

MALDEN STORM DRAIN MEETING

- Will be starting shortly

Malden Storm Drain State of Repair Update



City ARPA Committee – Water & Sewer
Councillor Stephen Winslow – City of Malden
Yem Lip – PE – City Engineer
Isaac Slavitt – Malden Conservation Comm.



Consultant – Hayner/Swanson Inc
John Vancor P.E. – Hayner/Swanson
Brandon Lambert E.I.T – Hayner/Swanson

May 30, 2023

Agenda – Storm Drain State of Repair

- Introductions

Councillor Winslow:

- Why the City Undertook the Study
- What Locations Were Considered

Hayner Swanson:

- Who Did the Investigation and How did they Do It?
- Examples of What Was Found
- Areas Investigated
- 9 Locations that Need Repairs

Options for Further Actions

- Next Level of Investigation
- Townline Brook – Clean-out
- Bowman / Neal Street: Focused upgrades
- Maplewood Highlands Drainage Study
- Willow Street Greenway / Rain Gardens and Pavement Reduction

Broken and Clogged Storm Drains Lead to Flooding of Home and Streets



Constance St. / Bowman Rd.

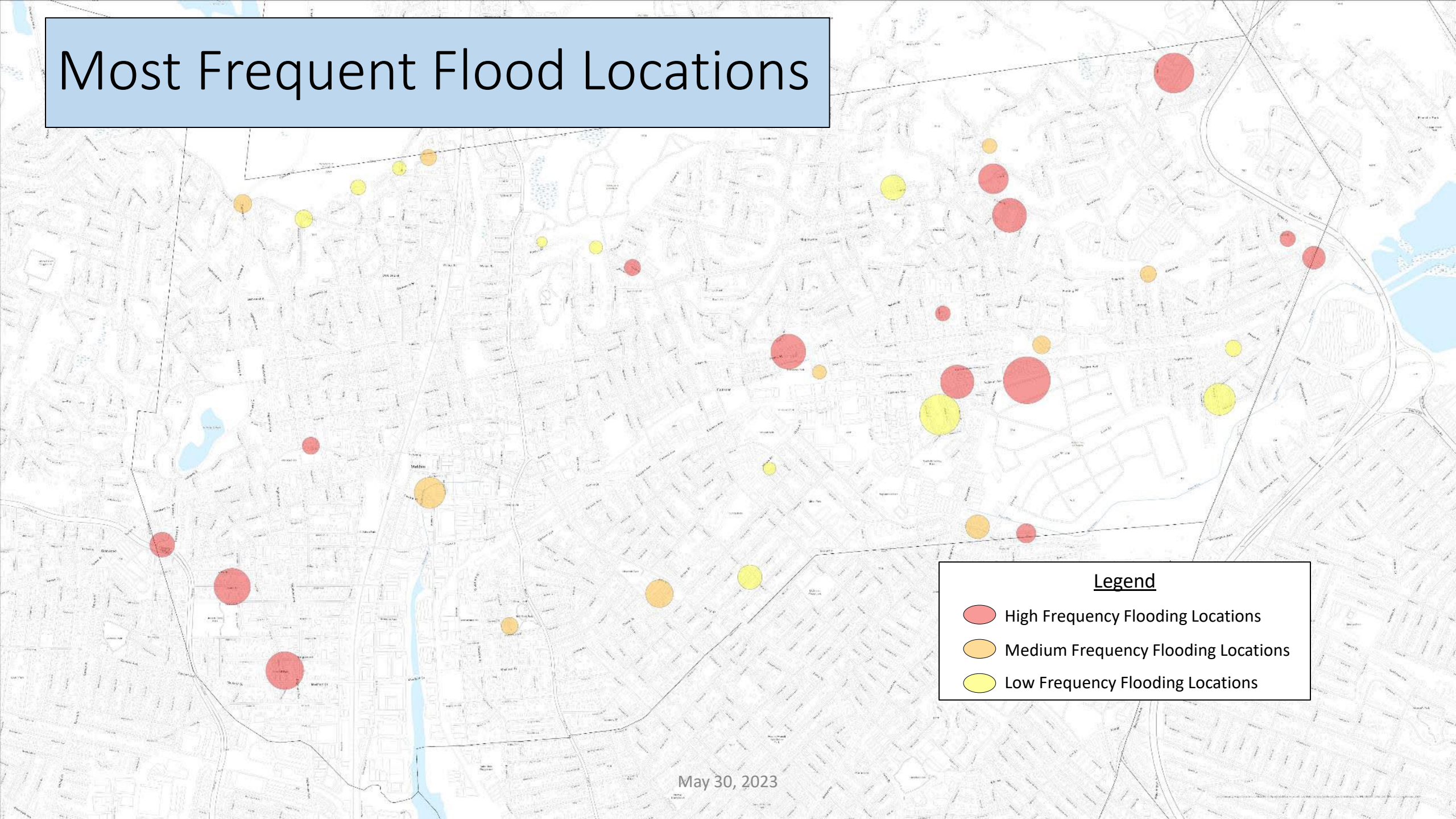


Eastern Ave.



Coleman Rd.

Most Frequent Flood Locations

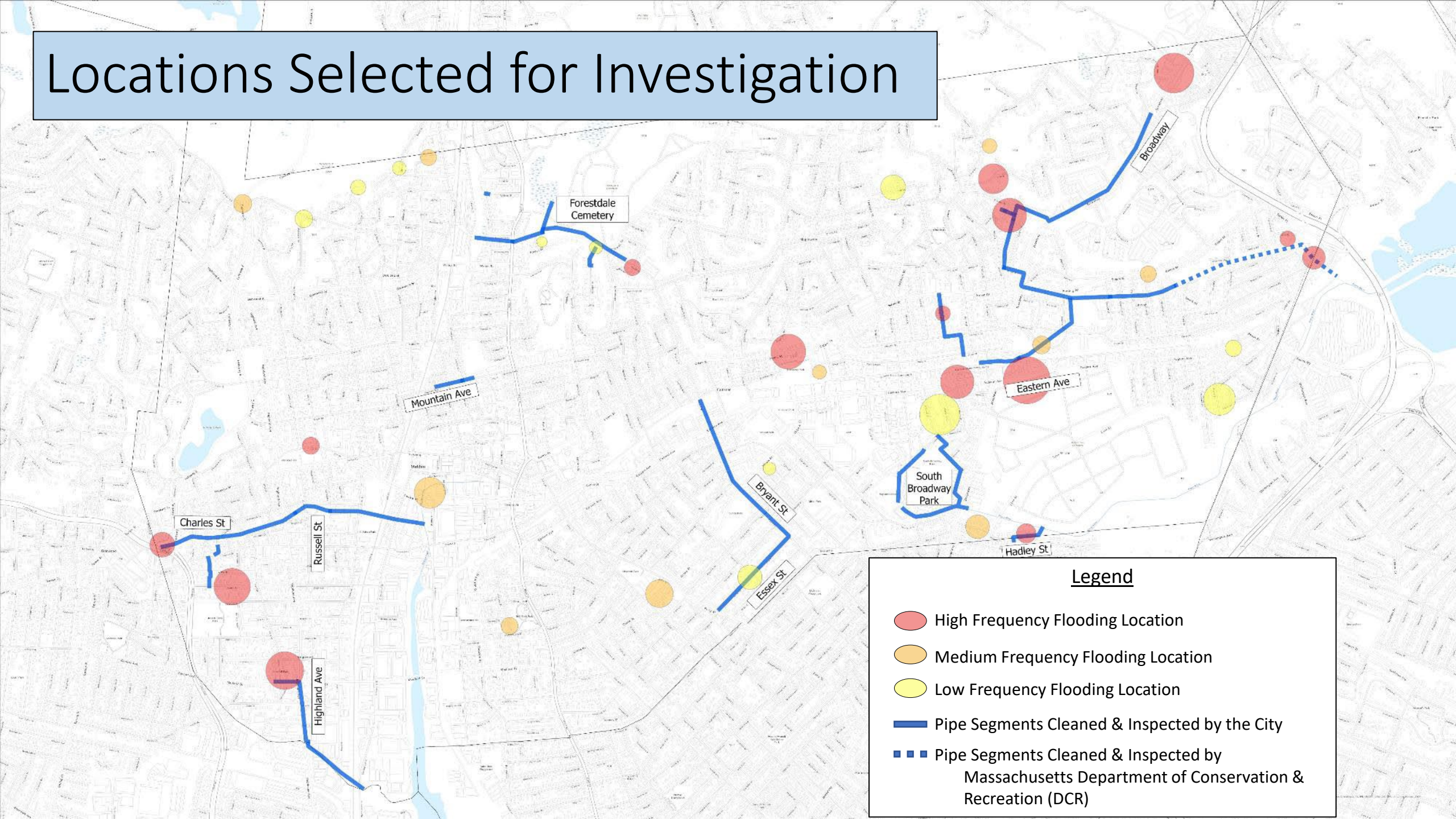


Legend

- High Frequency Flooding Locations
- Medium Frequency Flooding Locations
- Low Frequency Flooding Locations

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Locations Selected for Investigation



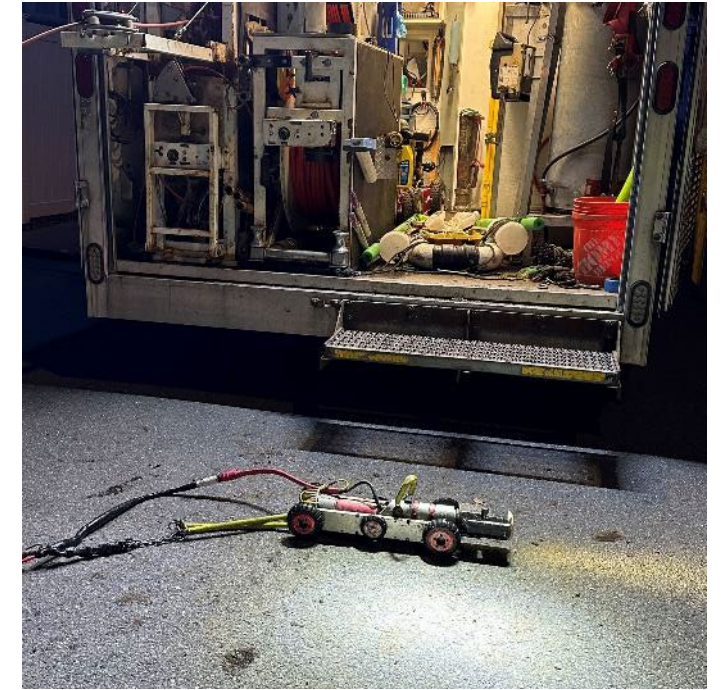
What Investigations Entailed?



Green Mountain Pipeline Services' Cleaning Truck



Green Mountain's Crew Cleaning Drain Pipe on Constance St.



Green Mountain's Inspection Camera

Examples of What Was Found – Constance St.

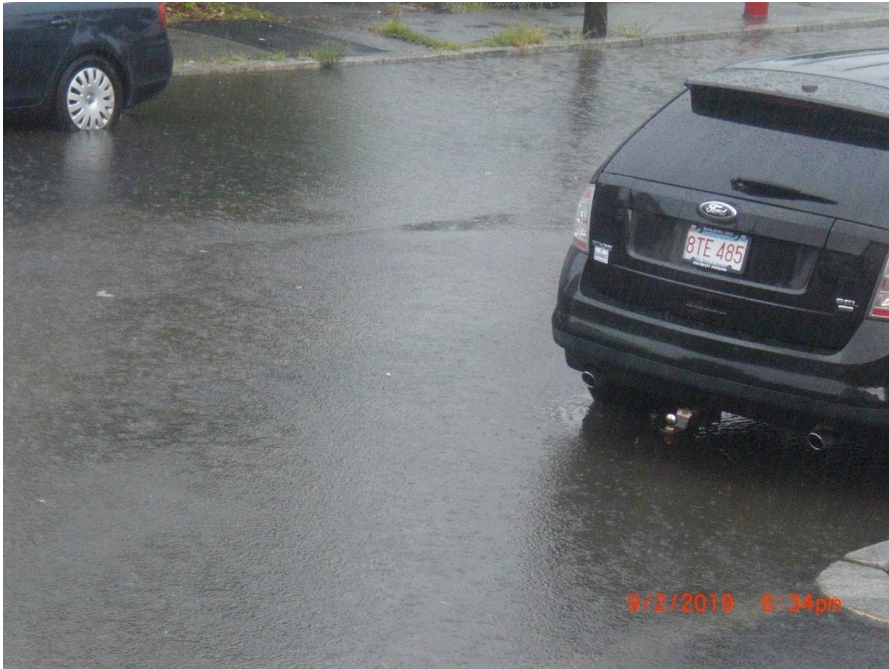


21 Constance St.
(August 2021)



Drain Inlet at
22 Constance St.

Example – Eastern Avenue / Coleman Rd



Flooding on Eastern Ave.



Overgrown Culvert along Bike Path
Near CVS

Examples – Debris & Pipe Defects

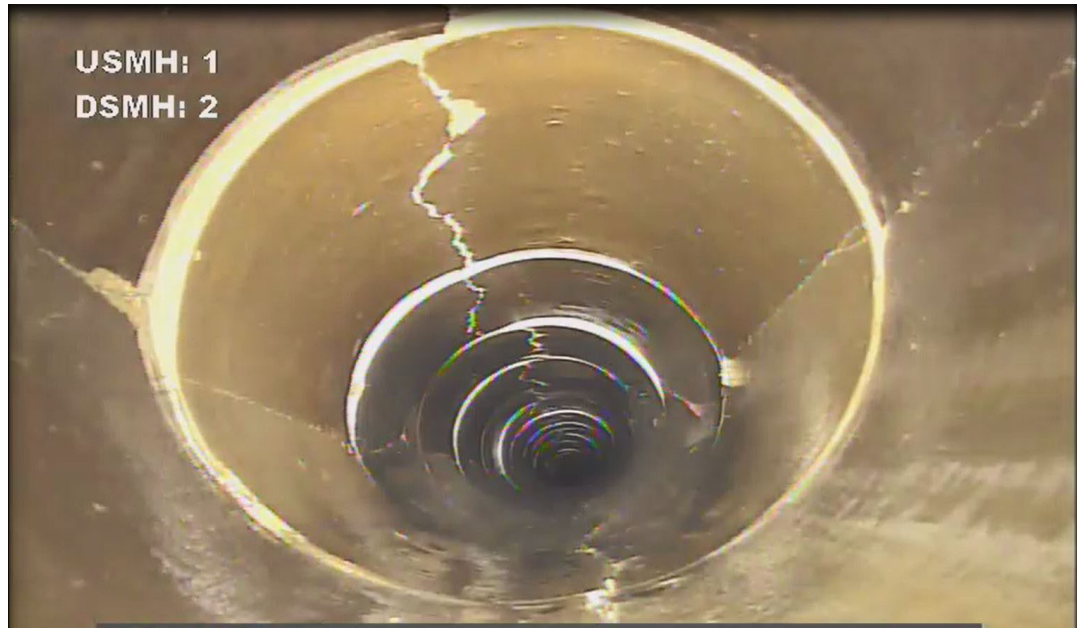


Pile of Debris in Edgeworth Brook Culvert near Russell St.



Deformed Pipe on Pierce St.

More Examples – Debris & Pipe Defects



Cracking on Essex St.



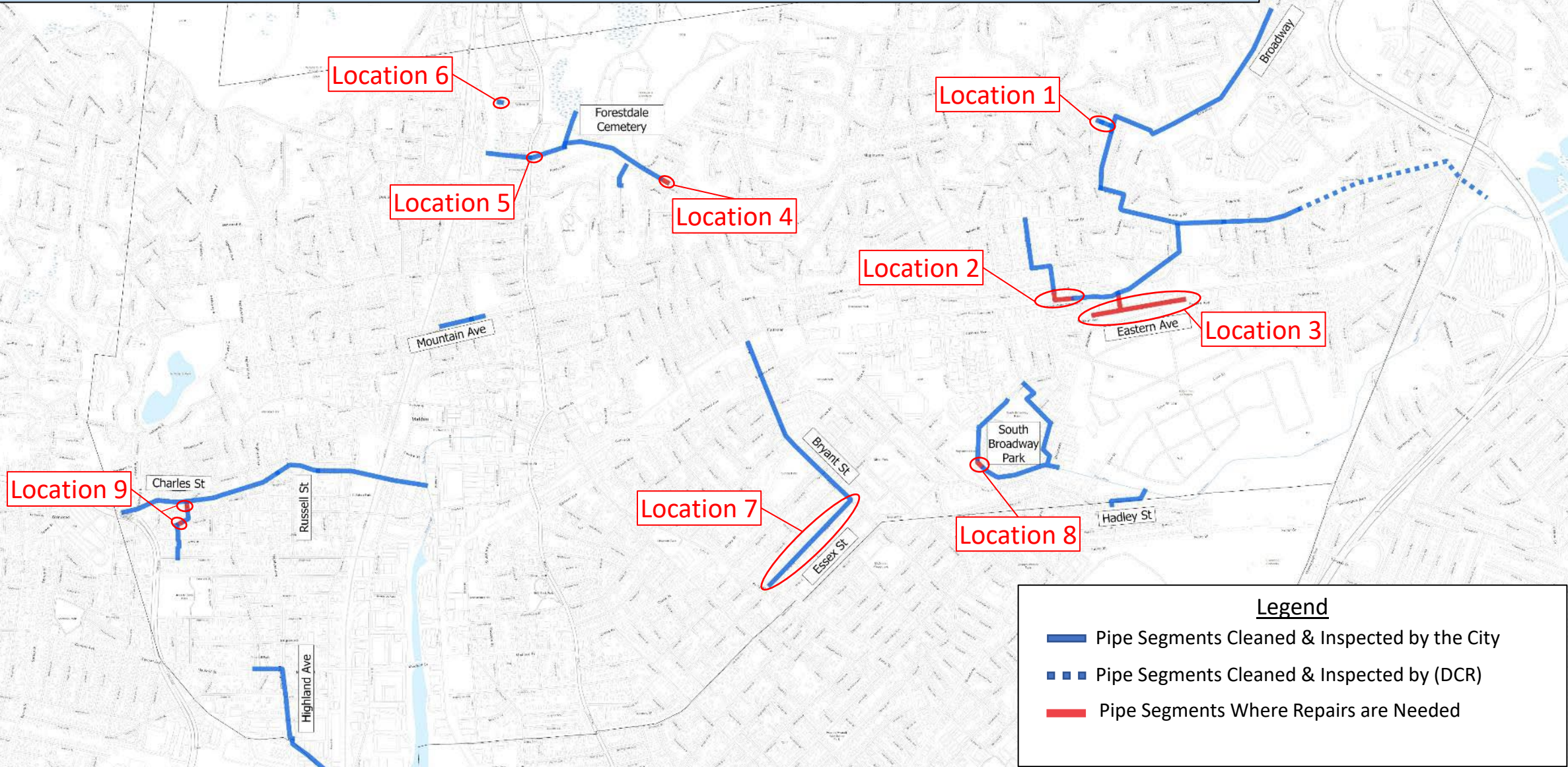
Root Intrusion on Charles St.

Typical Pipe Repairs

- Remove Roots and Debris
- Full Excavation and Repair
- Cured in Place Pipe Lining

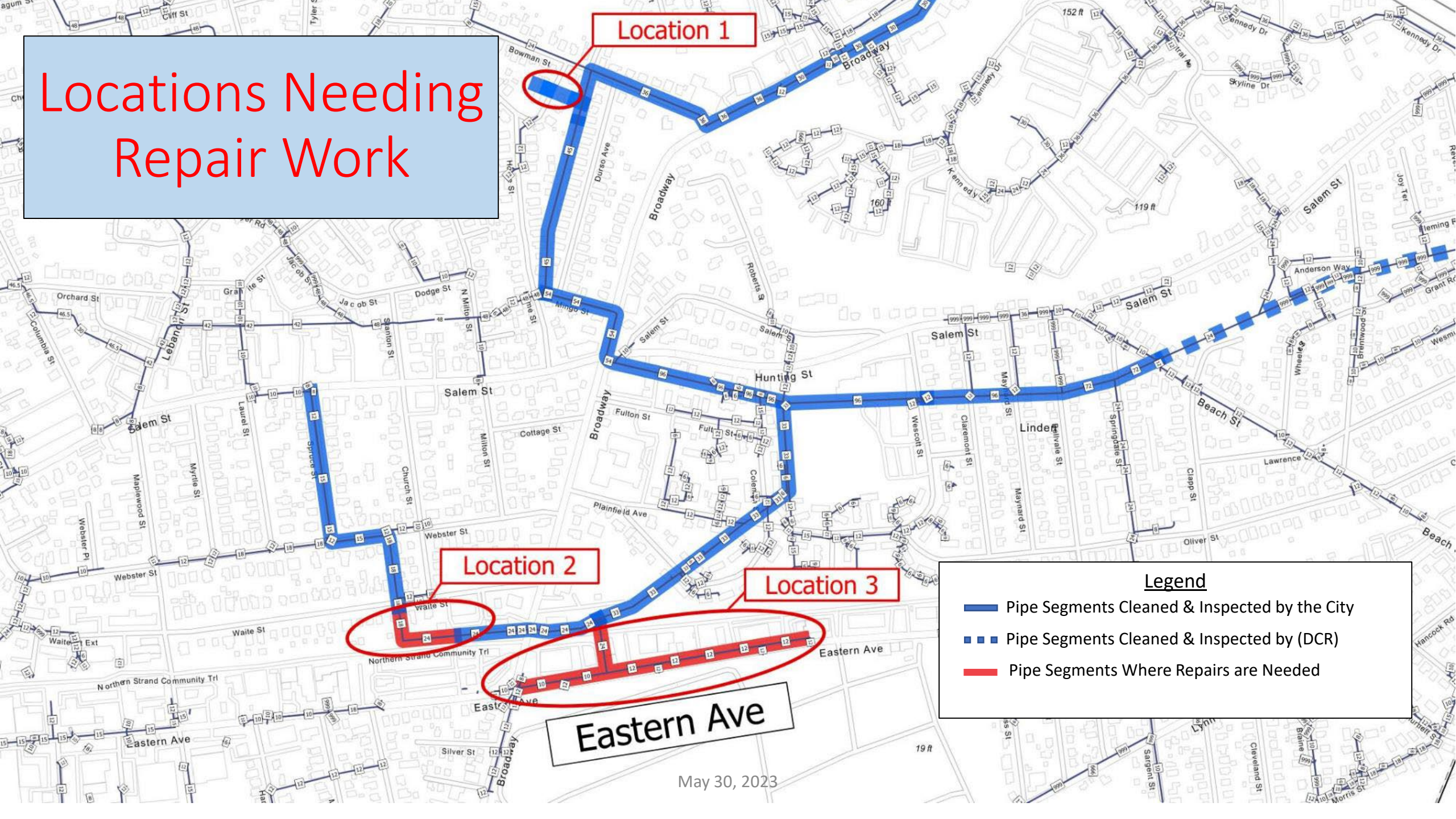


Pipes Cleared & Spots Needing Repair Work



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Locations Needing Repair Work



Location 1

Location 2

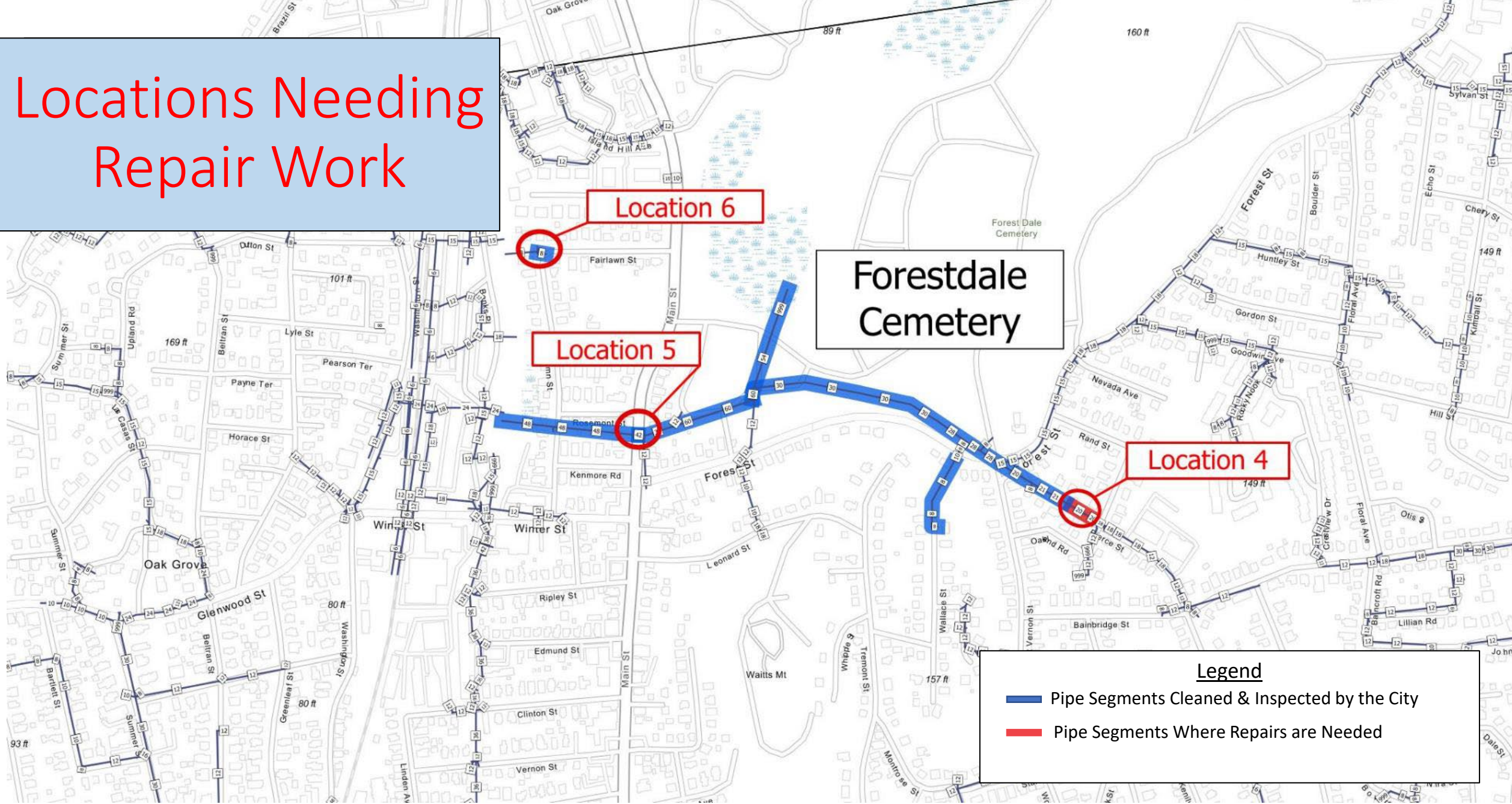
Location 3

Eastern Ave

Legend

- Pipe Segments Cleaned & Inspected by the City
- - - Pipe Segments Cleaned & Inspected by (DCR)
- Pipe Segments Where Repairs are Needed

Locations Needing Repair Work



Location 6

Location 5

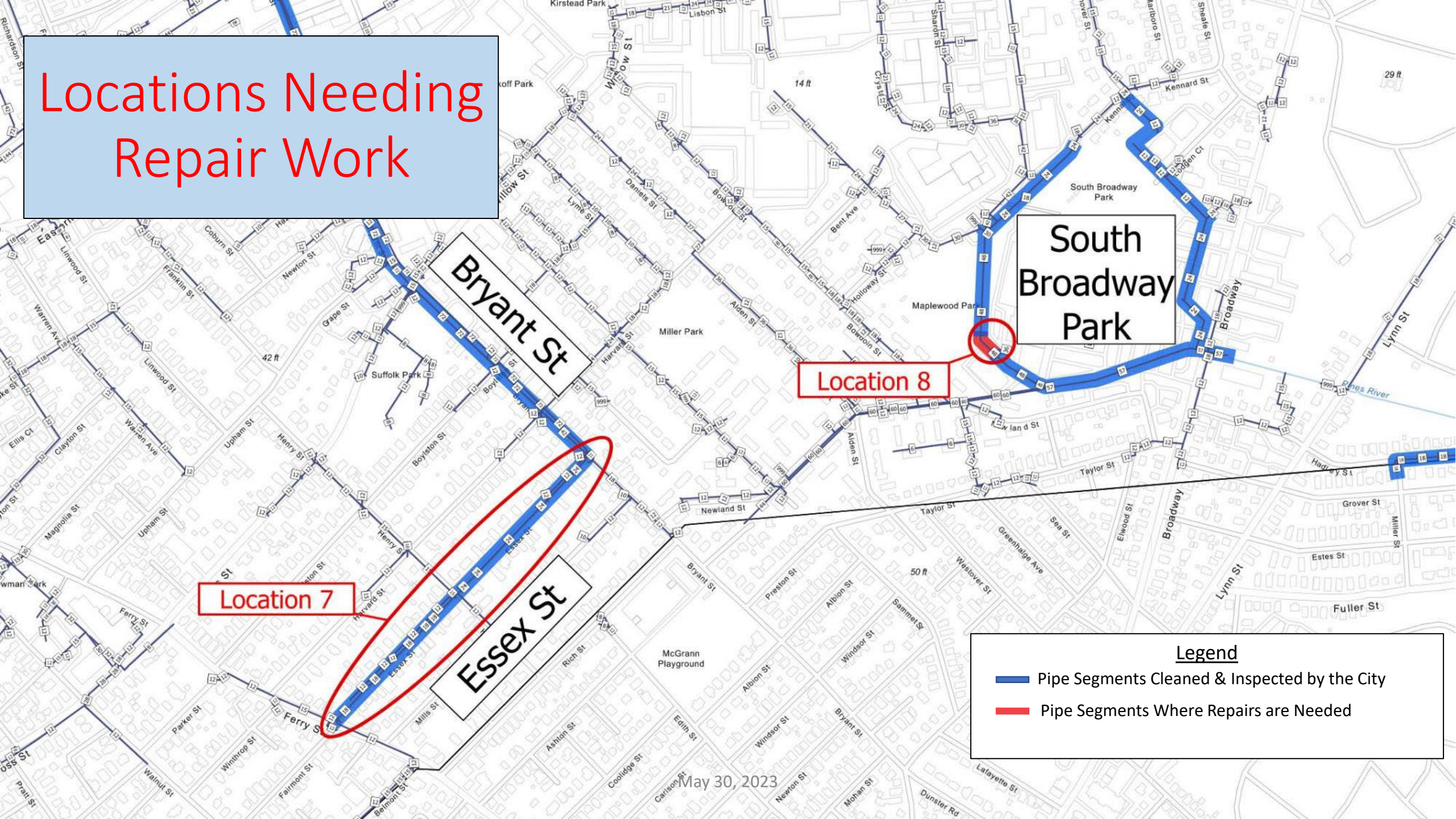
Location 4

Forestdale Cemetery

Legend

- Pipe Segments Cleaned & Inspected by the City
- Pipe Segments Where Repairs are Needed

Locations Needing Repair Work



South
Broadway
Park

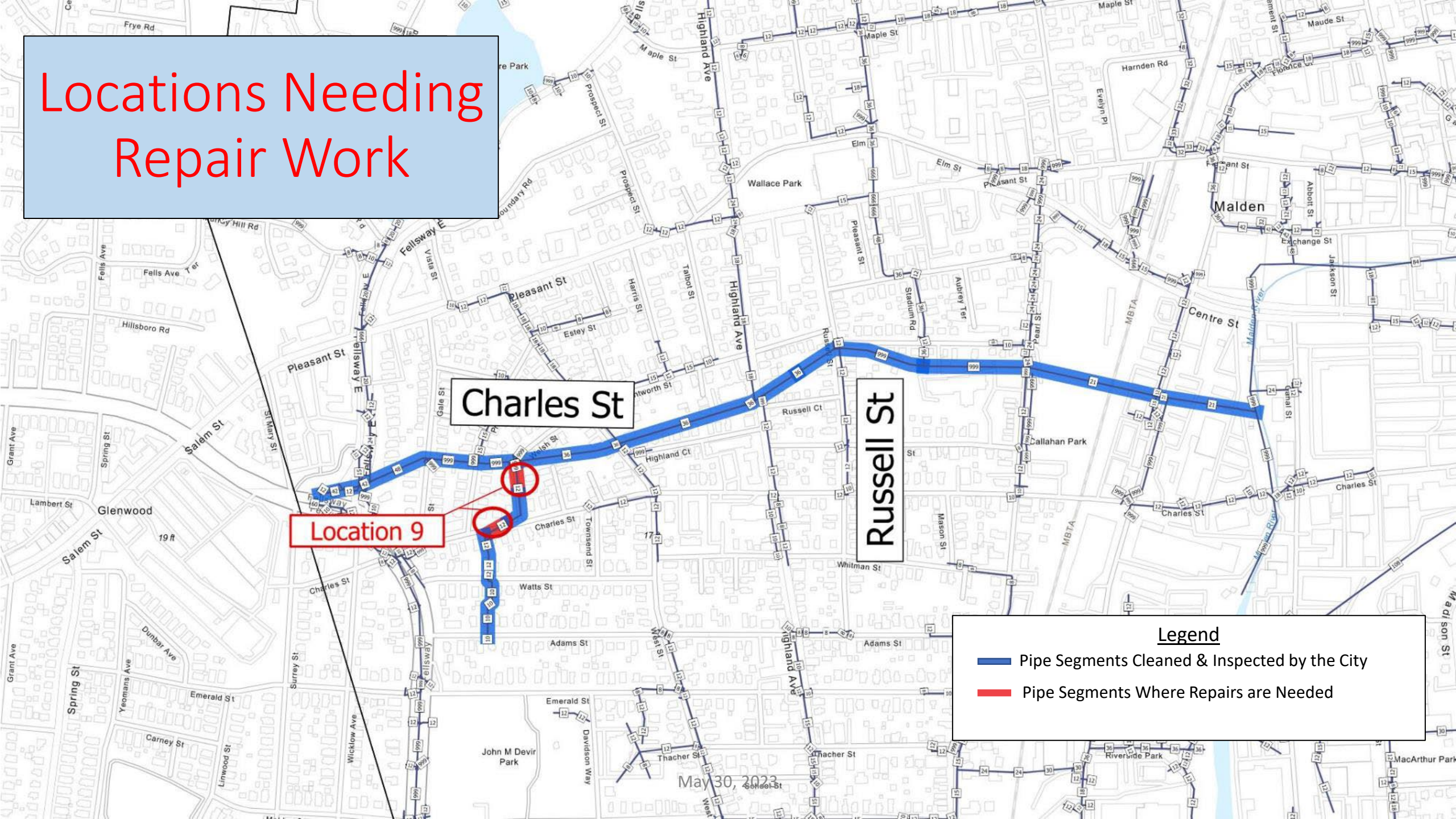
Location 8

Location 7

Legend

- Pipe Segments Cleaned & Inspected by the City
- Pipe Segments Where Repairs are Needed

Locations Needing Repair Work



Charles St

Russell St

Location 9

Legend

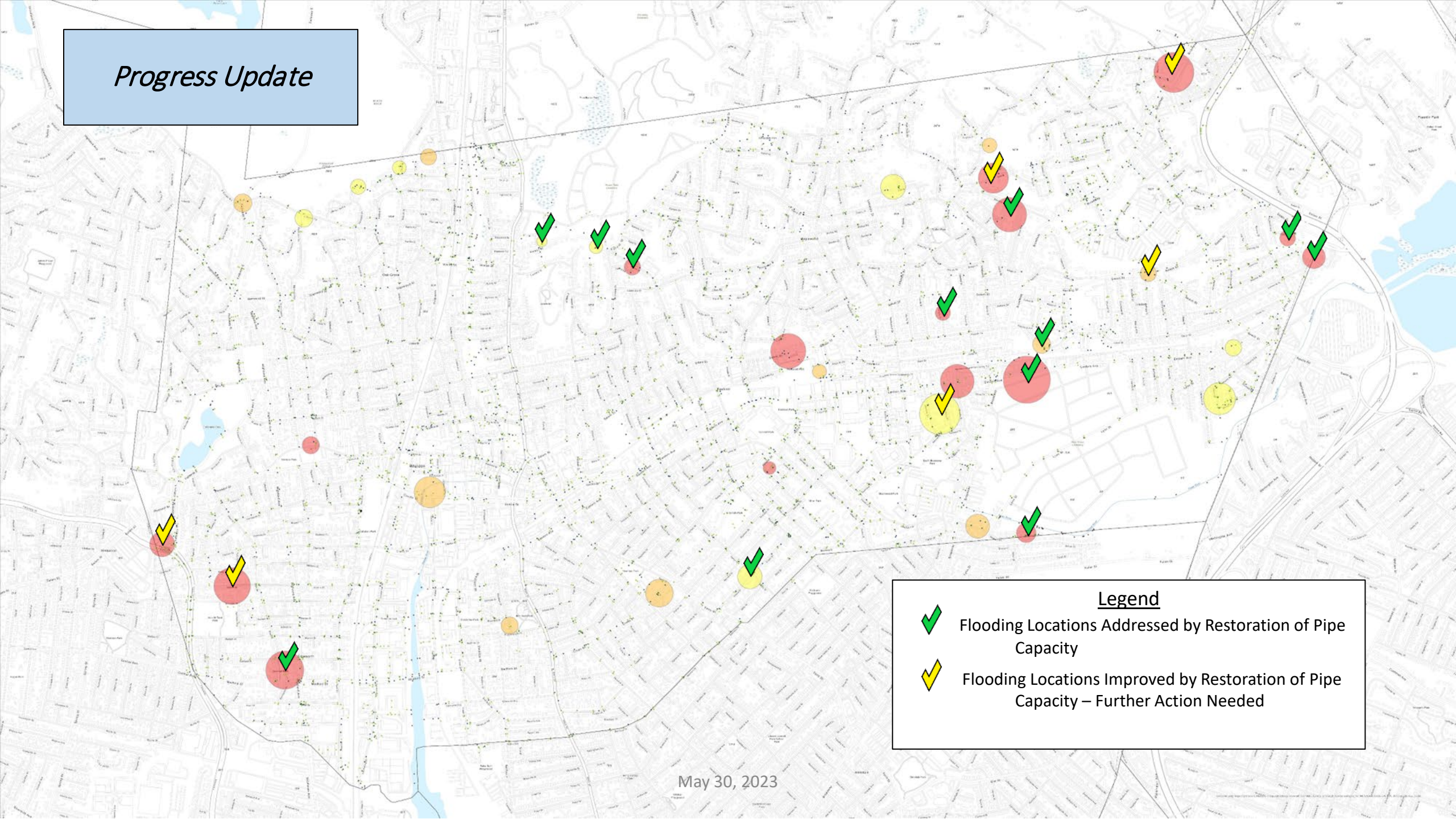
- Pipe Segments Cleaned & Inspected by the City
- Pipe Segments Where Repairs are Needed

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Construction Cost of Repairs at 9 Locations

Location	Estimated Cost
Location 1 (Constance St. Structure)	\$18,750
Location 2 (Buried Manholes along bike path)	\$20,000
Location 3 (Overgrown Culvert by CVS)	\$59,500
Location 4 (Deformed Pipe on Pierce St.)	\$56,250
Location 5 (Stone Culvert in Forestdale Cemetery)	\$31,250
Location 6 (Collapsed Catch Basin Connection on Fairlawn St.)	\$6,500
Location 7 (Lining on Essex St.)	\$191,750
Location 8 (Buried Manhole near South Broadway Park)	\$9,250
Location 9 (Offset Joint and Root Intrusion near Charles St.)	\$82,750
Total	\$476,000

Progress Update



Legend

-  Flooding Locations Addressed by Restoration of Pipe Capacity
-  Flooding Locations Improved by Restoration of Pipe Capacity – Further Action Needed

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Further Actions

- Study and Improvements at Identified Locations
- Evaluation of Surface Conditions
- Additional Pipeline Cleaning and Evaluation

Further Actions

Proposed Locations for Further Study and Improvements

Maplewood Highlands
Drainage Study







Bowman St. / Neal St.
Drainage Improvements

Forestdale Cemetery
Drainage Study

Townline Brook
Clean-Out

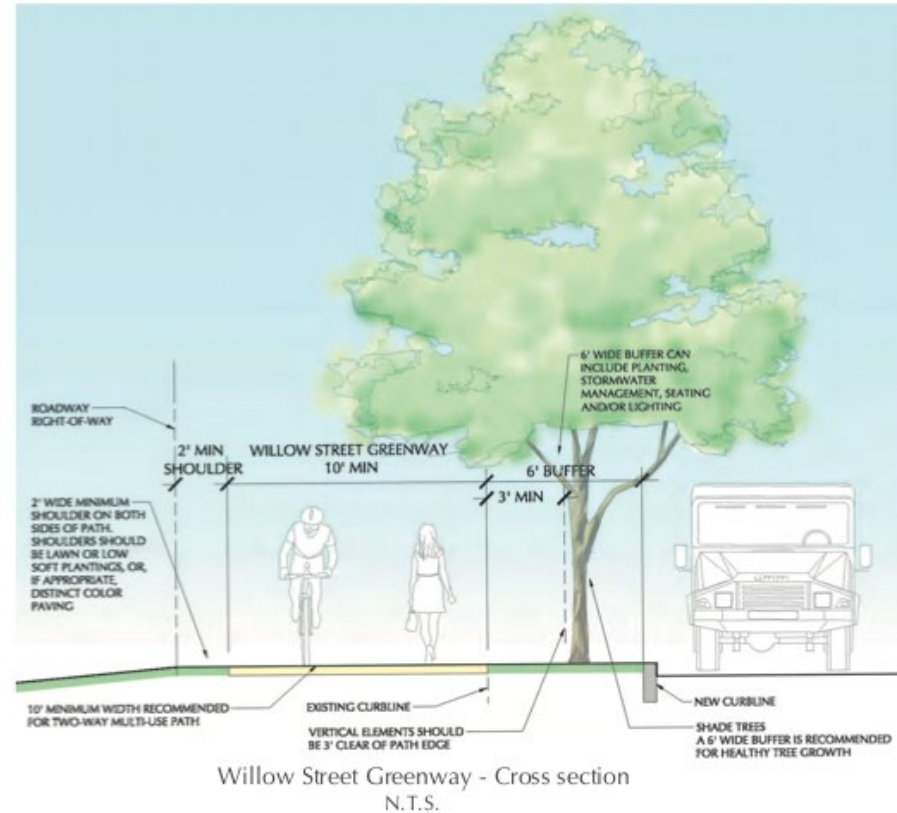
Willow Street Greenway
& Rain Gardens

Legend

-  High Frequency Flooding Location
-  Medium Frequency Flooding Location
-  Low Frequency Flooding Location
-  Drainage Improvements
-  Greenway
-  Drainage Study

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Further Actions



Shadley Associates, P.C.

Conceptual Cross-section of
Greenway/Rain Garden on Willow St.

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Further Actions



Townline Brook

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Comments and Questions