

REF: NEX-2300392.06

DATE: March 12, 2024

TO: Ms. Kate Fitzpatrick, Town Manager
Ms. Carys Lustig, Director of Public Works
Mr. Thomas Ryder, Town Engineer

FROM: Mr. John W. Diaz, P.E., PTOE

RE: Needham Quiet Zone - Feasibility

Greenman-Pedersen, Inc. (GPI) and Kimley Horne Associates (KMA) have been working with the Town of Needham's Quiet Zone Working Group (Working Group) to reexplore the feasibility of establishing a Quiet Zone (QZ) along the MBTA Commuter Rail Line through Needham. The current at-grade crossings in town include:

- Needham Golf Course
- Oak Street
- Great Plain Avenue
- May Street
- Rosemary Street
- West Street

The project involved a comprehensive review of materials (correspondence, memos, design alternatives, etc.) from previous work on the project from 2015 to present as well as new coordination meetings and discussions with the Federal Railroad Administration (FRA), MBTA and Keolis. The following were identified as critical issues that could impact the feasibility of implementing a QZ throughout the town.

- The golf course crossing is a privately owned crossing and Federal Railroad Administration (FRA) QZ regulations only pertain to public crossings. Private crossing can be included in a QZ, but only if they fall within the limits of a QZ. A private crossing cannot start or end a QZ.
- To implement Supplemental Safety Measures (SSM), all crossings must be equipped with Constant Warning Time (CWT) hardware as well as Power Out Indicators (POI). It will be up to the town to pay the cost of bringing any non-compliant crossings into compliance before implementing any additional SSMs.
- With the implementation of CWT, the operation of the gates at Great Plain Avenue and May Street may change. Gates may remain down for a longer period of time compared to current operations.

To open lines of communication, GP initiated an onsite meeting with representatives from MBTA, Keolis, the Town of Needham and members of Safer Quieter Needham on February 2, 2024. Minutes of that meeting are attached.

Golf Course Crossing

At the February 2, 2024, meeting, representatives of MBTA and Keolis reinforced the fact that regardless of any additional SSMs proposed at the crossing, a QZ **can not** start or end with a private crossing. In their opinion, the only acceptable way to eliminate a horn activation at the golf course crossing would be to provide a grade separated crossing. At the meeting, attendees discussed some potential alternatives for establishing a grade separated crossing, but the consensus of the meeting attendees was to eliminate the golf course crossing from consideration for inclusion in the QZ, and to pursue the potential of grade

separated crossing at a later time. This decision was presented to the Working Group at the February 12, 2024, meeting and agreed to by the group.

Railroad Crossing Equipment and Operations Summary

To move forward with the QZ process, all at grade crossings must provide CWT and POI equipment. Based on a review of the FRA Crossing Inventory Forms as well as discussions with MBTA and Keolis the following was noted at each crossing:

Existing Equipment			
	CWT	POI	Traffic Signal Pre-Emption
West Street	-	-	✓
Rosemary Street	✓	-	-
May Street	-	-	-
Great Plain Avenue	-	-	✓
Oak Street	-	-	-

Therefore, to move forward with the QZ notification process, all crossings will require upgrades to provide POI and all, but Rosemary Street, will require the installation of CWT equipment.

With the existing track circuitry and hardware at the Great Plain Avenue crossing, when the inbound train is stopped and riders are loading, the gates on Great Plain Avenue remain up and traffic on Great Plain Avenue is free to cross the tracks. However, with the installation of CWT the operations of the gates would change, such that the gates would remain down the entire time the train was stopped while loading occurs at the Needham Center Stop. This was a potential issue with Needham Public Safety, who had concerns that the additional time with the gates down could impede emergency response times to the community.

At the February 28, 2024, meeting the Working Group decided to pursue two QZ options. The first option (QZ 1) would provide a single QZ including all at-grade crossings from Oak Street to West Street. The second option (QZ 2) was developed as a “back up” if public safety concerns prevented the CWT installation at the Great Plain Avenue crossing. QZ 2 is comprised of two separate QZs, QZ 2A would include the crossings at West Street, Rosemary Street and May Street, and QZ 2B would include the Oak Street crossing only. Under this scenario, Great Plain Avenue would not be included in the QZ 2 option.

Supplemental Safety Measures (SSM)

To proceed with the QZ process the Risk Index of the entire QZ must be reduced below the Nationwide Significant Risk Threshold established by the FRA. Furthermore, to avoid annual re-calculations of the QZ Risk Index, and eliminate the chance that the QZ Risk Index may someday exceed the National Significant Risk Threshold, it is recommended that sufficient SSMs be installed to ensure the QZ Risk Index falls below the Risk Index with Horns.

The following charts provide a summary of the various SSM and Risk factors for various scenarios for QZ 1.

All 5 Location - No new Gates at GPA

EXISTING CONDITIONS						
Warning						
Crossing	Street	Traffic	Device	Pre-SSM	SSM	Risk
546869S	West Street	3360	Gates	0	0-None	31,559.51
546870L	Rosemway St	3360	Gates	0	0-None	28,943.53
546871T	May Street	3360	Gates	0	0-None	30,708.03
546872A	Great Plain Ave	3360	Gates	0	0-None	43,076.47
546873G	Oak St	3360	Gates	0	0-None	27,754.79
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						19,429.53
Quiet Zone Risk Index:						32,408.46

No Changes at GPA (other than CWT)

Warning						
Crossing	Street	Traffic	Device	Pre-SSM	SSM	Risk
546869S	West Street	3360	Gates	0	6 - Quad Gates w. Detection	7,258.69
546870L	Rosemway St	3360	Gates	0	12 - Flexible Median	7,235.88
546871T	May Street	3360	Gates	0	6 - Quad Gates w. Detection	7,062.85
546872A	Great Plain Ave	3360	Gates	0	0-None	43,076.47
546873G	Oak St	3360	Gates	0	6 - Quad Gates w. Detection	6,383.60
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						19,429.53
Quiet Zone Risk Index:						14,203.50

Median at GPA

Warning						
Crossing	Street	Traffic	Device	Pre-SSM	SSM	Risk
546869S	West Street	3360	Gates	0	6 - Quad Gates w. Detection	7,258.69
546870L	Rosemway St	3360	Gates	0	12 - Flexible Median	7,235.88
546871T	May Street	3360	Gates	0	6 - Quad Gates w. Detection	7,062.85
546872A	Great Plain Ave	3360	Gates	0	12 - Flexible Median	10,769.12
546873G	Oak St	3360	Gates	0	6 - Quad Gates w. Detection	6,383.60
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						19,429.53
Quiet Zone Risk Index:						7,742.03

As noted above, while the QZ Risk Index with no SSM improvements at the Great Plain Avenue crossing falls below both the Nationwide Significant Risk Threshold and the Risk Index with Horns, for the minimal costs associated with flexible or permanent medians, versus the added safety benefits, it would be recommended to provide some form of median at the Great Plain Avenue crossing.

Design and Construction Costs

To move forward with the project, the town needs to secure funds for design and construction through Town Meeting. Based on discussions with the MBTA and Keolis there may be two options for the town to move forward with the design and construction.

The first option would be for the town to fund the design. While the town would have more control over the design schedule, the design would still require review by MBTA / Keolis and the review would be dependent on their schedule. Costs for the town would be significantly greater since additional plan detail work would be required as well as design reviews and resubmissions.

The second option would be for the town to request the design be completed by MBTA / Keolis. While the town would be dependent on MBTA / Keolis' schedule, the costs would be anticipated to be significantly less, and multiple design and review submissions would not be required.

It is therefore recommended, that the town pursue the option of having MBTA / Keolis complete the design.

The following cost tables provide an order of magnitude cost estimate for design and construction services. Costs associated with Keolis' efforts are approximated.

	Existing Risk	1 QZ	
		6-12-6-0-6	6-12-6-12-6
West Street	31,559.51	7,258.69	7,258.69
Rosemary Street	28,943.53	7,235.88	7,235.88
May Street	30,708.03	7,062.85	7,062.85
Great Plain Ave	43,076.47	43,076.47	10,769.12
Oak Street	27,754.79	6,383.60	6,383.60
Nationwide Significant Risk Threshold:	15,488.00	15488.00	15488.00
Risk Index with Horns:	19,429.53	19429.53	19429.53
Quiet Zone Risk Index:	32,408.46	14203.50	7742.03
Construction Cost		\$ 3,474,375.00	\$ 3,524,375.00
Consultant Design		\$ 694,875.00	\$ 704,875.00
Keolis Design		\$ 416,925.00	\$ 422,925.00
Construction Cost		\$ 3,480,000.00	\$ 3,530,000.00
Consultant Design		\$ 700,000.00	\$ 710,000.00
Keolis Design		\$ 420,000.00	\$ 430,000.00

The preferred option, providing Quad Gates at West Street, May Street and Oak Street with Flexible Median at Rosemary Street and Great Plain Avenue is currently estimated to have a construction cost of approximately \$3.5 mil with design costs ranging from \$430k to \$710k depending on who performs the design.

Next Steps

Based on the research, meetings and safety calculations, the following actions are recommended:

- Coordinate with MBTA / Keolis to complete the required Diagnostics Testing – Include a review of all crossings including Great Plain Avenue, for potential future inclusion.
- Coordinate with MBTA / Keolis to determine process for MBTA / Keolis design.
- Acquire funding for design effort at Spring Town Meeting.
- Complete conceptual / 10% Design plans for each grade crossing.
- Once final construction numbers are determined (based on Diagnostic Testing and design requirements), acquire construction funding at a future Town Meeting.

Supplemental Information

- **Two Quiet Zone Review**
- **Minutes of MBTA / Keolis Meeting**
- **FRA Crossing Inventory Forms**
- **Concept Sketches**

Two Quiet Zone Alternative

Because of public safety concerns with the longer “gate down” times at the Great Plain Ave crossing, the option of eliminating Great Plain Avenue from the QZ and providing two separate QZs was considered. The following provides an overview of the SSM possibilities under that option.

QZ 2A - West, Rosemary & May Quiet Zone Only						
EXISTING CONDITIONS						
Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk
546869S	West Street	8754	Gates	0	0-None	31,573.89
546870L	Rosemary	4085	Gates	0	0-None	28,943.53
546871T	May Street	5411	Gates	0	0-None	30,708.03
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						18,234.80
Quiet Zone Risk Index:						30,415.65
Option: Quad Gates with Detection at West Street						
Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk
546869S	West Street	8754	Gates	0	6 - Quad Gates w. Detection	7,266.94
546870L	Rosemary	4085	Gates	0	0-None	28,943.53
546871T	May Street	5411	Gates	0	0-None	30,708.03
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						18,234.80
Quiet Zone Risk Index:						22,306.17
Option: Quad Gates with Detection at West Street & Channelization at Rosemary						
Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk
546869S	West Street	8754	Gates	0	6 - Quad Gates w. Detection	7,266.94
546870L	Rosemary	4085	Gates	0	12 - Flexible Median	7,235.88
546871T	May Street	5411	Gates	0	0-None	30,708.03
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						18,234.80
Quiet Zone Risk Index:						15,070.28
Option: Quad Gates with Detection at West Street & May St						
Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk
546869S	West Street	8754	Gates	0	6 - Quad Gates w. Detection	7,266.94
546870L	Rosemary	4085	Gates	0	0-None	28,943.53
546871T	May Street	5411	Gates	0	6 - Quad Gates w. Detection	7,062.85
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						18,234.80
Quiet Zone Risk Index:						14,424.44
Option: Quad Gates with Detection at West Street & Channelization at Rosemary, gates at May						
Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk
546869S	West Street	8754	Gates	0	6 - Quad Gates w. Detection	7,266.94
546870L	Rosemary	4085	Gates	0	12 - Flexible Median	7,235.88
546871T	May Street	5411	Gates	0	6 - Quad Gates w. Detection	7,062.85
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						18,234.80
Quiet Zone Risk Index:						7,188.56

For QZ 2A, (West Street, Rosemary Street and May Street), there are 3 scenarios that satisfy the criteria to bring the QZ Risk Index below the Nationwide Significant Risk Threshold. However, only one option brings the QZ Risk Index below the Risk Index with Horns. Therefore, to avoid having to recalculate the QZ Risk Index annually and ensure the QZ remains eligible, the following SSM treatments are recommended:

- West Street – Quad Gates
- Rosemary Street – Flexible Median Barrier
- May Street – Quad Gates

For QZ 2B (Oak Street Only), as noted below, due to the proximity of residential driveways, any form of median would not be feasible and the only applicable SSM would be to install Quad Gates.

QZ 2B - Oak St Only						
EXISTING CONDITIONS						
Crossing	Street	Traffic Warning Device	Pre-SSM	SSM		Risk
546873G	Oak Street	3360 Gates	0		0-None	27,754.79
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						16,639.56
Quiet Zone Risk Index:						27,754.79
Medians						
Crossing	Street	Traffic Warning Device	Pre-SSM	SSM		Risk
546873G	Oak Street	3360 Gates	0	6 - Quad Gates w. Detection		27,754.79
Nationwide Significant Risk Threshold:						15,488.00
Risk Index with Horns:						16,639.56
Quiet Zone Risk Index:						6,383.60

The following cost tables provide an order of magnitude cost estimate for design and construction services. Costs associated with Keolis' efforts are approximated.

	Existing Risk	West-May 6-12-0	West-May 6-0-6	West-May 6-12-6	Oak 6
West Street	31,559.51	7,266.94	7,266.94	7,266.94	
Rosemary Street	28,943.53	7,235.88	28,943.53	7,235.88	
May Street	30,708.03	30,708.03	7,062.85	7,062.85	
Great Plain Ave	43,076.47				
Oak Street	27,754.79				25754.79
Nationwide Significant Risk Threshold:	15,488.00	15488.00	15488.00	15488.00	15488.00
Risk Index with Horns:	19,429.53	18234.80	18234.80	18234.80	16639.56
Quiet Zone Risk Index:	32,408.46	15070.28	14424.44	7188.56	6383.60
Construction Cost		\$ 2,486,875.00	\$ 3,061,875.00	\$ 3,111,875.00	
Consultant Design		\$ 497,375.00	\$ 612,375.00	\$ 622,375.00	
Keolis Design		\$ 298,425.00	\$ 367,425.00	\$ 373,425.00	
Construction Cost		\$ 2,490,000.00	\$ 3,070,000.00	\$ 3,120,000.00	\$ -
Consultant Design		\$ 500,000.00	\$ 620,000.00	\$ 630,000.00	\$ -
Keolis Design		\$ 300,000.00	\$ 370,000.00	\$ 380,000.00	\$ -

The preferred option, providing Quad Gates at West Street, May Street and Oak Street with Flexible Median at Rosemary Street is currently estimated to have a construction cost of approximately \$3.1 mil with design costs ranging from \$380k to \$630k depending on who performs the design.

Overall, design and construction of both options QZ 1 and QZ 2 are of similar order of magnitude.

	2 QZ	1 QZ
Construction Cost	\$ 3,120,000.00	\$ 3,530,000.00
Consultant Design	\$ 630,000.00	\$ 710,000.00
Keolis Design	\$ 380,000.00	\$ 430,000.00

Minutes of MBTA / Keolis Meeting

MINUTES OF MEETING OF February 2, 2024 Quiet Zone Field Meeting

Needham Quiet Zone
Needham, MA
NEX-2300092.06

DATE PREPARED: 2/8/24

LOCATION: Needham Golf Course

ATTENDEES: See Attached

PURPOSE: Review At Grade Crossings with MBTA and Keolis

Discussion:

1. Golf Course Crossing

- a. Constant Warning Time Equipment Present
- b. Motion Detection Present
- c. MBTA would not support any type of QZ at this location other than elimination of the crossing via a tunnel/bridge
- d. Crossing could be moved
- e. MBTA typically installs metal culvert for this type of crossing
- f. Golf Course Concern over equipment access – needs a 12' vertical and horizontal clearance
- g. Alternative may be to register equipment and access property via Great Plain Ave
- h. Moving culvert towards stream area works better with grades, but may have other environmental impacts
- i. RECOMMENDATION: At this time, remove crossing from QZ application and look at design alternatives under a potential separate contract

2. Additional Equipment Requirements

- a. In order to be included in a QZ, the crossing must, at a minimum be equipped with Constant Warning Time and Power Out Equipment
- b. This is required regardless of if any type of SSM is installed. So for example, if we wanted to do as a short term SSM, flexible medians at the Great Plain Crossing, the work to install the CWT and POT would still be required.
- c. With the CWT installation, the current operation of the gates at Great Plain Ave and May Street would change. Currently the gates DO NOT remain down while passengers are embarking/disembarking. However, the CWT operations does not allow this functionality. Therefore, the gates would remain down the entire time from the time the train approaches the station, until after the train clears the grade crossing. This could result in a gates down situation of several minutes.
- d. At the West Street crossing, since it's an "end of line" station, the manual control of the gates could still work with the CWT, so the gates could raise while the train is at the station.
- e. Costs for CWT installation were discussed with MBTA/Keolis. MBTA will not provide any type of ballpark estimate on the cost of installing Constant Warning Time train detection or 4-quadrant at any crossings prior to completing preliminary engineering for which there would be a fee. However, "off the record" costs of approximately \$500k per crossing were discussed
- f. Currently the only crossings with CWT are the Golf Course and Rosemary Street
- g. None of the crossings have Power Out Indications

- h. Vehicle pre-emption is provided at West Street (but may not be functioning as pre-signals are turned and not operations) and at Great Plain.
 - i. While it will be confirmed through the Diagnostics review, it is likely that all crossings (except potentially Rosemary St) will require new equipment housings to be able to fit the CWT equipment.
 - j. Any new Quad Gate configuration would also require vehicle presence detection in the track area.
- 3. Permitting/Costs
 - a. MBTA/Keolis was not aware of any costs related to permitting or maintenance, but that will be verified as it was noted in the 2019 letter from MBTA to the town.
 - b. There is a cost associated with the Diagnostics Review that will be required by MBTA/Keolis, estimates for that are between \$30-\$50k
- 4. Timeframe
 - a. Estimated 1 yr Design and Design Review
 - b. Estimate 6-9 month Construction (with 12 month equipment lead time)
- 5. Design Options
 - a. Town can use their own consultant or have Keolis perform design (for a fee)
 - b. Keolis may be simpler (Since they know the system) but work would depend on their schedule of priorities
 - c. We may be able to retain some of the existing gate systems to reduce costs, but this would need to be verified by MBTA/Keolis as part of the formal design /review process.
- 6. Mini Quiet Zone Discussion
 - a. The discussion of a limited or Mini QA encompassing West St, Rosemary and/ potentially May Street was discussed.
 - b. May Street may be an issue with the longer Gate Down scenario. Carys to follow up with Police and Fire for public safety concerns.
- 7. Great Plain Ave Reconstruction
 - a. If any equipment needed to be replaced as part of the Streetscape redesign, if it's replaced in kind (i.e. 2 gate system) upgrading to Constant Warning Time and Power Out is not required.

These minutes constitute our understanding of the discussions and conclusions reached. Please advise us within ten (10) days, in writing, of any exceptions or corrections.

Respectfully submitted,

John W. Diaz
Vice President/Director of Innovation

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FRA Crossing Inventory Forms

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 01 / 05 / 2024	B. Reporting Agency ☐ Railroad ☐ Transit ☒ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction ☐ Change in Primary Operating RR	D. DOT Crossing Inventory Number 546869S
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority [MBTA]		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number West Street 100 (Street/Road Name) * (Block Number)		6. Highway Type & No. LS	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None Commuter Rail		10. Railroad Subdivision or District ☐ None South Side		11. Branch or Line Name ☐ None Needham Branch	
12. RR Milepost BN 0013.587 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 427 map 3		14. Nearest RR Timetable Station * CP Heights		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☒ Public ☐ Private		18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.		19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	
20. Public Access (if Private Crossing) ☐ Yes ☒ No		21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other		22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34	
23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.2931877		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -071.2360616	
29. Lat/Long Source ☒ Actual ☐ Estimated					
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 20 3.B. Typical Speed Range Over Crossing (mph) From 5 to 20		
4. Type and Count of Tracks Main 1 Siding 0 Yard 1 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☐ Constant Warning Time ☐ Motion Detection ☒ AFO ☐ PTC ☐ DC ☐ Other ☐ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☐ Yes ☒ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 01/05/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 546869S	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 2		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) ☒ None ☐ W10-1 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12	
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count _____) ☒ No		2.F. Pavement Markings ☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No		2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No			
2.J. Other MUTCD Signs Specify Type _____ Count _____ Specify Type R8-8 Count 1 Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☐ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway 2 Pedestrian 3		3.B. Gate Configuration ☒ 2 Quad ☐ Full (Barrier) ☐ 3 Quad Resistance ☐ 4 Quad Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	
3.D. Mast Mounted Flashing Lights (count of masts) 4 ☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included		3.E. Total Count of Flashing Light Pairs 7			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
3.I. Bells (count) 1		3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☒ Floodlighting ☒ None			
3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____		4.A. Does nearby Hwy Intersection have Traffic Signals? ☒ Yes ☐ No			
4.B. Hwy Traffic Signal Interconnection ☒ Not Interconnected ☒ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☒ Simultaneous ☐ Advance		5. Highway Traffic Pre-Signals ☒ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____	
6. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☒ Yes - Vehicle Presence Detection ☒ None					
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes 2 ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No		3. Does Track Run Down a Street? ☐ Yes ☒ No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☒ Yes ☐ No					
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * 30 Length * 60 ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____					
6. Intersecting Roadway within 500 feet? ☒ Yes ☐ No If Yes, Approximate Distance (feet) 50		7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☒ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal AID		2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☒ No	
4. Highway Speed Limit 30 _____ MPH ☐ Posted ☒ Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *		7. Annual Average Daily Traffic (AADT) Year 2019 AADT 8570			
8. Estimated Percent Trucks 00 _____ %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day _____		10. Emergency Services Route ☐ Yes ☐ No	
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____ Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 01 / 05 / 2024	B. Reporting Agency ☐ Railroad ☐ Transit ☒ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction	D. DOT Crossing Inventory Number 546871T
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority [MBTA]		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number May Street 100 (Street/Road Name) * (Block Number)		6. Highway Type & No. LS	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None ☐ Commuter Rail		10. Railroad Subdivision or District ☐ None ☐ South Side		11. Branch or Line Name ☐ None ☐ Needham Branch	
12. RR Milepost BN 0012.867 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 427 map 3		14. Nearest RR Timetable Station * Needham Center		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☒ Public ☐ Private	18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	20. Public Access (if Private Crossing) ☐ Yes ☒ No	21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34
23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A	27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.2828224		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -071.2371833		29. Lat/Long Source ☒ Actual ☐ Estimated
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 20 3.B. Typical Speed Range Over Crossing (mph) From 5 to 20		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☐ Constant Warning Time ☐ Motion Detection ☒ AFO ☐ PTC ☐ DC ☐ Other ☐ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☒ Yes ☐ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 01/05/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 5468711	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 2		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) ☒ None ☐ W10-1 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12	
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count _____) ☒ No		2.F. Pavement Markings ☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No		2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No			
2.J. Other MUTCD Signs Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☐ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway <u>2</u> Pedestrian <u>4</u>		3.B. Gate Configuration ☒ 2 Quad ☐ Full (Barrier) ☐ 3 Quad Resistance ☐ 4 Quad Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane <u>0</u> ☐ Incandescent Not Over Traffic Lane <u>0</u> ☐ LED	
3.D. Mast Mounted Flashing Lights (count of masts) <u>4</u> ☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included		3.E. Total Count of Flashing Light Pairs 5			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) _____/_____/_____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/_____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
3.I. Bells (count) 2		3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None			
3.K. Other Flashing Lights or Warning Devices Count <u>0</u> Specify type _____					
4.A. Does nearby Hwy Intersection have Traffic Signals? ☒ Yes ☐ No		4.B. Hwy Traffic Signal Interconnection ☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☐ Simultaneous ☐ Advance	
5. Highway Traffic Pre-Signals ☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____		6. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None			
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes <u>2</u> ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No		3. Does Track Run Down a Street? ☐ Yes ☒ No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☒ Yes ☐ No		5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/_____ ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____			
6. Intersecting Roadway within 500 feet? ☒ Yes ☐ No If Yes, Approximate Distance (feet) <u>150</u>		7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☒ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal AID		2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☒ No	
4. Highway Speed Limit 30 _____ MPH ☐ Posted ☒ Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *					
7. Annual Average Daily Traffic (AADT) Year <u>2019</u> AADT <u>4948</u>		8. Estimated Percent Trucks <u>06</u> %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day _____	
10. Emergency Services Route ☐ Yes ☐ No					
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 01 / 05 / 2024	B. Reporting Agency ☐ Railroad ☐ Transit ☒ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction	D. DOT Crossing Inventory Number 546870L
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority [MBTA]		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number Rosemary St 1100 (Street/Road Name) * (Block Number)		6. Highway Type & No. Local	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None Commuter Rail		10. Railroad Subdivision or District ☐ None South Side		11. Branch or Line Name ☐ None Needham Branch	
12. RR Milepost BN 0013.200 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 427 map 3		14. Nearest RR Timetable Station * Needham Heights		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☒ Public ☐ Private		18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.		19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	
20. Public Access (if Private Crossing) ☐ Yes ☒ No		21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other		22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34	
23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☒ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.2875083		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -071.2362198	
29. Lat/Long Source ☒ Actual ☐ Estimated					
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 20 3.B. Typical Speed Range Over Crossing (mph) From 5 to 20		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☒ Constant Warning Time ☐ Motion Detection ☒ AFO ☐ PTC ☐ DC ☐ Other ☐ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☐ Yes ☒ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 01/05/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 546870L	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 2		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) ☒ None ☐ W10-1 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12	
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count _____) ☒ No		2.F. Pavement Markings ☒ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No		2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No			
2.J. Other MUTCD Signs Specify Type <u>R8-8</u> Count <u>1</u> Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☐ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway <u>2</u> Pedestrian <u>4</u>		3.B. Gate Configuration ☒ 2 Quad ☐ Full (Barrier) ☐ 3 Quad Resistance ☐ 4 Quad Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane <u>0</u> ☐ Incandescent Not Over Traffic Lane <u>0</u> ☐ LED	
3.D. Mast Mounted Flashing Lights (count of masts) <u>4</u> ☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included		3.E. Total Count of Flashing Light Pairs 6			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
3.I. Bells (count) 1		3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None			
3.K. Other Flashing Lights or Warning Devices Count <u>0</u> Specify type _____					
4.A. Does nearby Hwy Intersection have Traffic Signals? ☐ Yes ☒ No		4.B. Hwy Traffic Signal Interconnection ☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☐ Simultaneous ☐ Advance	
5. Highway Traffic Pre-Signals ☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____		6. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None			
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes <u>2</u> ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No		3. Does Track Run Down a Street? ☐ Yes ☒ No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☒ Yes ☐ No		5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * <u>20</u> Length * <u>50</u> ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____			
6. Intersecting Roadway within 500 feet? ☐ Yes ☒ No If Yes, Approximate Distance (feet) _____		7. Smallest Crossing Angle ☐ 0° - 29° ☒ 30° - 59° ☐ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal AID		2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☒ No	
4. Highway Speed Limit <u>30</u> MPH ☐ Posted ☒ Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *					
7. Annual Average Daily Traffic (AADT) Year <u>2019</u> AADT <u>4511</u>		8. Estimated Percent Trucks <u>06</u> %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day _____	
10. Emergency Services Route ☐ Yes ☐ No					
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____ Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 01 / 05 / 2024	B. Reporting Agency ☐ Railroad ☐ Transit ☒ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction	D. DOT Crossing Inventory Number 546872A
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority (MBTA)		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number Great Plains Avenue 1000 (Street/Road Name) * (Block Number)		6. Highway Type & No. MA 135	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None Commuter Rail		10. Railroad Subdivision or District ☐ None South Side		11. Branch or Line Name ☐ None Needham Branch	
12. RR Milepost BN 0012.691 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 427 28 map 4		14. Nearest RR Timetable Station * Needham Center		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☒ Public ☐ Private		18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.		19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	
20. Public Access (if Private Crossing) ☒ Yes ☐ No		21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other		22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34	
23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☒ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.2802359		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -071.2378467	
29. Lat/Long Source ☒ Actual ☐ Estimated					
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week?
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 20 3.B. Typical Speed Range Over Crossing (mph) From 5 to 20		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☐ Constant Warning Time ☐ Motion Detection ☒ AFO ☐ PTC ☐ DC ☐ Other ☐ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☒ Yes ☐ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 01/05/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 546872A	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 2		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) ☒ None ☐ W10-1 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12	
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count _____) ☒ No		2.F. Pavement Markings ☒ Stop Lines ☒ Dynamic Envelope ☒ RR Xing Symbols ☐ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No		2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No			
2.J. Other MUTCD Signs Specify Type <u>R8-8</u> Count <u>1</u> Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☐ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway <u>2</u> Pedestrian <u>4</u>		3.B. Gate Configuration ☒ 2 Quad ☐ Full (Barrier) ☐ 3 Quad Resistance ☐ 4 Quad Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane <u>2</u> ☒ Incandescent Not Over Traffic Lane <u>0</u> ☐ LED	
3.D. Mast Mounted Flashing Lights (count of masts) <u>4</u> ☒ Incandescent ☐ LED ☒ Back Lights Included ☒ Side Lights Included		3.E. Total Count of Flashing Light Pairs 9			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
3.I. Bells (count) 2		3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None			
3.K. Other Flashing Lights or Warning Devices Count <u>0</u> Specify type _____					
4.A. Does nearby Hwy Intersection have Traffic Signals? ☒ Yes ☐ No		4.B. Hwy Traffic Signal Interconnection ☐ Not Interconnected ☒ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☒ Simultaneous ☐ Advance	
4.D. Highway Traffic Pre-Signals ☒ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____		4.E. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None			
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes <u>4</u> ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No		3. Does Track Run Down a Street? ☐ Yes ☒ No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☒ Yes ☐ No		5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * <u>24</u> Length * <u>92</u> ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____			
6. Intersecting Roadway within 500 feet? ☒ Yes ☐ No If Yes, Approximate Distance (feet) <u>65</u>		7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☒ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid		2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☒ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☒ No	
4. Highway Speed Limit <u>30</u> MPH ☐ Posted ☒ Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *					
7. Annual Average Daily Traffic (AADT) Year <u>2019</u> AADT <u>15001</u>		8. Estimated Percent Trucks <u>06</u> %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day _____	
10. Emergency Services Route ☐ Yes ☐ No					
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____ Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 01 / 05 / 2024	B. Reporting Agency ☐ Railroad ☐ Transit ☒ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction	D. DOT Crossing Inventory Number 546873G
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority [MBTA]		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number Oak Street 0 (Street/Road Name) * (Block Number)		6. Highway Type & No. LS	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None Commuter Rail		10. Railroad Subdivision or District ☐ None South Side		11. Branch or Line Name ☐ None Needham Branch	
12. RR Milepost BN 0012.460 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 427 28 map 4		14. Nearest RR Timetable Station * Needham Center		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☒ Public ☐ Private	18. Crossing Purpose ☒ Highway ☐ Pathway, Ped. ☐ Station, Ped.	19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	20. Public Access (if Private Crossing) ☐ Yes ☐ No	21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34
23. Type of Land Use ☐ Open Space ☐ Farm ☒ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☐ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A		27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.2770029		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -071.2386703	
29. Lat/Long Source ☒ Actual ☐ Estimated					
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 20 3.B. Typical Speed Range Over Crossing (mph) From 10 to 20		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☐ Constant Warning Time ☐ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other ☒ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☐ Yes ☒ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 01/05/2024		PAGE 2		D. Crossing Inventory Number (7 char.) 546873G	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No		2. Types of Passive Traffic Control Devices associated with the Crossing			
2.A. Crossbuck Assemblies (count) 2		2.B. STOP Signs (R1-1) (count) 0	2.C. YIELD Signs (R1-2) (count) 0	2.D. Advance Warning Signs (Check all that apply; include count) ☒ None ☐ W10-1 ☐ W10-3 ☐ W10-11 ☐ W10-2 ☐ W10-4 ☐ W10-12	
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count _____) ☒ No		2.F. Pavement Markings ☐ Stop Lines ☐ Dynamic Envelope ☒ RR Xing Symbols ☐ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No		2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No			
2.J. Other MUTCD Signs Specify Type <u>R8-8</u> Count <u>2</u> Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☐ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway <u>2</u> Pedestrian <u>2</u>		3.B. Gate Configuration ☒ 2 Quad ☐ Full (Barrier) Resistance ☐ 3 Quad ☐ Median Gates ☐ 4 Quad		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane <u>0</u> ☐ Incandescent Not Over Traffic Lane <u>0</u> ☐ LED	
3.D. Mast Mounted Flashing Lights (count of masts) <u>4</u> ☒ Incandescent ☐ LED ☒ Back Lights Included ☐ Side Lights Included		3.E. Total Count of Flashing Light Pairs <u>5</u>			
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) ____/____/____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
3.I. Bells (count) <u>1</u>		3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None			
3.K. Other Flashing Lights or Warning Devices Count <u>0</u> Specify type _____		3.L. Highway Traffic Pre-Signals ☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____			
4.A. Does nearby Hwy Intersection have Traffic Signals? ☐ Yes ☒ No		4.B. Hwy Traffic Signal Interconnection ☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☐ Simultaneous ☐ Advance	
4.D. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None		4.E. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None			
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes <u>2</u> ☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No		3. Does Track Run Down a Street? ☐ Yes ☒ No	
4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☒ Yes ☐ No		5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/____ Width * <u>30</u> Length * <u>50</u> ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☐ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____			
6. Intersecting Roadway within 500 feet? ☒ Yes ☐ No If Yes, Approximate Distance (feet) <u>300</u>		7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☒ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☒ (08) Non-Federal Aid		2. Functional Classification of Road at Crossing ☐ (0) Rural ☒ (1) Urban ☐ (1) Interstate ☒ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☒ No	
4. Highway Speed Limit <u>30</u> MPH ☐ Posted ☒ Statutory		5. Linear Referencing System (LRS Route ID) *			
6. LRS Milepost *		7. Annual Average Daily Traffic (AADT) Year <u>2019</u> AADT <u>3789</u>			
8. Estimated Percent Trucks <u>06</u> %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day _____		10. Emergency Services Route ☐ Yes ☐ No	
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

U. S. DOT CROSSING INVENTORY FORM

DEPARTMENT OF TRANSPORTATION

FEDERAL RAILROAD ADMINISTRATION

OMB No. 2130-0017

Instructions for the initial reporting of the following types of new or previously unreported crossings: For public highway-rail grade crossings, complete the entire inventory Form. For private highway-rail grade crossings, complete the Header, Parts I and II, and the Submission Information section. For public pathway grade crossings (including pedestrian station grade crossings), complete the Header, Parts I and II, and the Submission Information section. For Private pathway grade crossings, complete the Header, Parts I and II, and the Submission Information section. For grade-separated highway-rail or pathway crossings (including pedestrian station crossings), complete the Header, Part I, and the Submission Information section. For changes to existing data, complete the Header, Part I Items 1-3, and the Submission Information section, in addition to the updated data fields. Note: For private crossings only, Part I Item 20 and Part III Item 2.K. are required unless otherwise noted. An asterisk * denotes an optional field.

A. Revision Date (MM/DD/YYYY) 04 / 13 / 2022	B. Reporting Agency ☒ Railroad ☐ Transit ☐ State ☐ Other	C. Reason for Update (Select only one) ☒ Change in Data ☐ New Crossing ☐ Closed ☐ Re-Open ☐ Date Change Only ☐ Change in Primary Operating RR ☐ No Train Traffic ☐ Quiet Zone Update ☐ Admin. Correction	D. DOT Crossing Inventory Number 546879X
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Part I: Location and Classification Information

1. Primary Operating Railroad Massachusetts Bay Transportation Authority [MBTA]		2. State MASSACHUSETTS		3. County NORFOLK	
4. City / Municipality ☒ In ☐ Near NEEDHAM		5. Street/Road Name & Block Number Golf Course Xing (Street/Road Name) * (Block Number)		6. Highway Type & No. PRIVATE	
7. Do Other Railroads Operate a Separate Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR			8. Do Other Railroads Operate Over Your Track at Crossing? ☐ Yes ☒ No If Yes, Specify RR		
9. Railroad Division or Region ☐ None Commuter Rail		10. Railroad Subdivision or District ☐ None South Side		11. Branch or Line Name ☐ None Needham Branch	
12. RR Milepost BN 0011.140 (prefix) (nnnn.nnn) (suffix)					
13. Line Segment * VS 426 Map 4		14. Nearest RR Timetable Station * Hersey		15. Parent RR (if applicable) ☒ N/A	
16. Crossing Owner (if applicable) ☒ N/A					
17. Crossing Type ☐ Public ☒ Private	18. Crossing Purpose ☐ Highway ☒ Pathway, Ped. ☐ Station, Ped.	19. Crossing Position ☒ At Grade ☐ RR Under ☐ RR Over	20. Public Access (if Private Crossing) ☒ Yes ☐ No	21. Type of Train ☐ Freight ☐ Intercity Passenger ☒ Commuter ☐ Transit ☐ Shared Use Transit ☐ Tourist/Other	22. Average Passenger Train Count Per Day ☐ Less Than One Per Day ☒ Number Per Day 34
23. Type of Land Use ☐ Open Space ☐ Farm ☐ Residential ☐ Commercial ☐ Industrial ☐ Institutional ☒ Recreational ☐ RR Yard					
24. Is there an Adjacent Crossing with a Separate Number? ☐ Yes ☒ No If Yes, Provide Crossing Number			25. Quiet Zone (FRA provided) ☒ No ☐ 24 Hr ☐ Partial ☐ Chicago Excused Date Established		
26. HSR Corridor ID ☒ N/A	27. Latitude in decimal degrees (WGS84 std: nn.nnnnnnn) 42.27525656195		28. Longitude in decimal degrees (WGS84 std: -nnn.nnnnnnn) -71.2187121162083		29. Lat/Long Source ☒ Actual ☐ Estimated
30.A. Railroad Use *			31.A. State Use *		
30.B. Railroad Use *			31.B. State Use *		
30.C. Railroad Use *			31.C. State Use *		
30.D. Railroad Use *			31.D. State Use *		
32.A. Narrative (Railroad Use) *			32.B. Narrative (State Use) *		
33. Emergency Notification Telephone No. (posted) 800-522-8236		34. Railroad Contact (Telephone No.) 617-222-8240		35. State Contact (Telephone No.) 617-305-3763	

Part II: Railroad Information

1. Estimated Number of Daily Train Movements				
1.A. Total Day Thru Trains (6 AM to 6 PM) 25	1.B. Total Night Thru Trains (6 PM to 6 AM) 9	1.C. Total Switching Trains 0	1.D. Total Transit Trains 0	1.E. Check if Less Than One Movement Per Day ☐ How many trains per week? _____
2. Year of Train Count Data (YYYY) 2022		3. Speed of Train at Crossing 3.A. Maximum Timetable Speed (mph) 50 3.B. Typical Speed Range Over Crossing (mph) From 20 to 50		
4. Type and Count of Tracks Main 1 Siding 0 Yard 0 Transit 0 Industry 0				
5. Train Detection (Main Track only) ☒ Constant Warning Time ☒ Motion Detection ☐ AFO ☐ PTC ☐ DC ☐ Other ☐ None				
6. Is Track Signaled? ☒ Yes ☐ No		7.A. Event Recorder ☐ Yes ☒ No		7.B. Remote Health Monitoring ☐ Yes ☒ No

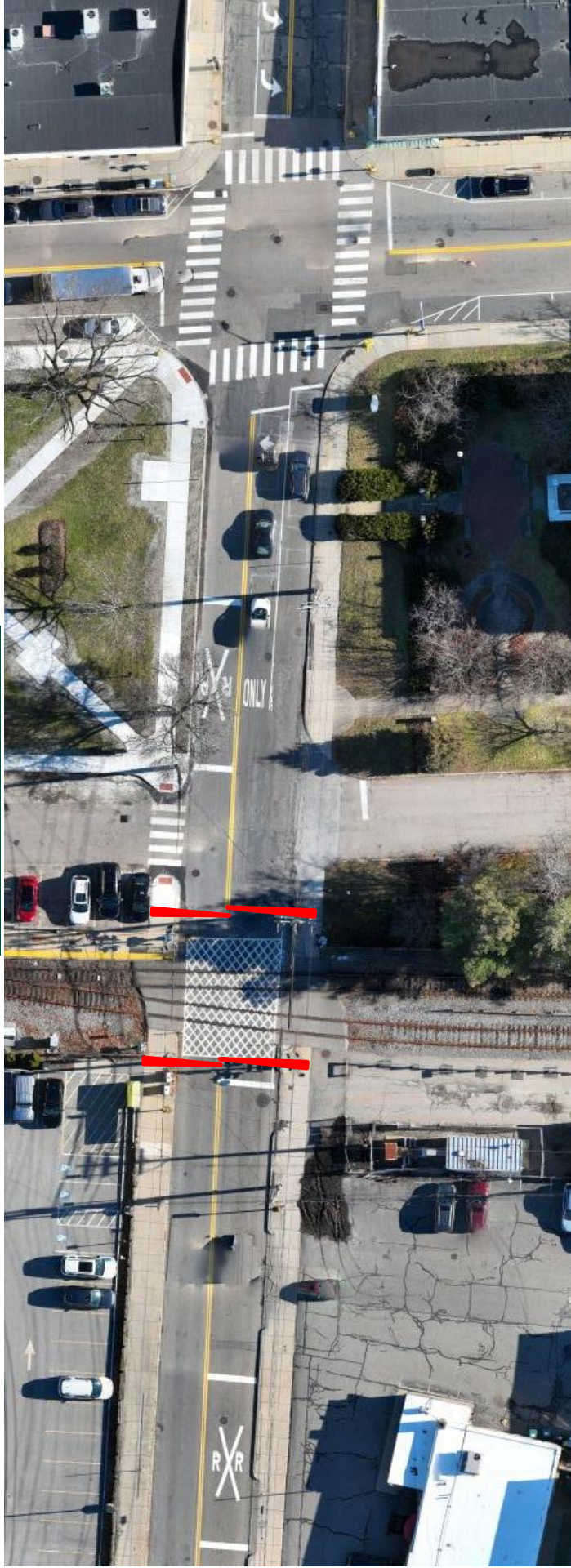
U. S. DOT CROSSING INVENTORY FORM

A. Revision Date (MM/DD/YYYY) 04/13/2022		PAGE 2		D. Crossing Inventory Number (7 char.) 546879X	
Part III: Highway or Pathway Traffic Control Device Information					
1. Are there Signs or Signals? ☒ Yes ☐ No					
2. Types of Passive Traffic Control Devices associated with the Crossing					
2.A. Crossbuck Assemblies (count) 0 2		2.B. STOP Signs (R1-1) (count) 0		2.C. YIELD Signs (R1-2) (count)	
2.D. Advance Warning Signs (Check all that apply; include count) ☒ None					
☐ W10-1 ☐ W10-3 ☐ W10-11		☐ W10-2 ☐ W10-4 ☐ W10-12			
2.E. Low Ground Clearance Sign (W10-5) ☐ Yes (count) ☒ No		2.F. Pavement Markings ☐ Stop Lines ☐ Dynamic Envelope ☐ RR Xing Symbols ☒ None		2.G. Channelization Devices/Medians ☐ All Approaches ☐ Median ☐ One Approach ☒ None	
				2.H. EXEMPT Sign (R15-3) ☐ Yes ☒ No	
				2.I. ENS Sign (I-13) Displayed ☒ Yes ☐ No	
2.J. Other MUTCD Signs Specify Type _____ Count _____ Specify Type _____ Count _____ Specify Type _____ Count _____		2.K. Private Crossing Signs (if private) ☐ Yes ☒ No		2.L. LED Enhanced Signs (List types)	
3. Types of Train Activated Warning Devices at the Grade Crossing (specify count of each device for all that apply)					
3.A. Gate Arms (count) Roadway 0 Pedestrian _____		3.B. Gate Configuration ☐ 2 Quad ☐ Full (Barrier) Resistance ☐ 3 Quad ☐ Median Gates		3.C. Cantilevered (or Bridged) Flashing Light Structures (count) Over Traffic Lane 0 ☐ Incandescent Not Over Traffic Lane 0 ☐ LED	
				3.D. Mast Mounted Flashing Lights (count of masts) 2 ☒ Incandescent ☐ LED ☐ Back Lights Included ☐ Side Lights Included	
				3.E. Total Count of Flashing Light Pairs 2	
3.F. Installation Date of Current Active Warning Devices: (MM/YYYY) _____/_____/_____ ☒ Not Required		3.G. Wayside Horn ☐ Yes Installed on (MM/YYYY) ____/____/_____ ☒ No		3.H. Highway Traffic Signals Controlling Crossing ☐ Yes ☒ No	
				3.I. Bells (count) 1	
3.J. Non-Train Active Warning ☐ Flagging/Flagman ☐ Manually Operated Signals ☐ Watchman ☐ Floodlighting ☒ None				3.K. Other Flashing Lights or Warning Devices Count 0 Specify type _____	
4.A. Does nearby Hwy Intersection have Traffic Signals? ☐ Yes ☒ No		4.B. Hwy Traffic Signal Interconnection ☒ Not Interconnected ☐ For Traffic Signals ☐ For Warning Signs		4.C. Hwy Traffic Signal Preemption ☐ Simultaneous ☐ Advance	
				5. Highway Traffic Pre-Signals ☐ Yes ☐ No Storage Distance * _____ Stop Line Distance * _____	
				6. Highway Monitoring Devices (Check all that apply) ☐ Yes - Photo/Video Recording ☐ Yes - Vehicle Presence Detection ☒ None	
Part IV: Physical Characteristics					
1. Traffic Lanes Crossing Railroad Number of Lanes 1		☐ One-way Traffic ☒ Two-way Traffic ☐ Divided Traffic		2. Is Roadway/Pathway Paved? ☒ Yes ☐ No	
				3. Does Track Run Down a Street? ☐ Yes ☒ No	
				4. Is Crossing Illuminated? (Street lights within approx. 50 feet from nearest rail) ☐ Yes ☒ No	
5. Crossing Surface (on Main Track, multiple types allowed) Installation Date * (MM/YYYY) ____/____/_____ ☐ 1 Timber ☒ 2 Asphalt ☐ 3 Asphalt and Timber ☐ 4 Concrete ☐ 5 Concrete and Rubber ☒ 6 Rubber ☐ 7 Metal ☐ 8 Unconsolidated ☐ 9 Composite ☐ 10 Other (specify) _____					
6. Intersecting Roadway within 500 feet? ☐ Yes ☒ No If Yes, Approximate Distance (feet) _____		7. Smallest Crossing Angle ☐ 0° - 29° ☐ 30° - 59° ☒ 60° - 90°		8. Is Commercial Power Available? * ☒ Yes ☐ No	
Part V: Public Highway Information					
1. Highway System ☐ (01) Interstate Highway System ☐ (02) Other Nat Hwy System (NHS) ☐ (03) Federal AID, Not NHS ☐ (08) Non-Federal Aid		2. Functional Classification of Road at Crossing ☐ (0) Rural ☐ (1) Urban ☐ (1) Interstate ☐ (5) Major Collector ☐ (2) Other Freeways and Expressways ☐ (3) Other Principal Arterial ☐ (6) Minor Collector ☐ (4) Minor Arterial ☐ (7) Local		3. Is Crossing on State Highway System? ☐ Yes ☐ No	
				4. Highway Speed Limit _____ MPH ☐ Posted ☐ Statutory	
				5. Linear Referencing System (LRS Route ID) *	
				6. LRS Milepost *	
7. Annual Average Daily Traffic (AADT) Year 1970 AADT _____		8. Estimated Percent Trucks _____ %		9. Regularly Used by School Buses? ☐ Yes ☒ No Average Number per Day 0	
				10. Emergency Services Route ☐ Yes ☐ No	
Submission Information - This information is used for administrative purposes and is not available on the public website.					
Submitted by _____ Organization _____ Phone _____ Date _____					
Public reporting burden for this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. According to the Paperwork Reduction Act of 1995, a federal agency may not conduct or sponsor, and a person is not required to, nor shall a person be subject to a penalty for failure to comply with, a collection of information unless it displays a currently valid OMB control number. The valid OMB control number for information collection is 2130-0017. Send comments regarding this burden estimate or any other aspect of this collection, including for reducing this burden to: Information Collection Officer, Federal Railroad Administration, 1200 New Jersey Ave. SE, MS-25 Washington, DC 20590.					

Concept Sketches

West Street

Quiet Zone with
Quad Gates



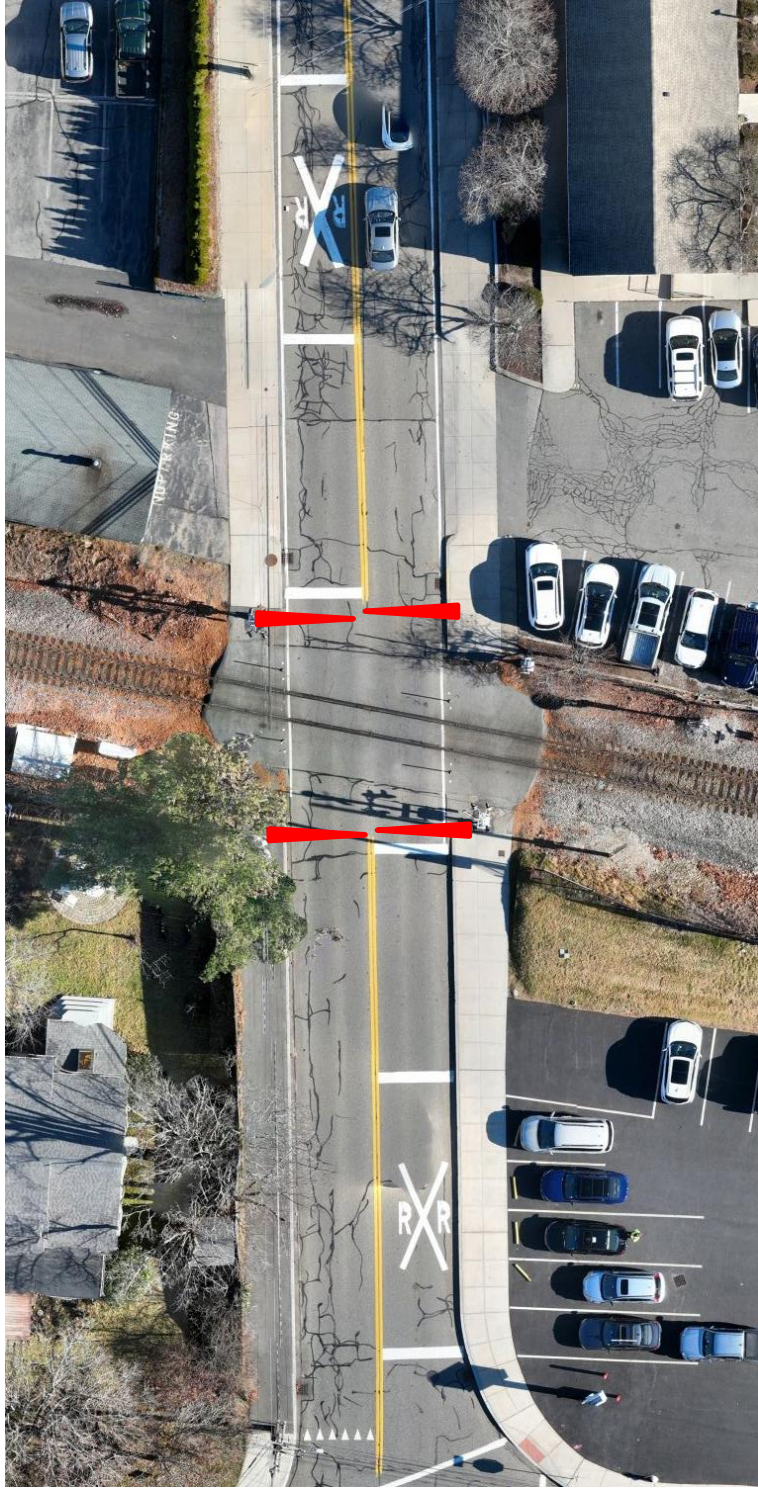
Rosemary Street

Quiet Zone with
Flexible Median Barrier

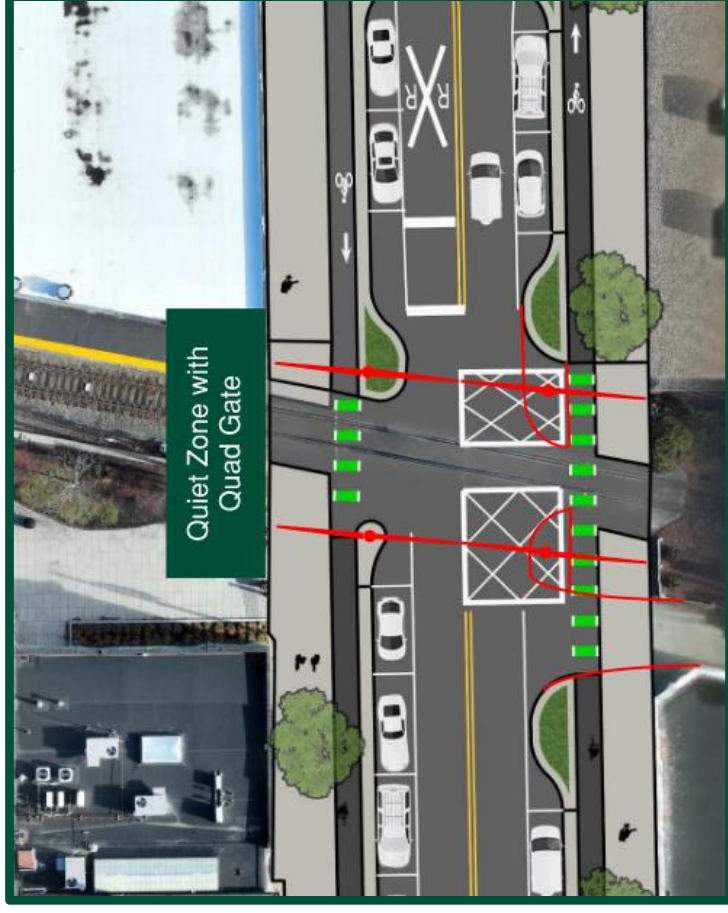


May Street

Quiet Zone with
Quad Gates



Great Plain Ave (with new Streetscape)



Oak Street

Quiet Zone with
Quad Gates

