

TRANSPORTATION NETWORK IMPROVEMENTS 2024 ROADS PROGRAM

City of Newton

June 5th, 2024



TRANSPORTATION NETWORK IMPROVEMENTS

Program Goals

Our goal is to strategically improve the City of Newton's roadway and sidewalk network, aiming to deliver a high level of service. The City is committed to ensuring a superior user experience for all modes of transportation, including pedestrians, cyclists and vehicles.

The City's objective is to accommodate all users, regardless of age, ability, income, or preferred mode of transportation.

The City's Infrastructure Asset Management Program assists in guiding data-driven decisions to perform timely maintenance and rehabilitation which best benefits Newton.



City-owned
Roadways



Bicycle
Infrastructure



Sidewalks and
Curb Ramps



Public Transit



ROADWAY NETWORK

Current Conditions

- Current PCI Rating is 72.17*
 - Program began at PCI of 62
- 274 centerline miles of road
 - Approximately 50% in need of rehabilitation
 - Approximately 25% in good/very good condition

PCI by Roadway Class

Arterial	Collector	Local
78.92	78.58	68.84



*Based on inspection data from October 2022

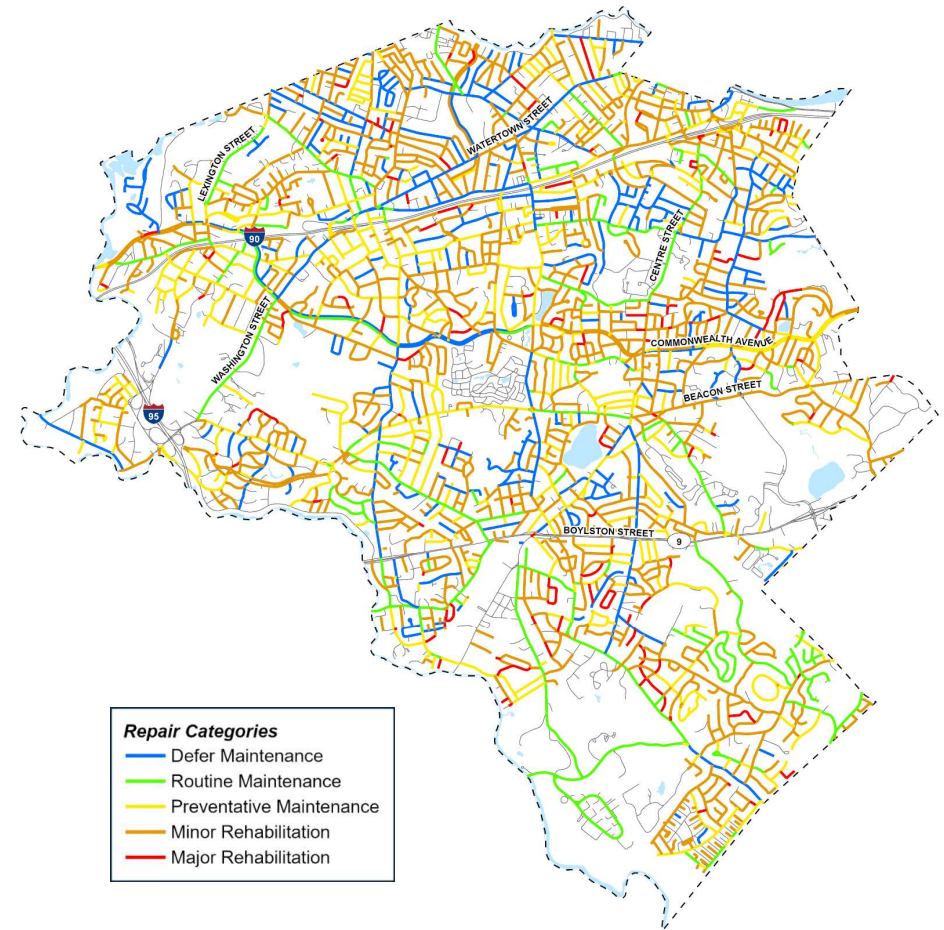
**Roads being re-inspected this year



ROADWAY NETWORK

Backlog Report

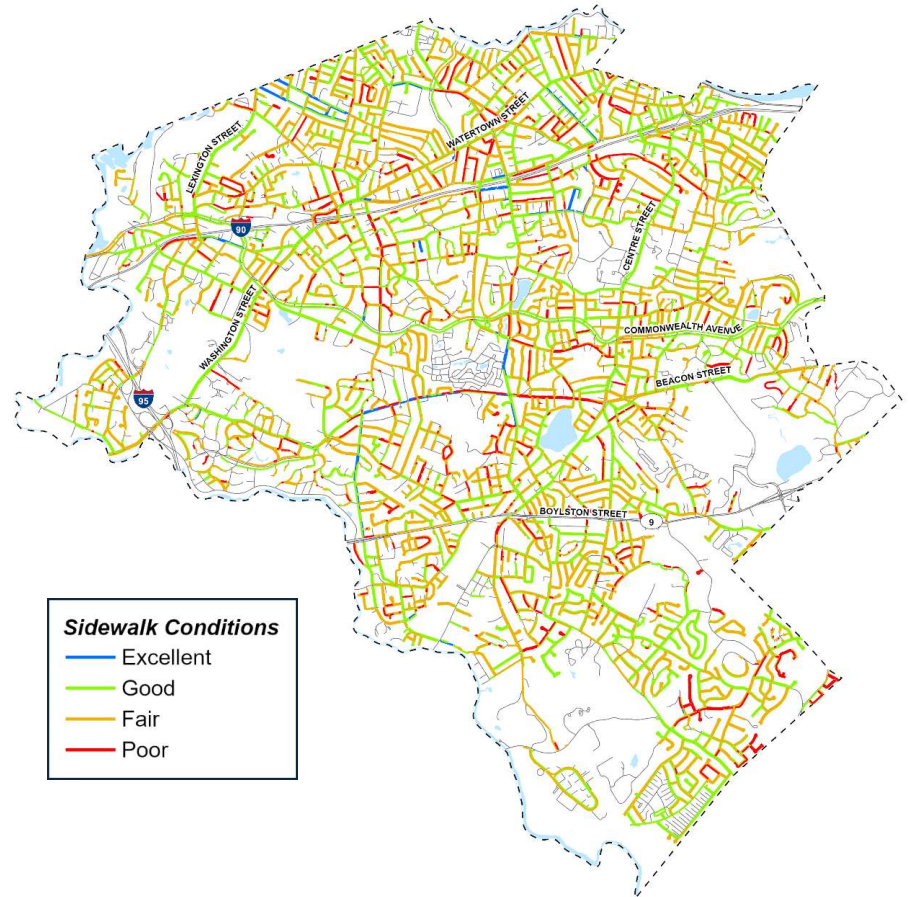
Treatment	Length (mi)	Area (SY)	Percent (by length)	Estimated Cost
Major Rehabilitation	10.82	161,843	3.9%	\$ 16,184,276
Minor Rehabilitation	131.70	2,041,761	47.9%	\$ 102,088,044
Preventative Maintenance	54.80	862,672	19.9%	\$ 6,901,380
Routine Maintenance	31.29	551,989	11.4%	\$ 689,987
Defer Maintenance	46.14	756,870	16.8%	\$ -
Total	274.75	4,375,136		\$ 125,863,687



PEDESTRIAN INFRASTRUCTURE

Sidewalk Inventory Results

- 420 miles of sidewalk infrastructure were evaluated and mapped (to-date)
 - Excellent/Good = 41%
 - Fair = 48%
 - Poor/Replace = 11%
- The City of Newton maintains approximately 5,200 curb ramps
 - Excellent/Good = 57%
 - Fair = 39%
 - Poor = 4%
 - 1,200 potential new ramps needed



PROGRAM WORK HISTORY



TRANSPORTATION NETWORK IMPROVEMENTS

2017 – 2023 Construction History

2017-2018		
Treatment	Area (SY)	Length (mi)
Bonded Wearing Course	12,764	2.42
Cape Seal	9,143	1.73
Hot In-Place Recycling	6,332	1.20
Microsurfacing	9,797	1.86
Mill & Overlay	43,018	8.15
Total	81,054	15.35

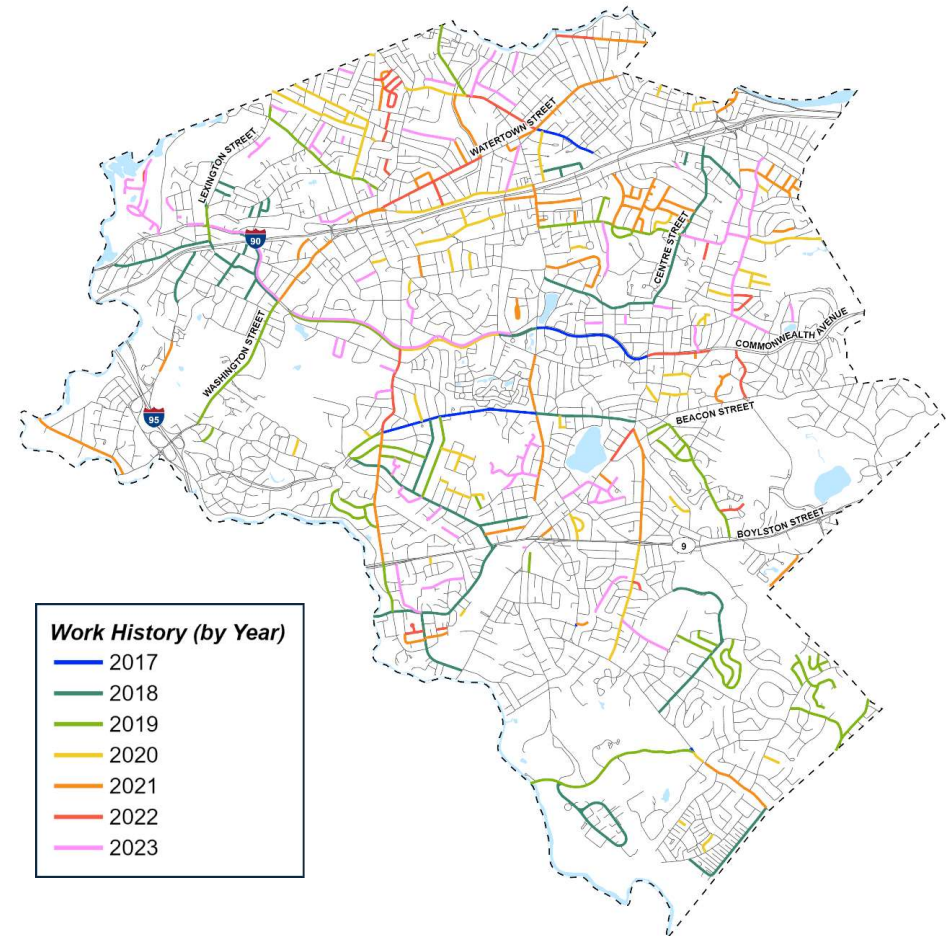
2019		
Treatment	Area (SY)	Length (mi)
Bonded Wearing Course	14,685	2.78
Cape Seal	8,479	1.61
Maintenance Overlay	19,258	3.65
Microsurfacing	1,892	0.36
Mill & Overlay	26,435	5.00
Total	70,749	13.40

2020		
Treatment	Area (SY)	Length (mi)
Bonded Wearing Course	3,991	0.76
Concrete Overlay	1,965	0.37
Hot In-Place Recycling	4,169	0.79
Maintenance Overlay	25,556	4.84
Mill & Overlay	16,368	3.10
Reclamation	2,493	0.47
Total	54,542	10.33

2021		
Treatment	Area (SY)	Length (mi)
Cold In-Place	6,887	1.31
Concrete Overlay	6,800	1.29
Maintenance Overlay	32,498	6.16
Mill & Overlay	24,225	4.59
Overlay	1,058	0.20
Total	71,468	13.54

2022		
Treatment	Area (SY)	Length (mi)
Bonded Wearing Course	6,631	1.26
Concrete Overlay	1,303	0.25
Maintenance Overlay	10,376	1.97
Mill & Overlay	8,570	1.62
Total	26,880	5.09

2023		
Treatment	Area (SY)	Length (mi)
Bonded Wearing Course	12,382	2.35
Maintenance Overlay	30,347	5.75
Mill & Overlay	28,617	5.42
BWC/SAMI	1,637	0.31
Total	72,983	13.83



- Program Total = 71.54 miles*
(excludes crack seal and fog seal)

PEDESTRIAN NETWORK IMPROVEMENTS

Major Sidewalk Construction

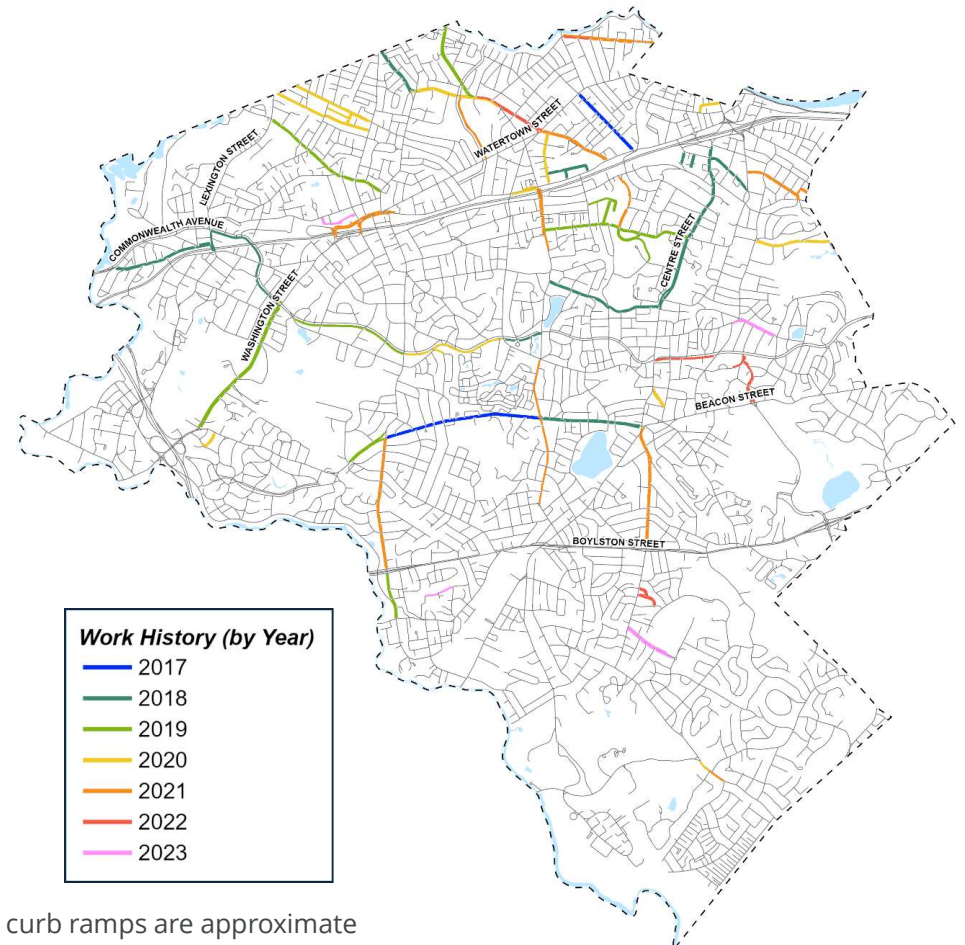
- Mileage by Year

- 2017 = 2.57 miles
- 2018 = 8.33 miles
- 2019 = 8.39 miles
- 2020 = 6.29 miles
- 2021 = 8.33 miles
- 2022 = 2.19 miles
- 2023 = 1.56 miles

- Number of Curb Ramps by Year

- 2017 = 55
- 2018 = 164
- 2019 = 56
- 2020 = 89
- 2021 = 179
- 2022 = 57
- 2023 = 34

* Work history numbers for sidewalks and curb ramps are approximate

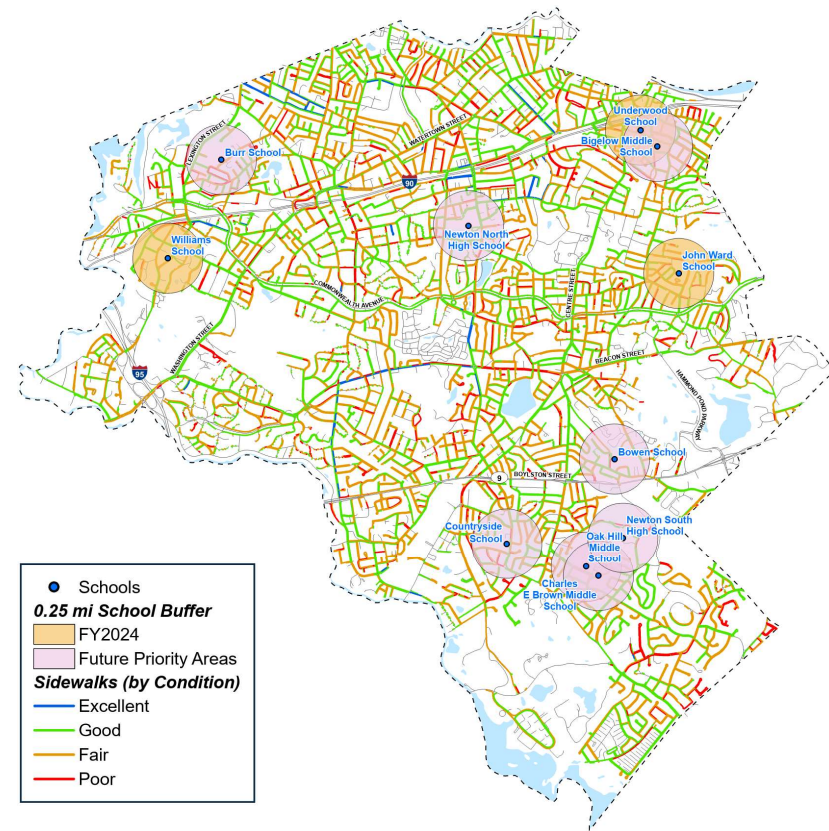


PEDESTRIAN INFRASTRUCTURE NETWORK

PEDESTRIAN INFRASTRUCTURE IMPROVEMENTS

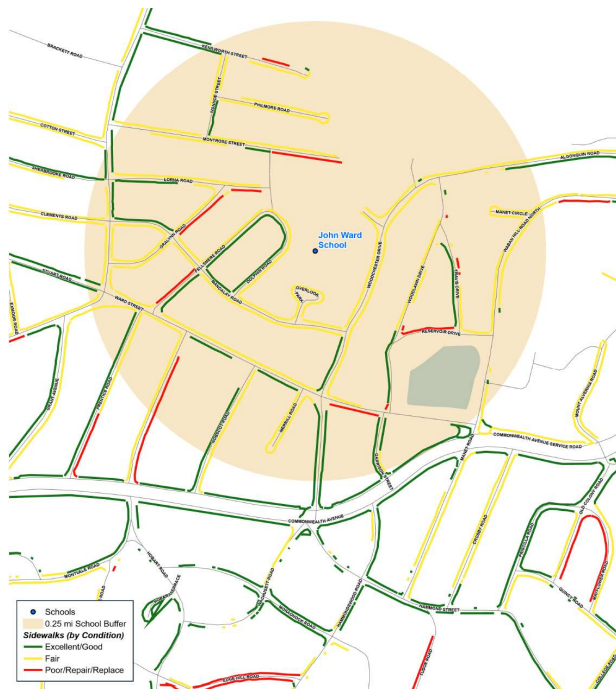
Priority Analysis

- Priority pedestrian routes
 - Schools
- Roadway classification
 - Connections the roadway provides within the network
- Safe Routes to School
 - Previously established plow routes for sidewalks
- Condition Assessment
- ADA & AAB Compliance
- High pedestrian locations

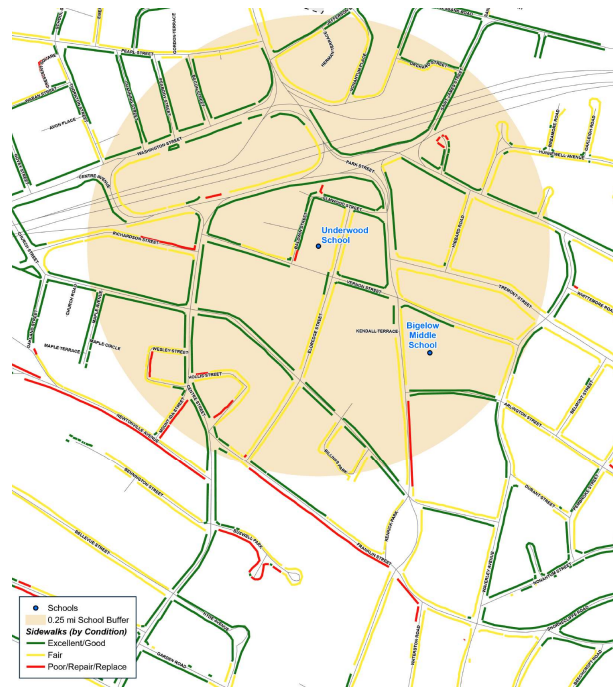


PEDESTRIAN PRIORITIZATION ANALYSIS – EXISTING CONDITIONS

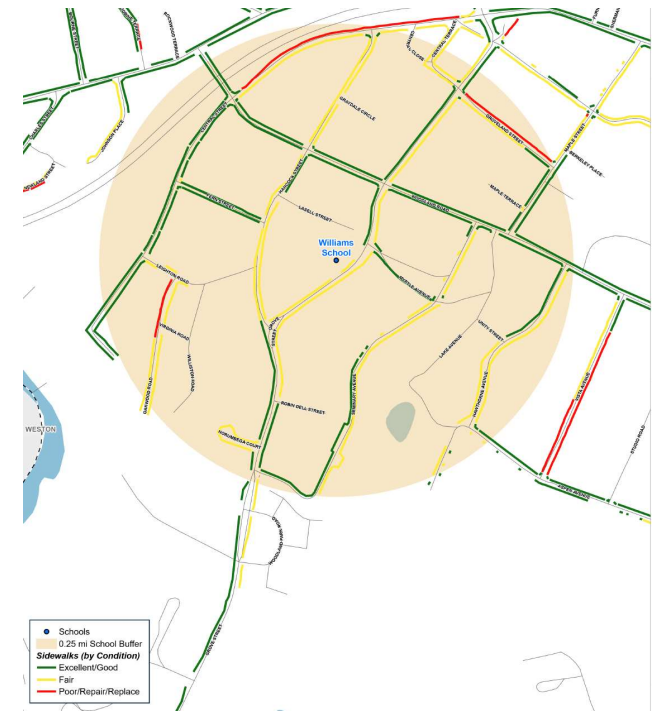
Ward School



Underwood School

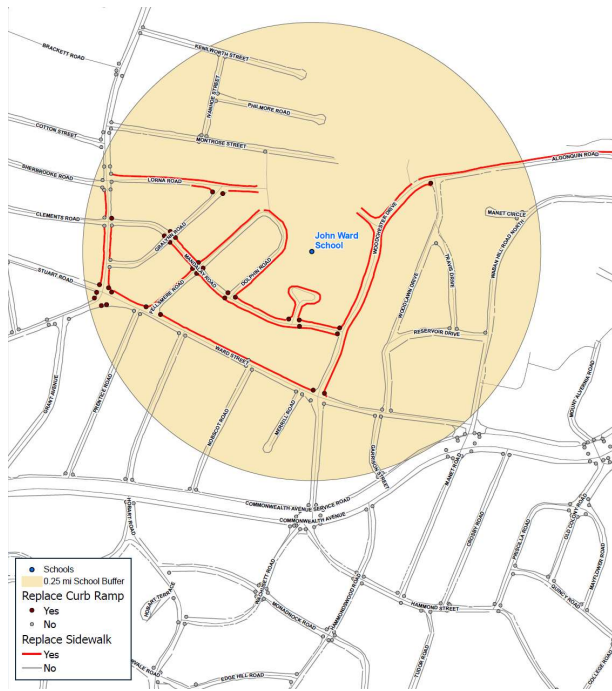


Williams School

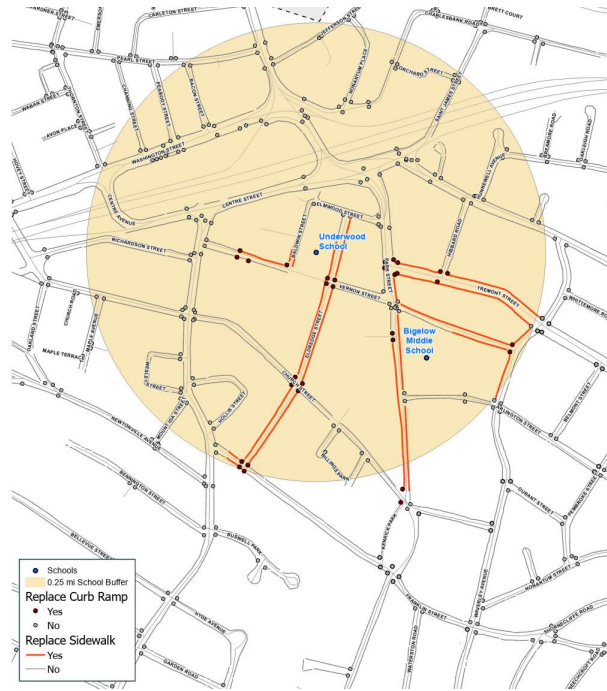


PEDESTRIAN PRIORITIZATION ANALYSIS – PRIORITY RECONSTRUCTION

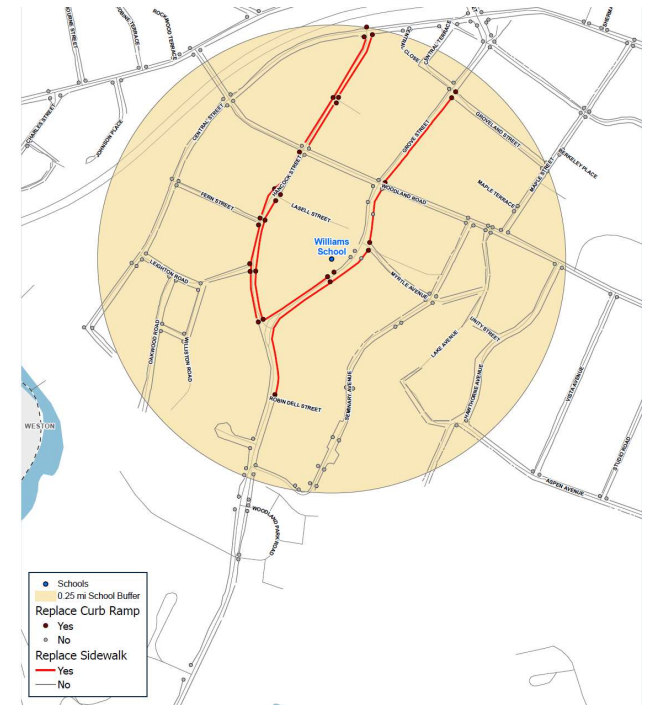
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Underwood School



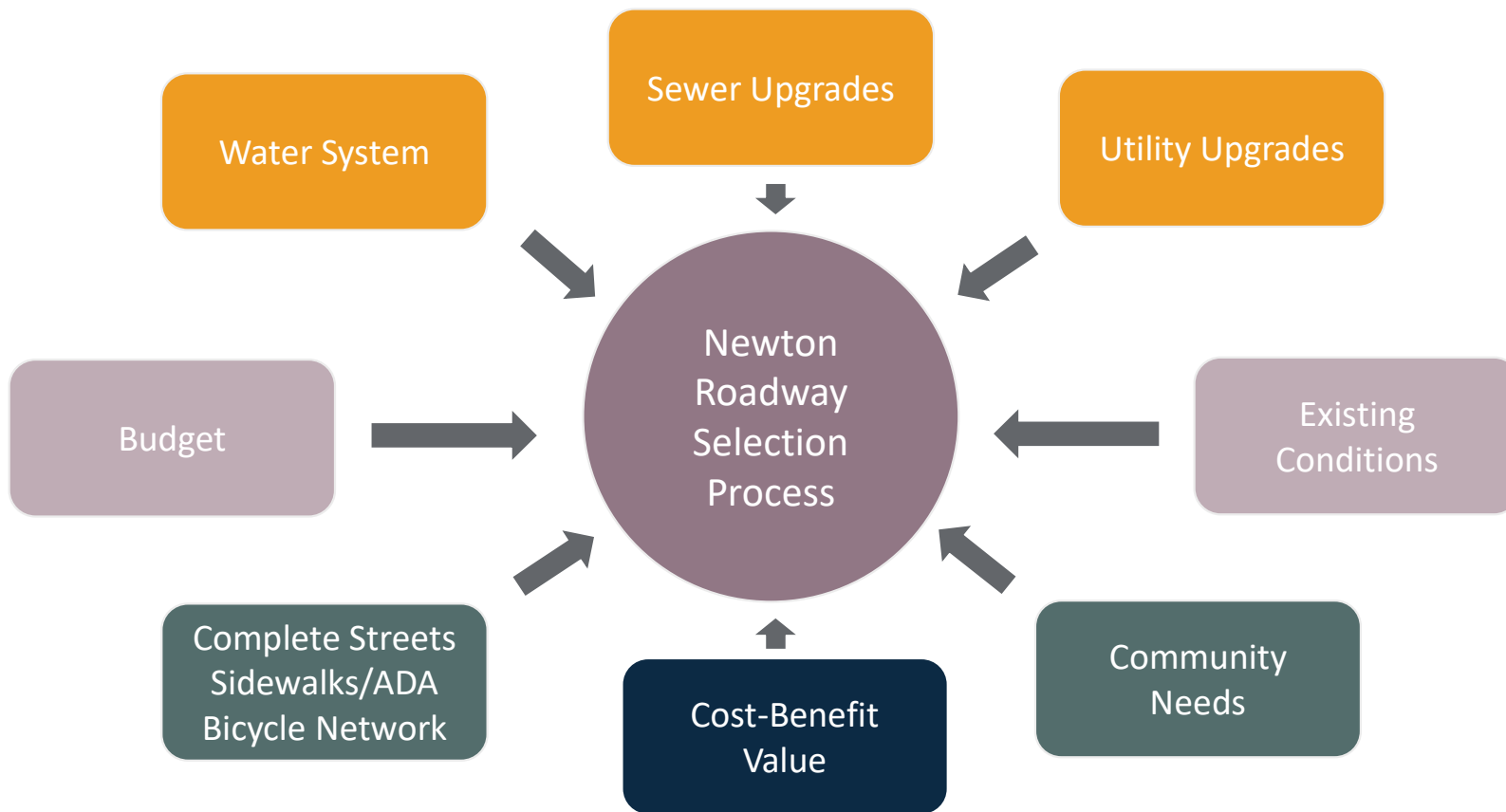
Williams School



ROADWAY NETWORK

ROADWAY SELECTION PROCESS

Selection Factors



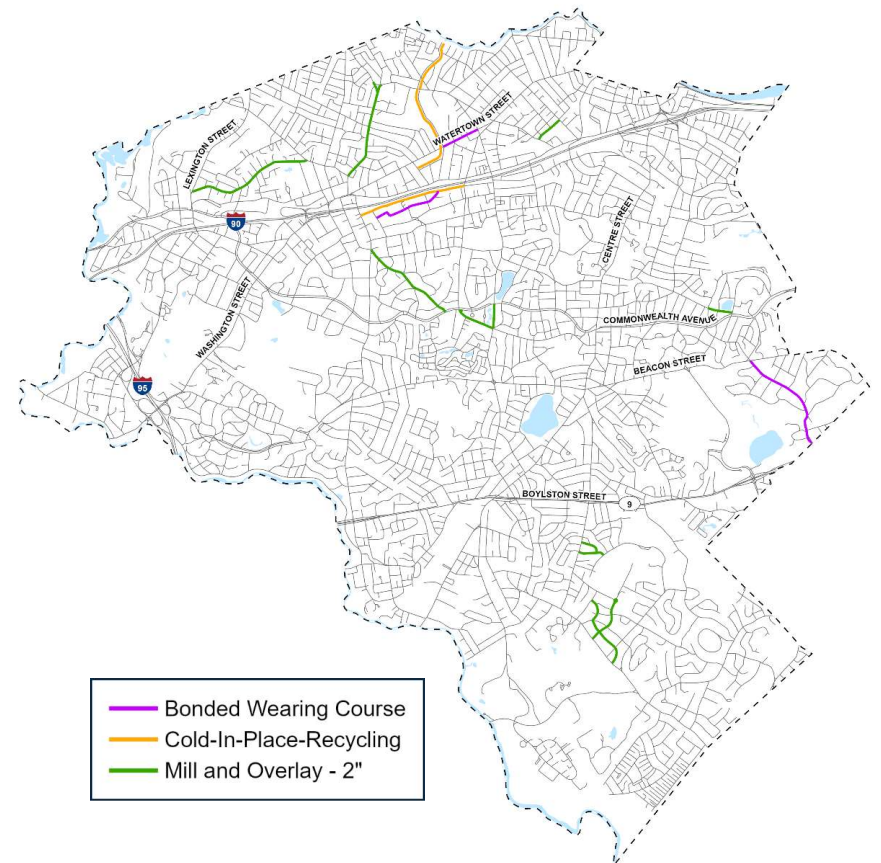
TRANSPORTATION NETWORK IMPROVEMENTS

2024 Planned Construction Planned Major Paving*

Street	From	To	Average PCI	Treatment
Albemarle Road	Crafts Street	Watertown Street	66.7	Cold-In-Place Recycling
Arnold Road	Dedham Street	Sharpe Road	36.2	Mill and Overlay - 2"
Auburndale Avenue	Lexington Street	River Street	56.9	Mill and Overlay - 2"
Austin Street	Lowell Avenue	Chestnut Street	66	Cold-In-Place Recycling
Hammond Street	Beacon Street	Brookline TL	68.3	Bonded Wearing Course
Highland Street	Highland Street	Chestnut Street	67	Mill and Overlay - 2"
Homer Street	Walnut Street	Commonwealth Avenue	76.2	Mill and Overlay - 2"
Lincoln Road	Adams Street	Crafts Street	59.1	Mill and Overlay - 2"
Meadowbrook Road	Dedham Street	Cul De Sac	49.8	Mill and Overlay - 2"
Mount Vernon Street	Austin Street	Hillside Road	52.8	Bonded Wearing Course
Police Station Parking Lot				Mill and Overlay - 2"
Roosevelt Road	Brandeis Road	Parker Street	61	Mill and Overlay - 2"
Theodore Road	Parker Street	Roosevelt Road	56.5	Mill and Overlay - 2"
Valentine Street	Burnham Road	Commonwealth Avenue	56	Mill and Overlay - 2"
Walnut Street	Commonwealth Avenue	Homer Street	76.2	Mill and Overlay - 2"
Waltham Street	Washington Street	Crafts Street	62.6	Mill and Overlay - 2"
Waltham Street Branch	Waltham Street	Crafts Street	63.3	Mill and Overlay - 2"
Ward Street	Manet Road	Hammond Street	65	Mill and Overlay - 2"
Watertown Street	Albemarle Road	Walnut Street	89.8	Bonded Wearing Course

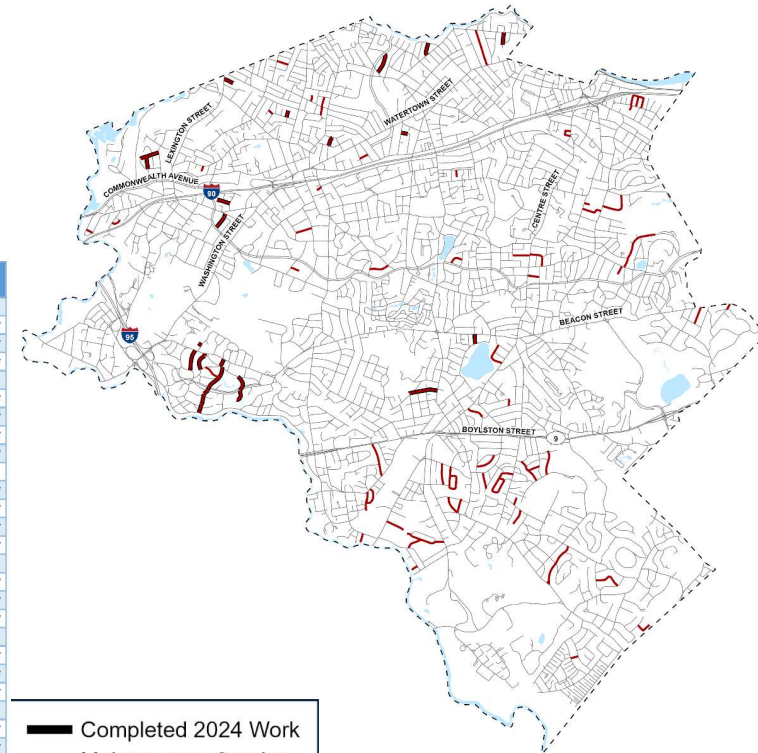
*This is a working list that may be revised based on factors such as unexpected utility work

**Does not include all preservation, routine maintenance or patching



TRANSPORTATION NETWORK IMPROVEMENTS

2024 Planned Construction Maintenance Overlay*



— Completed 2024 Work
— Maintenance Overlay

Italicized text = Completed Roadway

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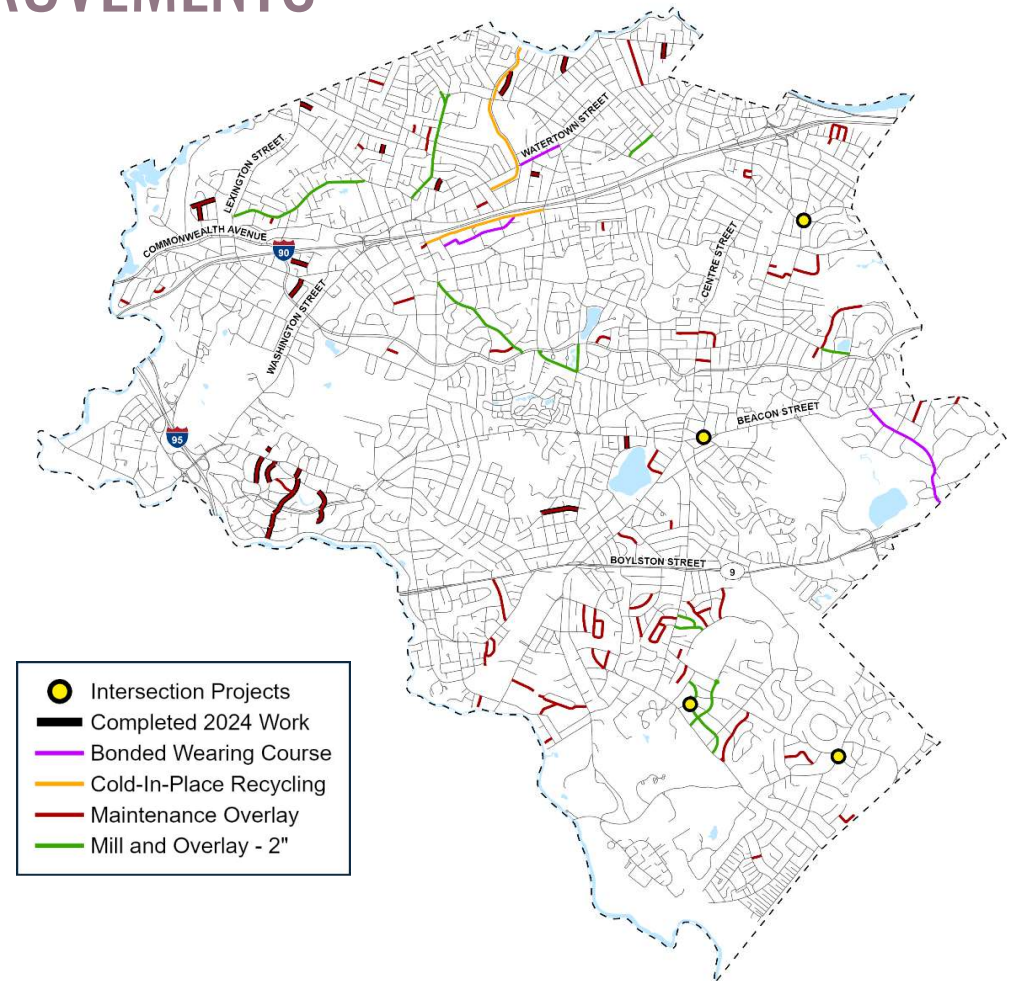
Street	From	To	Average PCI	Treatment
Abbott Street	Dead End	Oak Street	46.3	Maintenance Overlay
Acacia Avenue	Boston CL	Lee Road	50.3	Maintenance Overlay
Adeline Road	Brandeis Road	Hagen Road	50	Maintenance Overlay
Adena Road	Northgate Park	Llewellyn Road	50.1	Maintenance Overlay
Alden Street	Centre Street	Sumner Street	49.3	Maintenance Overlay
Alexander Road	Woodcliff Road	Walnut Hill Road	40.3	Maintenance Overlay
Allison Street	California Street	Los Angeles Street	99.9	Maintenance Overlay
Andrew Street	Dedham Street	Andrew Street	49.3	Maintenance Overlay
Ballard Street	Ward Street	Centre Street	49.3	Maintenance Overlay
Barnes Road	Hunnewell Avenue	Fairview Street	39.3	Maintenance Overlay
Bemis Road	California Street	Parkway Road	99.9	Maintenance Overlay
Bonaire Circle	Dorset Road	Cul De Sac	99.9	Maintenance Overlay
Brae Burn Road	Greenough Street	Commonwealth Avenue Ser. Road	99.9	Maintenance Overlay
Brookdale Road	North Street	Albemarle Road	99.9	Maintenance Overlay
Cappy Circle	Derby Street	Cul De Sac	48.3	Maintenance Overlay
Carlton Road	Beacon Street	Quinobequin Road	99.9	Maintenance Overlay
Cedric Road	Rowena Road	Athelstane Road	50.3	Maintenance Overlay
Charlemont Street	Winchester Street	Needham Street	50.3	Maintenance Overlay
Charles River Terrace	Dead End	Bernard Street	48.6	Maintenance Overlay
Chaske Avenue	Kapasia Street	Melrose Street	99.9	Maintenance Overlay
Chestnut Hill Road	Beacon Street	Chestnut Hill Ter	48.6	Maintenance Overlay
Circuit Avenue	Elliot Street	Boylston Street	60.1	Maintenance Overlay
Clinton Place	Centre Street	Gravel	48.6	Maintenance Overlay
Commonwealth Park	Commonwealth Avenue Ser. Road	Commonwealth Park	49.3	Maintenance Overlay
Crofton Road	Nehoiden Road	Dead End	99.9	Maintenance Overlay
Dalby Street	California Street	Watertown Street	49.3	Maintenance Overlay
Danehill Road	Bound Brook Road	Brush Hill Road	50.3	Maintenance Overlay
Dearborn Terrace	Westland Avenue	Dearborn Street	50.3	Maintenance Overlay
Eliot Memorial Road	Waverley Avenue	Magnolia Avenue	41.3	Maintenance Overlay
Elizabeth Circle	Exeter Street	Cul De Sac	50.3	Maintenance Overlay
Ellis Road	Valentine Street	Wauwinet Road	49.3	Maintenance Overlay
Elsworth Road	Falmouth Road	Parmenter Road	50.3	Maintenance Overlay
Evergreen Terrace	Oakland Avenue	Evergreen Avenue	25.3	Maintenance Overlay
Fairfax Street	Prince Street	Sterling Street	50.3	Maintenance Overlay
Fairview Street	Barnes Road	Hunnewell Avenue	53.3	Maintenance Overlay
Great Meadow Road	Hagen Road	Brandeis Road	53	Maintenance Overlay
Green Park	Park Avenue	Waverley Avenue	48.3	Maintenance Overlay
Hay Road	Mccarthy Road	Hanson Road	46.3	Maintenance Overlay
Hillside Road	Bowdoin Street	Walnut Street	99.9	Maintenance Overlay
Kelveden Road	Alban Road	Carlton Road	50.3	Maintenance Overlay

Street	From	To	Average PCI	Treatment
Laurel Street	Beacon Street	Lake Avenue	99.9	Maintenance Overlay
Leewood Road	Brush Hill Road	Bound Brook Road	49.3	Maintenance Overlay
Linder Terrace	Hunnewell Avenue	Dead End	49.3	Maintenance Overlay
Magnolia Avenue	Eliot Memorial Road	Kenrick Street	51.3	Maintenance Overlay
Manhattan Terrace	Westland Avenue	Dead End	99.9	Maintenance Overlay
Marla Circle	Grace Road	Cul De Sac	44.3	Maintenance Overlay
Mechanic Street	Elliot Street	Dead End	47.6	Maintenance Overlay
Merrill Road	Ward Street	Dead End	23.3	Maintenance Overlay
Miller Road	Centre Street	Cloverdale Road	50.3	Maintenance Overlay
Milton Avenue	Lexington Street	Dead End	99.9	Maintenance Overlay
Mount Vernon Street	Hillside Avenue	Austin Street	52.8	Maintenance Overlay
Nardone Road	Oldfield Road	Great Meadow Road	50.3	Maintenance Overlay
Newland Street	Charles Street	Charles Street	50.3	Maintenance Overlay
Norwood Avenue 2	Crescent Avenue	Centre Street	42	Maintenance Overlay
Oakland Street	Newtonville Avenue	Winthrop Avenue	98.8	Maintenance Overlay
Park Drive	Elinor Road	Selwyn Road	44.3	Maintenance Overlay
Parker Road	Truman Road	Truman Road	48.3	Maintenance Overlay
Plimpton Road	Chestnut Street	Cul De Sac	50.3	Maintenance Overlay
Proctor Street	Walker Street	Brooks Avenue	99.9	Maintenance Overlay
Roland Street	Charlemont Street	Christina Street	44.3	Maintenance Overlay
Rosalie Road	Hartman Road	Dedham Street	52.7	Maintenance Overlay
Rosalie Road Branch	Rosalie Road	Dedham Street	67.3	Maintenance Overlay
Sharon Avenue	Crescent Street	Cul De Sac	99.9	Maintenance Overlay
Shuman Circle	Wheeler Road	Cul De Sac	37.3	Maintenance Overlay
Stoneleigh Road	Orchard Avenue	Davis Avenue	99.9	Maintenance Overlay
Town House Drive	Washington Park	Dead End	48.3	Maintenance Overlay
Treeland Circle	Park Avenue	Cul De Sac	46.3	Maintenance Overlay
Truman Road	Parker Street	Parker Road	49.1	Maintenance Overlay
Tudor Terrace	Auburndale Avenue	Dead End	50.3	Maintenance Overlay
Verndale Road	Heatherland Road	Dedham Street	50.3	Maintenance Overlay
Voss Terrace	Wheeler Road	Cul De Sac	49.3	Maintenance Overlay
Wesley Street	Centre Street	Centre Street	41.3	Maintenance Overlay
Westgate Road	Redwood Road	Clifton Park	38.3	Maintenance Overlay
Wetherell Street	Elliot Street	Mechanic Street	46.3	Maintenance Overlay
White Oak Road	Beacon Street	Neshobe Road	99.9	Maintenance Overlay
Wild Road	Beacon Street	Alban Road	99.9	Maintenance Overlay
Willard Street	Hunnewell Avenue	Fairview Street	48.6	Maintenance Overlay
Winona Street	Chaske Avenue	Kapasia Street	99.9	Maintenance Overlay
Wiswall Street	Cross Street	Parsons Street	50.3	Maintenance Overlay
Woodchester Drive	Ward Street	Algonquin Road	46.9	Maintenance Overlay

TRANSPORTATION NETWORK IMPROVEMENTS

2024 Planned Intersection Construction

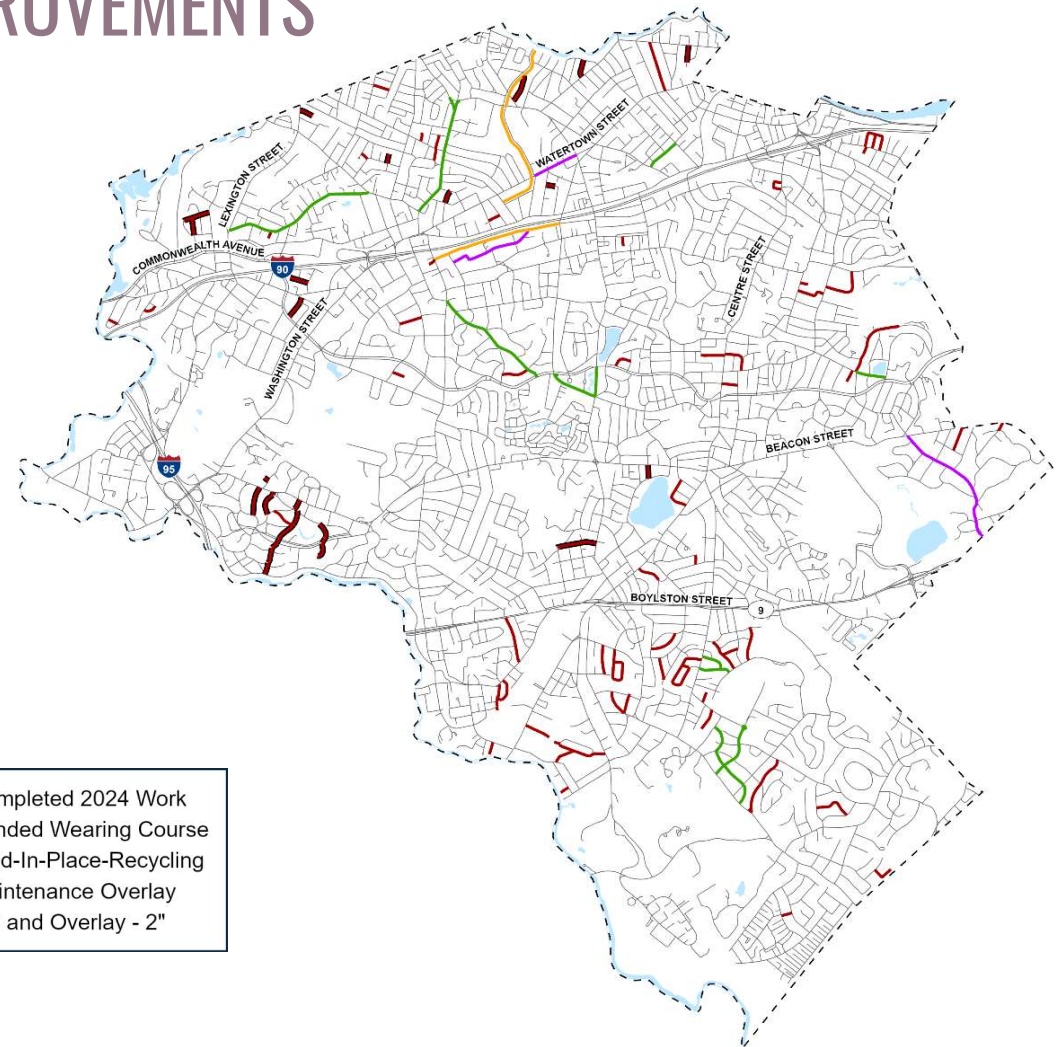
- Spaulding Lane and Hartman Road at Brookline Street
- Franklin Road at Waverley Avenue
- Arnold Road at Country Club Road
- Langley Road and Sumner Street at Beacon Street



TRANSPORTATION NETWORK IMPROVEMENTS

2024 Planned Construction Summary of Work

Treatment	Area (SY)	Length (mi)	Estimated Cost
Bonded Wearing Course	23,300	1.53	\$ 582,525
Maintenance Overlay	156,333	10.33	\$ 4,221,679
Mill and Overlay - 2"	77,606	4.37	\$ 4,214,693
Cold-In-Place Recycling	23,402	1.79	\$ 665,600
Total	280,641	18.01	\$ 9,684,497



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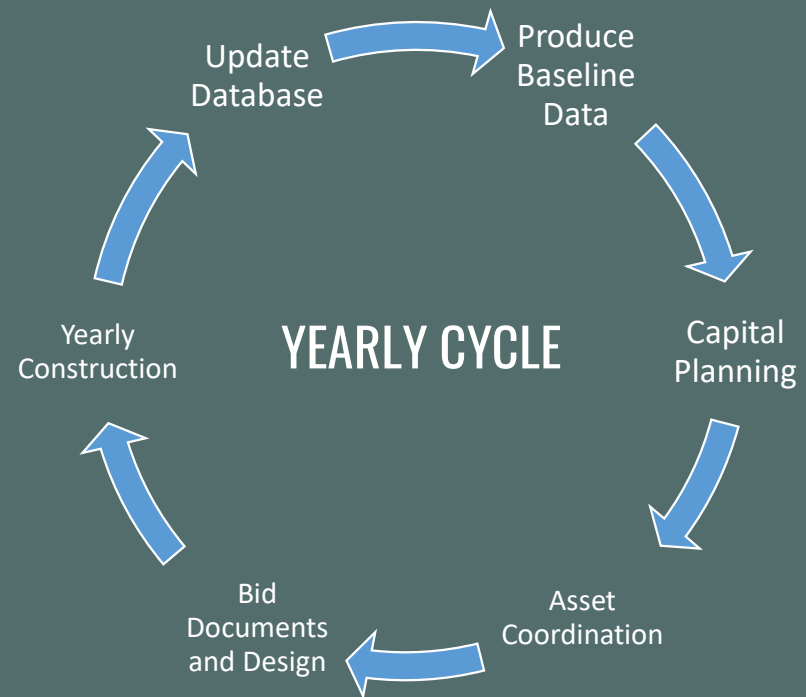
NEXT STEPS

CONTINUED PROGRAM IMPROVEMENT

The Transportation Network Improvement Program is not meant to be a stagnant, but rather a living document.

2024 Updates

- Road network re-evaluation
- Recalibration of priority roads
- Long-Range Sidewalk Prioritization



THANK YOU

