SAFER QUIETER NEEDHAM .COM

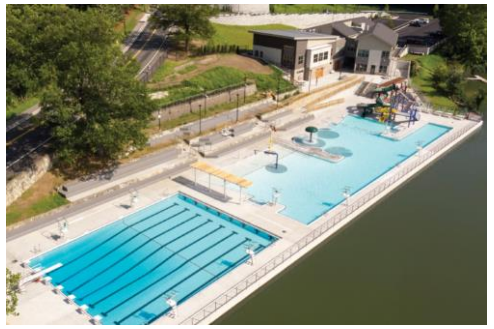
Overview Information

June 2021

We believe Needham has untapped potential to continue improving its economy and quality of life for everyone.

SAFER QUIETER NEEDHAM .COM

To realize this potential, we support continued investments that bring Needham further into the 21st century.



SAFER QUIETER NEEDHAM .COM

Safer Quieter Needham

advocates for enhanced safety measures at commuter rail level crossings that will eliminate non-emergency train horns.

SAFER QUIETER NEEDHAM .COM

The Challenge

SAFER QUIETER NEEDHAM .COM

With currently using train horns at rail crossings,

Needham's risk index is **40% higher**

than the Nationwide Significant Risk Threshold.

Source: Federal Railroad Administration Quiet Zone Calculator, May 2021

The Challenge

SAFER QUIETER NEEDHAM .COM

Federal Railway Administration regulations:

- Trains required to sound horns at all level crossings
- Duration: 15 (minimum) to 20 (maximum) seconds
- Pattern: 2 long, 1 short, 1 long
- Volume: 96-110 decibels
  - NOTE: At 90-95 dB, sustained exposure can result in hearing loss
- Current First Departure: 5:05 AM (trains arrive earlier)
- Current Last Arrival: 11:44 PM (trains leave later)

The Opportunity

SAFER QUIETER NEEDHAM .COM

By implementing various Supplemental Safety Measures ("SSM"s),

Needham's risk index will be **42% to 81% lower**

than the Nationwide Significant Risk Threshold …

Source: Federal Railroad Administration Quiet Zone Calculator, May 2021

The Benefits

SAFER QUIETER NEEDHAM .COM

… AND train horns will no longer be used

throughout Needham

(except for emergency situations).

The Benefits

SAFER QUIETER NEEDHAM .COM

The quality of life for Needham

residents, non-profits, and businesses,

particularly those near each level crossing,

will vastly improve.

The Benefits

SAFER QUIETER NEEDHAM .COM

Un- and under- utilized properties will have

expanded opportunities for private investment

resulting in

- new employment,
- greater offerings and services, and
- increased tax revenues for Needham.

The Benefits

SAFER QUIETER NEEDHAM .COM

And Needham will join the majority of other MBTA-served communities with level crossings.

Communities Served by MBTA Commuter Rail with Level Crossings			
With Quiet Zones or In Planning		**No Quiet Zones - Train Horns**	
Abington (QZ in Planning)	Lincoln	Ayer	Middleboro
Acton	Manchester	Bernardston	**NEEDHAM**
Andover	Medford	Boston	Norwood
Ashland (QZ in Planning)	Melrose	Bridgewater	Quincy
Ayer	Norfolk	Canton	Shirley
Belmont	Reading	Framingham	Stoughton
Beverly	Revere	Franklin	Walpole
Braintree	Rowley	Grafton	Whitman
Cambridge	Scituate	Halifax	Worcester
Chelsea (QZ in Planning)	Somerville	Hanson	
Cohasset	Wakefield	Haverhill	
Concord	Waltham (QZ in Planning)	Holbrook	
Gloucester	Wenham	Kingston	
Hamilton	Weston	Lawrence	
Hingham	Weymouth	Littleton	
Ipswich	Wilmington	Lowell	
TOTAL: 32 (56%)		**TOTAL: 25 (44%)**	

Sources: https://safetydata.fra.dot.gov/OfficeofSafety/publicsite/DownloadCrossingInventoryData.aspx
https://boston.cbslocal.com/2021/05/12/train-horns-waltham-massachusetts-federal-railroad-administration/

Supplemental Safety Measures

SAFER QUIETER NEEDHAM .COM

Supplemental Safety Measure (SSM)	SSM Code	Estimated Total Cost (INDEX = 1.0)	Nationwide Significant Risk Threshold	Risk Index with Horns	Quiet Zone Risk Index	Qualifies for Quiet Zone
CURRENT CONDITIONS - Two-Quadrant Gates with no medians	0	0.0	15,488	21,727	36,241	NO
Temporary Closure of a Public Highway-Rail Grade Crossing - NOT APPLICABLE	1	N/A	N/A	N/A	N/A	N/A
Permanent Closure of a Public Highway-Rail Grade Crossing - NOT APPLICABLE	2	N/A	N/A	N/A	N/A	N/A
Grade Separation of Public Highway-Rail Grade Crossing - NOT APPLICABLE	3	N/A	N/A	N/A	N/A	N/A
Four-Quadrant Gates Upgrade from Two Quadrant Gates, [with no medians and] No Vehicle Presence Detection	4	7.7	15,488	21,727	6,523	YES
Four-Quadrant Gates Upgrade from Two Quadrant Gates, with medians and no Vehicle Presence Detection	5	8.8	15,488	21,727	2,899	YES
Four-Quadrant Gates Upgrade from Two Quadrant Gates, [with no medians and] with Vehicle Presence Detection	6	9.8	15,488	21,727	8,335	YES
Four-Quadrant Gates Upgrade from Two Quadrant Gates, with medians and Vehicle Presence Detection	7	10.8	15,488	21,727	2,899	YES
Four-Quadrant Gates New Installation, [with no medians and] No Vehicle Presence Detection	8	21.5	15,488	21,727	6,523	YES
Four-Quadrant Gates New Installation with medians and no Vehicle Presence Detection	9	22.7	15,488	21,727	2,899	YES
Four-Quadrant Gates New Installation [with no medians and] with Vehicle Presence Detection	10	23.7	15,488	21,727	8,335	YES
Four-Quadrant Gates New Installation with medians and Vehicle Presence Detection	11	24.6	15,488	21,727	2,899	YES
[Two-Quadrant Gates with] Mountable medians with Reflective Traffic Channelization Devices	12	1.0	15,488	21,727	9,060	YES
[Two-Quadrant Gates with] Non-Traversable Curb Medians with or without Channelization Devices	13	1.2	15,488	21,727	7,248	YES
One-Way Streets with Gates - NOT APPLICABLE	14	N/A	N/A	N/A	N/A	N/A

Source: Federal Railroad Administration Quiet Zone Calculator, May 2021

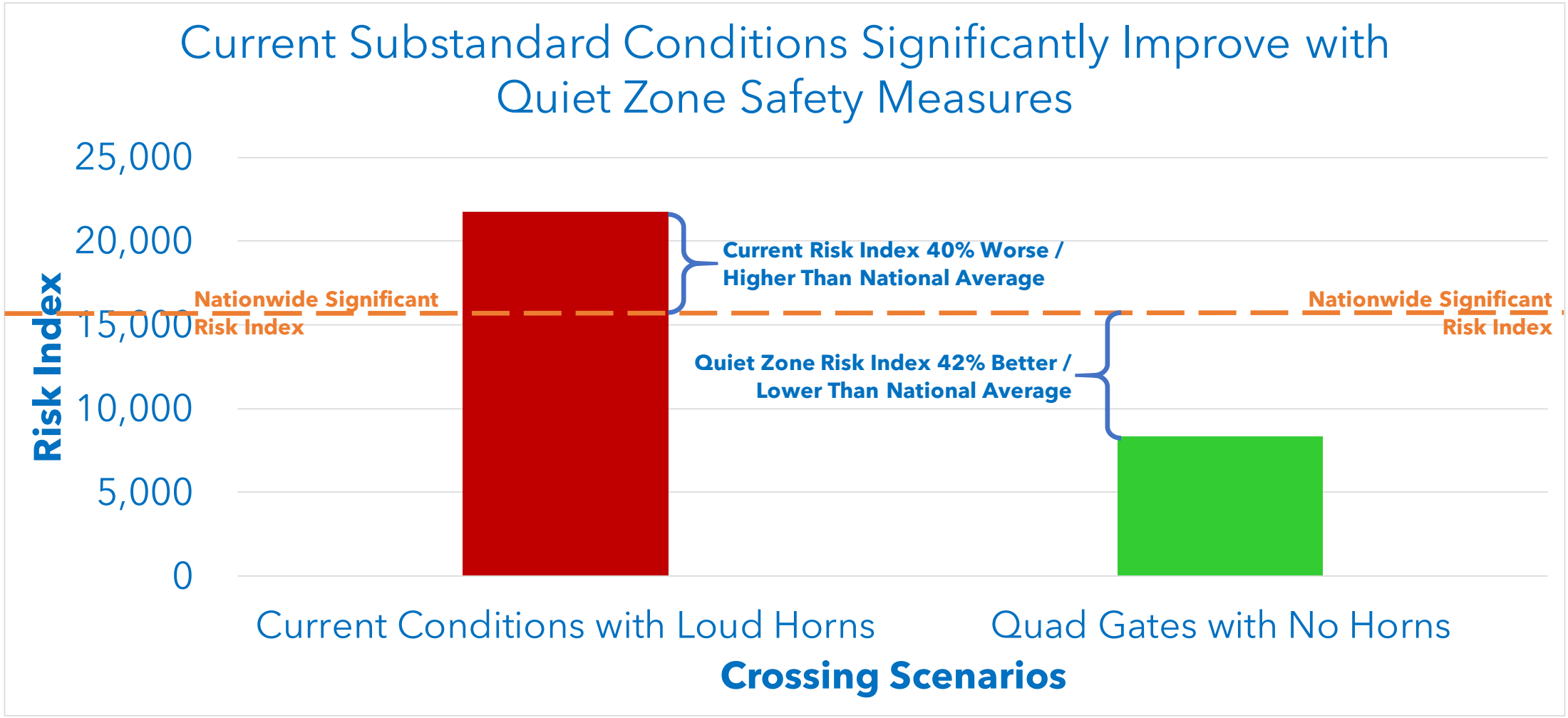
SSMs In Action

SAFER QUIETER NEEDHAM .COM

No Quiet Zone (current condition)	With Quiet Zone
Gate red lights flash	Gate red lights flash
Gate bells ring	Gate bells ring
Gates drop down	Gates drop down
Trail engine bells ring	Train engine bells ring
Train horns (96-110 dB, 15-20 secs.) 5:05 AM to 11:44 PM (actually earlier and later, respectively)	No train horn (except in emergency)

SSMs In Action

SAFER QUIETER NEEDHAM .COM



Needham's Level Crossings

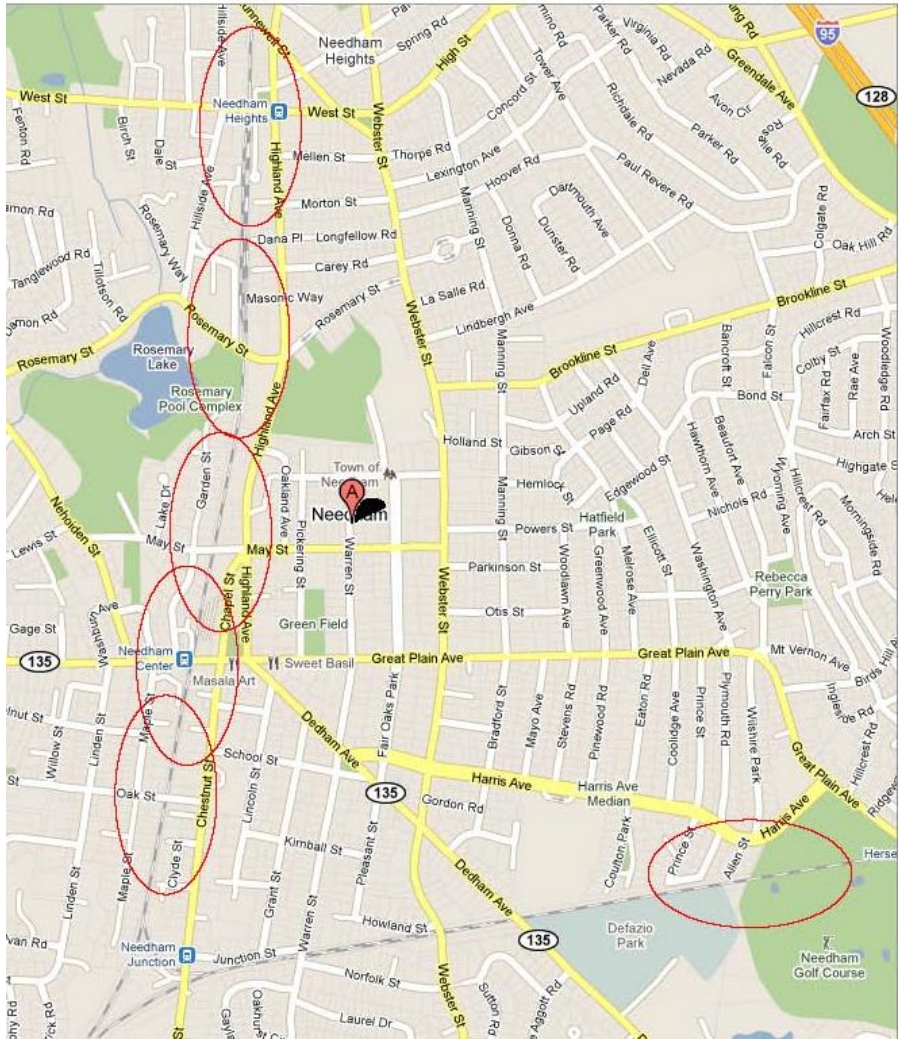
SAFER QUIETER NEEDHAM .COM

Quiet Zone Crossings

- West St
- Rosemary St
- May Street
- Great Plain Ave
- Oak St

Separate Agreement Crossing

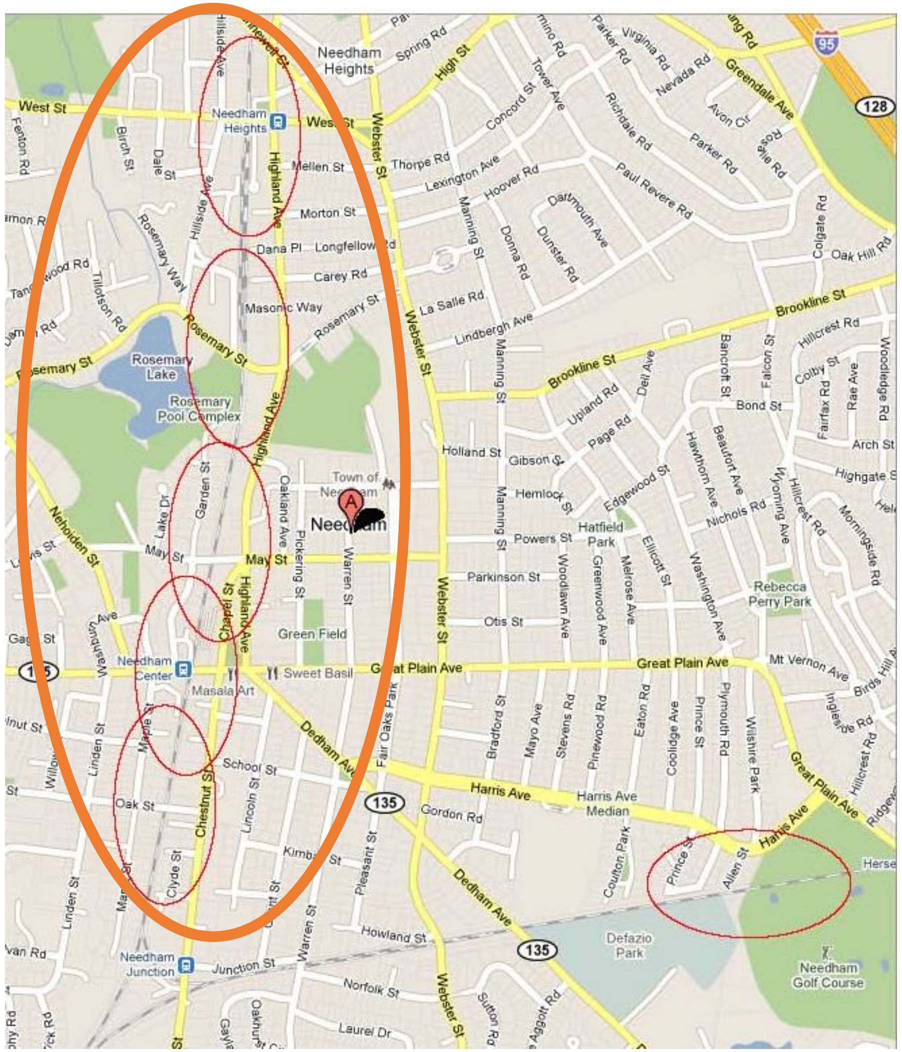
- Golf course cart crossing



SAFER QUIETER NEEDHAM .COM

Quiet Zone Crossings

- West St
- Rosemary St
- May St
- Great Plain Ave
- Oak St

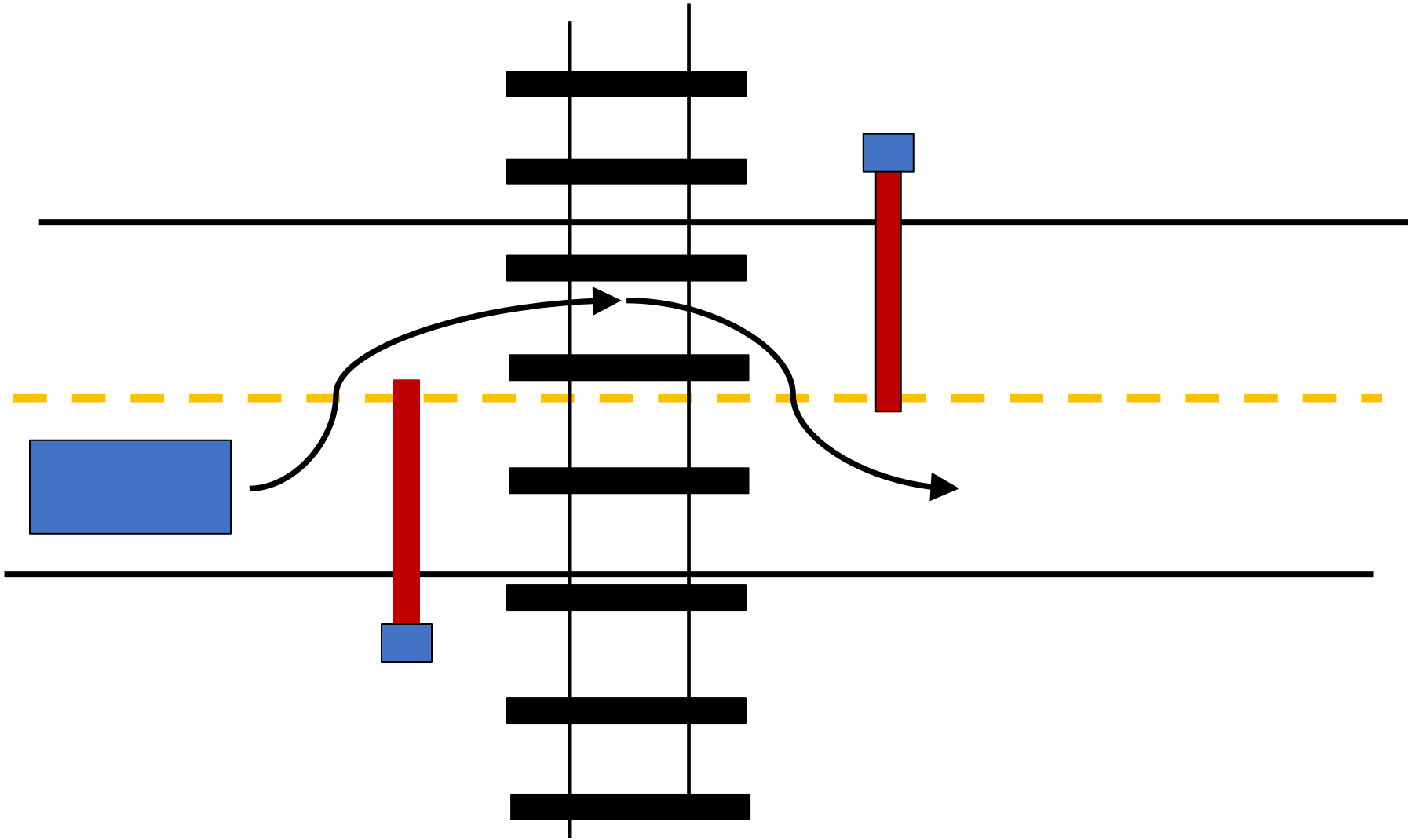


<u>OBJECTIVE</u>

- Prevent “Slaloming” Around Gates

“Slaloming” Around Gates

SAFER
QUIETER
NEEDHAM
.COM



Quiet Zone Crossings

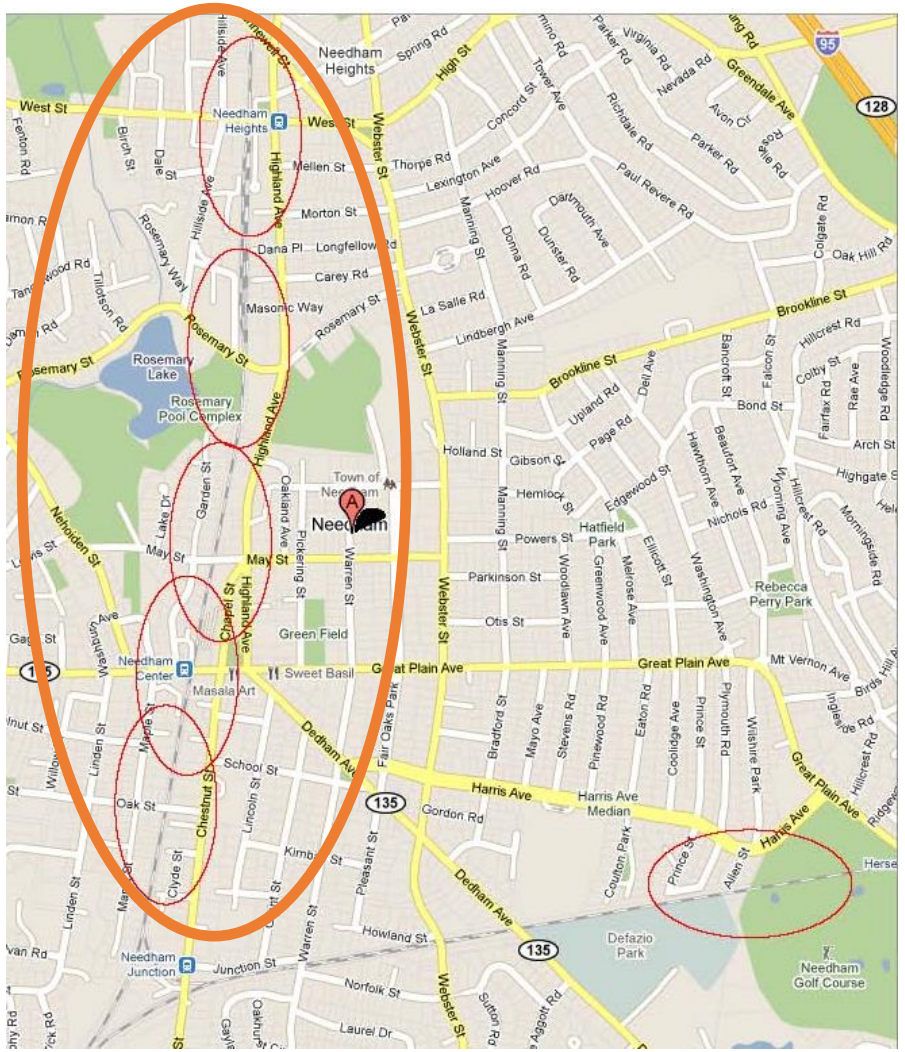
SAFER QUIETER NEEDHAM .COM

TWO ALTERNATE SOLUTIONS

- Four-Quadrant Gates

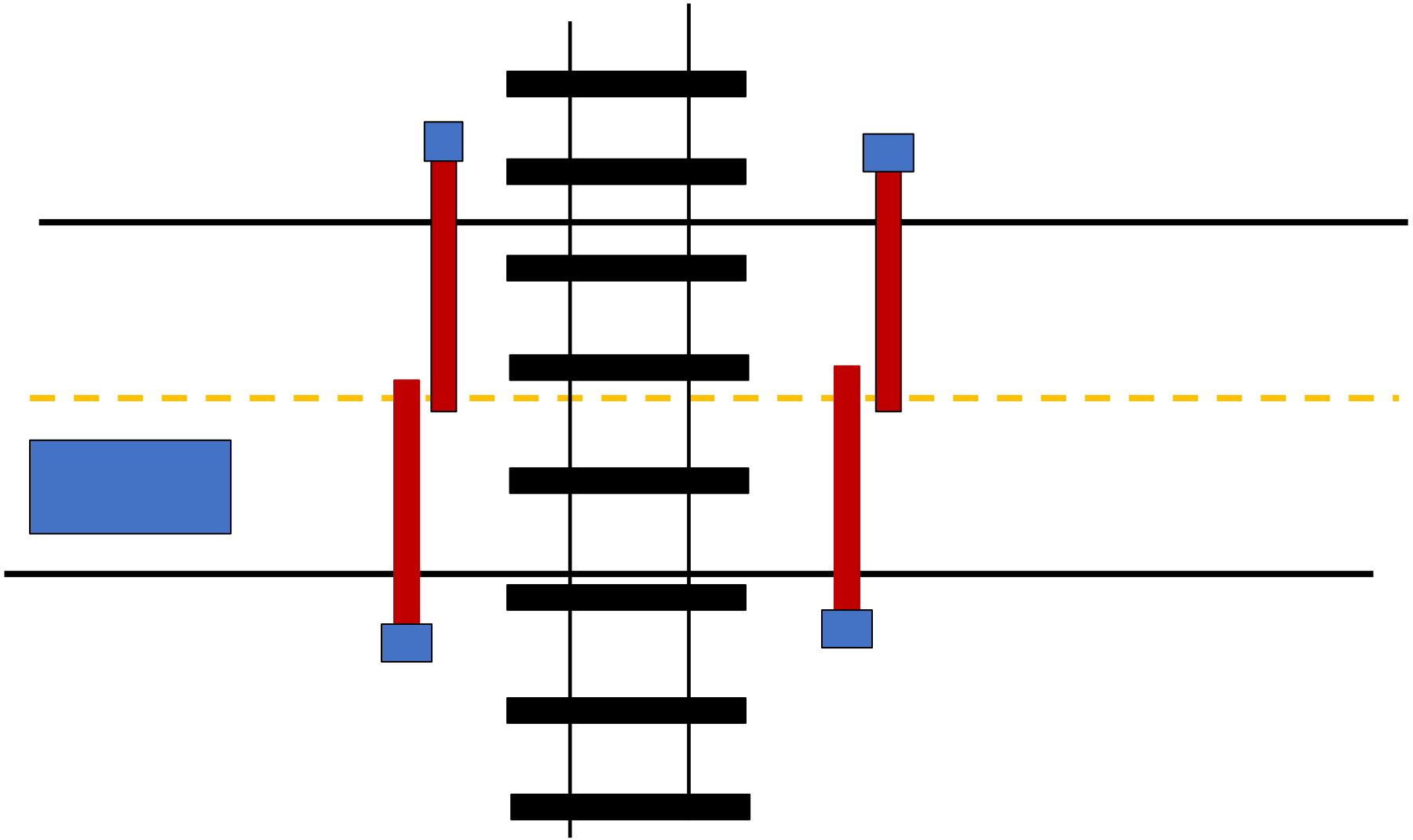
- or –

- Two-Quadrant Gates with Medians



SAFER
QUIETER
NEEDHAM
.COM

Four-Quadrant Gates



SAFER
QUIETER
NEEDHAM
.COM

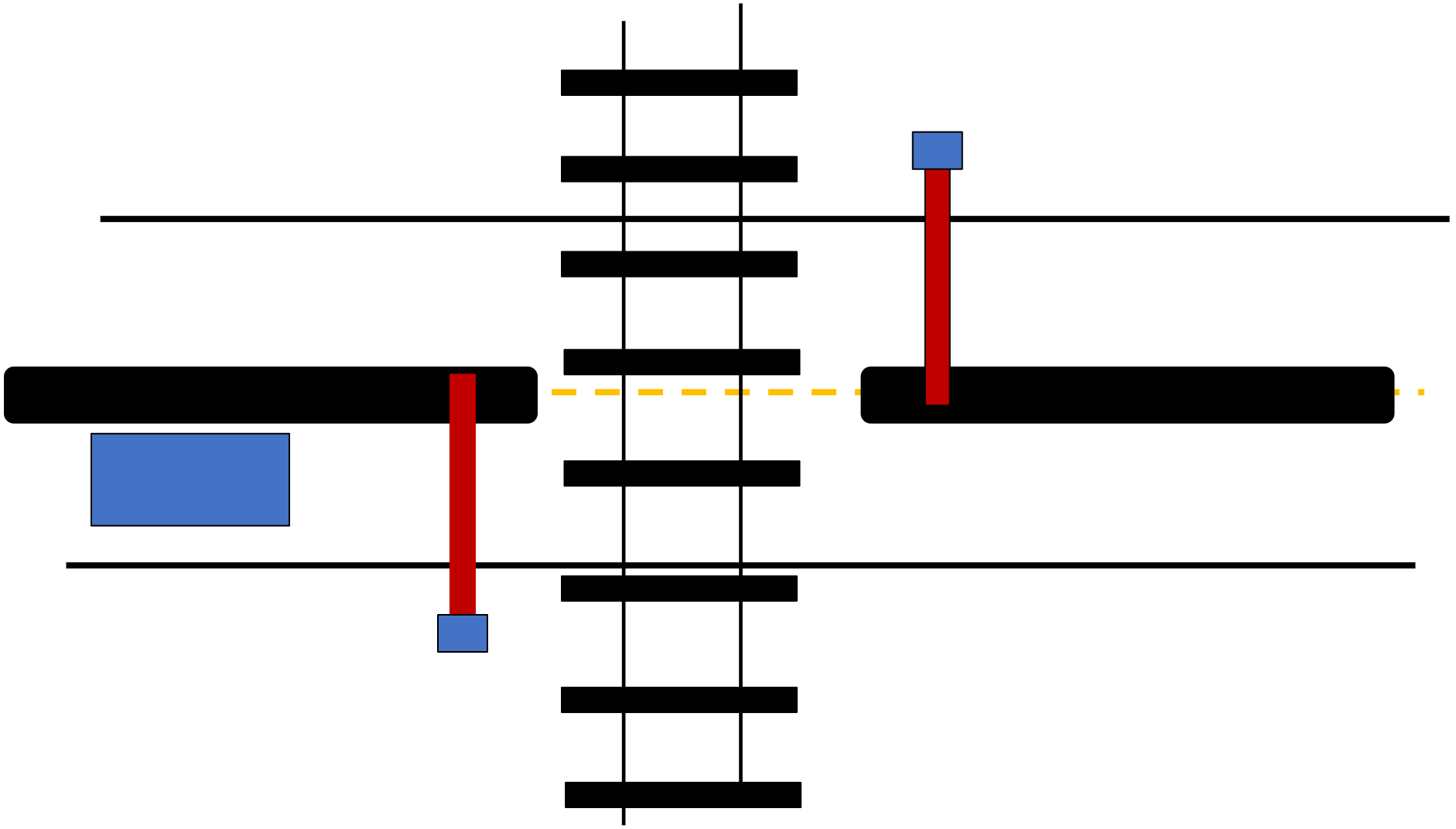
Case Study: 4-Quad Gates

SAFER
QUIETER
NEEDHAM
.COM

Case Study: 4-Quad Gates

SAFER
QUIETER
NEEDHAM
.COM

Two-Quadrant Gates w/ Medians



Case Study: Baker Ave., Concord

SAFER QUIETER NEEDHAM .COM

SAFER QUIETER NEEDHAM .COM

Case Study: Belknap St., Concord

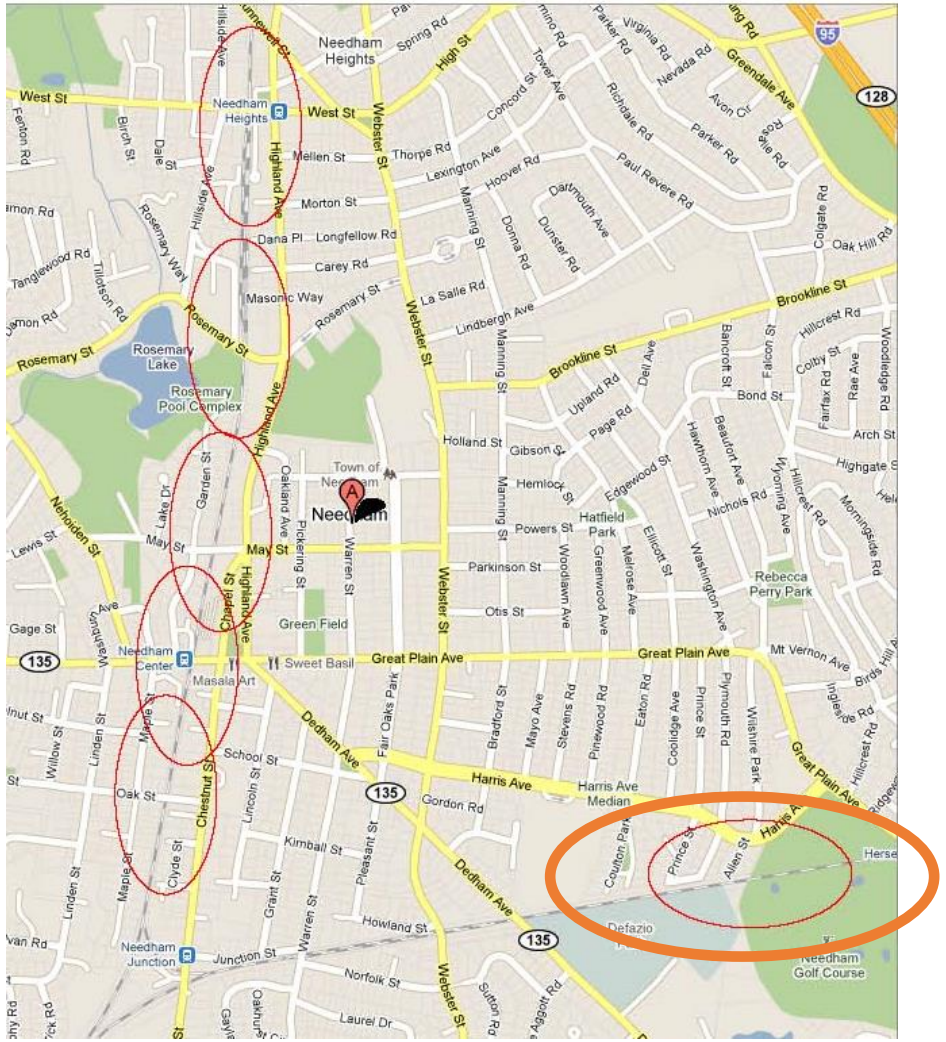
Separate Agreement Crossing

SAFER QUIETER NEEDHAM .COM

- Golf course cart crossing

OBJECTIVE

- Prevent pedestrian and cart crossings when train approaching

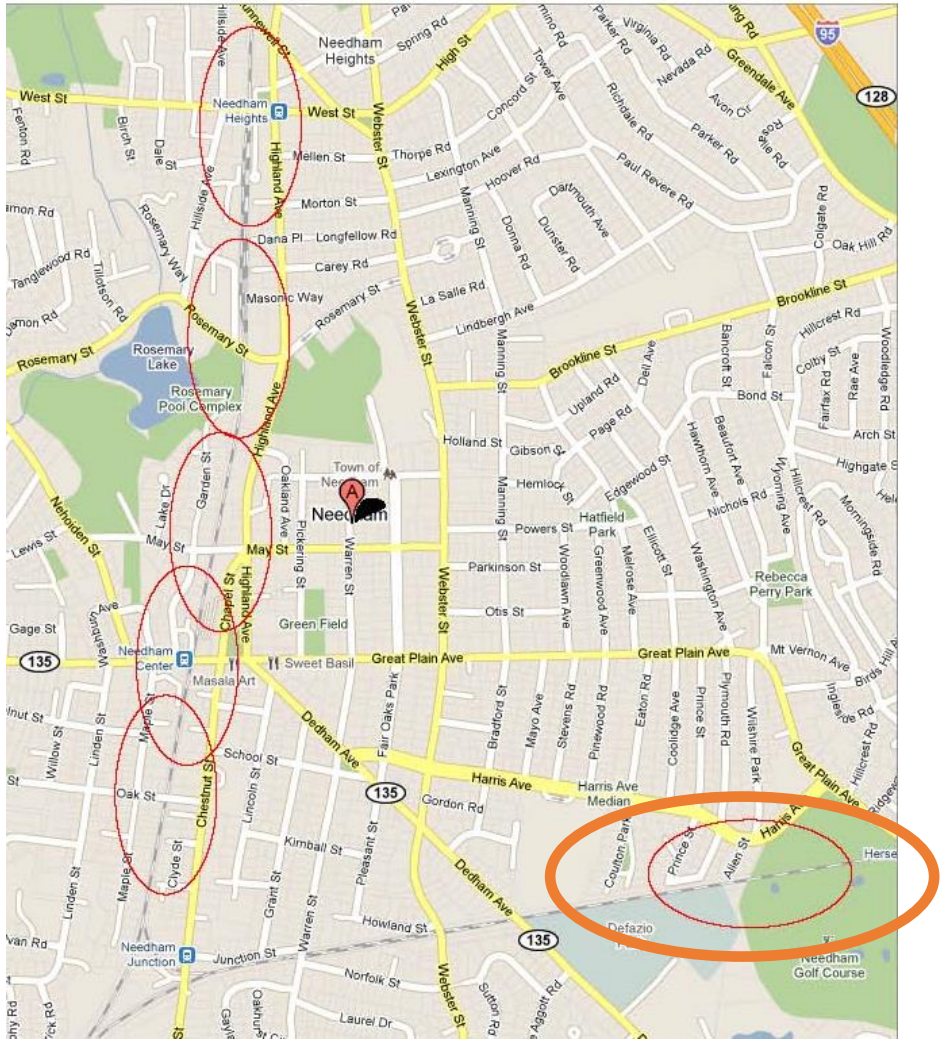


Separate Agreement Crossing

SAFER QUIETER NEEDHAM .COM

SOLUTION

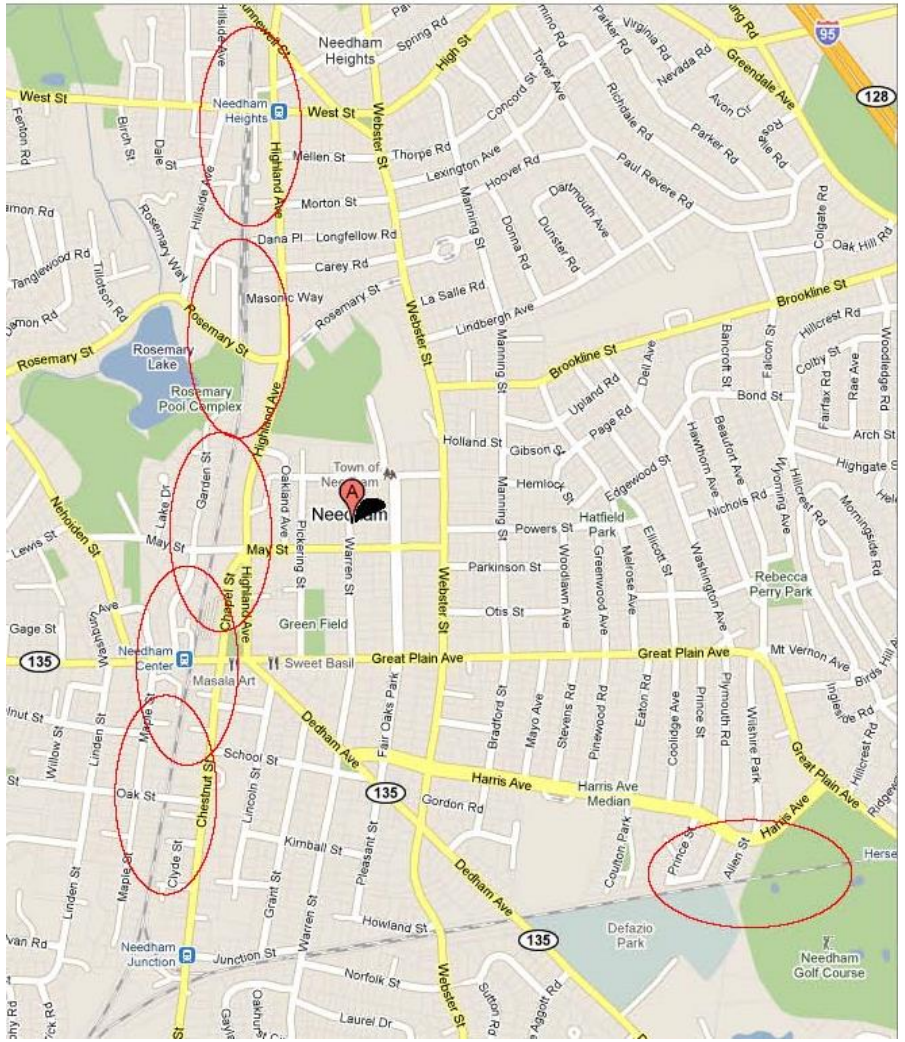
- Installation of gates
  - Potentially reclaimed from other locations
- Agreement with MBTA



Properties within 1/4 Mile

SAFER QUIETER NEEDHAM .COM

- 1,924 Tax-Paying Properties
  - Residential and Commercial
- Total Assessed Value: $1.5 billion
- Total Annual Tax Income: $20.4 million



Properties within 1/4 Mile

SAFER QUIETER NEEDHAM .COM

All Property Within 1/4-mile of Each Street Crossing + Golf Course in Needha

Class	Class	# of Properties	Total Land Value	Average Assessed Value	FY 2021 Mill Rate	FY 2021 Assessment	FY 2021 Average Annual Assessment per Property	Average Annual Incremental Assessment Required
R	Residential	1,831	642,262,200	808,145	13.03	19,280,675	10,530	211
C	Commercial	93	11,866,100	463,076	25.74	1,108,521	11,920	239
I	Industrial	0	0	0	25.74	0	0	0
E	*Exempt*	*7*	*11,466,300*	*3,984,929*	*0.00*	*0*	*0*	*0*
TOTAL (excludes E)		**1,924**	**654,128,300**	**791,466**	**13.39**	**20,389,197**	**10,597**	**212**

Potential Total Cost of Implementation Based on Chelsea's Experience	3,400,000	
Margin of Safety	680,000	20%
Total Cost of Implementation	4,080,000	
Term of Investment (years)	10	
Annual Cost of Project	408,000	
Improved Value of Property within 1/4-mile of each crossing to justify investment	**2.00%**	

Conclusion

SAFER QUIETER NEEDHAM .COM

- Maintaining commuter rail is vital to Needham's long-term future
- Our current rail crossing safety is substandard
  - 40% worse than the national average
- We can **improve safety & improve quality of life** at the same time
- A reasonable investment for tremendous economic and quality of life benefits for Needham

SAFER QUIETER NEEDHAM .COM

Thank you

Visit us at **SaferQuieterNeedham.com** to get involved!