October 1 2020

Lynnfield Center Water District

Supplemental Water Options for LCWD

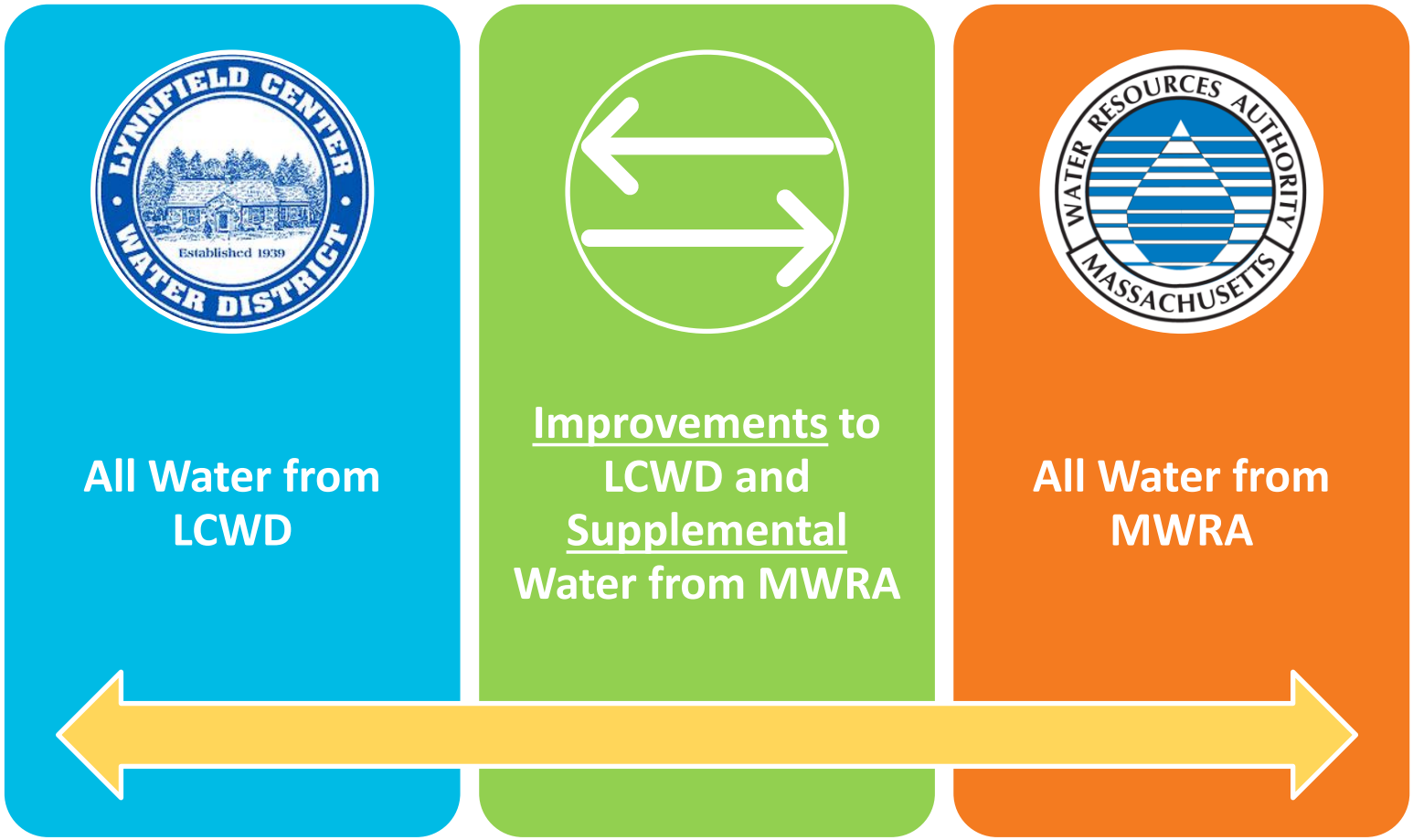
CDM Smith

LYNNFIELD CENTER WATER DISTRICT
Established 1939

Tonight's Presentation

- Short Review from June 15
- Overview of Options
- Cost Comparisons
- Recommendations

Big Picture and Long-Term Solutions



Option	1	2A	2B	3	4	5A	5B
	• Maintain existing assets (options 1-4)	• New WTP at Glen Dr, connect Main Street	• New WTP at Glen Dr • Upgrades at Phillips Rd (STA 1)	• New WTP at Glen Dr • Upgrades at Phillips Rd (STA 1) • ~25% MWRA Water From LWD	• Retire Glen D • ~50% MWRA Water From LWD	• Retire all LCWD sources • 100% MWRA Water from LWD	• Retire all LCWD sources • 100% MWRA Water from MWRA
Quality							
Quantity							
~Timeframe	1 - 2 years	2 - 5 years	2 - 5 years	3 - 5 years	5 - 7 years	6 - 8 years	6 - 8 years
Approx. Cost Range	$1- 2M	$7 - 8 M	$8 - 9 M	$10.5 - 12M	$11 - 13M	$20 - 22 M	$18 - 20 M
Impact to Water Rate	• Capital Borrowing	• Capital Borrowing (SRF Loan)	• Capital Borrowing (SRF Loan)	• Capital Borrowing (SRF Loan) • MWRA & LWD Rates	• Capital Borrowing • MWRA & LWD Rates	• Capital Borrowing • MWRA & LWD Rates	• Capital Borrowing • MWRA Rates

Legend:

- All Water from LCWD
- Improvements to LCWD and Supplemental Water from MWRA
- All Water from MWRA

- Not Achieved
- Partially Achieved
- Fully Achieved

Possible Supplemental Water Partners

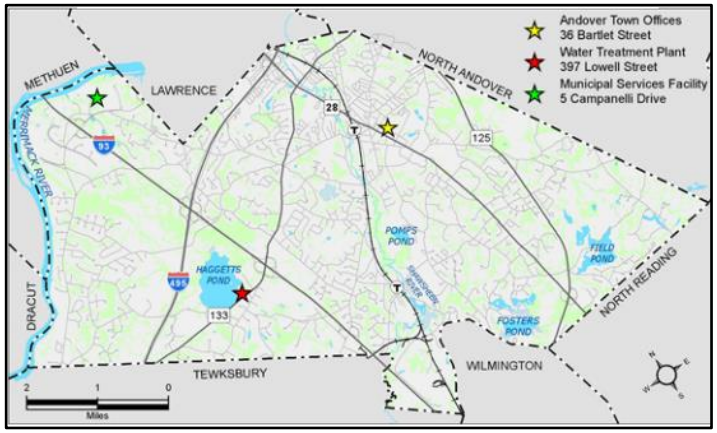
- Andover via N. Reading **- Haggetts Pond / Merrimack**
- Lynnfield Water District (LWD) **- MWRA**
- Wakefield **- MWRA***

Noteworthy:

- A direct connection to the MWRA on Rt. 1 or within Wakefield is cost prohibitive and complex construction considerations
- Developing new ground water supplies within the District is unlikely
  - Replacement wells to achieve permitted yield is allowed

Andover

- Requires service through North Reading
- Providing water during peak demand (June/July) is problematic
- Upsizing transmission mains would be required and/or a new transmission main on Rt. 28
- N. Reading may require additional upgrades
- Option ultimately eliminated as a cost-effective solution at this time



Lynnfield Water District (LWD)

- LWD 25% MWRA
  - Requires LWD pipeline improvements
  - Route 1 pump station improvements
  - Above ground meter building

- LWD 50% MWRA
  - Requires LWD & Route 1 Pipeline improvements
  - Route 1 pump station full replacement
  - Above ground meter building

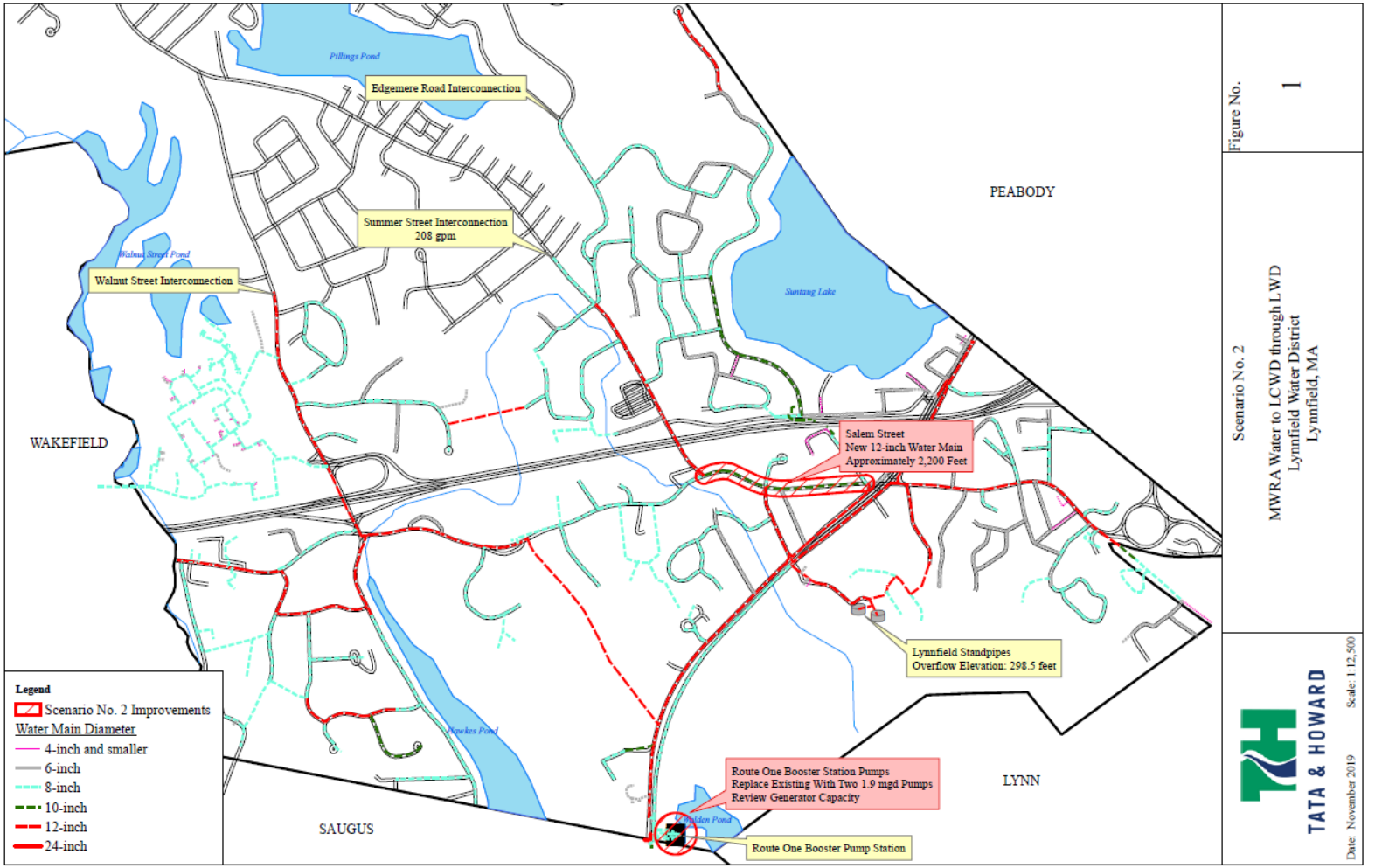
Pros

No improvements needed in LCWD

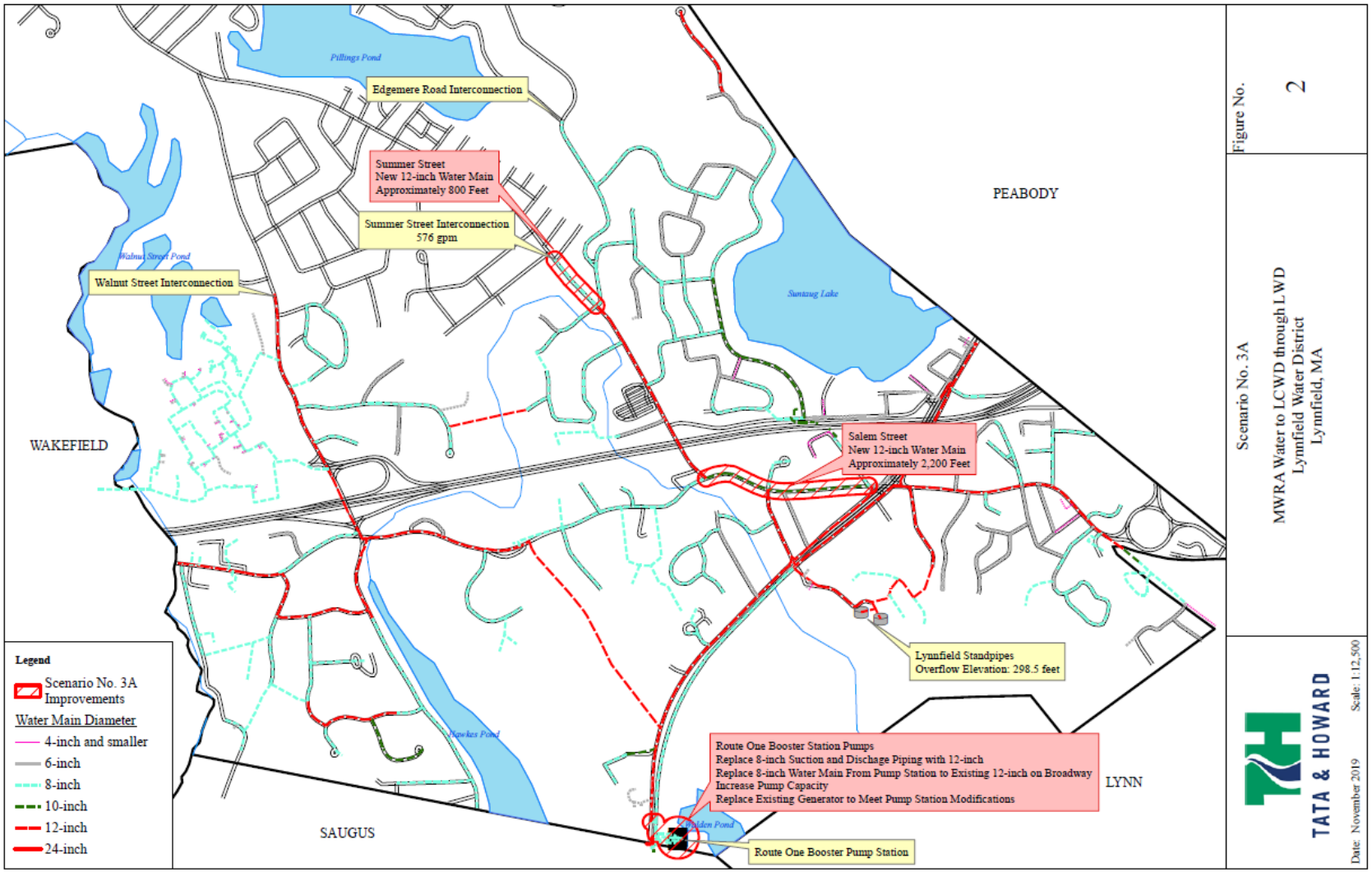
Cons

Above ground structures required
Land takings / Legislature approval

LWD: 25% Supply



LWD: 50% Supply



Wakefield

- 25% MWRA
  - Requires some pipeline improvements in Wakefield and LCWD
  - Pumping not required
  - Underground meter vault

- 50% MWRA
  - Requires LCWD & Wakefield pipeline improvements
  - Pumping not required; some pressure loss if Glenn Dr. turned off
  - Glenn Drive could be turned off or greatly reduced
  - Underground meter vault

Pros

Minimal pipeline investment required

Cons

50% supply would require more capital investment

Wakefield: 25% Supply

Wakefield: 50% Supply

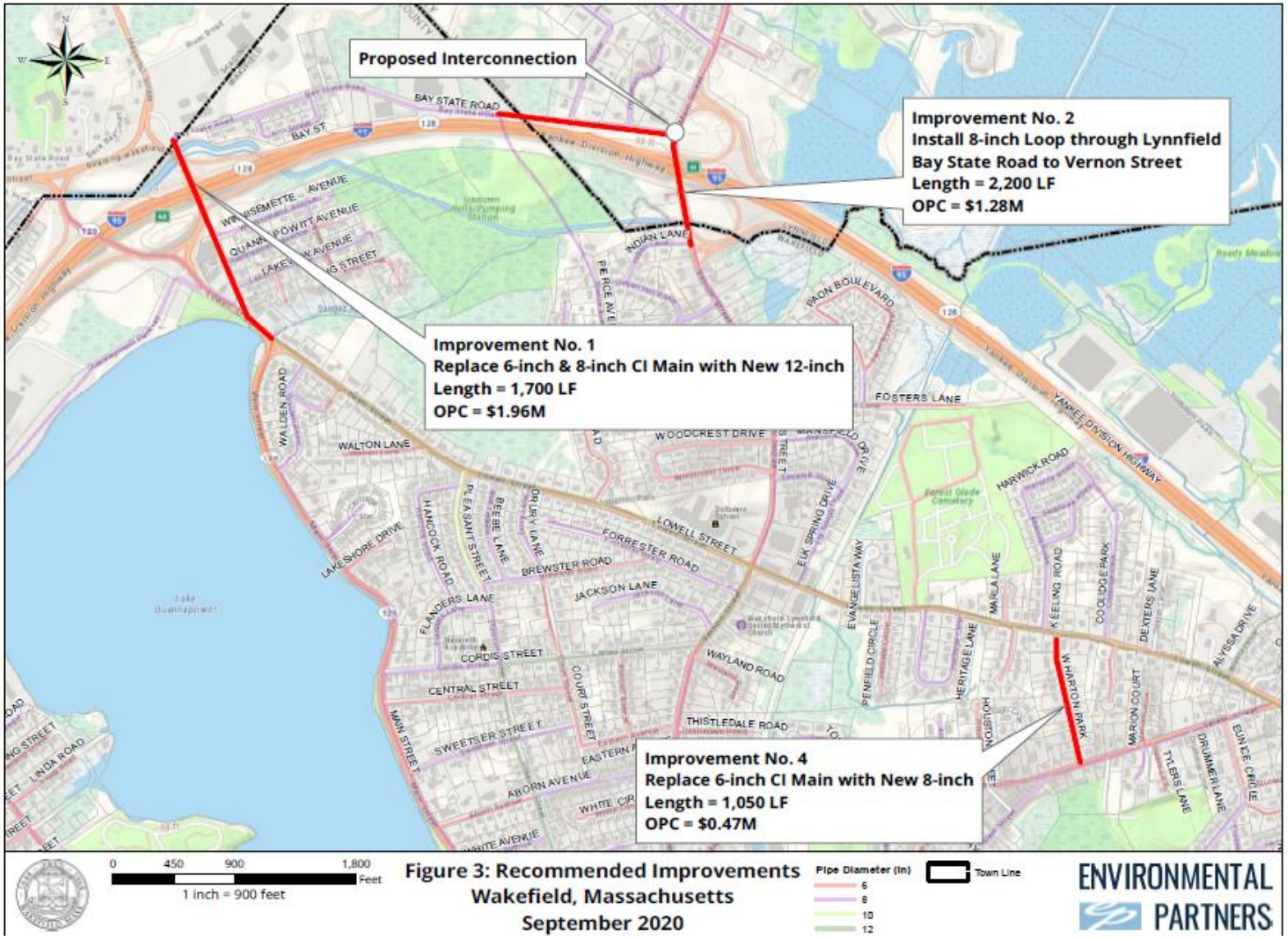


Figure 3: Recommended Improvements
Wakefield, Massachusetts
September 2020

ENVIRONMENTAL PARTNERS

Cost Comparison LWD vs Wakefield

Capital Improvements	Lynnfield Water District		Wakefield	
	25% MWRA (Tata & Howard)	50% MWRA (Tata & Howard)	25% MWRA (CDM Smith)	50% MWRA (EPG)
LWD Booster Station Upgrade / Replacement	$800,000	$2,200,000	-	-
Water Main Improvements in Neighboring System	$800,000	$1,600,000	$175,000	$2,470,000
Water Main Improvements in LCWD			$280,000	$840,000
Interconnection[1]	$900,000	$1,000,000	$350,000	$350,000
Sub Total	**$2,500,000**	**$4,800,000**	**$805,000**	**$3,660,000**
Contingencies (25%)	$625,000	$1,200,000	$201,250	$915,000
Engineering and Construction Oversight (25%)	$625,000	$1,200,000	$201,250	$915,000
Design and Construction Sub Total	**$3,750,000**	**$7,200,000**	**$1,207,500**	**$5,490,000**
Interbasin Permitting Allowance	$300,000	$300,000	$300,000	$300,000
MWRA tie-in fee	$1,316,250	$3,641,625	$1,316,250	$3,641,625
Project Total	**$5,366,250**	**$11,141,625**	**$2,823,750**	**$9,431,625**

NOTES:

[1]Interconnection for LWD includes construction of aboveground meter connection; Cost for land taking not included

LWD Costs prepared by Tata & Howard; Wakefield 25% costs prepared by CDM Smith; Wakefield 50% costs prepared by Environmental Partners Group

All options require an intermunicipal agreement for water rates

Capital Improvement Summary

LWD

- Both 25% and 50% scenarios require pipeline & pump station improvements in LWD system
- Both require land takings from 3rd parties
- Costs presented for 50% are approaching direct connection costs with MWRA

Wakefield

- 25% is hydraulically favorable with minimal investment required
- 50% is hydraulically possible, but requires more capital improvements in Wakefield
- Requires main upsizing in LCWD (Main Street)

CDM Smith Recommendations

- Pursue a connection with Wakefield at Bay State Road and Main Street
- Reach an agreement for 250 gpm by creating a loop on Bay State Road
- Begin permitting process; Permit the connection for 575 gpm for future flexibility
- Complete studies for treatment at Main Street wells, Glenn Drive wells
- Pursue Station 1 seasonal operations

A Closer Look