
WATER RESOURCES AUTHORITY
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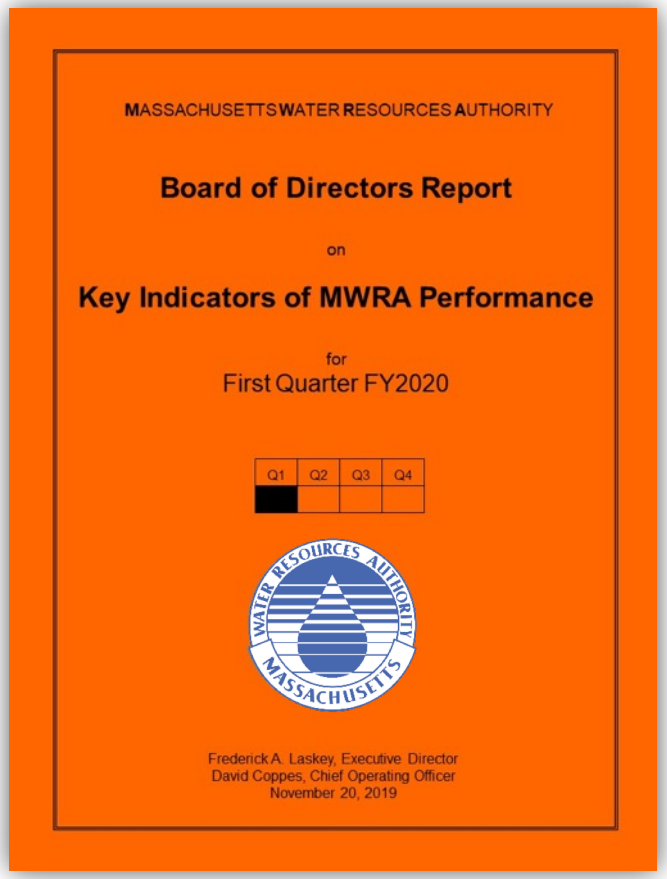
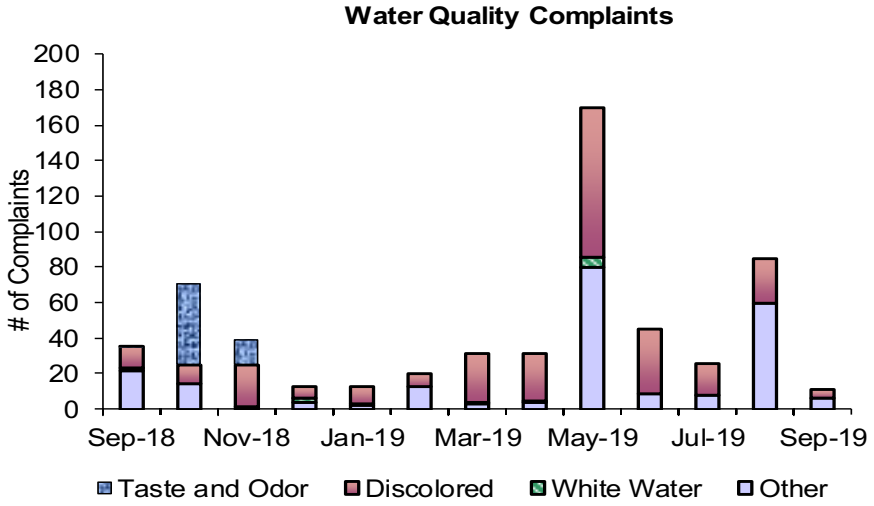
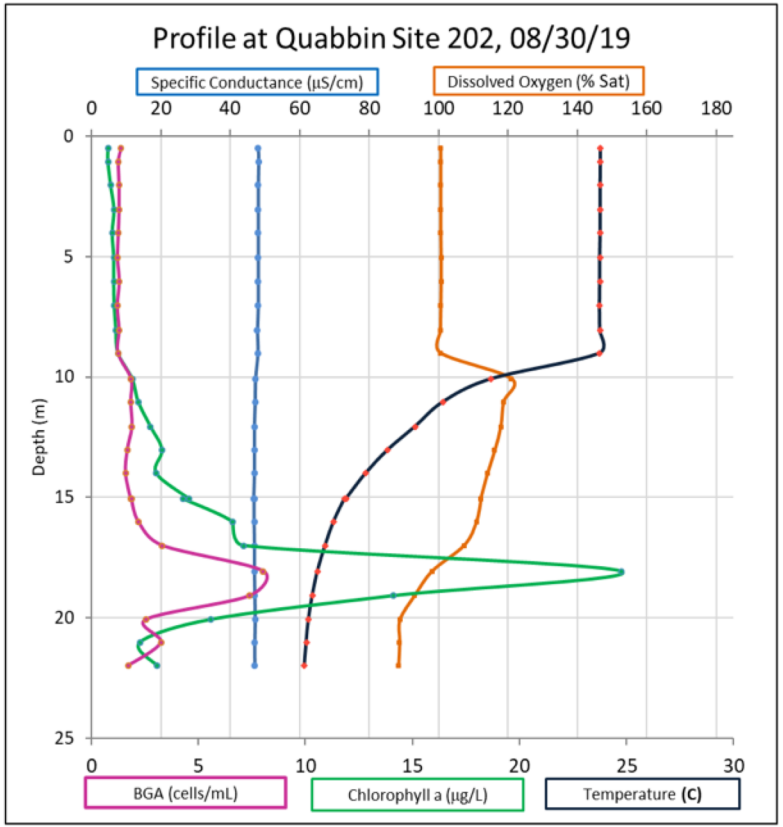
Massachusetts Water Resources Authority

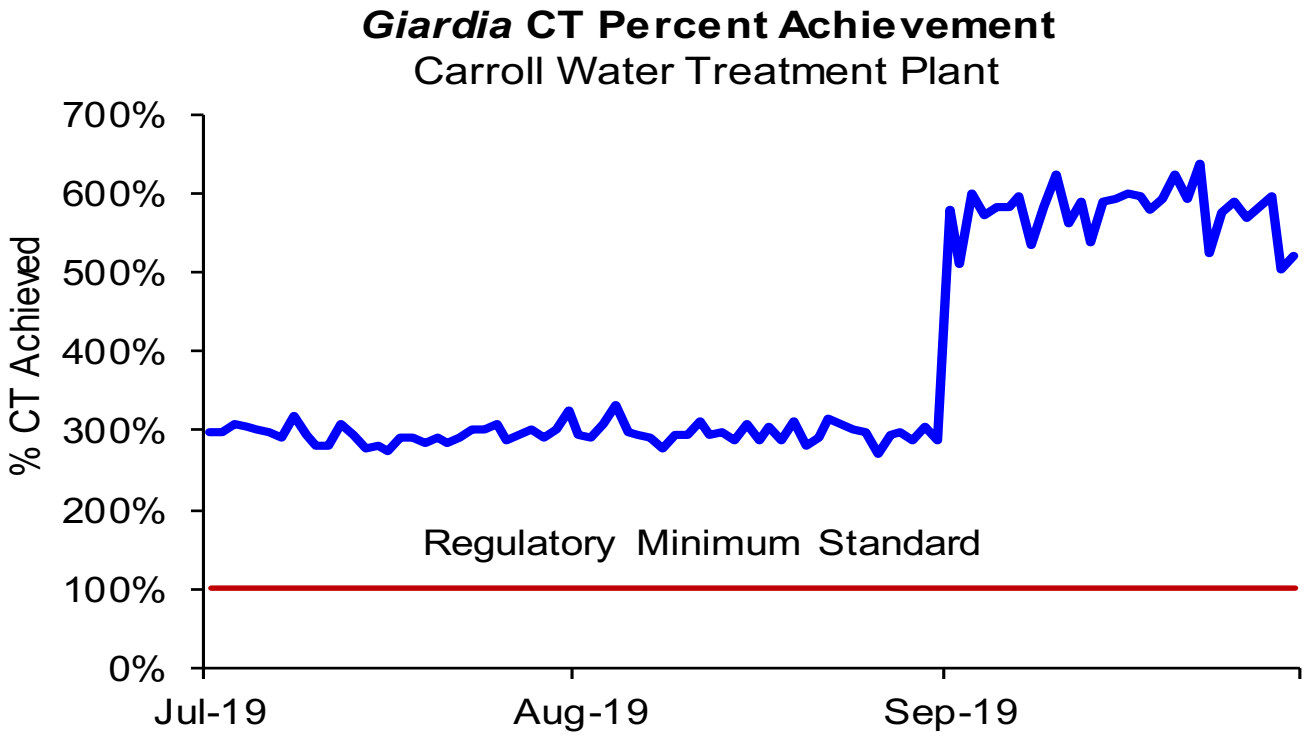


Algae and Drinking Water Complaints

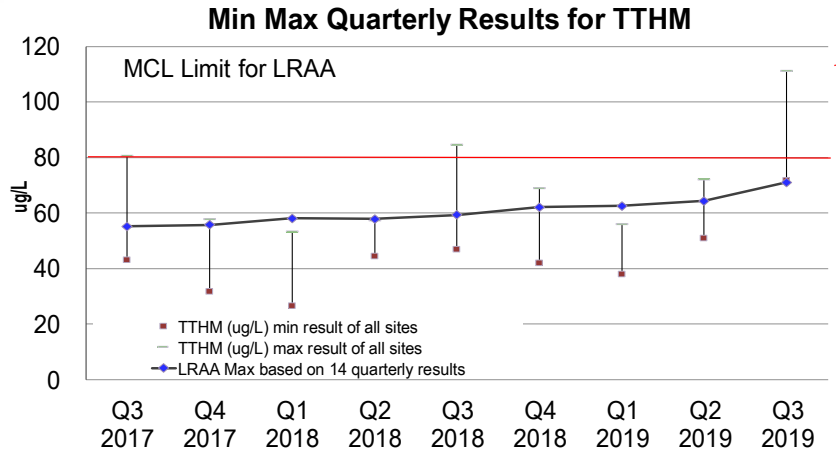


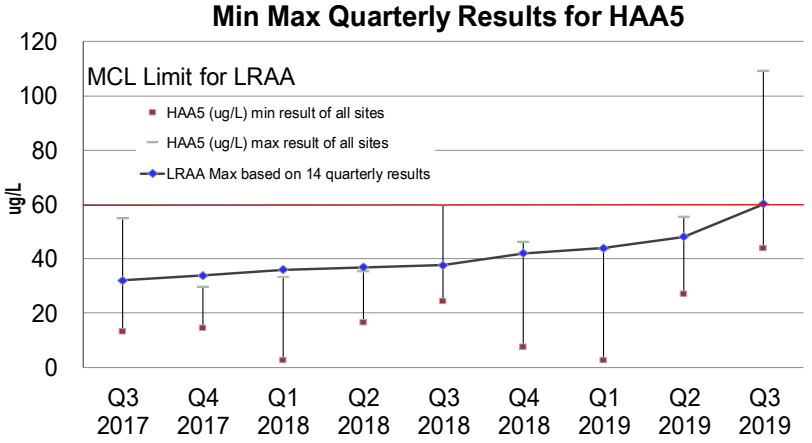


Carroll Water Treatment Plant

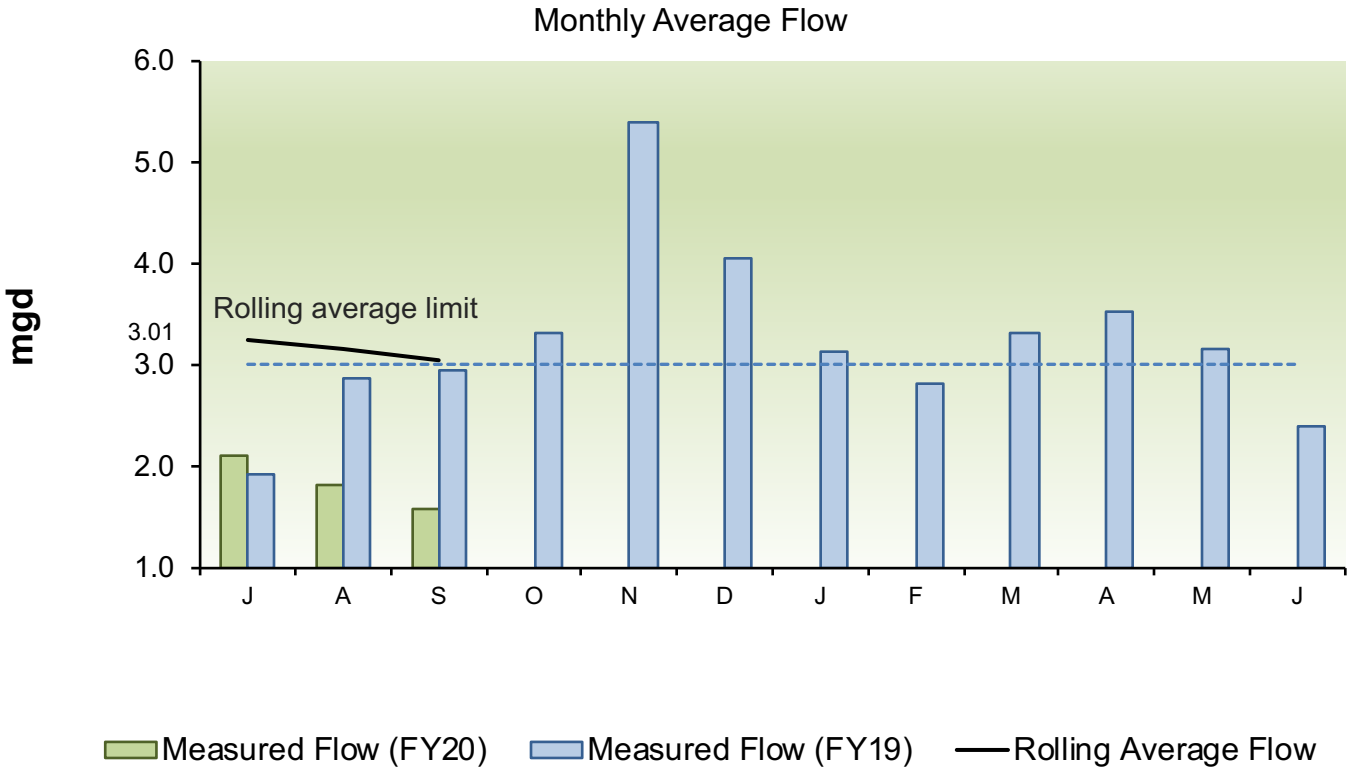


Disinfection Byproducts Levels:
CVA Disinfection By-Products (Combined Results)





Clinton Wastewater Treatment Plant

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Automated Vehicle Locator Tracking System Contract A606, Amendment 1

November 20, 2019

www.networkfleet.com/portal


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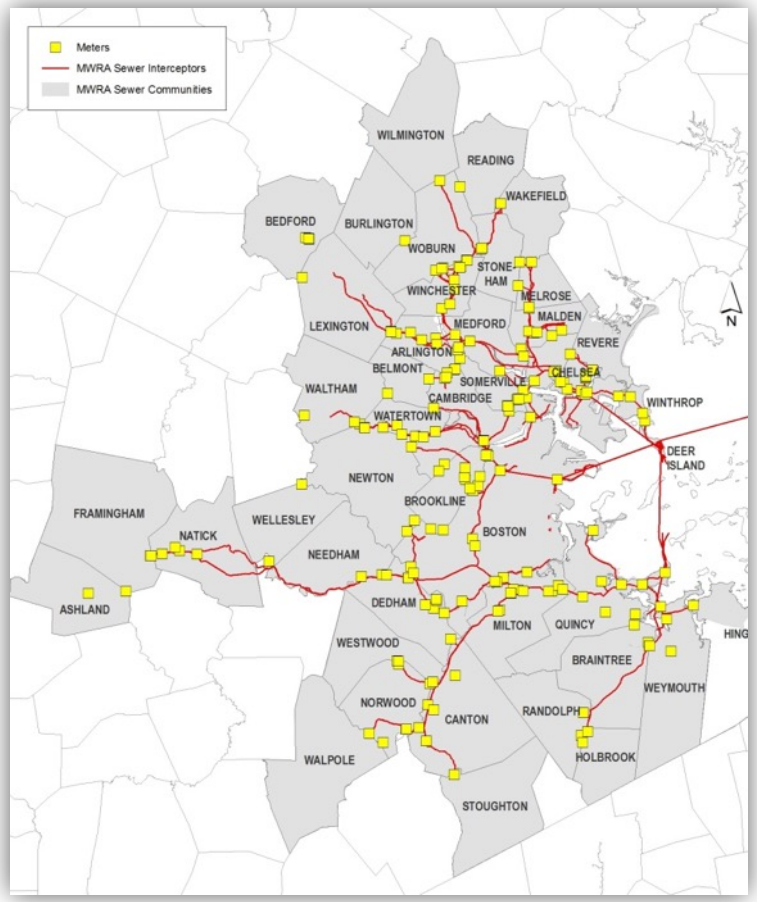
Wastewater Metering System Upgrade Project

November 20, 2019

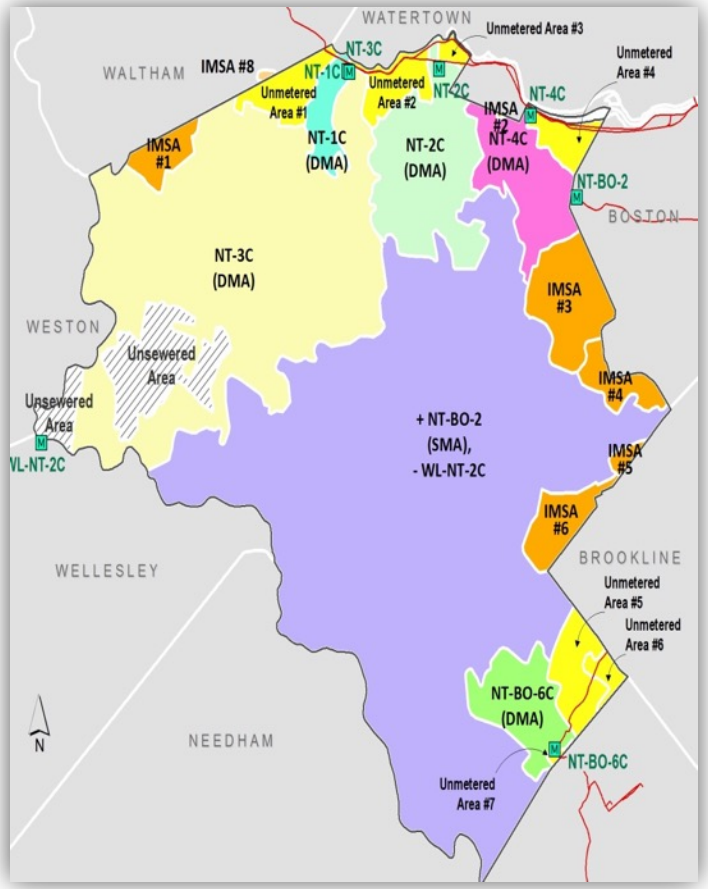
Background

- Wastewater meters are a key element of MWRA'S cost allocation methodology for the regional sewer system
- About half of operating and debt service costs for capital projects are allocated based on community wastewater flows
- Last full metering system upgrade was in 2004
- 212 total meters, including 189 revenue meters



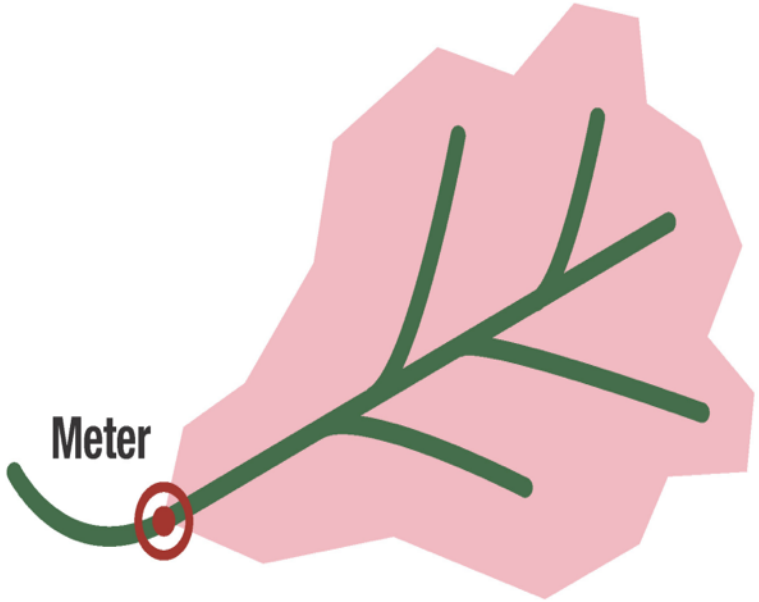
Wastewater Metering System Design

- System was not designed to be metered
  - Goal was meter at least 85% of community flows
  - And to confidently estimate any unmetered flow
- Directly meter where possible
  - Use subtraction where needed
  - Estimate flow based on ratio to a metered area



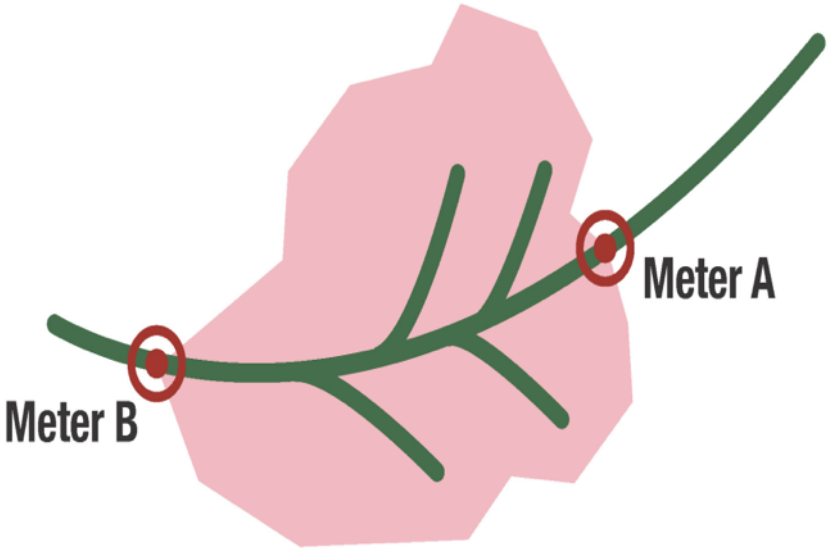
Direct Metering

- Flow within a tributary area to a single suitable point for metering
- No adjustments needed



Subtraction Metering

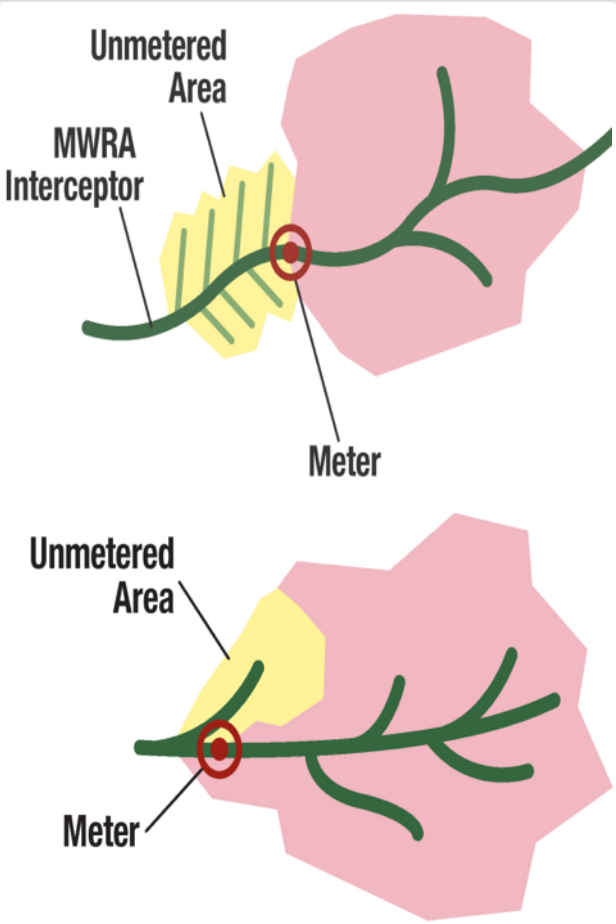
- Flow from one community flows through another community
- Can be tributary to community or MWRA pipe
- Flow = Meter B – Meter A



Unmetered Areas

- Some areas cannot easily or cost effectively be metered
  - a large number of small community connections to MWRA
  - downstream of suitable meter location
  - inter-municipal service areas

- Flow estimated as a ratio of nearby metered area



Major Tasks of the Upgrade Project

- Update flows from unmetered areas
- Assess current meter sites
- Review locations – increase metered if cost effective
- Assess meter technology, communication and data management technology
- Specify and assist in procurement
- Oversee purchase and installation

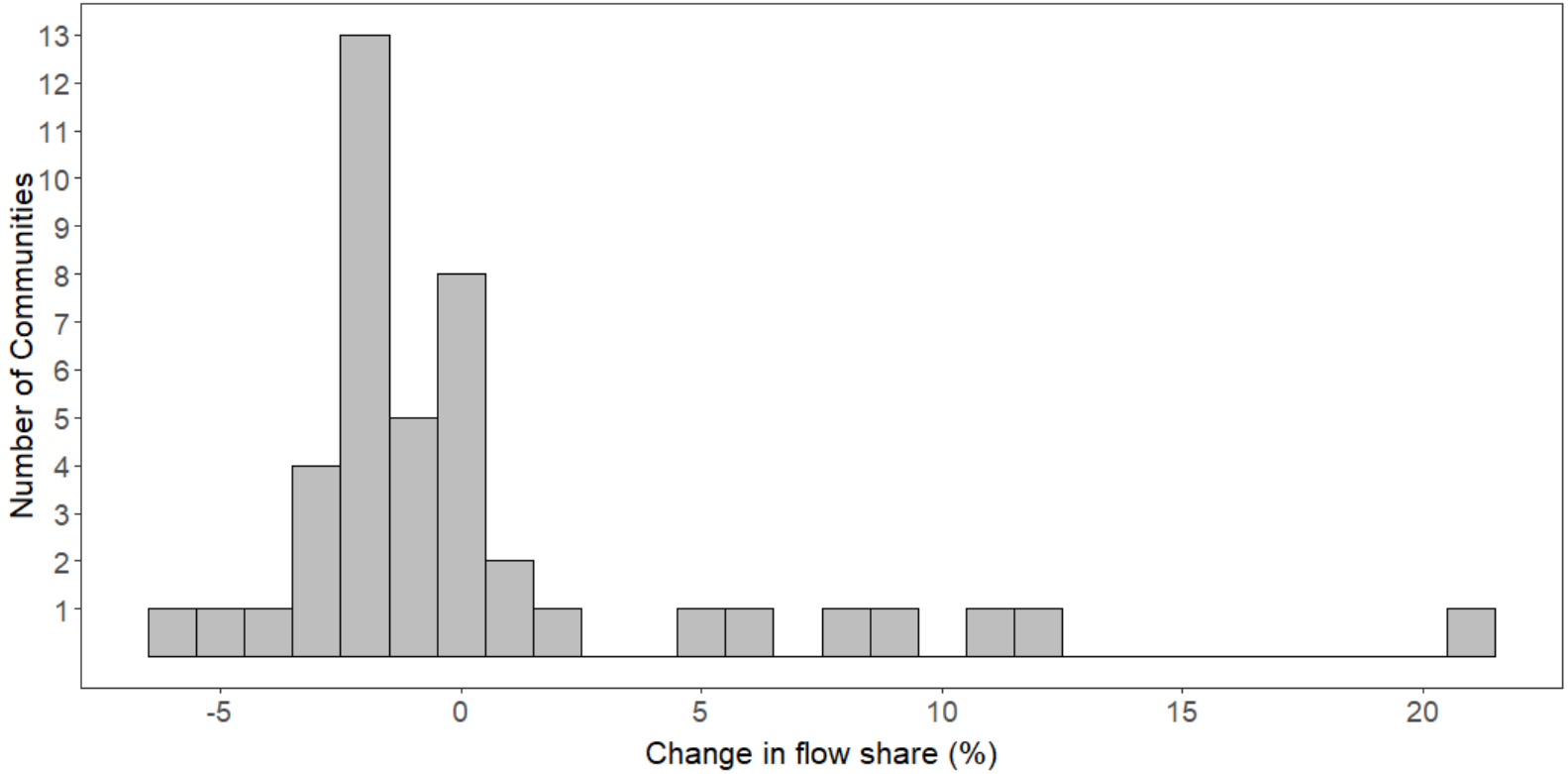
Updating Flow Estimates for All Unmetered Areas

- GIS mapping and field investigations to locate sites and recommend how to determine flow
  - Installing temporary metering
  - Installing temporary weir
  - Estimate based on land use and water use data

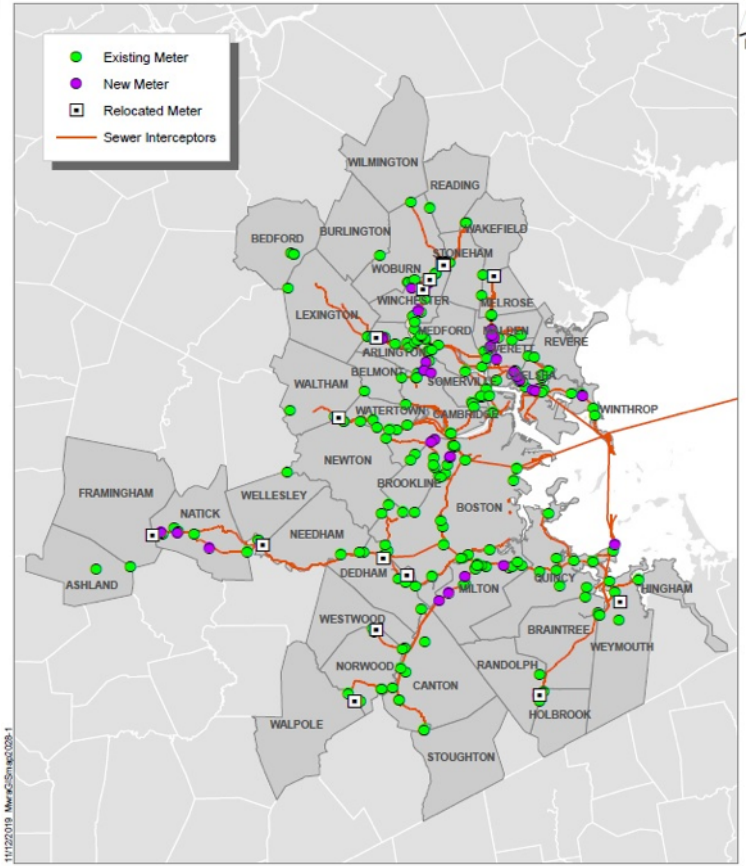
- Created updated flow estimates for all 630 unmetered areas

- Quality assurance checks, and community review

Flow Share Changes Due to Updated Unmetered Flows



Map of Proposed New and Relocated Meters



- 170 Existing – to remain
- 17 Existing – relocated
- 2 Existing - eliminated
- 34 New

	Existing (pre-2020)	w/ New Unmetered Flows	w/ New Meters
System wide Metered Pct.	93.2%	90.8%	94.5%
Communities below 85%	10	12	3

Non-Contact and Submerged Sensor Meters

Schedule

- Purchase and install contract - award Spring 2020
- Installation during calendar year 2020
- Flow data during installation based on CY2017 to CY2019 average
- New meter data first used in CY2021 for FY2023 assessments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Chelsea Creek Headworks Upgrade
Contract 7161 - Change Order 34

November 20, 2019

Chelsea Creek Headworks: Stair A Structural Modifications

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Chelsea Creek Headworks: Grit Collector Chain Failure

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Chelsea Creek Headworks: Channel 2 Startup

Chelsea Creek Headworks: Odor Control System

Chelsea Creek Headworks: Odor Control System

Chelsea Creek Headworks: Temporary HVAC System


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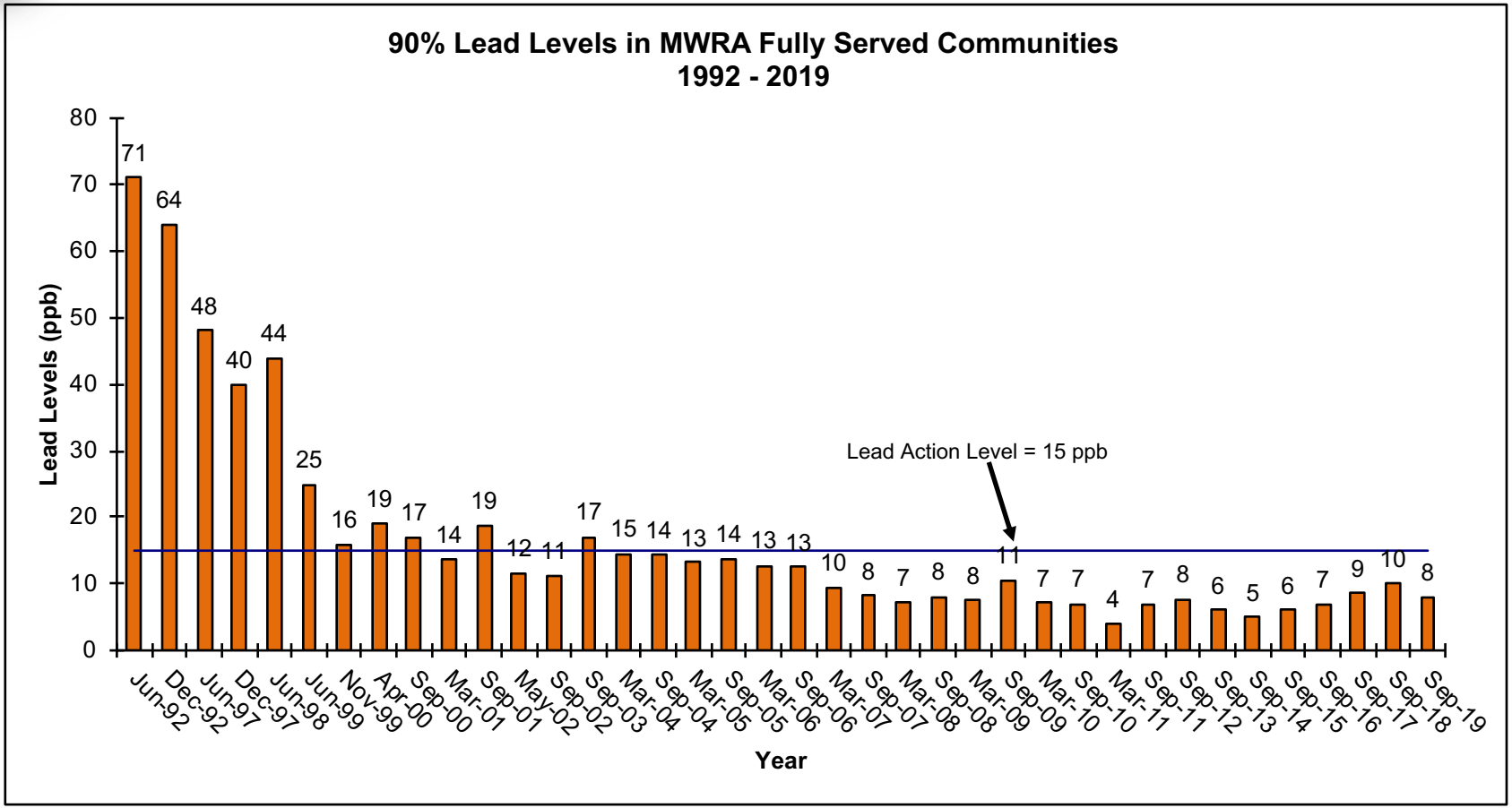
Lead and Copper Rule Compliance
Fall 2019

November 20, 2019

Fall 2019 System Wide 90th Percentile = 7.97 ppb

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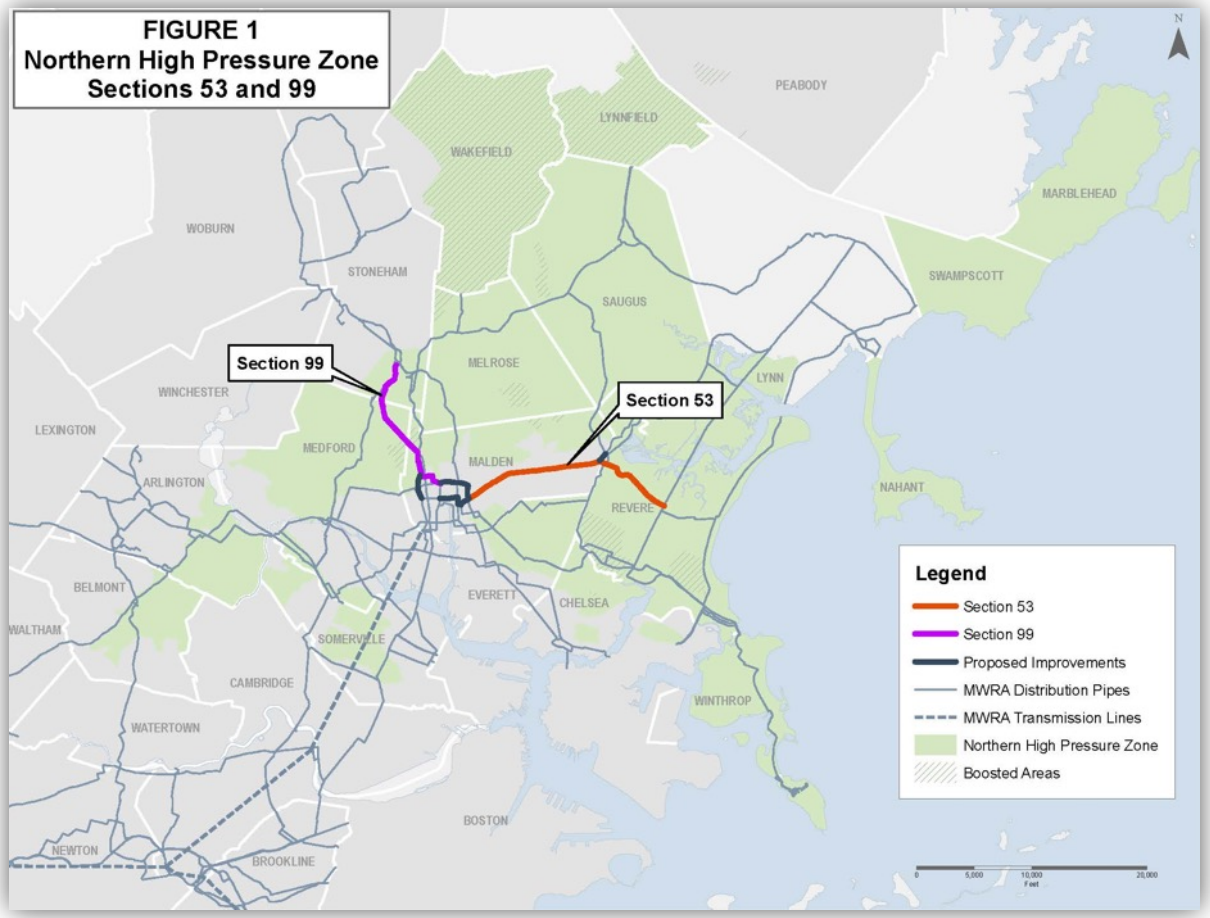
Sections 53 and 99 Improvements
Contract 7485

November 20, 2019

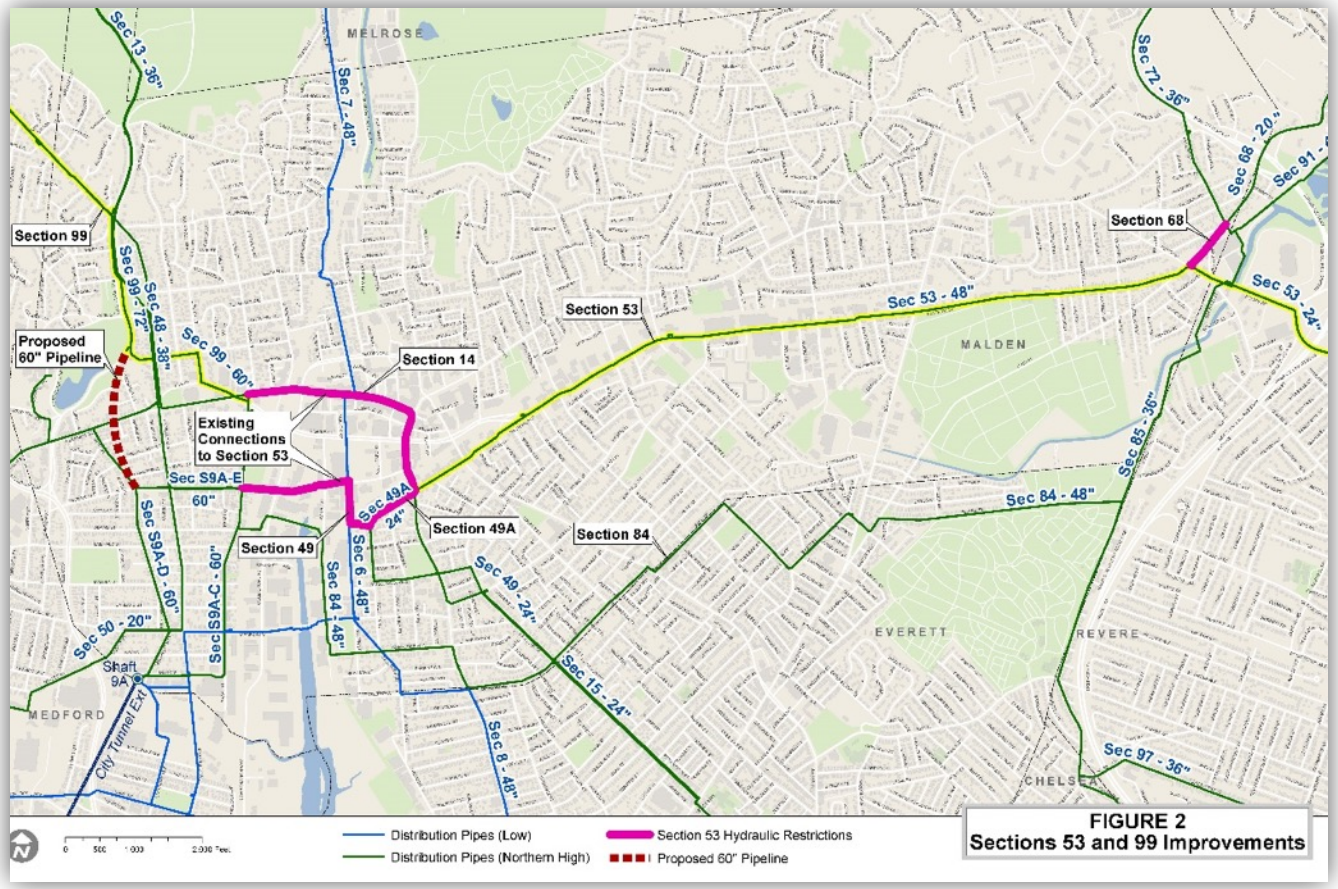
Northern High Pressure Zone



Project Purpose

- **Improve hydraulic capacity and reliability of the Northern High pressure zone**
- Hydraulic restrictions exist at both ends of Section 53
- Southern portion of Section 99 restriction due to smaller pipe diameter
- Design for three construction contracts:
  1. Replace 2,600 feet of Section 49, 900 feet of Section 49A, and 1,000 feet of Section 68 with new 48-inch diameter pipelines
  2. Rehab 4,000 feet of Section 14
  3. Install 3,000 feet of new 60-inch diameter pipeline from Section 9A-E to Section 99

Sections 53 and 99 Improvements



Procurement Process and Project Cost

Proposer	Cost	Hours
Hazen and Sawyer	**$4,985,263**	**27,278**
Engineer's Estimate	*$5,468,000*	*28,000*
Stantec	$5,550,744	23,129
Black & Veatch	$5,740,000	26,598
CDM Smith	$6,983,797	33,039

- One step RFQ/P
- Selection Committee recommends Hazen and Sawyer

Project Schedule

Item	Start Date	Duration	End Date
Design	December 2019	36 Months	December 2022
Construction	December 2022	54 Months	June 2027
Warranty	June 2027	12 Months	June 2028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Southern Extra High Redundancy Pipeline
Section 111, Contract 7504

November 20, 2019

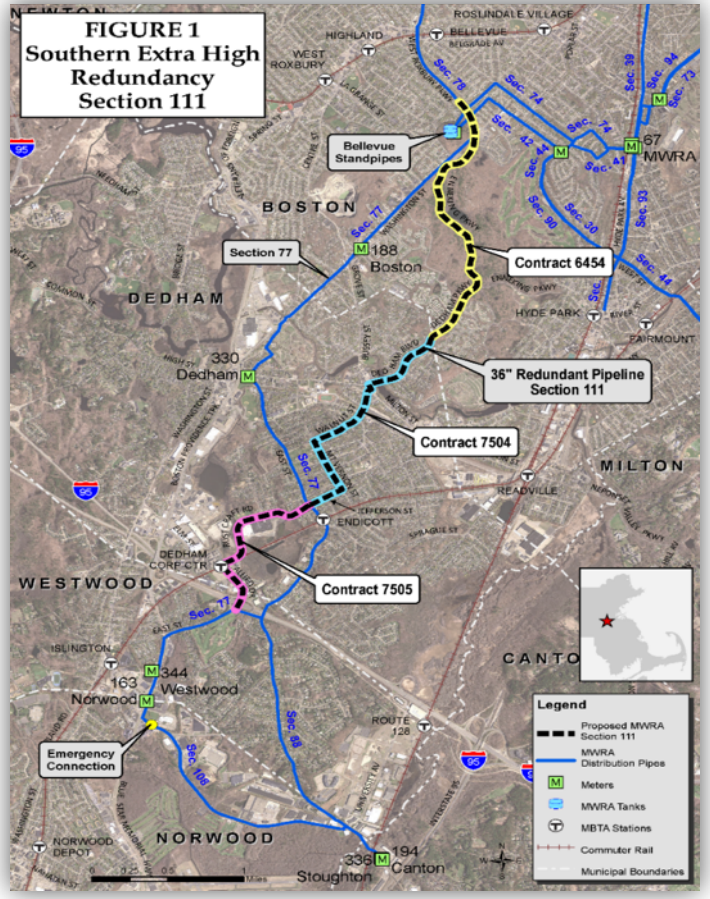
Project Overview

Project Purpose: Provide redundancy to MWRA water pipeline Section 77 which feeds the communities of Norwood, Canton, Stoughton, and the Dedham-Westwood Water District

CONTRACT 1: Boston - Dedham

CONTRACT 2: Dedham North

CONTRACT 3: Dedham South



Gate Valve Vault on Walnut Street Just South of Bridge

Steel to Ductile Iron Transitions

Installing Steel Pipe

Steel Pipe and Blow Off Manhole

Piping Across Abandoned Railway Bed and Starting Up Slope

Abutting House on the North Side of the Walnut Street Bridge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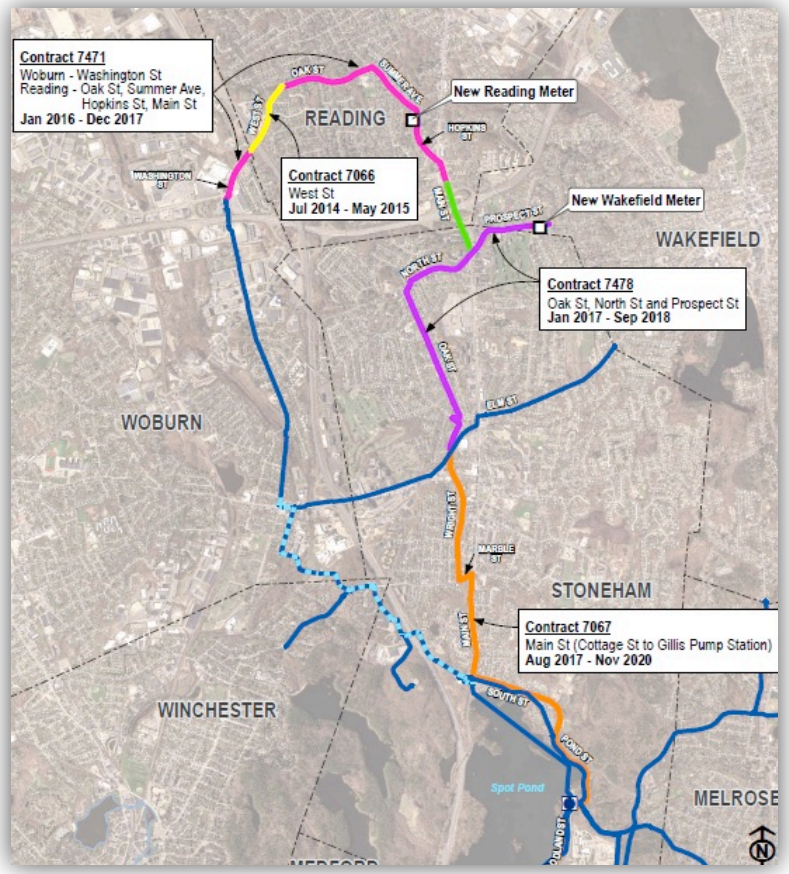
Northern Intermediate High: Pipeline Disinfection



Southern Extra High: Section 77 Crossing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