South Lexington Transportation Study

Lexington, Massachusetts

Preliminary Findings and Options for Consideration

Businesses Meeting – 10/10/13

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Engineering and Planning
Departments

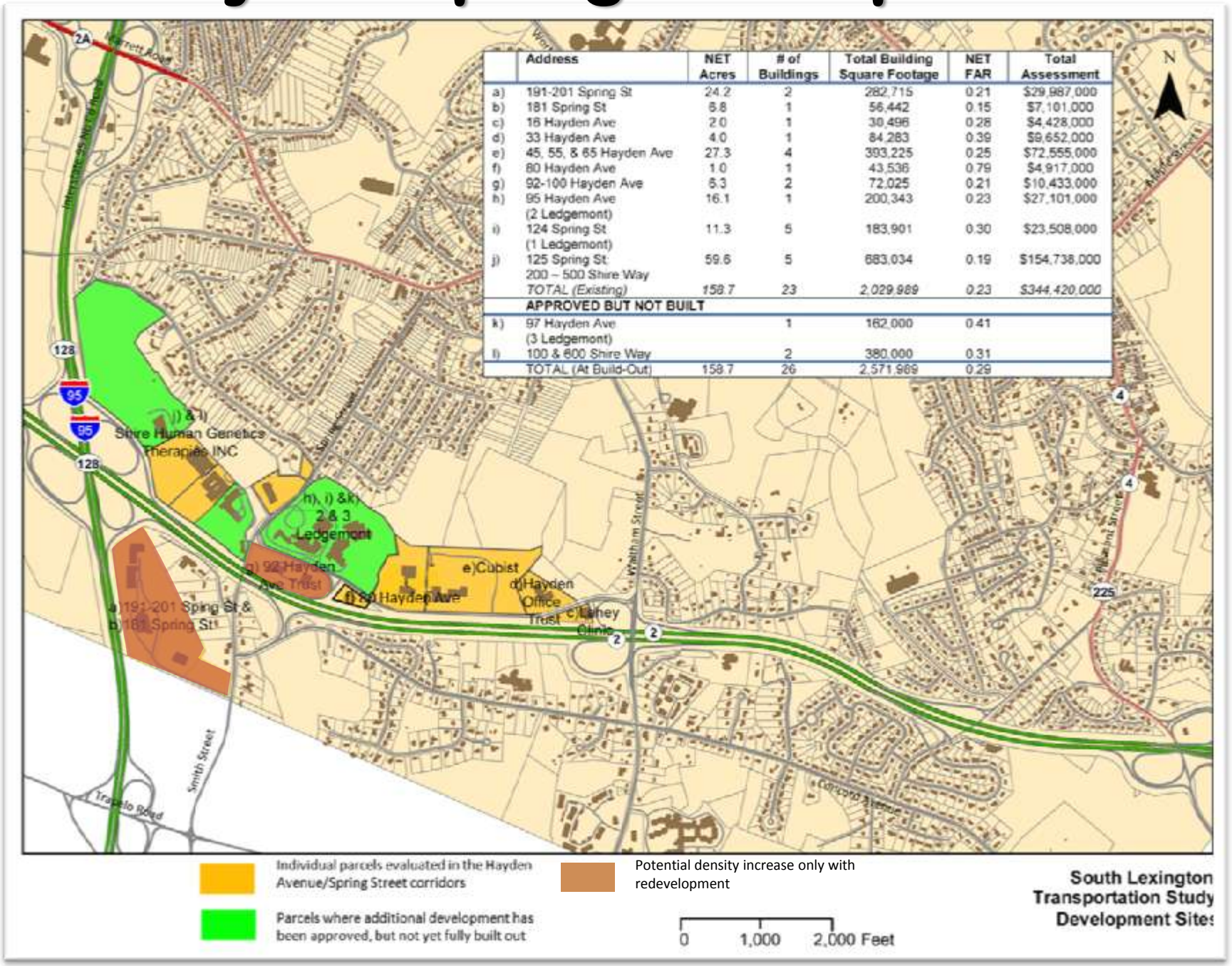
Meeting Purpose

- Study Overview
- Existing Conditions Findings
- Summary of Projection Findings
- Discussion of Options
- Receive Feedback Prior to Recommendations

Study Objectives

- Examine cumulative impacts of Hayden/Spring Developments
- Project traffic conditions out to a 10-year Horizon -- 2013 to 2023 moderate / potential for growth
- Identify multi-modal traffic issues/opportunities
- Review potential options
- Recommendations based on feedback, analysis findings, and evaluation of options

Hayden/Spring Developments



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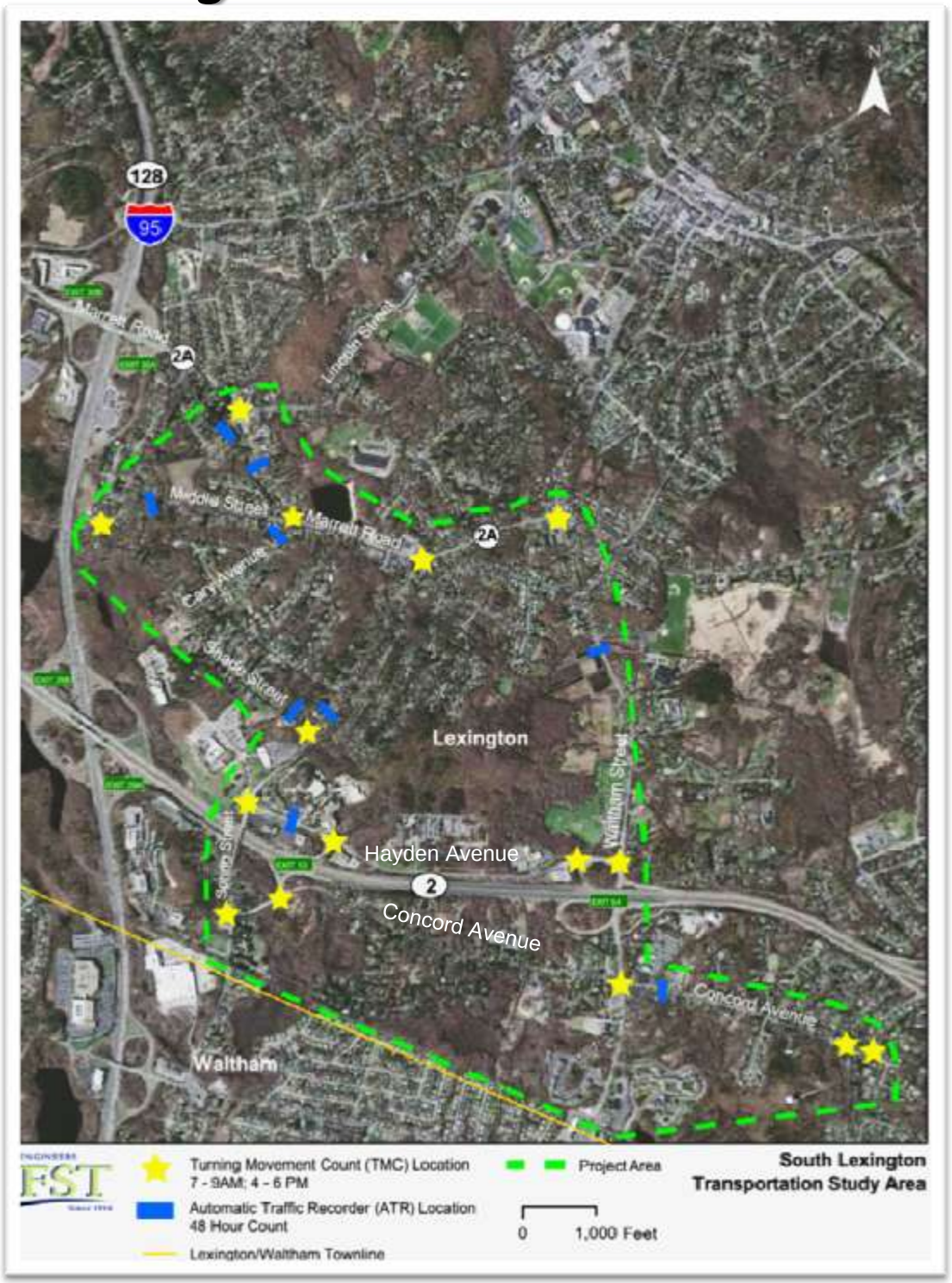
Study Area Aerial Base



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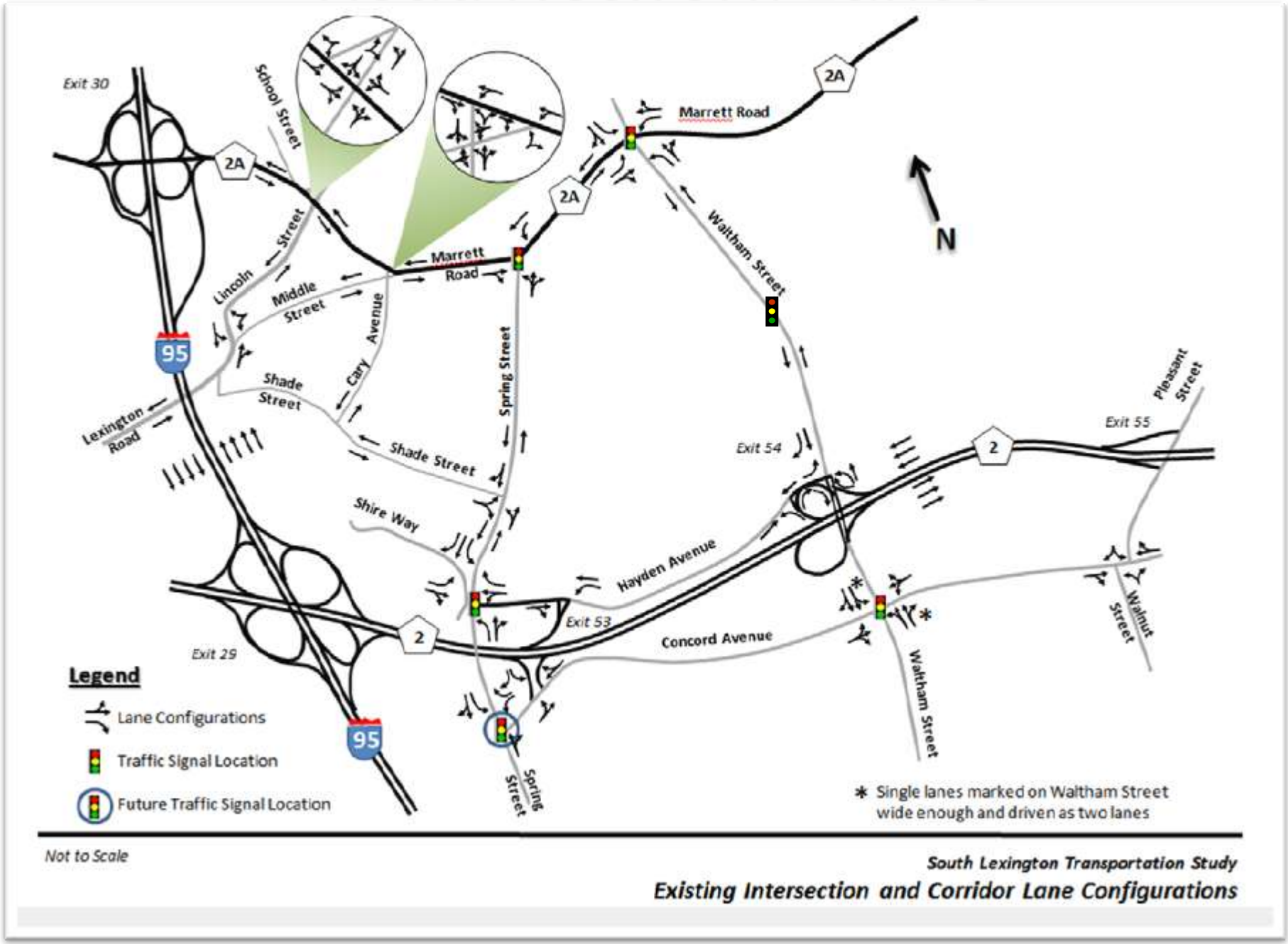
Study Area – Street base

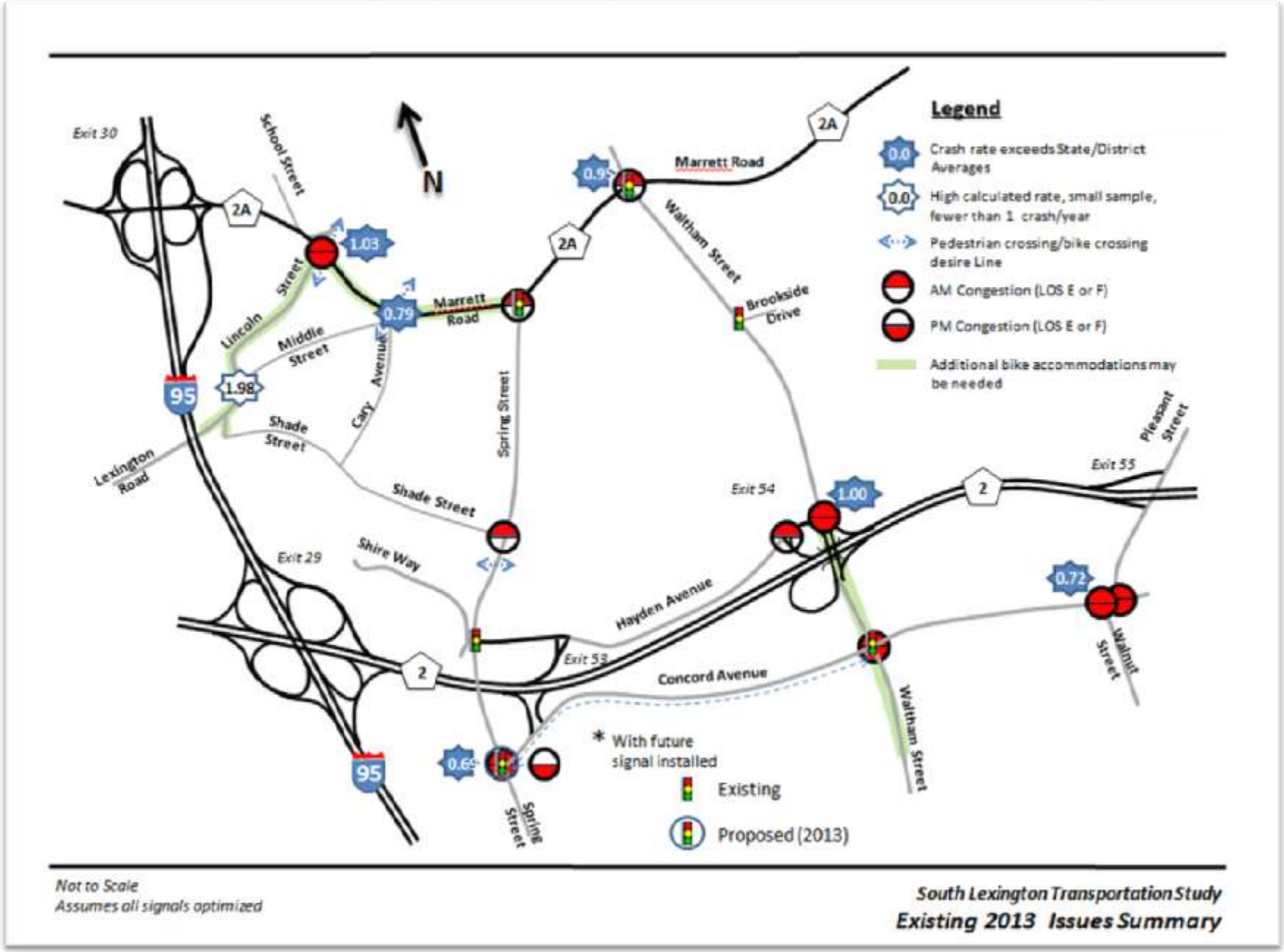
Road Network Lanes



Basis of Existing Conditions Findings

- New 2013 counts included pedestrians, bikes, cars, trucks, buses
- Analysis of historic crash rates
- Observations & local knowledge
- Discussions with and data from Lexington Engineering and Planning Departments

Existing (2013) issues findings



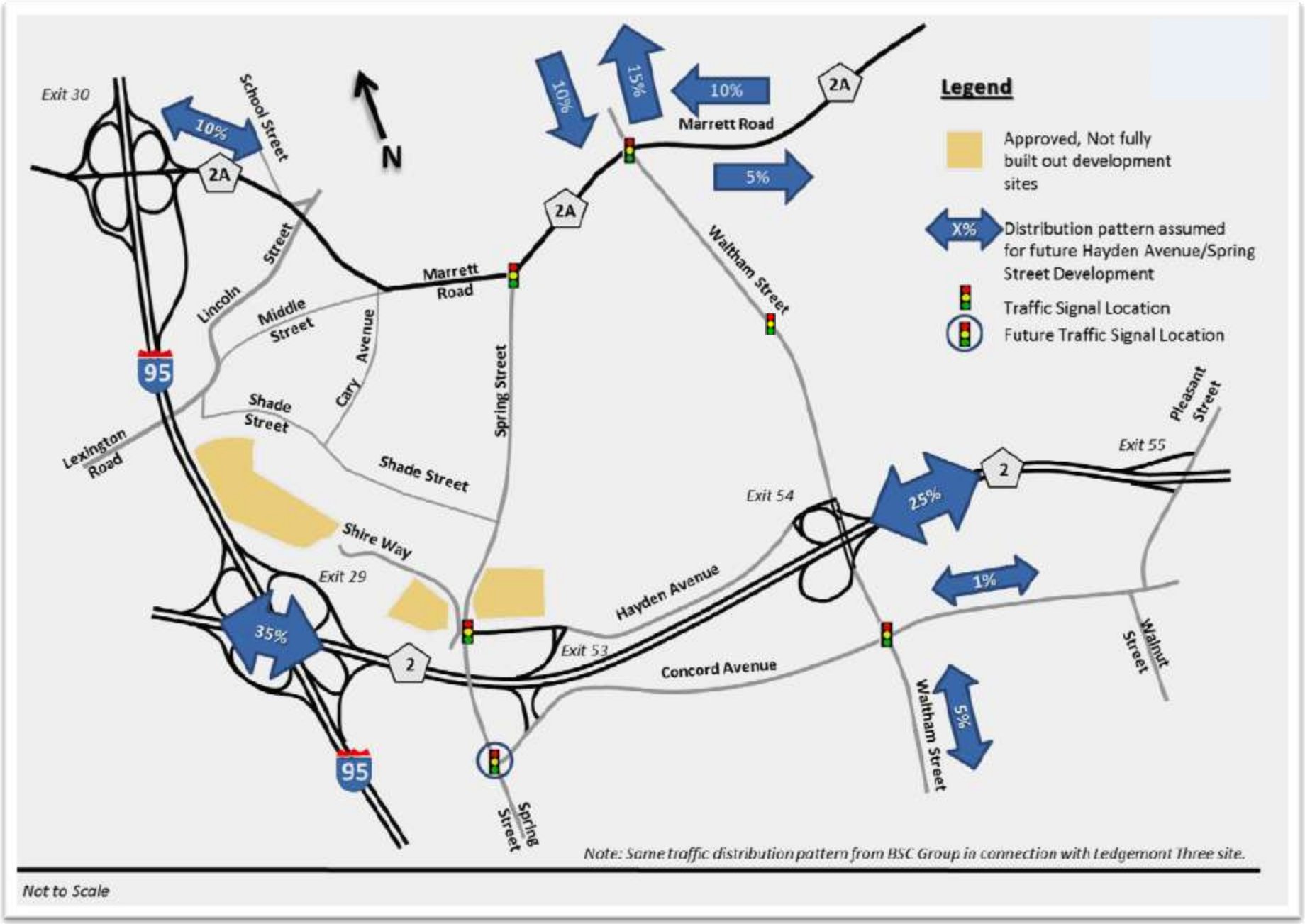
Network: AM peak volumes 18% higher than PM

2023 Projections

2023 Traffic Growth Assumptions

- Background: 0.2% annually; 2% over next ten years – Source CTPS
- *Additional approved* 542 ksf office growth along Spring/Hayden corridor over the next 10 years
- Generated as General Office using ITE Trip Generation report (9th Edition, 2012)
- Total Projected Network Growth by 2023
  - AM Peak 12%
  - PM peak 10 %
- Lexington Town standard for maximum traffic accommodation – level of service D (alternatively - no worse than No-Build)

Future Development Trip Distribution Pattern



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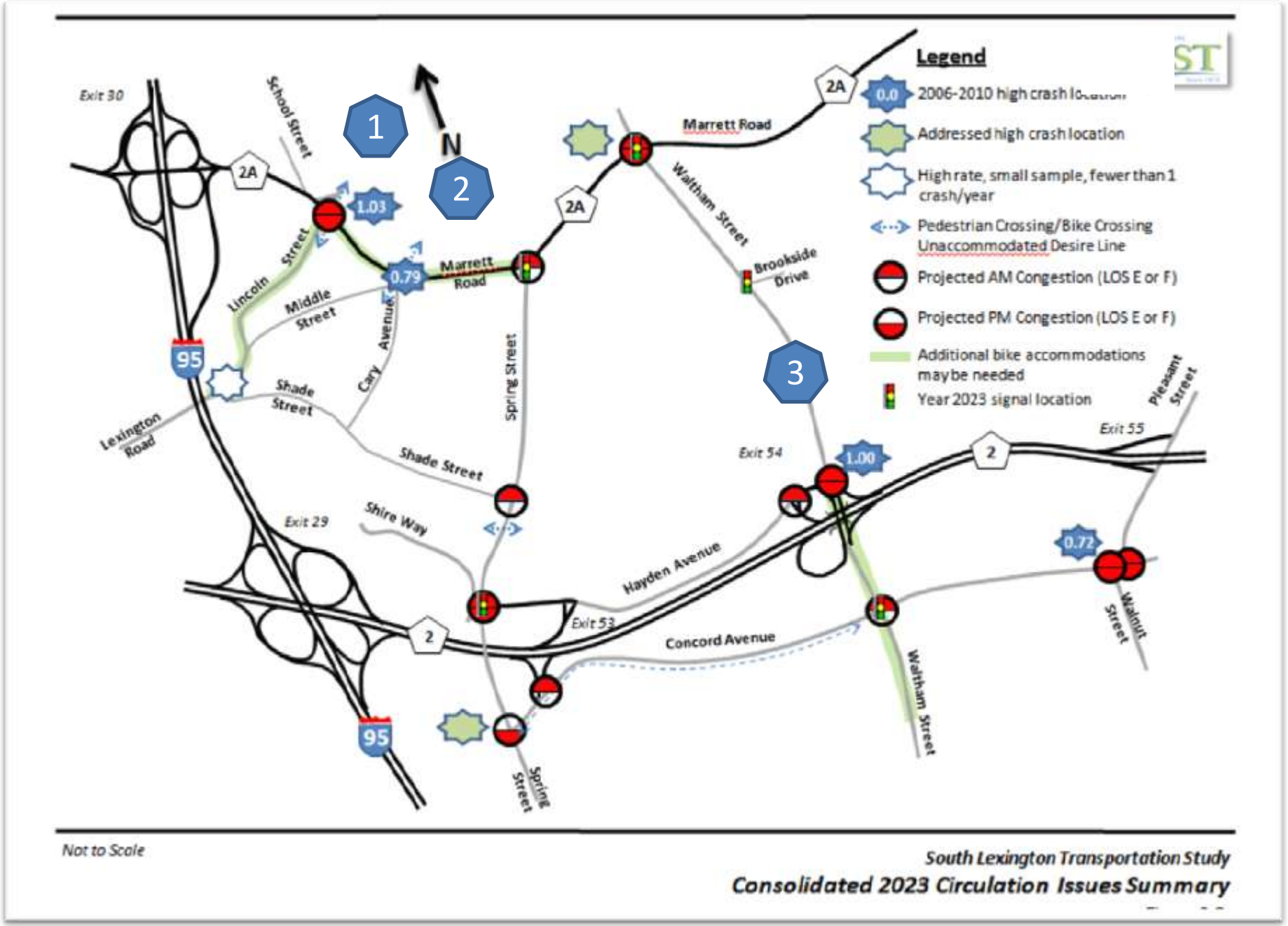
Assumed Enhancements by 2023

Year 2023 Focus Issues



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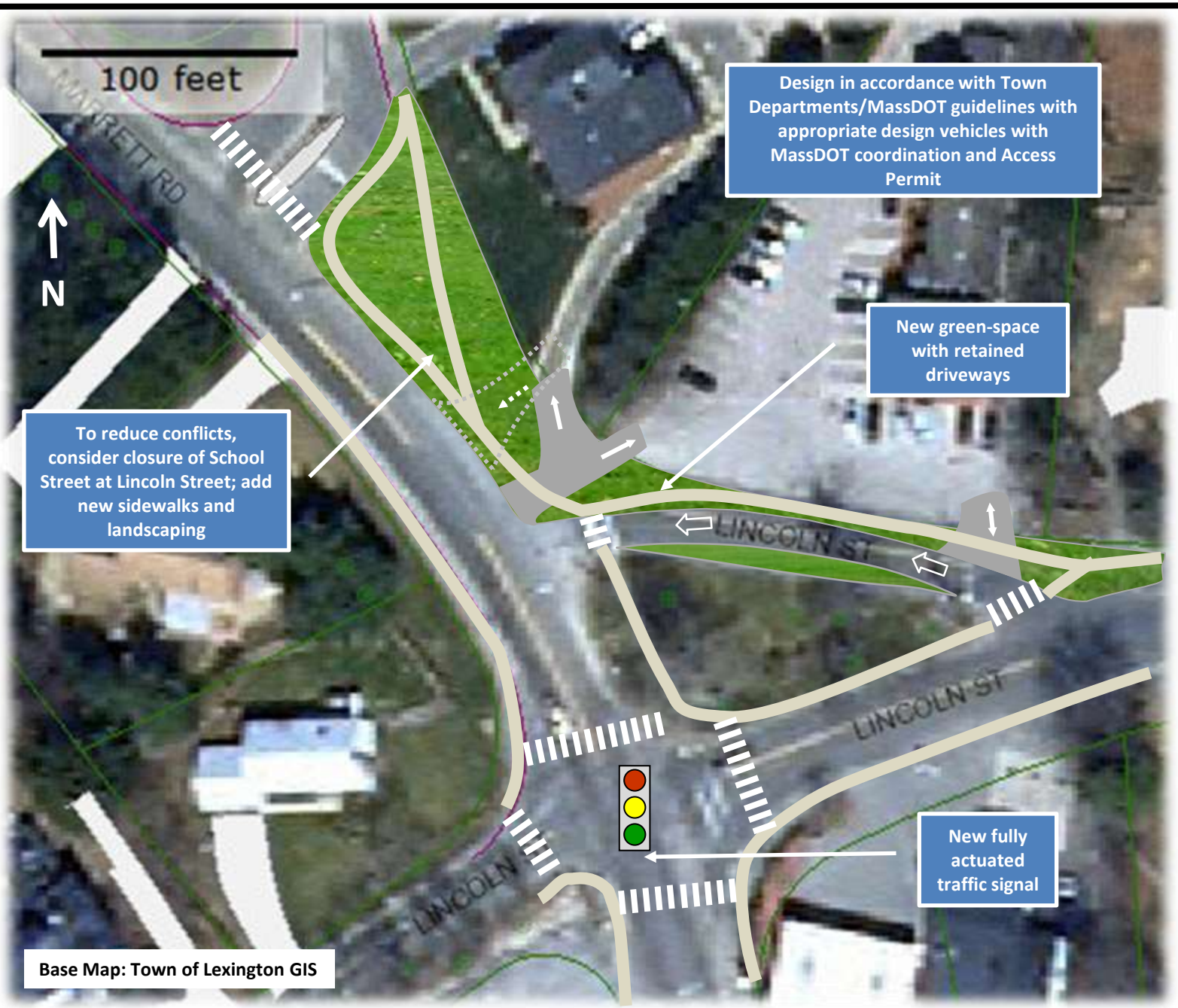

1

Concept: Not to Scale

South Lexington Transportation Study

Marrett Road (Rte. 2A) at Lincoln Streets – Option 1 – Signalized w/One-Way Segment

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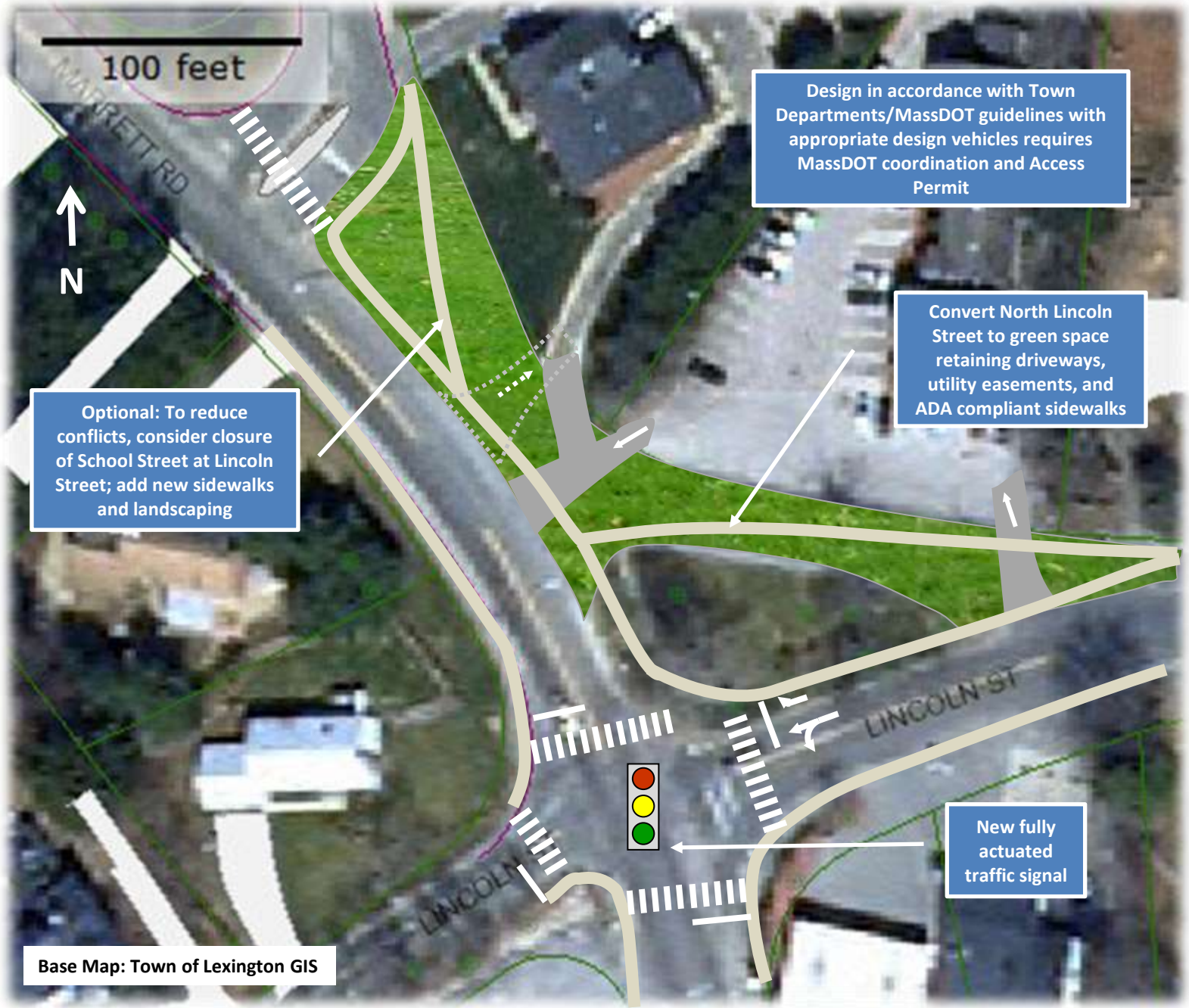

Concept: Not to Scale

South Lexington Transportation Study

Marrett Road (Rte. 2A) at Lincoln Streets – Option 2 – Signalized w/Enlarged Green Spaces

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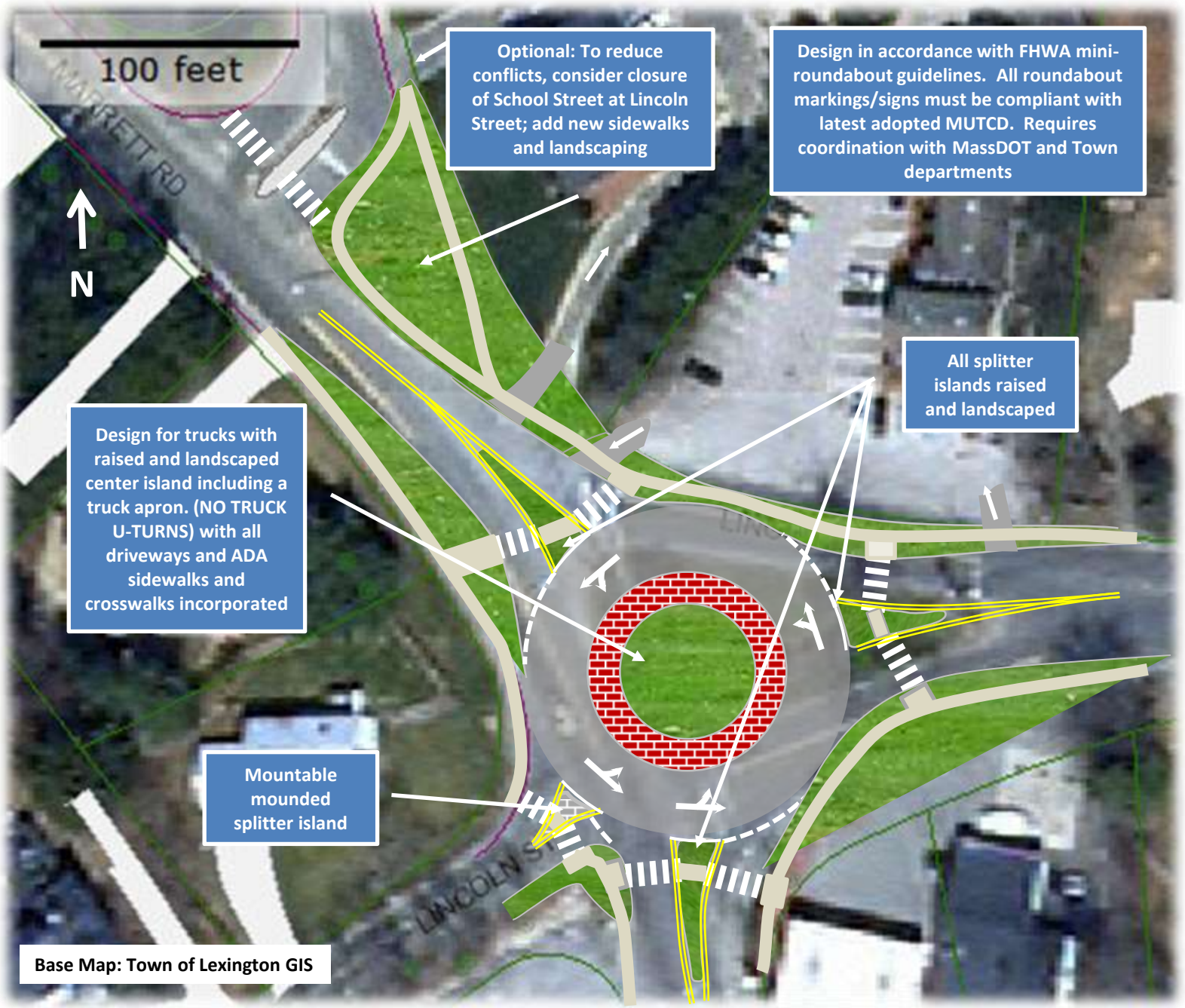

1

Concept Not to Scale

South Lexington Transportation Study

Option 3 – Marrett Road (Rte. 2A) at Lincoln Streets – Roundabout w/Enlarged Greenspace

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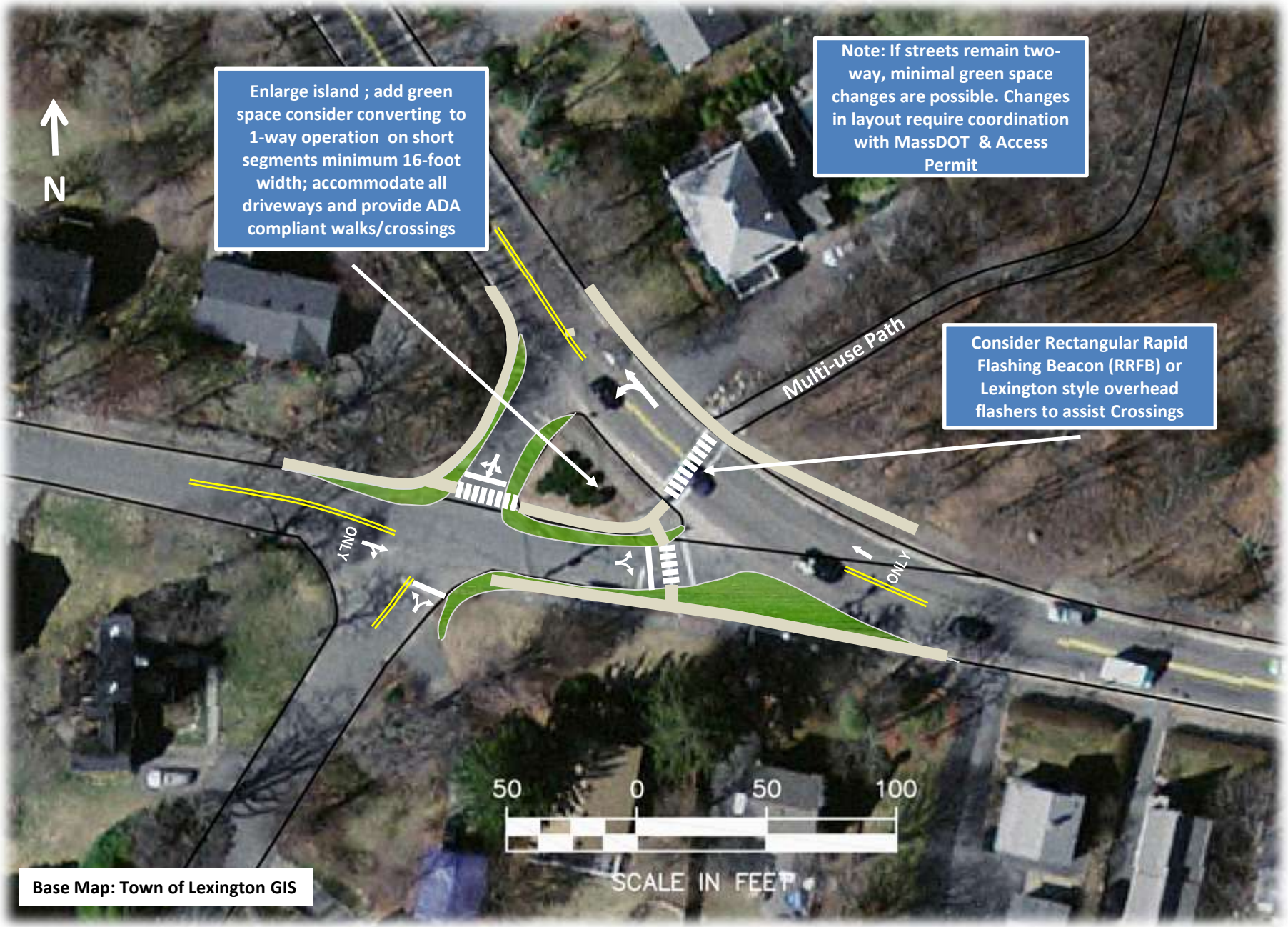

2

Concept: Not to Scale

South Lexington Transportation Study

Option 1 - Marrett Road (Route 2A) at Cary and Middle Streets –Enlarge Island and Modify Circulation

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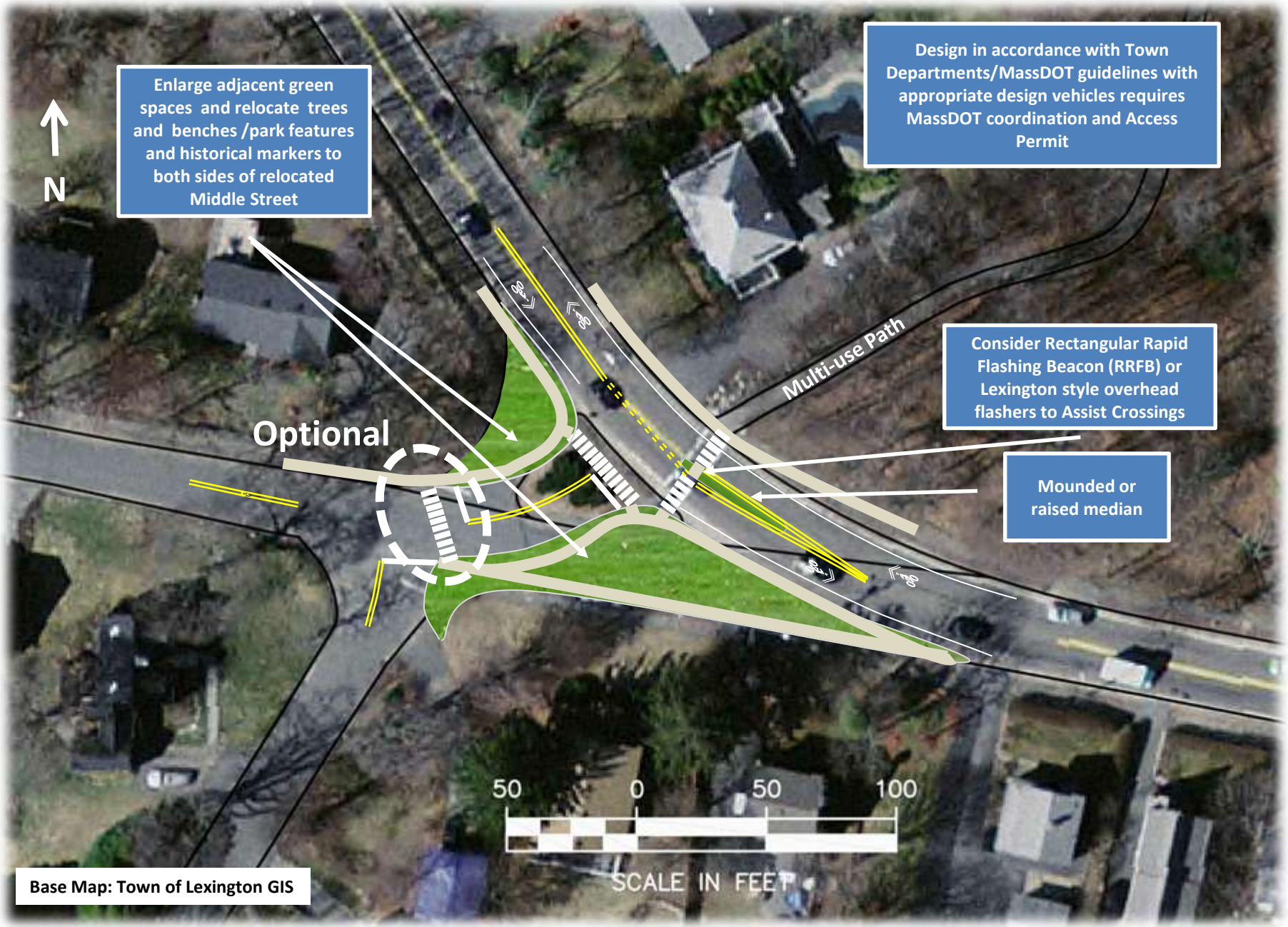

Concept: Not to Scale

South Lexington Transportation Study

Option 2 - Marrett Road (Route 2A) at Cary and Middle Streets –Simplified Circulation with Median

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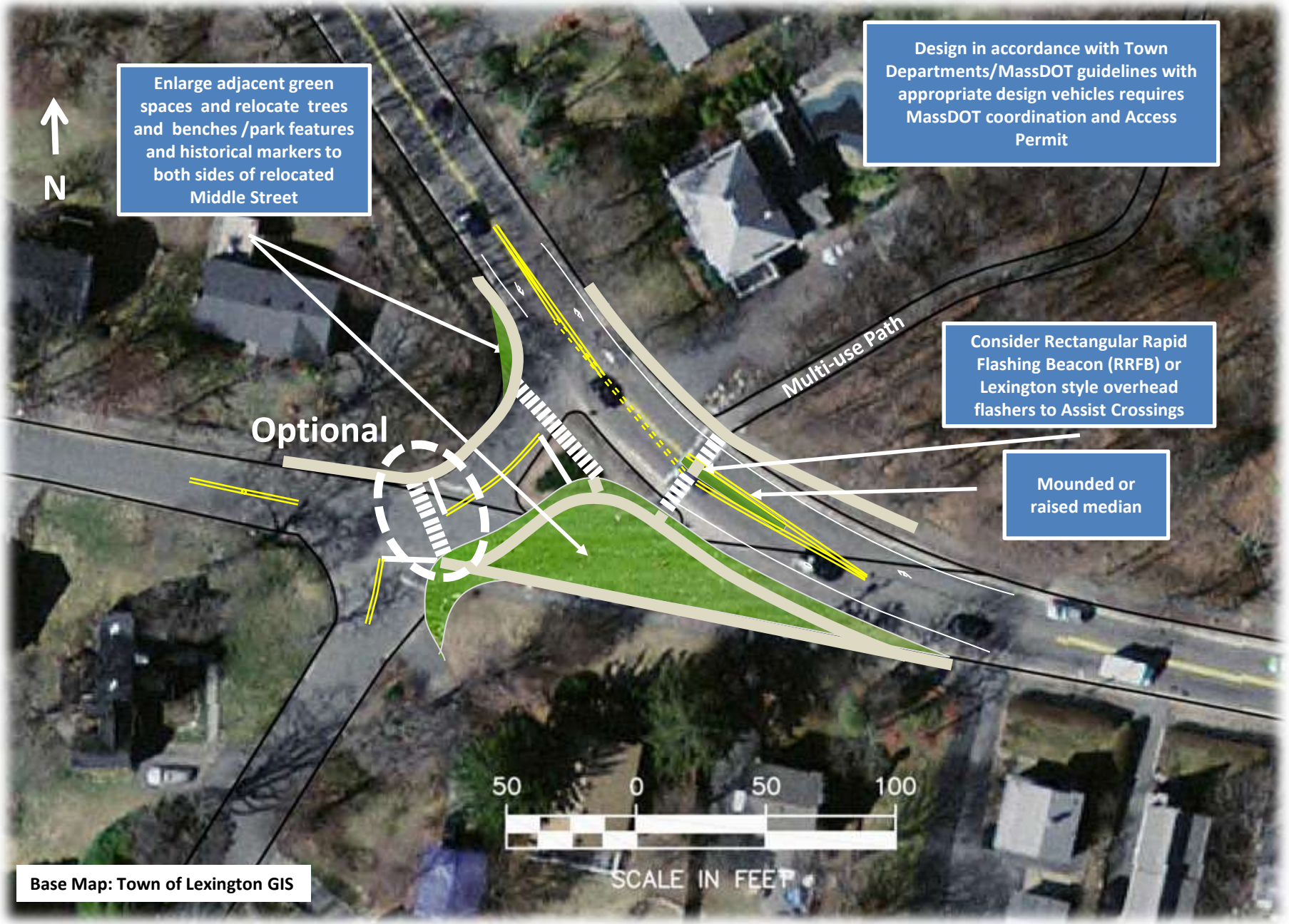

2

Concept: Not to Scale

South Lexington Transportation Study

Option 2A - Marrett Road (Route 2A) at Cary and Middle Streets –Simplified Circulation with Median

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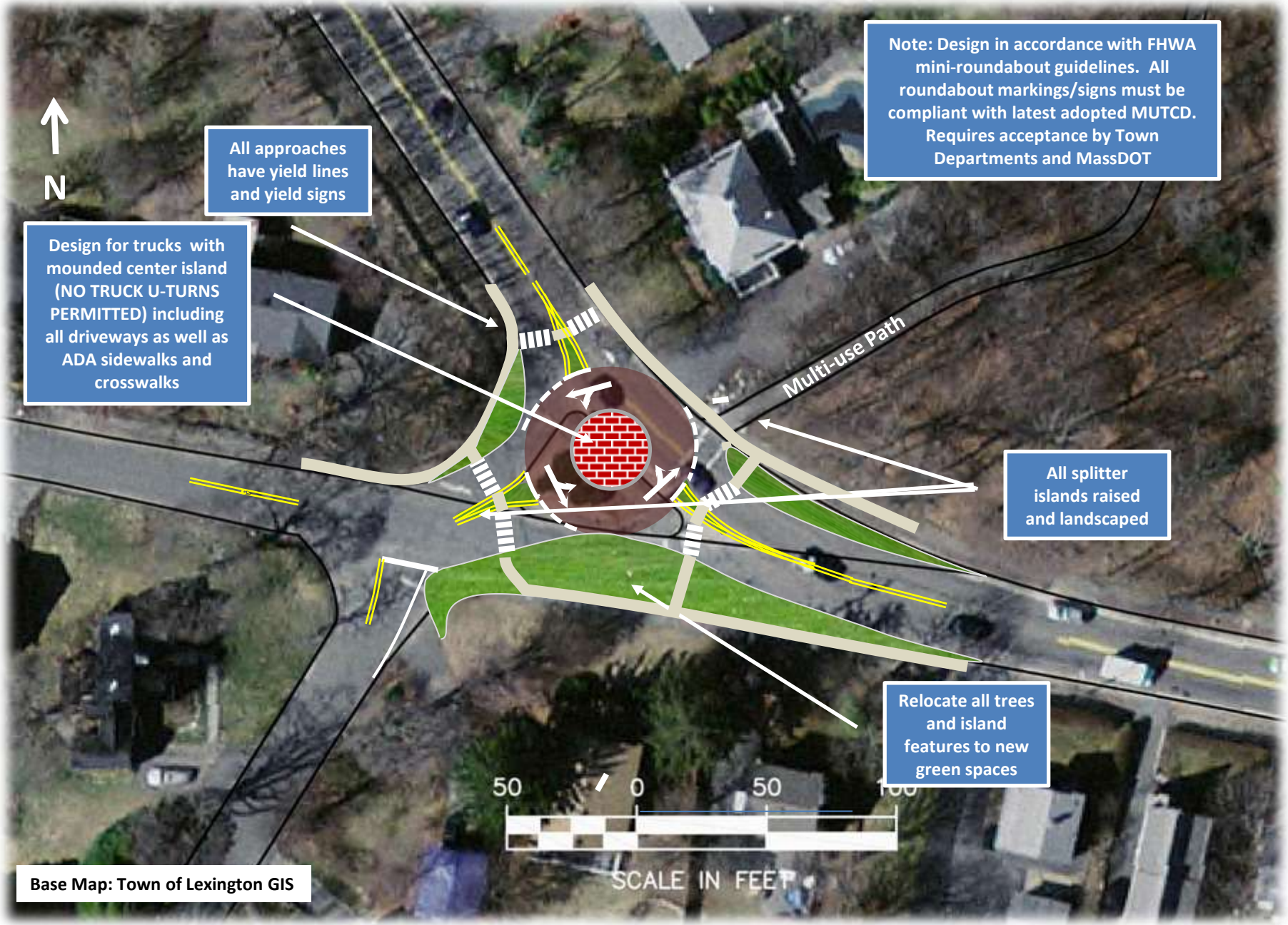

2

Concept: Not to Scale

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Option 3 – Marrett Road (Route 2A) at Cary and Middle Streets Mini-roundabout

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Concept: Not to Scale

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Option 1 – Provide Bike Enhancements

Signalize & Modify Route 2 WB Ramps at Waltham Street with Single Controller

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Concept: Not to Scale

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Option 2 – Provide Bike Enhancements

Create Dual Roundabouts of 2 WB Ramps at Waltham Street

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Concept: Not to Scale

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Option 3 – Provide Bike Enhancements

Create Deflections and Roundabout Route 2 WB Ramps at Waltham Street

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Other Strategies

- Emphasize/maximize site TDM measures
- New pedestrian or bike crossings --address ADA compliance; sight lines; use FHWA guidelines for crosswalk placement
- Marrett Road – 3 to 4-foot shoulders with sharrows in travel lanes for bicyclists throughout & 11-foot travel lanes
- Walnut/Pleasant at Concord Avenue
  - Pleasant meets peak hour warrants for signal, but not compatible with area
  - Perhaps replace raised island at Walnut Street approach with flush/granite rubble
  - Perhaps use high friction 'popcorn' pavement on approach or consider winter heating of pavement to reduce skidding potential.
  - Keep vegetation trimmed to enhance sight lines
- Compress Lincoln at Middle Streets – add green space and enhance sight lines. Add sharrows to Lincoln Street
- Optimize/maintain all signals regularly

Thank you

Comments- Questions

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EXTRA SLIDES & PHOTOS


LINCOLN ST
MIDDLE ST

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Lincoln at Middle Streets – T to Middle Street

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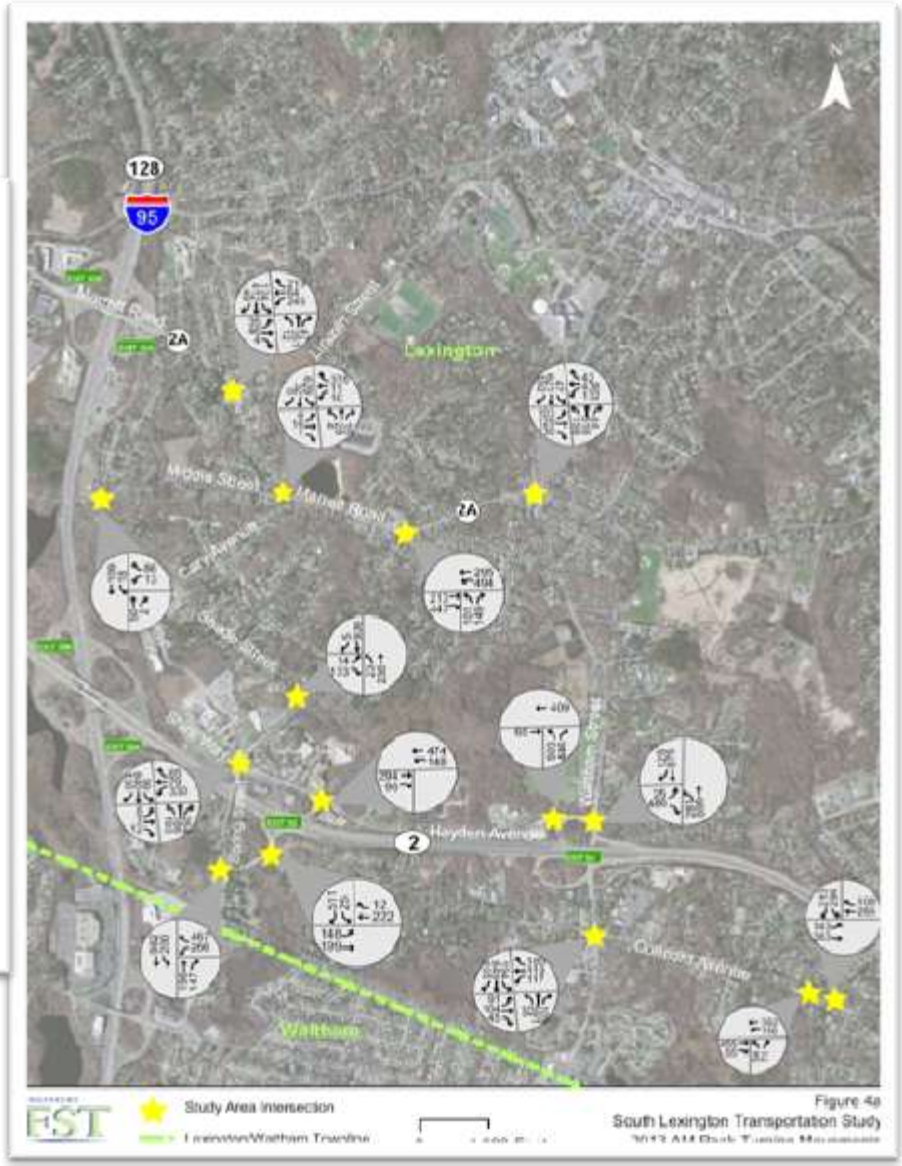
2013 AM Peak Hour counts



2013 PM Peak Hour counts

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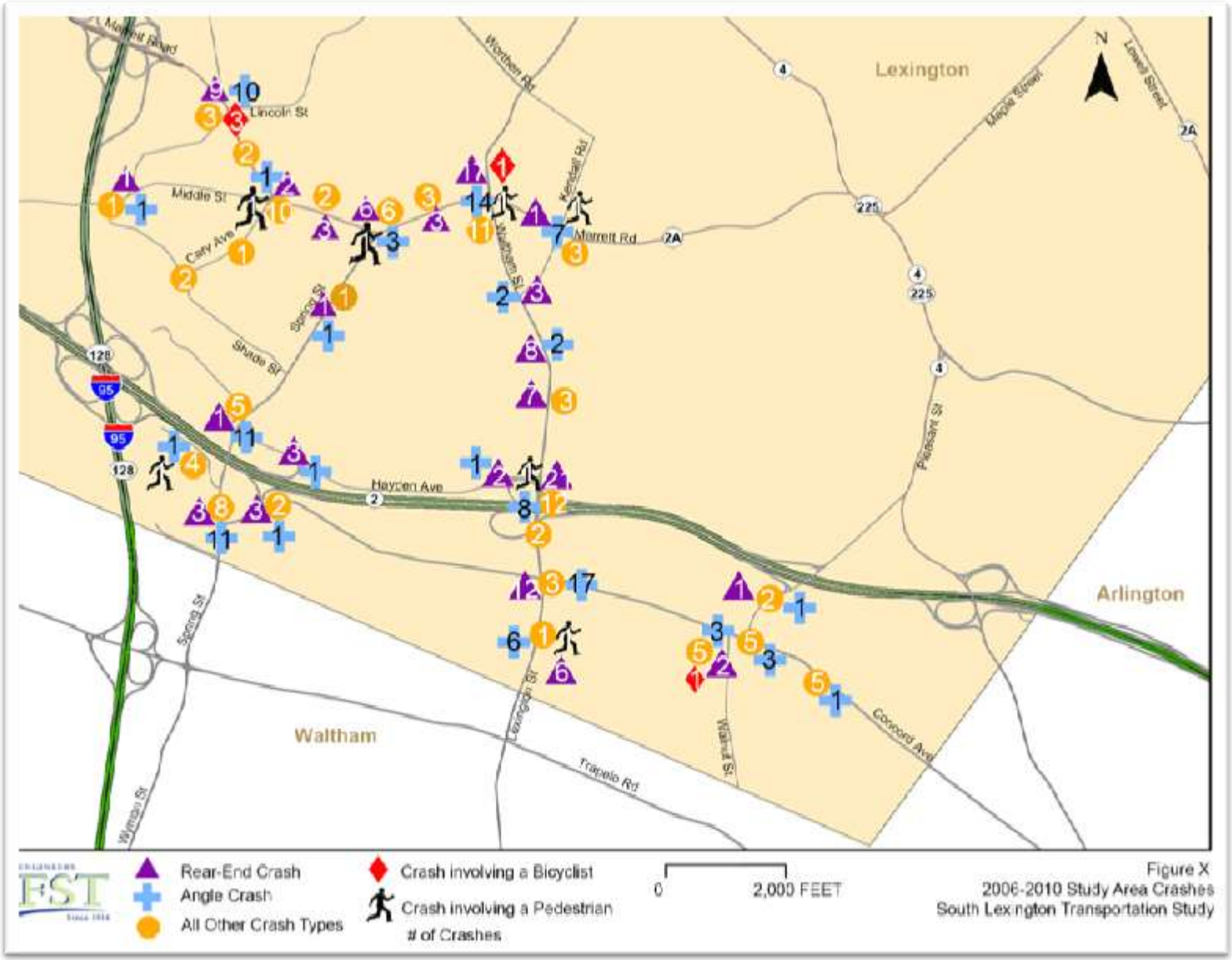
5-year Crash history 2006-2010



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Sidewalks and trails - 2013

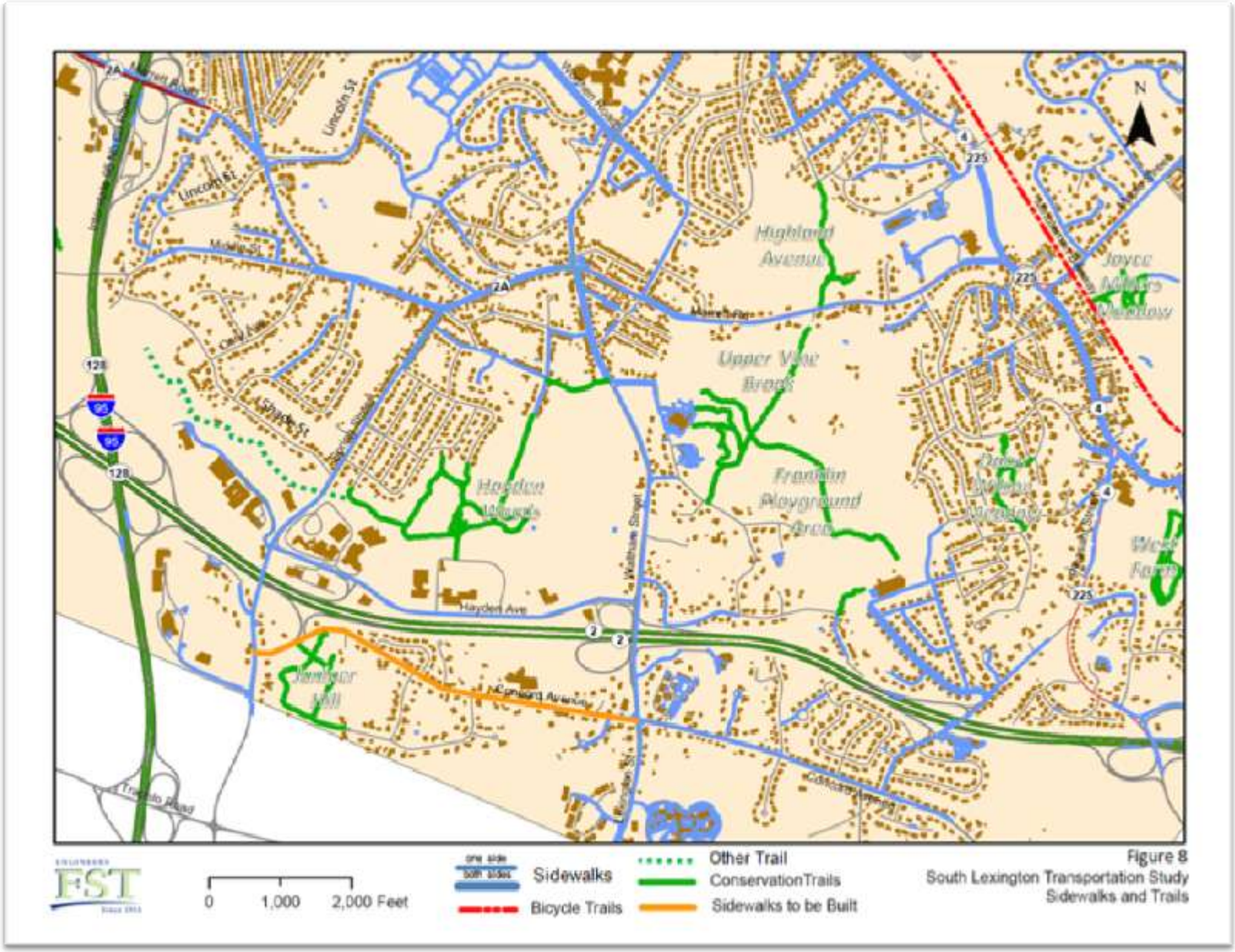

Figure 8
South Lexington Transportation Study
Sidewalks and Trails

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Drawing Source: Conceptual Design Plan, Town of Lexington Engineering Department - implemented fall 2013

Not to Scale

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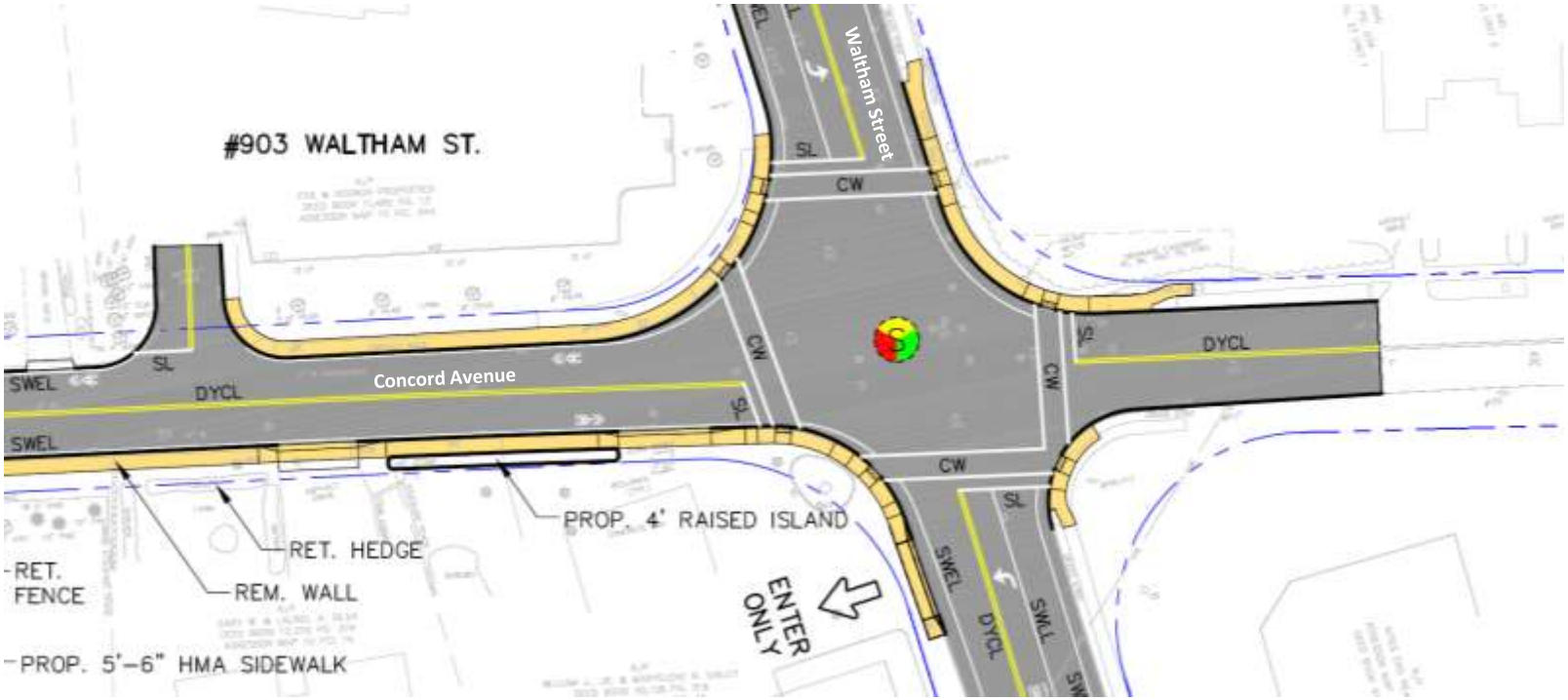
Excerpt from Shade Street Traffic Calming Plan



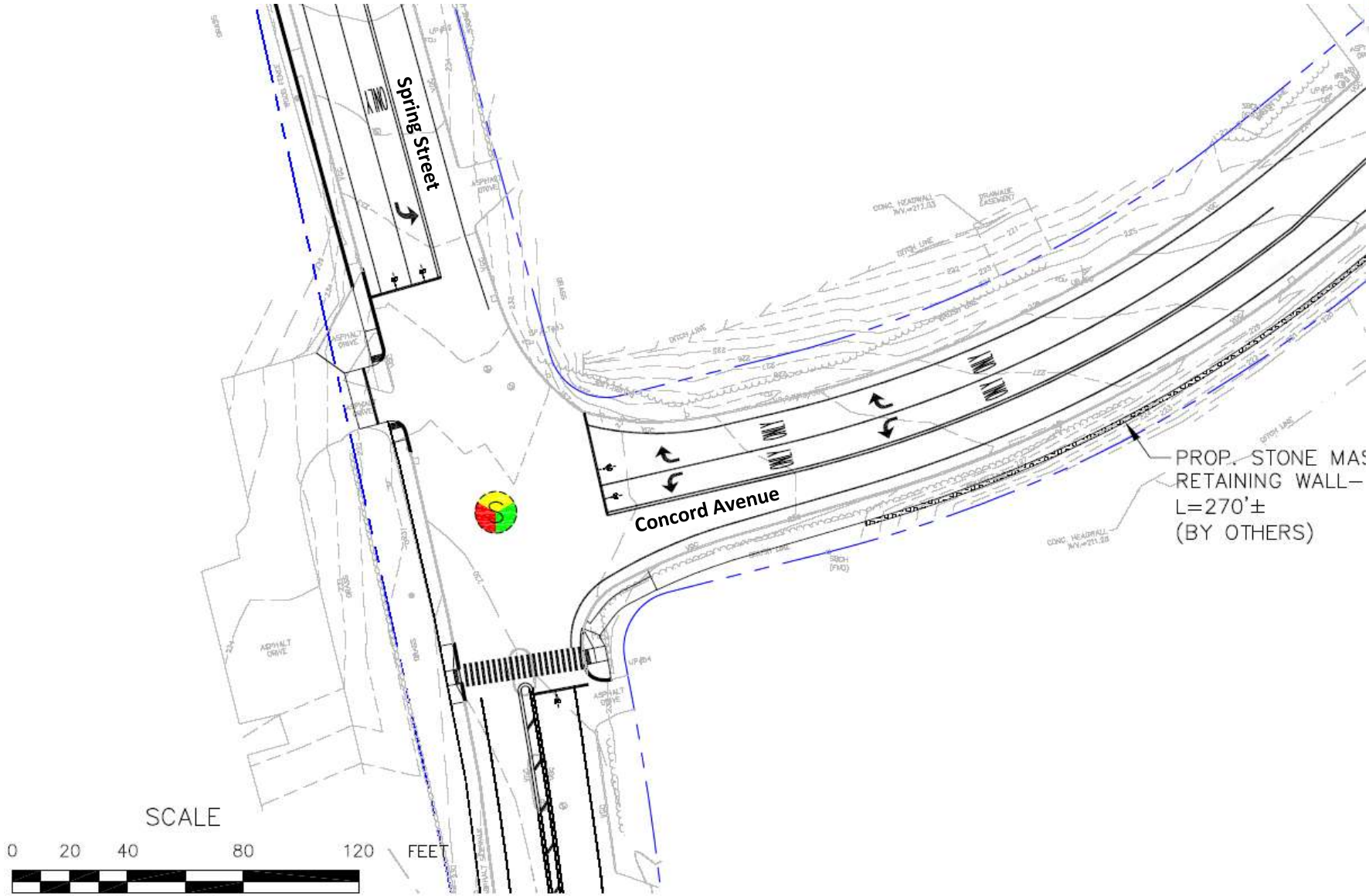
Drawing Source: Conceptual Design Plan, MDM Associates, July 3, 2013 Presentation

Not to Scale

South Lexington Transportation Study

Concord Avenue at Waltham Street Planned Signal Improvements

Figure X



Drawing Source: Conceptual Design Plan, MDM Associates, July 3, 2013 Presentation

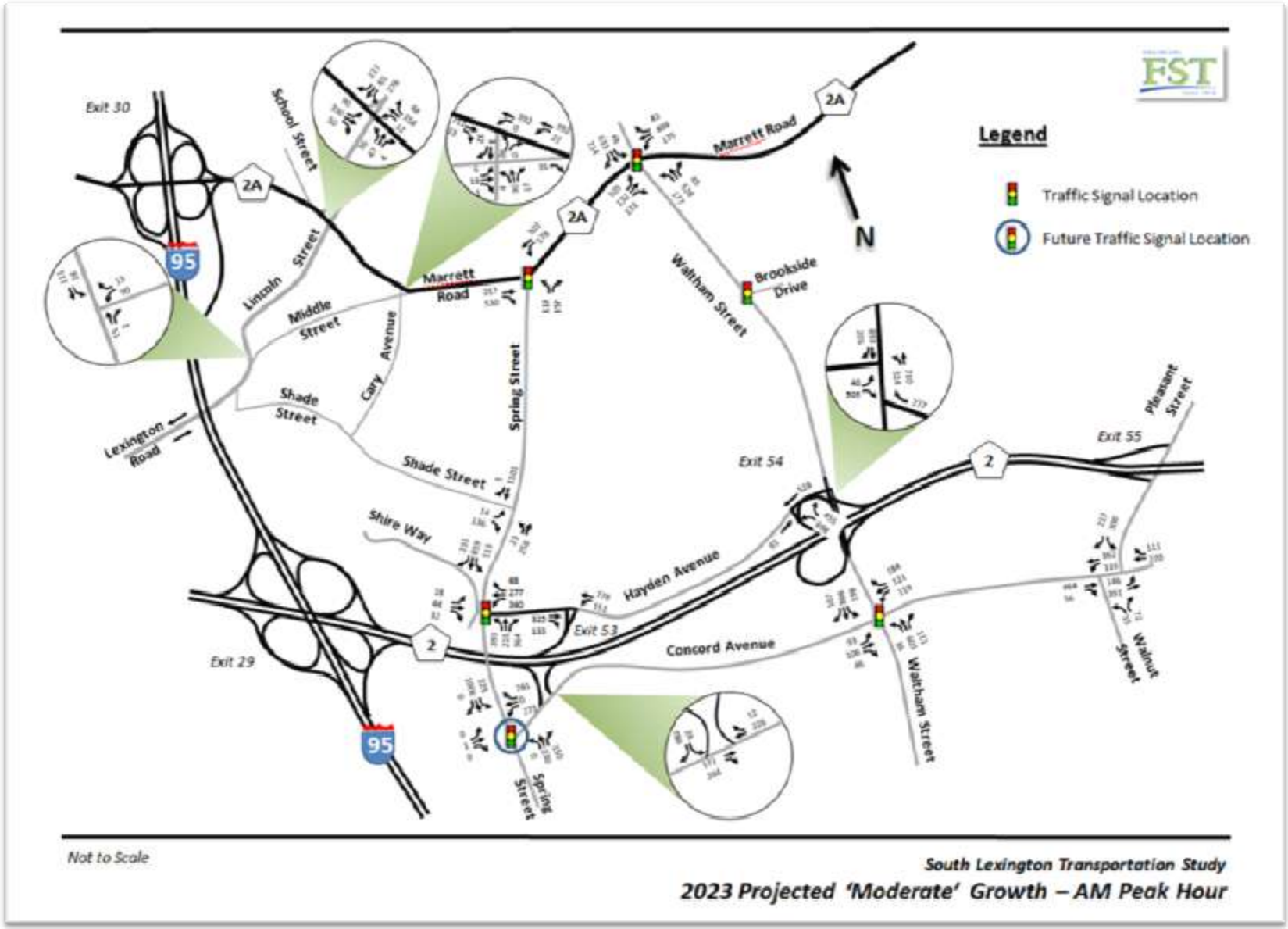
Not to Scale

South Lexington Transportation Study

Concord Avenue at Spring Street Programmed Signal Improvements

Figure X

Year 2023 AM 'moderate' projections



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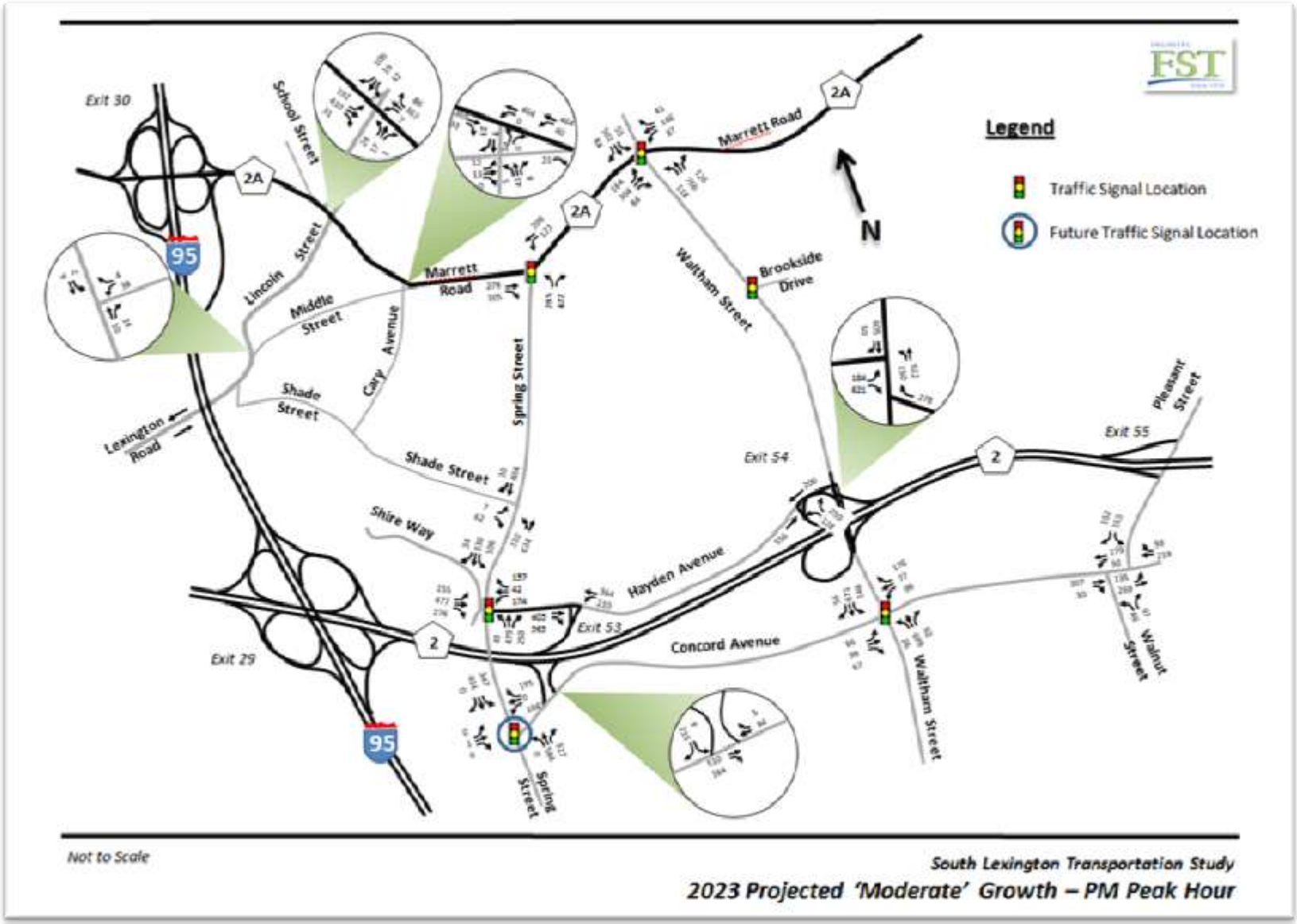
Year 2023 PM 'moderate' projections



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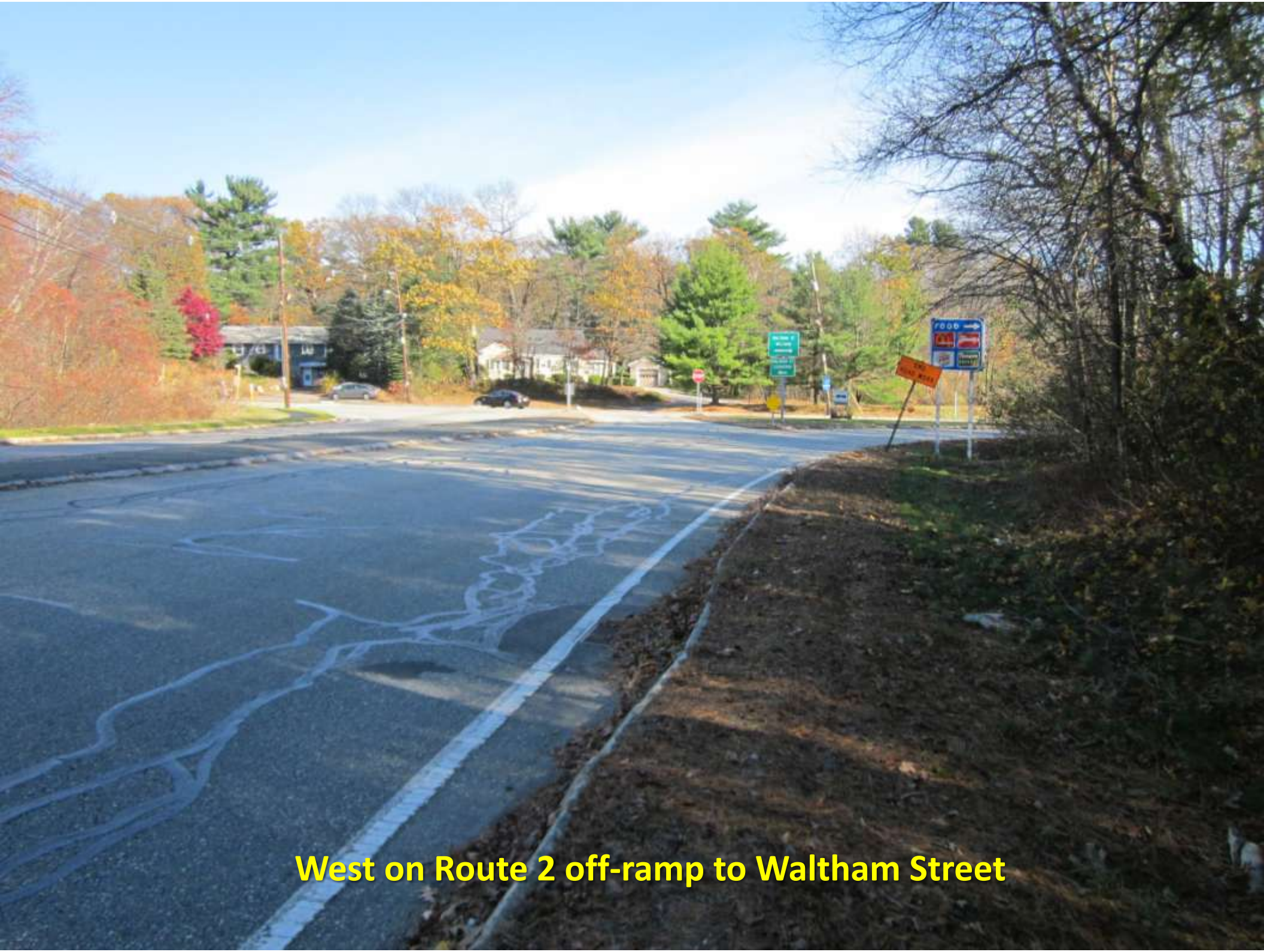
South on Waltham Street at Hayden Avenue


West on Route 2 off-ramp to Waltham Street


West on Hayden Avenue to Route 2 WB off ramps


Northeast on Route 2 WB off ramp right to Hayden Avenue

North on Route 2 WB off-ramp left to Hayden Avenue


Northwest on Marrett Rd (Rte. 2A) to Lincoln Street

South on Lincoln (North) to Marrett Rd (Rte. 2A)

South on School Street to island and Marrett Rd. (Rte. 2A)
Just north of Lincoln Street (North)

West on Lincoln Street to Marrett Road (Rte. 2A)

North on Cary Street to Middle Street and Marrett Road (Rte. 2A)

Northeast on Middle Street to Marrett Road (Rte. 2A)

North on Marrett Road (Rte. 2A) to Cary Avenue

West on Marrett Rd. (Rte. 2A) to Middle Street at Crosswalk

North on Middle Street (Rte. 2A) to Cary Avenue

North on Walnut Street to Concord Avenue


East on Concord Avenue to Pleasant Street approach

Southeast on Middle Street at Lincoln Street

East on Middle Street to Lincoln Street