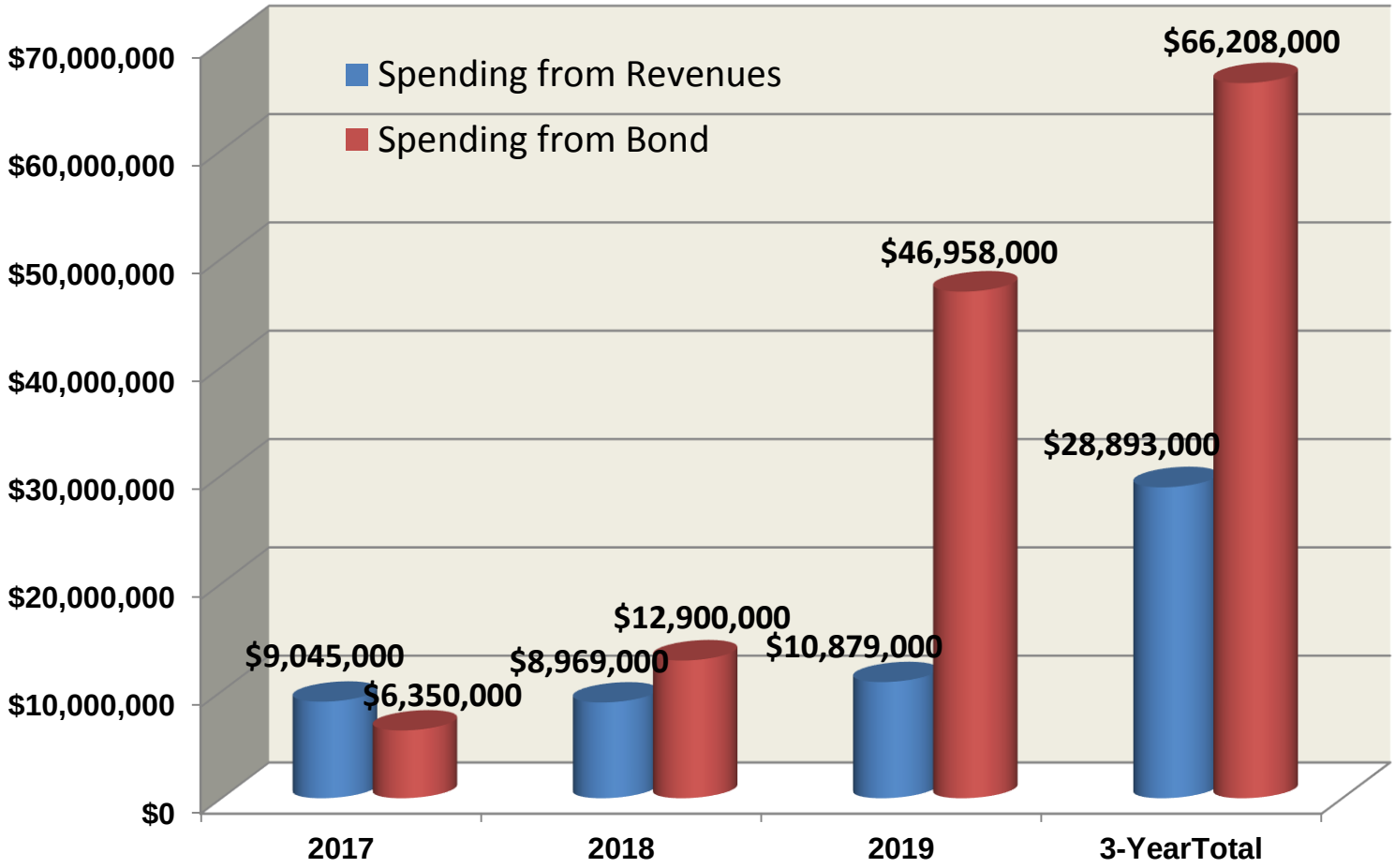
Spending By Division FY2017

Budget - $70,952,100



Capital Spending 2017-2019

Total $95,101,000

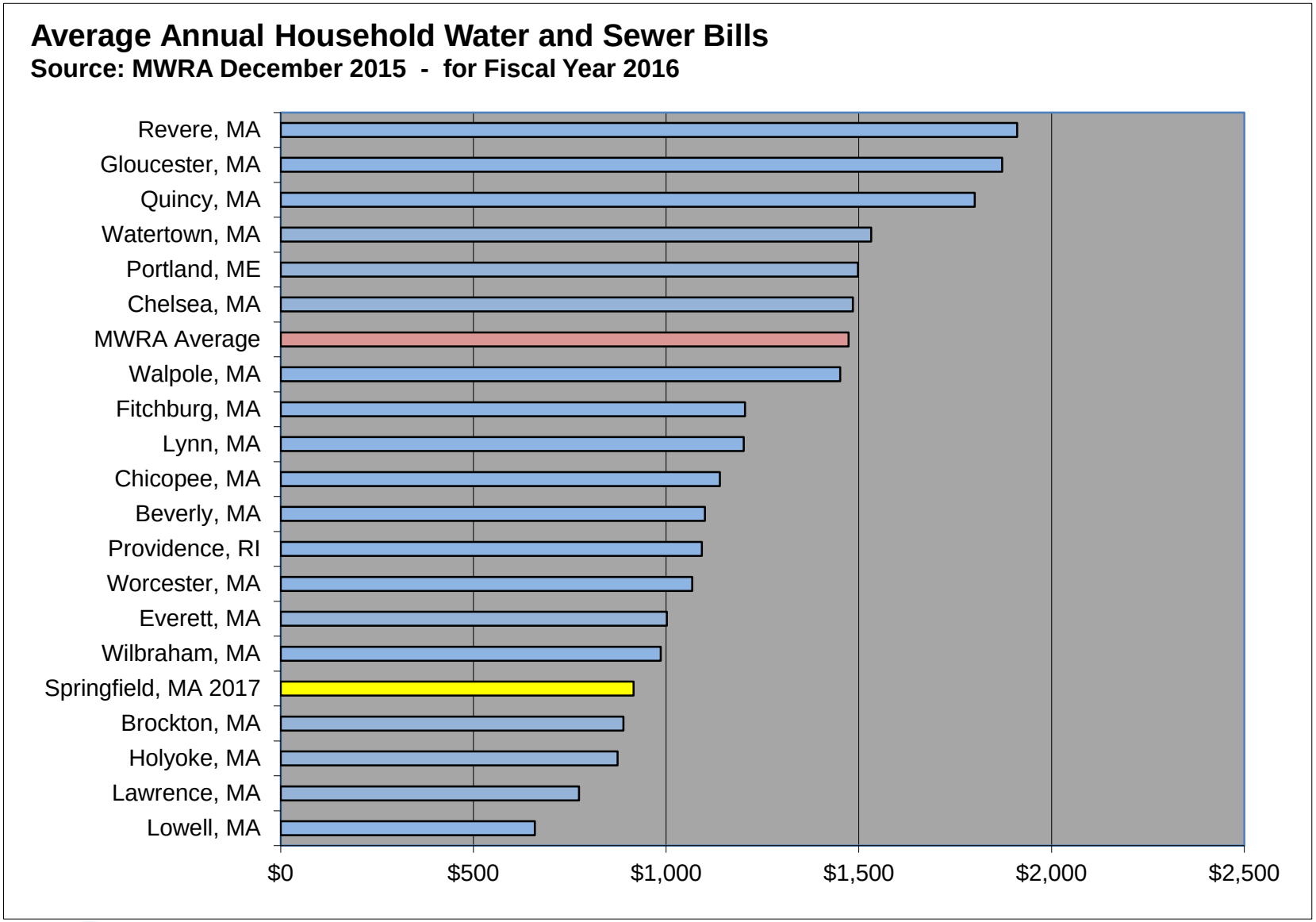


Retail Water and Sewer Rates

	FY2016 Eff. July 1	FY2017 Eff. July 1	% Increase
Water:			
Residential & Commercial	$2.78	$2.89	4.0%
Industrial & Municipal	$2.07	$2.15	4.0%
Sewer:			
Residential & Municipal	$4.56	$4.74	4.0%
Commercial & Hospital	$5.01	$5.21	4.0%
Industrial	$5.46	$5.69	4.2%
Restaurant	$5.92	$6.16	4.2%
Combined Water and Sewer:			
Typical Annual Household Bill	$916.53	$953.13	4.0%

Note: rates above are for each 100 cubic feet (or 748 gallons) of metered water.

Rate Comparison



Domenic Pellegrino

Finance Director

Proposed Rules and Regulations Changes

Rules and Regulations Proposed Changes

All Changes Effective FY 2017: July 1, 2016

Chapter 5 – Schedule of Rates, Fees, Charges and Penalties

Section 5.2	Water Rates	
Class of Customer	FY 2016	FY 2017
Residential (per 100 cu.ft.)	$2.78	$2.89
Commercial (per 100 cu.ft.)	$2.78	$2.89
Industrial (per 100 cu.ft.)	$2.07	$2.15
Municipal (per 100 cu.ft.)	$2.07	$2.15

Section 5.8	Sewer Rates	
Class of Customer	FY 2016	FY 2017
Residential, Institutional and Municipal (per 100 cu.ft.)	$4.56	$4.74
Commercial and Medical Facility (per 100 cu.ft.)	$5.01	$5.21
Industry Wet & Dry (per 100 cu.ft.)	$5.46	$5.69
FSE (per 100 cu.ft.)	$5.92	$6.16

Rules and Regulations Proposed Changes

All Changes Effective FY 2017: July 1, 2016

Copies of the Rules and Regulations Proposed Changes are available by request.

Joshua Schimmel

Executive Director

Summary and Closing Remarks

What is the Value of Water?

Reliable Water and Sewer Services are Vital for:

Public Health

Fire Protection

Economic Development

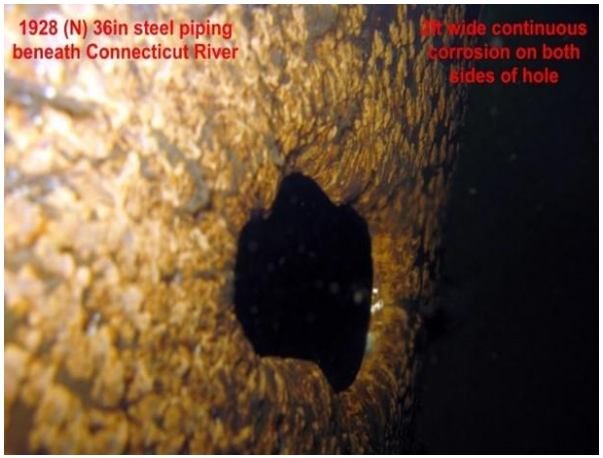
What is the Value of Water?

Facing Aging Infrastructure and Regulatory Challenges

Challenge 1: An Aging Infrastructure

Parts of the water and sewer infrastructure in the City of Springfield date back to the late 1800s. The pipes are aging and in some cases, in need of repair and replacement.

Example of corrosion on a 1928 transmission main



In February 2012, the Commonwealth of Massachusetts' Water Infrastructure Finance Commission published a report estimating the funding gap for needed water and wastewater investments at **$21.4 billion**.

Water Main and Sewer Main Breaks

What is the Value of Water?

Facing Aging Infrastructure and Regulatory Challenges

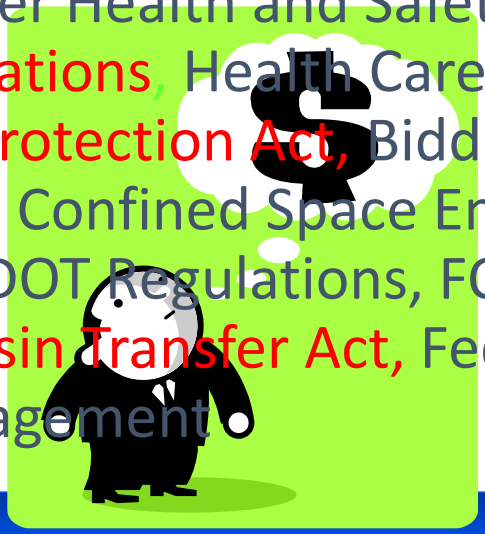
Challenge 2: Regulatory Mandates

The Commission has been working to reduce overflows from Combined Sewer Overflows since 2003, and will continue to do so for the next 40 years and beyond.

In addition to CSOs, the Commission meets and surpasses multiple Safe Drinking Water Act regulations every single day.

Legislation and Regulations

Safe Drinking Water Act: 90 Regulated Contaminants, Stage 2 Disinfection Byproduct Rule, Long Term 2 Enhanced Surface Water Treatment, Lead and Copper Rule, Total Coliform Rule, Unregulated Contaminant Monitoring, Contaminant Candidate List Clean Water Act: NPDES Permit for Water Treatment Plant, NPDES Permit for Wastewater Treatment Plant, Solids Regulations, Zero Discharge, Nutrient Removal, CSO's, Stormwater BMP's, CMOM Bioterrorism Act: Homeland Security Presidential Directives, Terrorism, Disasters (FEMA), Emergency Preparedness, Endangered Species Act, General Liability, GASB 34, Worker Health and Safety, Right to Know, Contract Laws, Dam Safety Regulations, Health Care, Pensions, Trenching & Excavation, MA Rivers Protection Act, Bidding Laws, Procurement Laws, UFST Regulations, Confined Space Entry, Water Management Act, Hazardous Waste, DOT Regulations, FCC Regulations, Wetlands Protection Act, Inter-Basin Transfer Act, Federal Clean Air Act, MA Clean Air Act, Risk Management



What is the Value of Water?

Facing Aging Infrastructure and Regulatory Challenges

Investment

Water Facilities Plan Phases 1&2 $1.2 million

South Transmission Main Replacement Project $24 million

Regulatory Requirements

CSO Reduction Spending to Date

$100+ million

Sustainability

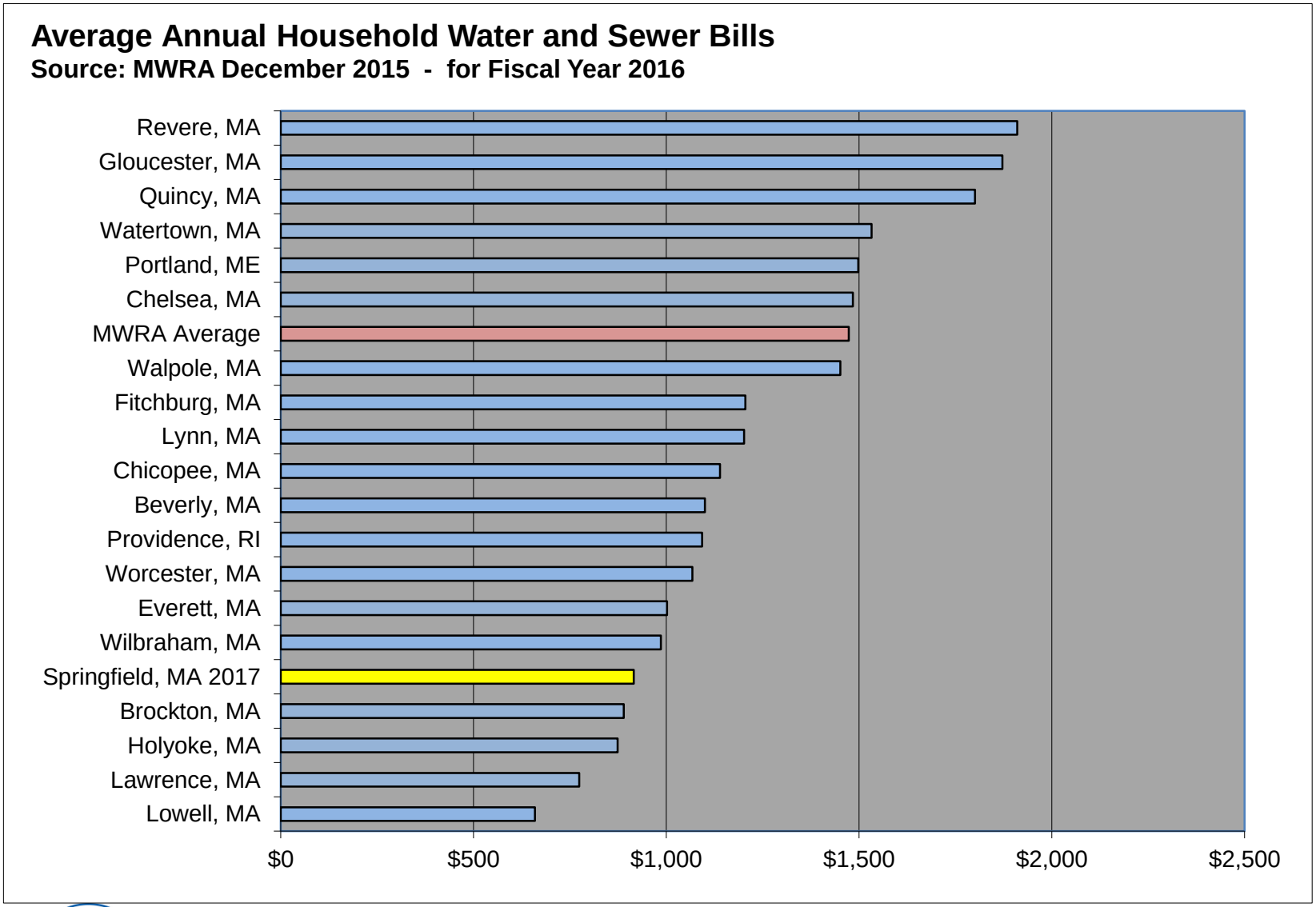
Infrastructure Improvements (three years) $ 14.6 million

Main Interceptor Rehabilitation Project $23.4 million

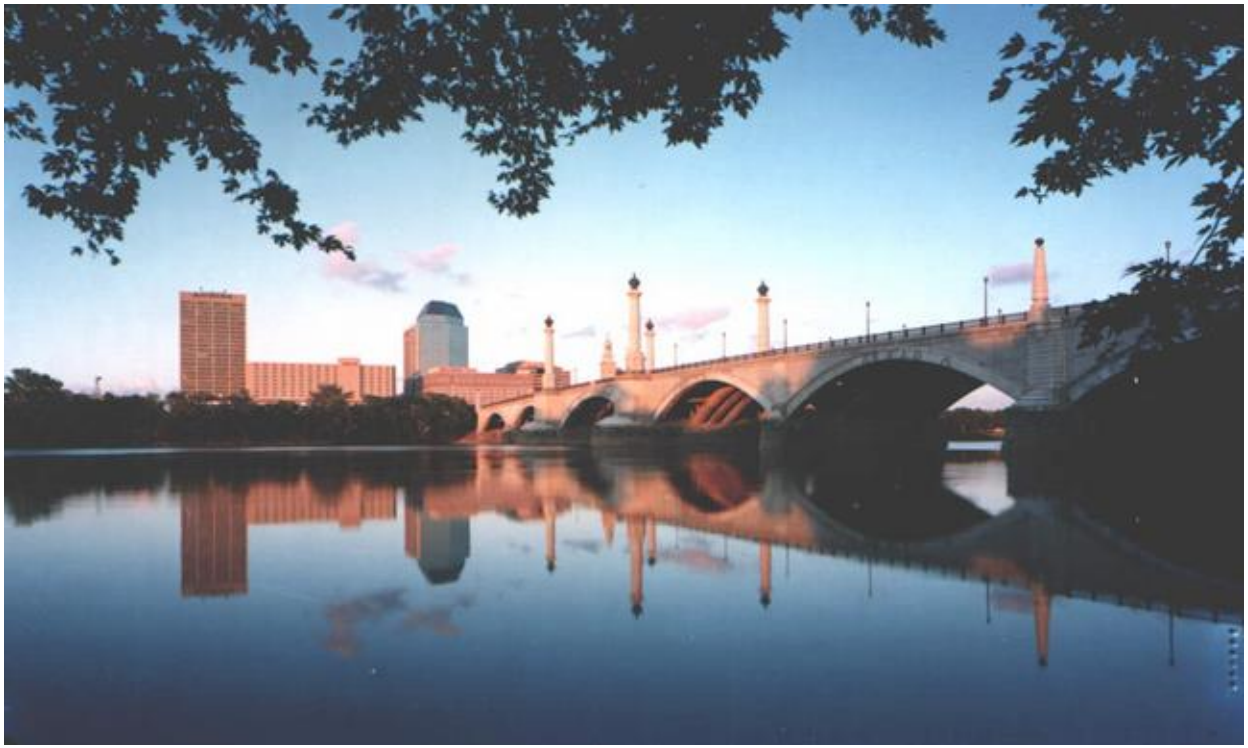
Springfield Water is a Great Value!

SPRINGFIELD WATER AND SEWER COMMISSION

Springfield Water is a Great Value



Springfield Water and Sewer Commission, Continuously Working for a Better Future



For more information, please contact:

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