

Spring Road & Laydon Avenue Traffic Study



Prepared for:

South Central Regional Council of Governments



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Introduction

This study was initiated by the South Central Regional Council of Governments in cooperation with the Town of North Haven to investigate potential measures to address traffic and safety concerns in the Spring Road and Laydon Avenue corridor.

Study Area

The study area includes Spring Road and Laydon Avenue in North Haven, Connecticut. The study corridor begins at the intersection of Spring Road and Middletown Avenue (Route 17) and extends northerly approximately 2 miles to the intersection of Laydon Avenue and Maple Avenue (Route 103).

Study Objectives

The study was undertaken to achieve these objectives:

- Identify and evaluate traffic and safety issues in the study corridor.
- Assess need and desire for mitigation of the identified issues.
- Develop recommendations and plan for implementation.



Study Area Map

(Source: Google)

Study Process

The study was conducted in 2011 by SCRCOG's technical consultant working with representatives from the Town of North Haven – including the Town engineer and Police Chief – and community stakeholders to fulfill the study objectives. Specific tasks that were completed under this study included accident and traffic data collection, assessment of existing conditions and issues, and development of corridor recommendations.

A key element to the completion of these tasks and fundamental to the study process was community involvement. Input from the Town representatives and corridor residents helped inform the study relative to existing issues and concerns, priorities, and types of improvement measures that are acceptable to the community for possible future implementation.

During the course of the study, several meetings were conducted with Town representatives, and community meetings were conducted at the North Haven Memorial Library in June and October 2011. Both community meetings were advertised via local press releases and notification letters were mailed to residents of the Laydon Avenue and Spring Road corridor in advance of the meetings. Additionally, both meetings were recorded for broadcast on local cable access station NHTV. Approximately 42 and 27 public attendees (excluding Town, SCRCOG, and consultant staff) participated in the June and October meetings, respectively. These attendees included residents from locations throughout the Laydon Avenue and Spring Road corridor, as well as several residents from adjacent streets and neighborhoods.

Detailed summaries of these meetings, including details of the input and comments provided by attendees, are provided in Appendix 1.

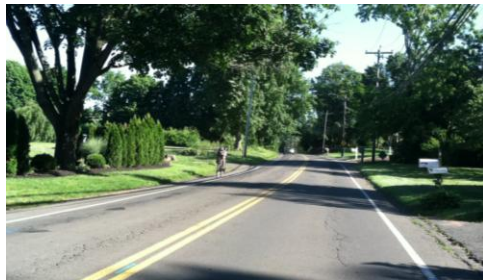
Existing Conditions and Issues Assessment

The data collection effort – including field review and observation, traffic speed and volume measurements, and accident record compilation and review – was supplemented with input from Town representatives and community stakeholders to understand and identify the existing traffic and safety conditions, concerns, and issues in the study area. The conditions and issues relative to roadway characteristics, traffic conditions, and accident history that were determined based on field review, data collection, and community input are summarized in the following sections.

Roadway Characteristics

The Spring Road and Laydon Avenue corridor is part of the collector roadway system in North Haven, meaning that it serves to “collect” traffic from local streets (such as Pez Court and Pequot Avenue) and connect it to the arterial street network (including Route 17 and Route 103). The corridor is a two lane roadways with lanes that are separated by a double solid yellow centerline. When the study was initiated in April 2011, there were no white edge lines to delineate shoulders for use by bicyclists and pedestrians. As a recommendation of this study, the Town installed painted edge lines along the study corridor and Beach Street in October 2011 to delineate narrowed travel lanes and shoulders (see section xx for details about narrowed travel lanes).

The width of the roadway surface varies throughout the corridor, but is typically between 26 ft and 30 ft wide in most areas. The condition



Spring Road

of the pavement is generally fair to poor with generally widespread cracking, some surface deterioration, and pavement patching.

The alignments of Spring Road and Laydon Avenue are generally straight, with the exception of a 90-degree horizontal curve that connects the roadways in the north. The radius of this curve (approximately 280 ft) is designed to accommodate speeds up to 35 mph.

There are limited sections of sidewalk in the corridor including the south side of Laydon Avenue, and both sides of Spring Road in some spots between Mill Road and Beach Street. The general lack of continuous sidewalks throughout the corridor require pedestrians to use the roadway for walking in many areas.



Laydon Avenue

Traffic controls in the corridor consist of a stop-controlled approach to Route 17 (which includes a flashing beacon) at the southern limit, and a four-way signalized intersection with Route 103 and Pool Road at the northern limit. There is also a freight railroad crossing of Spring Road located just north of Roarke Road. This crossing is signalized, but not gated. Most of the side road approaches to Laydon Avenue and Spring Road corridor are stop-controlled with no intermediate stops for through traffic along the length of the corridor.

There are several side road locations where sight lines from the side road to Spring Road or Laydon Avenue are restricted, posing a potential safety concern for motorists attempting turns into the corridor.

These locations include:

- Livingston Drive, looking south to Spring Road. Sight line is obscured by vegetation located near the edge of the roadway.
- Mill Road, looking south to Spring Road. Sight line is limited by an earthen slope adjacent to the roadway.
- Roarke Road, looking north to Spring Road. Sight line is limited by vegetation located near the edge of the roadway.
- Pequot Avenue, looking south to Spring Road. Sight line is obscured by some trees and the curvature of the roadway.

The 30 mph speed limit is posted in nine locations (five northbound four southbound) with supplemental “Speed Limit Strictly Enforced” signs that supplement two of the speed limit signs in two of these locations.



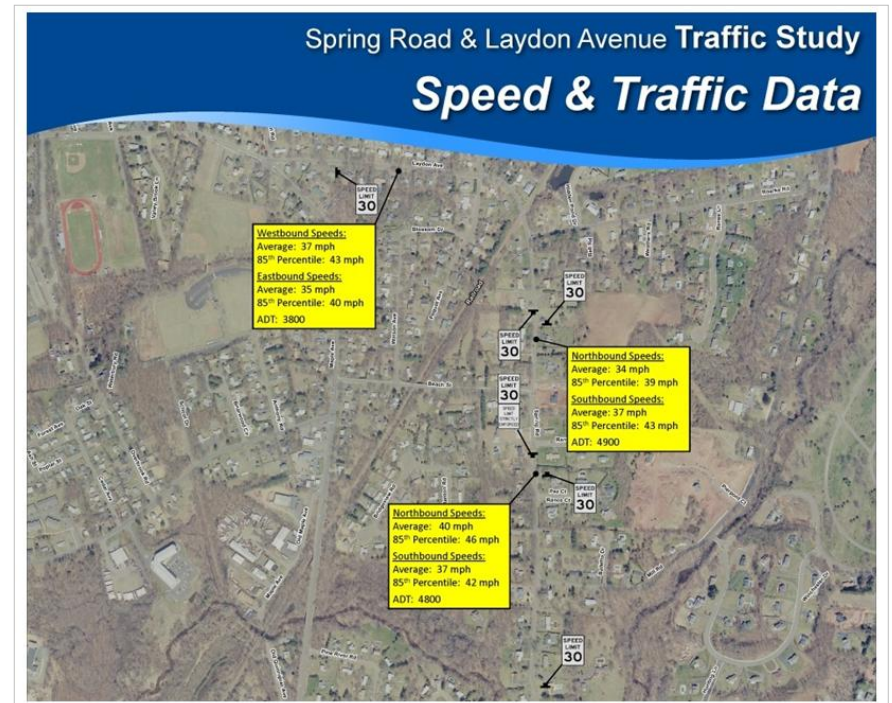
Signs that indicate a prohibition on through truck traffic in the corridor are posted on Spring Road and Laydon Avenue near the intersections of Route 17 and Route 103, respectively. It is noted that the sign near Route 17 is posted with a speed limit sign on the left side of traffic within the grassed median at the intersection. This placement makes the sign less conspicuous to truck drivers turning from Route 17.

Nearly all of the parcels abutting the corridor are occupied by single family residential homes. There are no community destinations located along the corridor, though Montowese Elementary School is located just west of Spring Road with access from the east provided via Fitch Street.

A Study Area Map illustrating the roadway characteristics is provided in Appendix 2.

Traffic Conditions

Vehicle speeds and volumes were collected in several locations in the corridor including speed data from 2009 and 2010 provided by North Haven police, and automatic traffic recorder (ATR) data obtained in May 2011 as part of this study effort. A map illustrating this data and where it was collected is provided in Appendix 2.



See Appendix 2 for Complete Map of Speed & Traffic Data

In general, daily traffic volumes in the corridor are:

- Spring Road: 4800 vehicles per day (vpd), approximately.
- Laydon Ave: 3800 vpd, approximately.

These volumes are similar in magnitude to daily traffic volumes on other residential collector roadways in the south central region of Connecticut. However, these volumes (relative to the level of local traffic that is expected to be generated by the primarily residential uses along the corridor) and observed traffic patterns indicate a significant proportion of through traffic – perhaps as much as two-thirds to three-quarters of the daily traffic – using the corridor. It appears that some of the through traffic is cut-through traffic using the corridor to avoid potential peak hour travel delays on adjacent arterial roadways such as Route 103. Peak hour traffic observations indicate a notable flow of vehicles on Spring Road that are headed to and from Cloudland Road and points south in East Haven. Many of these vehicles continue use Laydon Avenue or Beach Street to get to and from Route 103 and points north and west of Route 103. Additionally, there is a notable flow of traffic that uses Mill Road-Spring Road-Beach Street for traveling east-west between Route 17 and Route 103.

No truck volumes were obtained by the ATRs as part of this study; however, field observation and local input suggests that the corridor is used for through travel by a number of large commercial vehicles and couriers, despite the posted prohibition on through trucks.

The speed data collected between 2009 and 2011 indicates that average and 85th percentile¹ speeds in the corridor are:

- Spring Road: Average – 34~40 mph. 85th Percentile – 39~46 mph.
- Laydon Ave: Average – 35~37 mph. 85th Percentile – 40~43 mph.

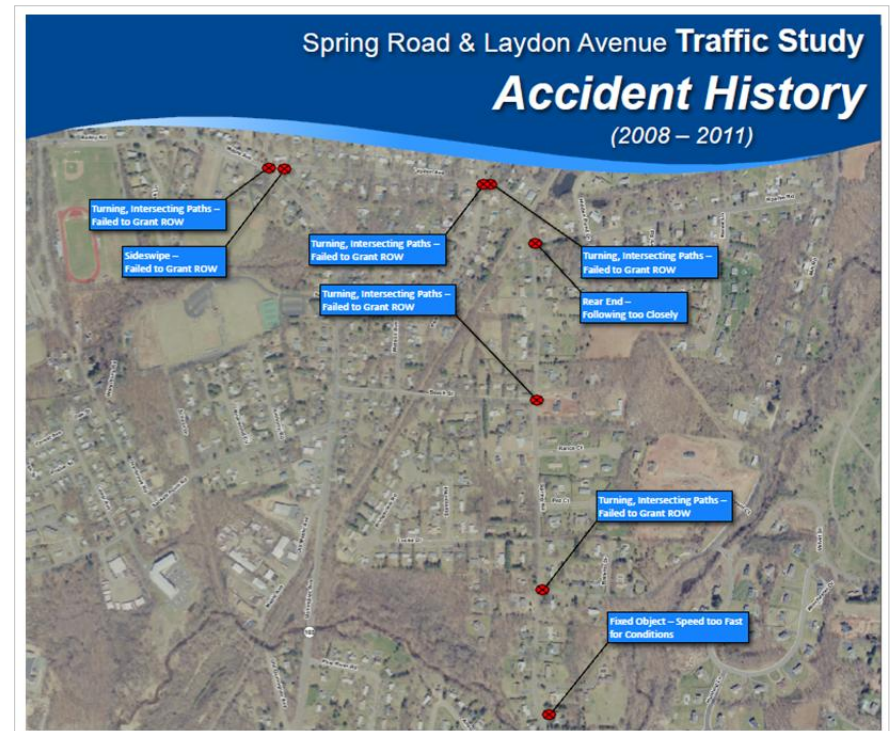
Based on the speed and volume data, approximately 600 vpd are traveling 10 mph or more over the posted speed limit of 30 mph.

¹ 85th percentile speed is the speed at which 85% of vehicles are traveling at or below. In other words, this is the speed at which 15% of vehicles are traveling at or above.

Pedestrian and bicycle volumes were not counted as part of this study; however, field observation and local input suggests that the corridor is infrequently used for walking and more occasionally used for bicycling.

Accident History

Accident data for Laydon Avenue and Spring Road was obtained from the North Haven police department for the period of 2008 to July 2011. This data indicates that a total of 13 automobile accidents were reported in the corridor during the three-and-a-half year period. Four of these accidents occurred on Laydon Avenue; nine occurred on Spring Road. A map illustrating the corridor accident history is provided in Appendix 2.



See Appendix 2 for Complete Map of Accident History

In summary, the accident history includes:

- Five fixed object collisions, two of which were directly attributed to speeds too fast for conditions.
- Five turning-related collisions caused by motorists failing to grant rights-of-way to other motorists.
- Two rear end collisions, one of which was caused by unsafe backing.
- One sideswipe collision caused by a motorist failing to grant right-of-way.

As shown in the map, there is no one location or pattern of accidents that suggests a specific problem area or site condition that is leading to a significant number or high frequency of accidents.

In addition to the 13 accidents actually reported to the police department, several residents who attended the community meeting in June 2011 suggested that there is a notable number of accidents in the corridor that go unreported. In particular, it was noted that minor accidents involving single vehicles running off the road and damaging property and mailboxes are relatively common. It was also noted by several residents that aggressive driving behavior and high speeds, though not directly resulting in accidents, are primary safety concerns in the corridor particularly for residents and their children who are turning into driveways; walking or bicycling; or playing and working in their yards.

Summary of Issues and Concerns

Based on the existing conditions assessment and community input provided by the Town representatives and community meeting attendees, the key traffic and safety issues and concerns for the corridor include:

- Traffic speeds and the potential consequences of traffic speeds on the safety of corridor residents.
- Safety of pedestrians and bicyclists given traffic speeds and the general lack of awareness of motorists for other roadway users.
- Safety of children given traffic speeds and the proximity of homes and yards to the roadway.
- Intersection safety including insufficient sight lines from side roads to approaching traffic on Spring Road and Laydon Avenue.
- Use of the corridor for through truck travel.



Recommendations

The recommendations plan for the corridor consists of four initiatives – enforcement, education, traffic calming, and other safety improvements – that can be undertaken by the Town to provide a comprehensive solution to the traffic speed and safety issues that have been identified in the corridor, as well as to begin addressing similar issues on other roadways throughout Town.

Enforcement Initiatives

Recommendation: Continue police enforcement of the 30 mph speed limit on Spring Road and Laydon Avenue. Specifically:

- North Haven police department should continue proactive speed monitoring on Spring Road and Laydon Avenue, particularly during weekday morning and afternoon peak commuting periods, to enforce the speed limit and to promote motorists' awareness of their traveling speeds.
- Speed enforcement efforts could include progressive ticketing, or introducing ticketing through a three-staged enforcement program of educating, warning, and ticketing:
 - **Educating** consists of raising community awareness of speeding and its consequences on safety for pedestrians, bicyclists, and area residents. This process is intended to build community support for the program (See Education Initiatives, next page for more details.)
 - **Warning** consists of actions that give motorists an opportunity to change their behaviors before ticketing begins, including:
 1. Officially announcing to the community that increased speed monitoring and enforcement efforts are being taken to improve safety. Official announcements should be used

to facilitate positive media coverage of the program. Various media outlets should be utilized including the North Haven Citizen and Courier, email, Town website, social media, and local cable access (NHTV).

2. Issuing verbal warnings to offending drivers in the corridor. Issuing verbal warnings allows officers to make direct contact with many times the number of offending motorists as writing citations does. By increasing the frequency of stops, many other motorists witness the stops and are encouraged to reduce their own speeds.
- **Ticketing** consists of issuing citations to offending drivers after a predetermined warning period has expired. Ticketing is essential to lending credibility to the enforcement program by demonstrating the police department's commitment to carrying out their efforts.

It is recommended that both verbal warnings and tickets be issued for a speed that demonstrates strict enforcement of the speed limit in



compliance with the Town's own "Speed Limit Strictly Enforced" signs that are posted with regulatory speed limit signs in the corridor. Allowing motorists to travel at speeds of 40 mph or higher without certainty of a warning and eventual ticket undermines the effectiveness of these signs and the other speed limit signs that have proliferated in the corridor.

- North Haven police department should consider initiating a traffic complaint hotline or on-line mailbox where citizens can post traffic complaints. Information relative to time of day and day of week when traffic issues are most prevalent should be provided. Areas receiving repeated complaints can be prioritized for speed monitoring and enforcement programs.

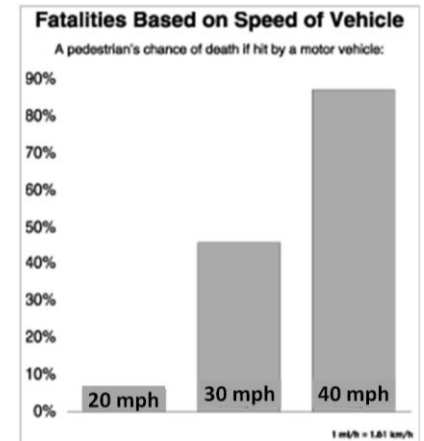
Recommendation: Continue police enforcement of the through-truck prohibition on Spring Road and Laydon Avenue. Specifically:

- North Haven police department should continue to be responsive to local complaints about apparent and repeated through-truck violations. This includes investigating and confirming which carriers or contractors are in violation; notifying and educating the violators about the truck prohibition and the preferred use of alternate routes; warning the violators about repeated violations; and enforcing the prohibition through ticketing of violators who have previously been warned.
- North Haven police department should utilize the traffic complaint hotline or on-line mailbox (discussed under speed enforcement on page 5) to identify and prioritize problem locations.

Education Initiatives

Recommendation: Promote speed, safety, and traffic calming education through a variety of Town-sponsored initiatives. Specifically:

- North Haven should promote community awareness of speeding and the consequences of speeding on the safety of pedestrians, bicyclists, and area residents. The Town could utilize the existing town website as a platform to promote and disseminate information about speeds and safety on local roadways, as well as provide links to research and resources that inform the community about traffic calming. Information about the Town’s own Traffic Calming Program, if established, should also be made readily available via the town website.
- North Haven should consider sponsoring a Pace Car program that aims to effect safer streets by encouraging citizens to proactively promote motorist responsibility and roadway safety. The program, similar to other programs throughout the country (including Greenwich, CT and Northampton, MA), would encourage participants to “pledge” to obey speed limits; stop at stop signs, red lights, and crosswalks; and respect the use of the roadway by pedestrians, bicyclists, and other motorists. By regulating their own behavior, participants set an example and set a pace for motorists



Source: U.K. Department of Transportation, *Killing Speed and Saving Lives*, London, 1987.

driving behind them. Participants would be provided a window sticker or magnet to identify their participation in the program.

- North Haven police department should supplement enforcement efforts with regular deployment of speed trailers to the corridor to increase motorists’ awareness of the speed limit and of one’s own travel speed.
- North Haven should consider the installation of permanent dynamic speed display signs in one or two key locations in the corridor where speeding issues persist (see measures for details). The permanent signs would serve the same function as temporary speed trailers by increasing motorists’ awareness of speeds in the corridor.
- North Haven should consider the installation of new warning signs that promote shared use of the roadway by bicyclists (see Traffic Calming Measures for details) throughout the corridor and warn of pedestrian activity in key locations. The signs would serve to remind motorists of the potential presence of bicyclists and pedestrians in the roadway and encourage reduced speeds.



- **By SCRCOG’s Traffic Calming Resource Guide:** “Traffic calming is a self-enforcing traffic management approach that encourages motorists to alter their speed. The purpose is to improve safety and improve the environment or ‘livability’ of streets for residents and visitors.”

For the Spring Road and Laydon Avenue corridor, traffic calming measures are recommended for consideration and implementation, as needed, to directly address the speed and safety issues that have been identified in the corridor. Additionally, a traffic calming program is recommended for development and adoption by the Town to coordinate and manage future traffic calming-related projects in Town.

Traffic Calming Measures

Recommendation: The Town should consider the implementation of various traffic calming measures to encourage motorists to reduce travel speeds in the Spring Road and Laydon Avenue corridor. Specifically:

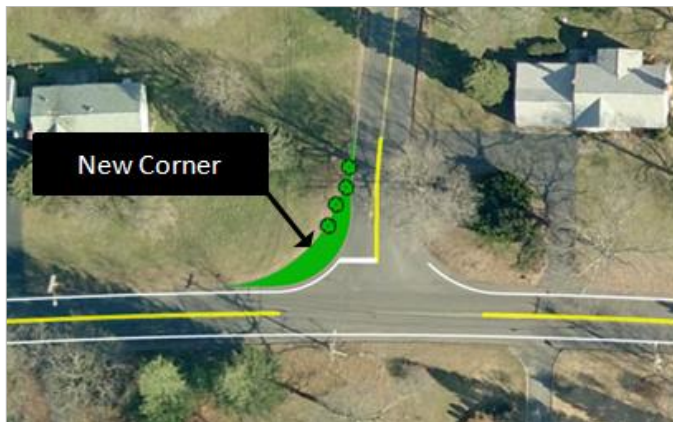
- **Narrowed Travel Lanes.** Maintain white edge lines to delineate 10 ft wide travel lanes throughout the corridor. The existing edge lines were installed in October 2011 as a product of this study; these lines should be reapplied as frequently as they become worn over time.
- **Signing Modifications.** Post speed limit signs only at key locations to maximize visibility and effectiveness; reduce the overall number of speed limit signs in the corridor. Post bicycle warning signs with “Share the Road” plaques at regular intervals along the corridor.
- **Dynamic Speed Display (DSD) Signs.** Install these electronic signs in strategic locations to detect and display actual travel speeds of approaching vehicles.

Traffic Calming Initiatives

Traffic calming can be defined in a number of ways, including:

- **By the Institute of Transportation Engineers (ITE):** “Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users.”

- **Pavement Area Reductions.** Remove excess pavement where possible to reduce the amount of space available for high-speed operations. Typical applications for the corridor include corner radii reductions at several intersections – including Mill Road and Potter Road; and pavement narrowing where the roadway pavement is excessively wide (greater than 30 ft wide overall) – including Spring Road just north of Route 17.



**Example Pavement Area Reduction:
Mill Road at Spring Road**

- **Median Islands.** Install short median islands, either flush or raised, in strategic locations in the corridor, including on Spring Road near Livingston Drive, Mill Road, Beach Street, and on Laydon Avenue near Pequot Avenue.



**Example Median Island:
Spring Road near Beach Street**

Each of these measures is described in more detail in the “Traffic Calming Measures Applicable to Spring Road – Laydon Avenue Corridor” table provided in Appendix 3. The table includes a detailed description of each measure; representative images; a summary of the benefits and drawbacks of the measure; typical cost guidelines; and other considerations for implementation.

A map illustrating traffic calming opportunities in the corridor is provided in Appendix 3. The map depicts and describes the potential locations where the recommended traffic calming measures could be applied on Spring Road and Laydon Avenue to encourage slower traffic speeds.

Regarding implementation of the recommended traffic calming measures in the corridor, the Town should consider this a multi-phase process. Specifically:

- The simpler, lower cost measures should be implemented first and monitored for their effectiveness in providing the desired speed reduction. The Town has already implemented painted edge lines to define narrowed travel lanes and shoulders. Additionally, low

cost signing modifications could be implemented in the near-term to supplement the narrowed travel lanes.

- Once in place, the narrowed travel lanes and signing modifications should be evaluated by measuring travel speeds in the corridor and relating these speeds to those reported in this study. As necessary, edge lines should be reapplied and additional signing improvements – such as dynamic speed display signs – could be considered for implementation to further encourage reduced speeds.
- If the desired speed reduction is not achieved by the lower cost measures, the need for additional measures – including pavement area reductions and median islands in one or more key locations in the corridor – should be considered by the Town and presented to local residents at that time to obtain community support.
- The implementation of additional measures in the Spring Road and Laydon Avenue corridor should be considered within the context of other needs for traffic calming in Town and prioritized accordingly.

To better define this implementation process, the Town should develop and adopt a formal Traffic Calming Program, as discussed in the next section.

Traffic Calming Program

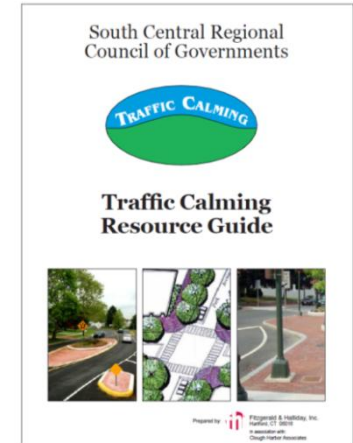
Recommendation: The Town of North Haven should develop and adopt a Town-specific Traffic Calming Program and Project Development Process that will guide the development and implementation of future traffic calming-related projects in Town.

More specifically, the Town can use the South Central Regional Council of Governments' *Traffic Calming Resource Guide* (June 2008) and model programs from other municipalities (such as City of Northampton, Massachusetts' *Traffic Calming Manual*) as a basis for developing a

program that defines traffic calming policy specific to North Haven and that establishes a program enabling town officials to undertake a formal process of identifying, prioritizing, selecting, and implementing traffic calming projects on local roadways.

The basic elements of a traffic calming program include:

- Identifying a Program Coordinator to manage the development of the program and its implementation.
- Forming a Local Traffic Calming Advisory Committee that will guide and formulate the specific details of the Town-specific policy and program elements.
- Outlining Town goals relative to traffic calming.
- Defining the community outreach process that will be followed for each traffic calming initiative and project identified.
- Identifying funding mechanisms to understand the magnitude of projects that can be undertaken and funded by the Town as independent initiatives, or that may need to be wrapped into larger-scale roadway improvement projects subsidized with other state and federal funding sources.
- Formalizing the process for identifying traffic calming projects and for implementing them.



The general implementation process includes:

- Initiating a study of the issues and potential solutions.
- Developing a recommendations plan to be reviewed by the Town and local residents.
- Approving, designing, and funding the improvement measures.
- Installing the measures.
- Evaluating and monitoring the effectiveness of the measures and modifying the measures as required to optimize their effectiveness.

Other Safety Improvement Initiatives

Recommendation: Address existing intersection sight line issues by removing obstructions. Specifically:

- At Livingston Drive, clear vegetation and landscaping from the roadside to improve sight lines looking south to Spring Road.
- At Mill Road, modify/grade the earthen slope to improve sight lines looking south to Spring Road.
- At Roarke Road, clear vegetation from the roadside to improve sight lines looking north to Spring Road.

Recommendation: Continue to monitor accidents in the corridor to identify and address any locations or site conditions that become safety concerns in the future, particularly if traffic patterns or volumes change notably in time.

Summary

The need and desire to address traffic speed and safety issues in the Spring Road and Laydon Avenue corridor is well-documented by this study. At a community meeting in June 2011, area residents generally agreed that measures to improve safety in the corridor were warranted. At a subsequent community meeting in October 2011, area residents generally supported the notion of further pursuing and implementing – over time – the recommendations of this study to address the identified speed and safety issues. The Town has already taken an initial step to implement narrowed travel lanes in the corridor. As recommended, the Town should consider a comprehensive solution of enforcement, education, additional traffic calming, and other safety initiatives to improve safety and quality-of-life for its residents.

Appendix 1

**Summary of Notes and Comments from Community Meeting:
June 15, 2011**

**Summary of Notes and Comments from Community Meeting:
October 13, 2011**

Summary of Notes and Comments from Community Meeting

Meeting Date and Location:

Wednesday, June 15, 2011 at 7 p.m.

North Haven Memorial Library, Community Room, 17 Elm Street

North Haven, CT

- **Attendance:**

- 42 Public Attendees (Sign-in sheets attached; excluding Town, SCRCOG, and Consultant staff)
- Representing South Central Regional Council of Governments (SCRCOG) – Stephen Dudley.
- Representing Town of North Haven – Jonathan Bodwell (Town Engineer), Chief Tom McLoughlin (NHPD)
- Representing CHA (SCRCOG’s consultant) – Jeff Parker, Casey Hardin.

- **Meeting Overview:**

- The purpose of the meeting was to inform the community about the study; to provide an opportunity for community participants to express their concerns about traffic speeds and safety issues in the corridor; and to discuss potential traffic calming measures for the corridor. This meeting was the first of two community meetings scheduled for this study.
- CHA conducted a PowerPoint® presentation that provided an overview of the study (including study area, objectives, community involvement, and schedule); summarized preliminary finding relative to roadway characteristics, traffic conditions, and accident history; and solicited community input regarding key issues and problem areas. The presentation also included information about potential opportunities and measures for speed mitigation.
- Large-scale exhibits were on display and illustrated the study area, accident history, and traffic and speed data.
- The meeting was publicized via a press release from the Town of North Haven and a letter mailed to residents of the Spring Road and Laydon Avenue corridor. Copies of the press release and resident letter are attached.
- Attendees were encouraged to indicate their residence by placing a push pin on a map of the study area. The resultant distribution of the push pins showed relatively uniform representation of the entire corridor (copy of map attached).
- Attendees were also encouraged to complete and submit comment forms documenting the issues and problem areas that are of concern to them (copies of completed forms attached).
- The meeting was recorded and replayed on local cable access television, NHTV.

- **Summary of General Community Comments:**

- An attendee expressed concern about through trucks using the corridor, noting there are signs located at both ends of the corridor that prohibit trucks.
- Concerns about truck traffic became a general theme of the community comments. Specifically, several attendees indicated that there are times when tractor-trailers use the corridor, in addition to dump trucks, water company delivery trucks, school buses, and tour buses. Attendees also noted that UPS and FedEx trucks routinely travel through the corridor at high speeds.
- An attendee stated that the primary reason for the prohibition on through trucks relates to the presence of the high pressure Algonquin Transmission Gas Line, buried under Spring Road, with the through truck ban intended to limit vibrations from the roadway affecting the gas line.
- Chief McLoughlin pointed out that the “No Through Trucks” is somewhat misleading, noting that as long as the truck has business in the area, then they are not considered a through truck.
- Several attendees agreed that a popular dump truck route seems to take vehicles north on Spring Road and west on Beach Street to Route 103.
- Attendees suggested re-routing traffic to Route 103, whether truck or otherwise.
- Chief McLoughlin stated that his personnel could and would make contact with specific trucking companies to encourage them to utilize Route 103 as their primary route, and to remind them to be careful of their speeds though residential areas.
- Several attendees agreed that safety of walking and bicycling in the corridor is a concern because of traffic speeds and aggressive motorists. The corridor has few sidewalks and no delineated shoulders.
- Some attendees noted that they would support the installation of sidewalks, though J. Bodwell noted that provisions for new sidewalks are not the focus of this study.
- Some attendees also expressed a desire to bicycle in the corridor and seemed to welcome the idea of providing edge lines to delineate a shoulder.
- A resident noted that there is a horse stable on Spring Road and that equestrians are allowed to use Spring Road, posing a safety issue that should be considered.
- Numerous attendees introduced and supported the notion of installing stop signs at locations throughout the corridor to force motorists to reduce speeds. J. Parker explained that stop signs are not intended for speed control and that there are specific warrants for new stop controls (such as traffic operations; and safety issues such as accident history or poor sightlines) that must be met before stop signs are installed. J. Parker stated that each side road intersection would be evaluated as part of the study to determine if any currently meet warrants for new stop control.
- An attendee noted that a project in East Haven installed stop signs along a similar type of road and suggested that North Haven could do the same.

- **Summary of General Community Comments (continued):**
 - S. Dudley asked the attendees to keep an open mind about the types of measures that could be recommended by this study and to not just think that stop signs would resolve speed issues. S. Dudley further noted that stop signs could result in increased noise due to vehicle acceleration and braking, and new safety problems associated with motorists failing to obey the stop control.
 - A number of attendees noted the dangers associated with getting mail from their roadside mailboxes because of high speeds and associated reluctance to step in the road to access their boxes.
 - An attendee noted that he has had to replace five mailboxes as a result of them being hit by errant vehicles.
 - A number of attendees noted that it is not safe for children to play in front yards in the corridor. One resident cited a recent accident at 92 Spring Road that resulted in a car nearly hitting her husband and child.
 - An attendee pointed out that the poor pavement condition along Spring Road and Laydon Avenue actually contributes to lowering speeds.
 - An attendee suggested concentrated radar checks to try and catch speeders on Spring Road.
 - Several attendees noted that two housing developments are planned in the area and suggested that this potential traffic would contribute to traffic and safety issues on Spring Road.

- **Summary of Location-specific Community Comments:**
 - An attendee stated that there are some issues with the traffic signal at the intersection of Route 103, Laydon Avenue, and Pool Road. For vehicles turning left from Route 103 to Laydon Avenue, there is a left turn arrow which has no yellow or red indication, causing some motorists to continue to turn left in front of on-coming traffic when the exclusive left-turn signal phase expires.
 - An attendee asked about the current signal timing of the intersection of Route 103, Laydon Avenue, and Pool Road, stating that as a motorcyclist queued at the intersection, the traffic signal skipped over the Laydon Avenue phase. He expressed his opinion that more green time should be given to the Laydon Avenue approach.
 - Several attendees commented about safety concerns at the intersection of Laydon Avenue with Tennyson Avenue and Pequot Avenue. The intersection features stop signs on the Tennyson and Pequot approaches, while there is no traffic control for Laydon Avenue. Attendees commented that there are poor sight lines from both Tennyson and Pequot Avenues, in part due to the adjacent horizontal curve on Laydon Avenue/Spring Road. An attendee suggested this could be an appropriate place to implement stop signs on Laydon Avenue. J. Parker stated that sight line issues from this intersection would be investigated as part of the study.

- **Summary of Location-specific Community Comments (continued):**
 - An attendee noted concerns about the horizontal curve on Laydon Avenue near the railroad tracks. He mentioned that vehicles routinely run off the road, potentially hitting obstacles such as utility poles and trees. It was noted by several attendees that there is no horizontal curve warning sign in the area.
 - An attendee noted strange patterns of activity at the gas facility at 67 Laydon Avenue, particularly people parking there at night despite signs saying no parking. The attendee also complained about the level of activity at the gas facility, particularly the number of trucks entering and exiting.
 - An attendee noted that the long straightaway between Roarke Road and Beach Street provides southbound motorists an opportunity to build up speed.
 - An attendee stated that a high number of drivers run the stop sign on the Beach Street approach to Spring Road while turning right. Another attendee suggested that this was a potential location for stop signs to be installed on the Spring Road approaches to the intersection, making the intersection a three-way stop.
 - An attendee stated that a high number of drivers run the stop sign on the Potter Road approach to Spring Road. The attendee also stated that there are sightline issues looking in both directions from the stop sign on Potter Road.
 - An attendee noted the crest vertical curve on Spring Road just north of Livingston Drive restricts sight distance looking right from the stop sign on the Livingston Drive approach to the intersection.
 - An attendee noted that the straightaway at the southern end of Spring Road allows drivers to accelerate quickly upon entering the corridor. Several attendees stated that it is difficult for them to turn into their driveways as vehicles follow too closely.

- **Summary of Other Community Comments:**
 - An attendee stated that 4800 vehicles per day sounded like a lot of traffic for Spring Road. J. Parker stated that that number is consistent with previous counts of Spring Road and it is consistent with volumes on similar roadways in the region.
 - S. Dudley explained that this study is the third traffic calming study SCRCOG has performed in recent years and that it is important for residents and town officials to work with the study team and keep an open mind as they develop recommendations for this project as there is potential for other projects in North Haven. An attendee asked what the success level of those projects was. Mr. Dudley stated that to this point both have been successes, with the study performed in Wallingford having particularly tangible results.

Summary of Notes and Comments from Community Meeting

Meeting Date and Location:

Thursday, October 13, 2011 at 7 p.m.

North Haven Memorial Library, Community Room, 17 Elm Street

North Haven, CT

- **Attendance:**

- 27 Public Attendees (excluding Town, SCRCOG, and Consultant staff)
- Representing South Central Regional Council of Governments (SCRCOG) – Stephen Dudley.
- Representing Town of North Haven – Michael Freda (First Selectman), Jonathan Bodwell (Town Engineer), Chief Tom McLoughlin (NHPD), Captain Mark Genovese (NHPD), Lieutenant Kevin Glenn (NHPD)
- Representing CHA (SCRCOG’s consultant) – Jeff Parker, Casey Hardin.

- **Meeting Overview:**

- The purpose of the meeting was to inform the community about the study; to update progress since the last Community Meeting; to present preliminary recommendations of the study; and to provide an opportunity for community participants to express their opinions on the preliminary recommendations of the study. This meeting was the second of two community meetings scheduled for this study.
- CHA conducted a PowerPoint® presentation that provided a study overview and summarized findings; summarized preliminary recommendations for the study area and solicited community input regarding the preliminary recommendations. The presentation also included an update on proposed schedule for the conclusion of the study.
- Large-scale exhibits were on display and illustrated the previous study findings, study area, accident history, and traffic and speed data.
- The meeting was publicized via a press release from the Town of North Haven and a letter mailed to residents of the Spring Road and Laydon Avenue corridor.
- Attendees were encouraged to indicate the location of their residence by placing a push pin on a map of the study area. The distribution showed small clusters of residents located around the Spring Road-Beach Street intersection, around the Spring Road-Potter Road intersection, and along Laydon Avenue, with others randomly distributed throughout the study area.
- Attendees were also encouraged to complete and submit comment forms documenting the issues and problem areas that are of concern to them.

- **Summary of General Community Comments:**

- An attendee asked what the study boundaries are and whether the study would remain valid with a 6-7% increase in traffic, due to construction of two residential developments within the area. J. Parker explained that the primary recommendations of the study deal with vehicular speeds, so any increase in traffic volume alone would not affect study recommendations. The study recommends that intersections within the study be monitored in the future for potential to meet warrants to install multi-way stop signs, thereby increases to traffic volume should be included in the monitoring program.
- An attendee asked what the time period was for the 129 occasions which NHPD sent a cruiser detail to monitor speeding on Spring Road. The data is from August 2008 through August 2011.
- An attendee asked if there was a decrease in tickets/warnings handed out during the time period. J. Parker stated that the study did not evaluate the number and types of penalties handed out by NHPD during these enforcement occasions.
- An attendee asked if the study team knew how many tickets had been written. Chief McLoughlin stated that on Spring Road, in this calendar year (2011) there had been 49 stops, with 34 citations given and 3 written warnings given.
- An attendee stated that her son was almost hit by a car going around a stopped school bus (with its stop sign and lights on) and that she was disappointed with the police response. Chief McLoughlin stated that NHPD could include watching for vehicles illegally passing stopped school buses as part of their regular enforcement efforts in the corridor.
- An attendee asked if areas with medians allow enough room for a bus or truck to pass a pedestrian or pedestrian walking a dog. J. Parker stated that space adjacent to a median would be limited for passing, but noted that the median lengths would be short enough for the bus or truck to allow the pedestrian to clear the area prior to passing through.
- An attendee stated that this is the time of year when residents dump their leaves onto and into the road illegally. He asked if town officials can step up enforcement of this. J. Bodwell stated that the Town released notices advising residents that it was illegal to do so.
- An attendee asked if speed humps could be applied to Beach Street. J. Parker said no, but Narrowed Travel Lanes could be applied.
- An attendee noted that speeding through the area (Beach Street-Spring Road intersection) gets worse by the day.
- An attendee invited NHPD to have officers conduct traffic details from his driveway on a side street off Beach Street. The attendee stated that NHPD should not make it known where traffic enforcement was happening. J. Parker stated that the intent of the enforcement notifications would not be to identify location, just timing of when the enforcement would happen.

- An attendee noted that existing speed limit signs are often ignored, and asked if more high visibility, larger, yellow speed limit signs could be used. J. Parker stated that new requirements have been put in place regarding the reflectivity of sign materials. Any new signs would be installed per the latest standards.
- An attendee stated his opinion that pavement reduction could slightly reduce travel speeds. He stated that he thought narrowing Laydon Avenue from the outside in could be more effective. Chief McLoughlin stated that he believed that drainage concerns (amidst other costly items) could be prohibitive, and that residents of other roads would expect the same for their roads. J. Parker stated that localized neck downs could be provided, but that the reasons stated by Chief McLoughlin are what led to the concept of recommending central medians, thereby narrowing from the inside of the road out.
- An attendee asked if stop signs could be provided for traffic calming. J. Parker stated that multi-way stops cannot be introduced to slow traffic. Chief McLoughlin stated that intersections with multi-way stop signs can have a significant amount of accidents.
- An attendee asked the cost of installing a stop sign, and opined that stop signs would be a cheaper way to of slowing traffic. J. Parker stated the estimated cost is \$200 per installed sign.
- An attendee stated that the pavement on Spring Road and Laydon Avenue is in poor condition and that her house shakes when large vehicles pass. Chief McLoughlin stated that paving money will become available following an upcoming referendum. Chief McLoughlin also stated that he will allocate money to have edge lines applied to Spring Road and Laydon Avenue in the near future.
- An attendee stated his opinion that travel speeds would be increased following repaving of Spring Road.
- An attendee asked why no traffic details had been provided on Saturdays, when truck travel appears to be at its highest. Chief McLoughlin stated that that could be addressed.
- An attendee noted that Beach Street was the busiest side road of Spring Road, and deserved thought for traffic calming measures of its own.
- S. Dudley stated that it is important to implement measures of the study incrementally, and that it is important for residents to remember that municipal officials do not always have funding available to accomplish what they would like to. First Selectman Freda added that the Town would start the implementation process by painting edge lines on Spring Road and Laydon Avenue.
- An attendee asked if there was a planned time to test and see if there was any affect from the painted edge lines. Chief McLoughlin stated that the edge lines would be painted as soon as possible. Measures to evaluate changes in travel speeds could be set up in the spring of 2012.
- An attendee asked how travel speeds would be measured. Chief McLoughlin stated that the NHPD's stealth unit would be used. The stealth unit is placed on a utility pole and passing motorists are unaware of its presence. S. Dudley suggested performing stealth tests often to accurately track changes in travel speeds in the corridor.

- An attendee asked if the proposed measures are ineffective, would stop signs be considered. J. Parker stated that installing stop signs is not an acceptable solution to speeding. S. Dudley stated that the notion that stop signs can be used to slow traffic is a fallacy.
- First Selectman Freda polled the audience on whether they wanted Spring Road to be repaved. Upon first request, five attendees raised their hands for yes, four raised their hands for no. Upon a second request, seven attendees raised their hands for yes, four raised their hands for no.
- An attendee noted that after previous paving operations it appeared the curb reveal height had decreased. J. Bodwell explained that in the past the Town had repaved the roads without milling, but now the Town mills roadways before paving.
- An attendee noted a drainage problem in front of her house on Laydon Avenue.
- An attendee asked if roads were numbered in priority level for paving. J. Bodwell stated that the Town would be working with SCRCOG in the future to establish paving priorities. S. Dudley noted that SCRCOG was in the process of developing paving prioritization plans for all of its member municipalities. First Selectman Freda noted that the Town had received a grant from SCRCOG for the discussed project.
- An attendee asked if stealth monitoring could be performed on Beach Street. Chief McLoughlin stated that could be accommodated.
- An attendee asked if CHA would be involved in evaluating performance of implemented measures. J. Parker stated that the limit of CHA's involvement would be the drafting of the final report.
- An attendee asked if the Town would perform a study on the effects of providing striped edge lines. Chief McLoughlin stated that the Town would perform the study and that they would publish the results.

Appendix 2

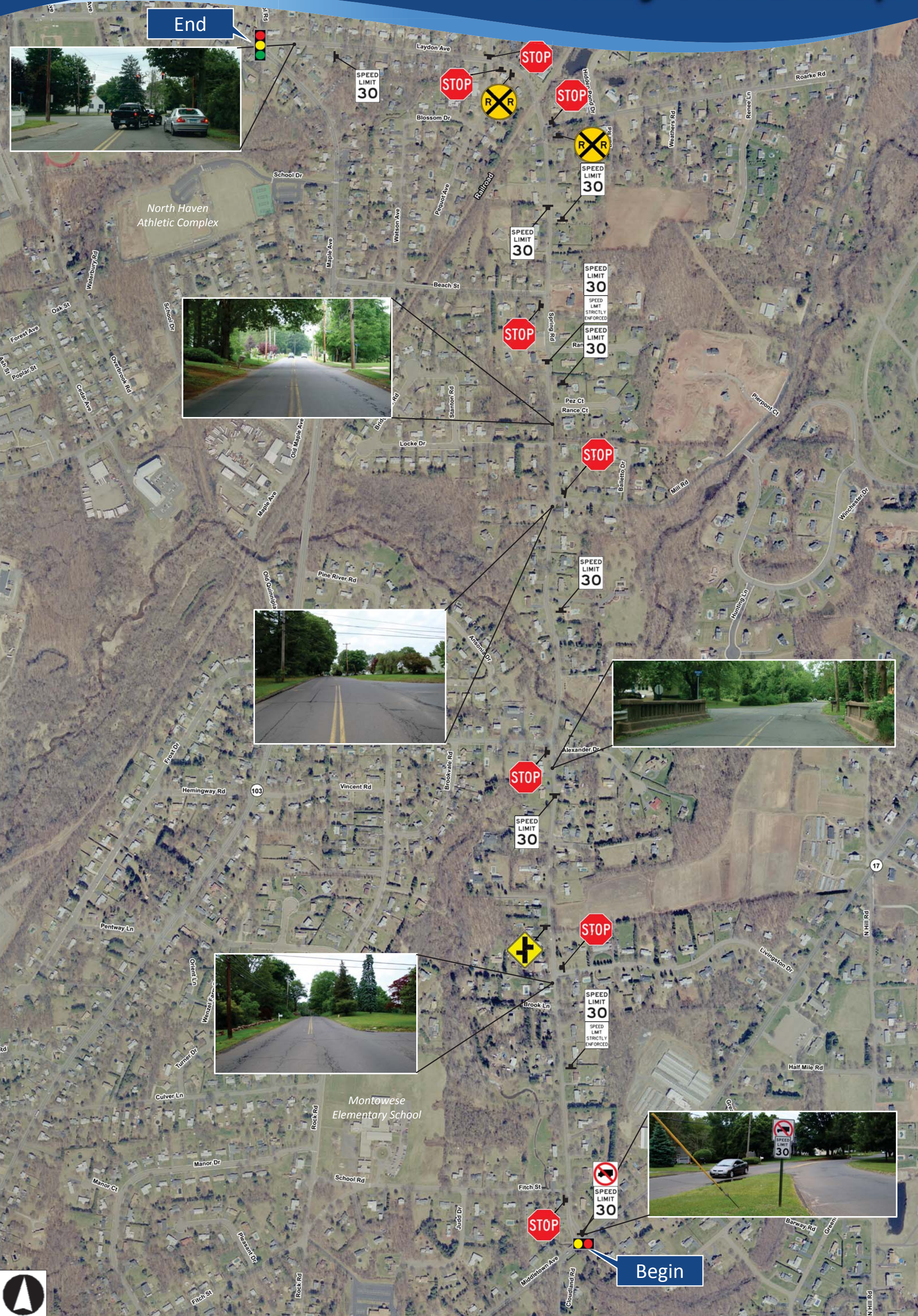
Study Area Map

Speed & Traffic Data Map

Accident History (2008 – 2011) Map

Spring Road & Laydon Avenue Traffic Study

Study Area Map



Spring Road & Laydon Avenue Traffic Study

Speed & Traffic Data

Westbound Speeds:
 Average: 37 mph
 85th Percentile: 43 mph
Eastbound Speeds:
 Average: 35 mph
 85th Percentile: 40 mph
 ADT: 3800

Northbound Speeds:
 Average: 34 mph
 85th Percentile: 39 mph
Southbound Speeds:
 Average: 37 mph
 85th Percentile: 43 mph
 ADT: 4900

Northbound Speeds:
 Average: 40 mph
 85th Percentile: 46 mph
Southbound Speeds:
 Average: 37 mph
 85th Percentile: 42 mph
 ADT: 4800

Speeds (January 2010):
 Average: 35 mph
 85th Percentile: 41 mph
Speeds (September 2009):
 Average: 36 mph
 85th Percentile: 42 mph
 ADT: 4200

Northbound Speeds:
 Average: 38 mph
 85th Percentile: 44 mph
Southbound Speeds:
 Average: 35 mph
 85th Percentile: 40 mph
 ADT: N/A

Legend:

- Data Collected by ATRs (May 2011)
- Data Collected by Police Dept.

Definitions:

ATR – Automatic Traffic Recorder. Device placed across roadway to collect traffic data.
 ADT – Average Daily Traffic, reported in vehicles per day (vpd). Total two-way traffic volume on roadway at a given location.
 85th Percentile Speed – Speed at which 85% of vehicles are traveling at or below.



Spring Road & Laydon Avenue Traffic Study

Accident History

(2008 – 2011)

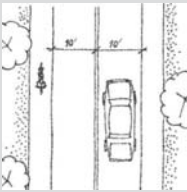


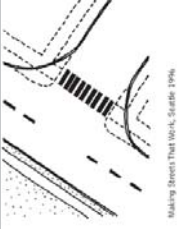


Appendix 3



Table of Traffic Calming Measures Applicable to Spring Road – Laydon Avenue Corridor

Traffic Calming Opportunities Map

Traffic Calming Measures Applicable to Spring Road – Laydon Avenue Corridor

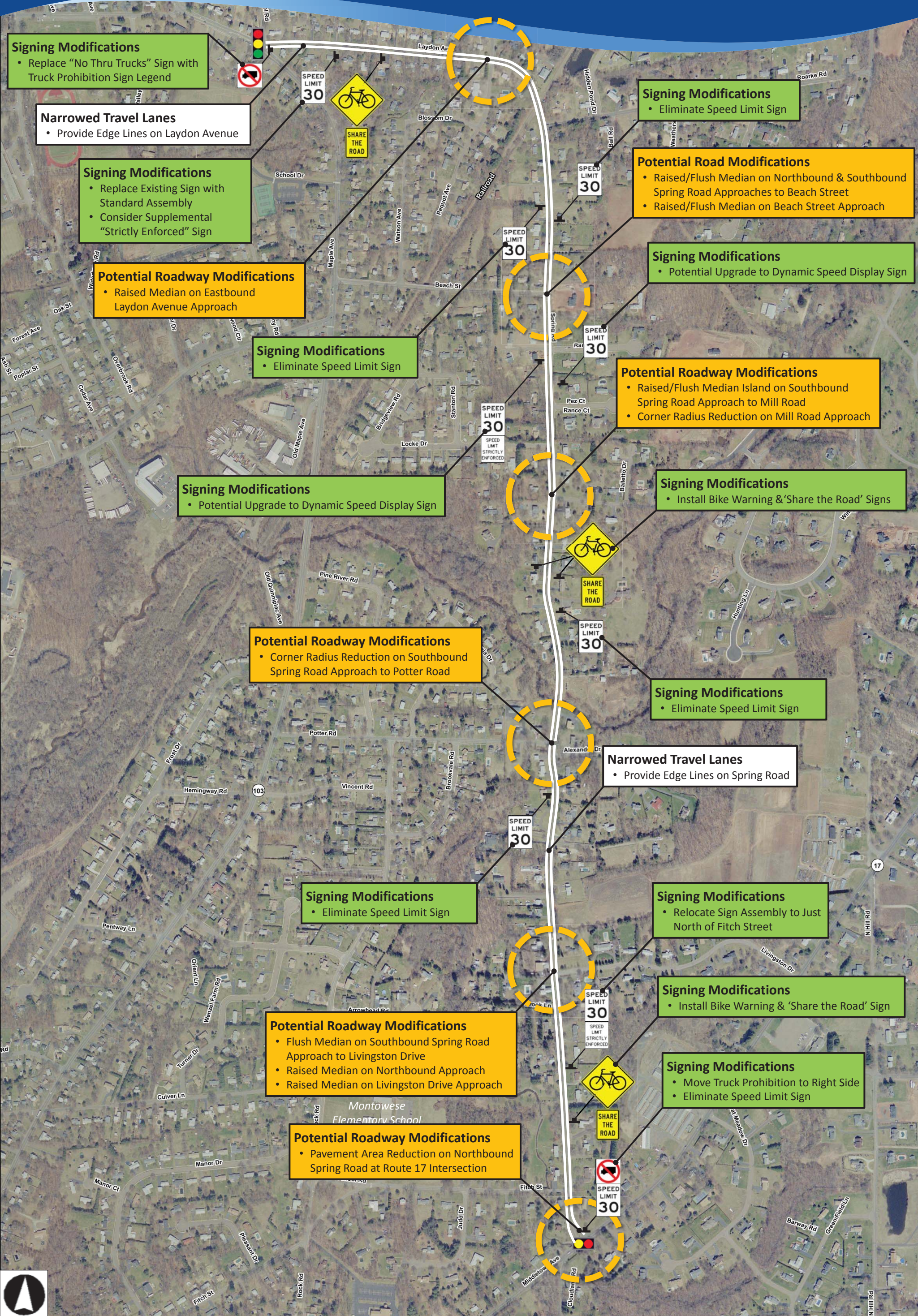
Measure	Description		Key Benefits (+)/Drawbacks (-)	Typical Cost	Other Considerations
<p>Narrowed Travel Lanes</p>	<ul style="list-style-type: none"> Travel lanes delineated to be 10 ft wide – the minimum width permitted by CTDOT standards on Spring Road and Laydon Avenue (existing major collector roadways). Narrowed lanes can be achieved by applying white painted edge lines on the existing roadway without reducing the overall existing pavement width. 		<ul style="list-style-type: none"> + Narrow lanes encourage speed reduction by requiring motorists to occupy less roadway space and to stay within the lanes while driving. + Narrow lanes with edge lines maximize and define the amount of roadway space allocated to bicyclists. - Painted edge lines require routine reapplication due to wear. 	<ul style="list-style-type: none"> Paint: \$0.70 per LF of edge lines (price includes left and right edge lines). Thermoplastic: \$2.00 per LF of edge lines (price includes left and right edge lines). <p>Corridor is approximately 10,000 ft long.</p>	<ul style="list-style-type: none"> Enhance effectiveness of narrowed lanes by reducing pavement area where more than 15 ft of combined travel lane and shoulder width is available.
<p>Signing Modifications</p>	<p>Regulatory Signs:</p> <ul style="list-style-type: none"> Speed limit signs posted at key locations to maximize visibility. Auxiliary signs such as ‘Speed Limit Strictly Enforced’ posted below speed limit signs at key locations. Thru-truck prohibition signs posted at north and south entrances to corridor. <p>Warning Signs:</p> <ul style="list-style-type: none"> ‘Share the Road’ warning signs posted at regular intervals along corridor. Pedestrian warning signs posted where pedestrian activity is common. 		<ul style="list-style-type: none"> + Regulatory signs clearly convey traffic regulations and establish enforcement guidelines. + Warning signs alert drivers to potential presence of bicyclists and pedestrians. - Abundance of signs can create sign pollution. 	<ul style="list-style-type: none"> \$250 - \$425 per new sign assembly. 	<ul style="list-style-type: none"> Over-signing can diminish effectiveness of signs. Studies show that closely spaced speed limit signs do not measurably reduce travel speeds.
<p>Dynamic Speed Display (DSD) Signs</p>	<ul style="list-style-type: none"> Electronic signs erected in strategic locations that detect and display travel speeds of approaching motorists, typically mounted with speed limit signs. 		<ul style="list-style-type: none"> + DSD signs encourage speed reduction by alerting drivers to actual travel speeds. + DSD signs complement police enforcement measures. - DSD signs require power source (solar or hard-wired). 	<ul style="list-style-type: none"> \$6,000 Each for Solar Powered. \$5,000 Each for Hard-wired. 	<ul style="list-style-type: none"> Signs can be relocated easily at minimal cost if alternate locations are desired.
<p>Pavement Area Reduction</p>	<ul style="list-style-type: none"> Removal of excess pavement to reduce the amount of operating space for vehicles. Typical applications include: <ul style="list-style-type: none"> Corner radius reductions at intersections. Pavement narrowing where overall pavement widths exceed 30 ft (or 15 ft each side for travel lane and shoulder). 		<ul style="list-style-type: none"> + Pavement area reductions encourage speed reduction by minimizing the amount of space available for vehicular movements. + Corner radius reductions at intersections limit turning speeds. - Insufficient space for turning movements of larger vehicles can cause encroachment into opposing travel lanes or tracking onto grass or lawns. 	<ul style="list-style-type: none"> \$5 per SF of pavement removal \$10 per LF of new bituminous curb <p>*Prices do not include any required drainage modifications.</p>	<ul style="list-style-type: none"> Curbing could be provided where corner radii are reduced to discourage vehicles from tracking off roadway. Limits of pavement removal shoulder consider space requirements for turning vehicles and whether encroachment is allowable.

Traffic Calming Measures Applicable to Spring Road – Laydon Avenue Corridor

Measure	Description		Key Benefits (+)/Drawbacks (-)	Typical Cost	Other Considerations
<p>Median Islands</p>	<p>General:</p> <ul style="list-style-type: none"> Short, raised or flush islands located in strategic locations along the center of the roadway that require motorists to shift driving paths to remain in their lane. Motorists traveling at higher speeds will be influenced to reduce speeds in order to comfortably bypass the island. <p>Raised Island:</p> <ul style="list-style-type: none"> Curbed island that is elevated 6 inches above adjacent travel lanes and is non-traversable. Typically 4 ft wide, relatively short, and not continuous across driveways or intersections. Surface can be grassed; landscaped with shrubs, trees or perennials; or hardscaped with brick or textured pavement. <p>Flush Island:</p> <ul style="list-style-type: none"> Uncurbed island of textured pavement (stamped concrete or brick pavers) that is level with or slightly (less than 1 inch) above adjacent travel lanes and is traversable. Driving on island is discouraged by vibration and noise created by uneven surface. Typically 4 ft wide, relatively short, and possibly extending in front of driveways. Flush islands can be used in place of raised islands or in conjunction with raised islands in locations where turning, vehicles, driveway access, or visibility are concerns. 	 	<ul style="list-style-type: none"> + Median islands raise motorist awareness of roadway conditions and encourage speed reduction by influencing motorists who are traveling at higher speeds to reduce speeds in order to comfortably bypass islands. + Raised islands can provide aesthetic value by accommodating landscaping. - Raised islands create obstacles for winter plowing and sanding operations. - Landscaped raised islands require regular maintenance. - Textured pavements in flush islands create noise when traversed, which can be undesirable in residential areas. 	<p>Unit Prices:</p> <ul style="list-style-type: none"> Raised: \$170 per LF Flush: \$90 per LF Other Costs <ul style="list-style-type: none"> Trees: \$500 - \$1,000 Each Shrubs: \$50 - \$200 Each Signs: \$250 Each 	<ul style="list-style-type: none"> Raised islands should not be used where visibility of the island or associated signing is limited. Limits of raised islands must consider space requirements for turning vehicles and drive locations. Minimum pavement width along each side of island should be at least 12 ft to accommodate emergency vehicles. Minimum width of roadway at a 4-ft wide island should be 28 ft. Curbing should be provided along pavement edges in vicinity of islands to discourage vehicles from leaving pavement surface while bypassing. Enhance effectiveness of speed reduction at island locations by providing street trees, shrubs, decorative grasses, perennial flowers, or other plantings located within raised islands or close to the outside edge of the roadway to create a sense of roadway enclosure and reduced operating area.

Spring Road & Laydon Avenue Traffic Study

Traffic Calming Opportunities



Signing Modifications

- Replace "No Thru Trucks" Sign with Truck Prohibition Sign Legend

Narrowed Travel Lanes

- Provide Edge Lines on Laydon Avenue

Signing Modifications

- Replace Existing Sign with Standard Assembly
- Consider Supplemental "Strictly Enforced" Sign

Potential Roadway Modifications

- Raised Median on Eastbound Laydon Avenue Approach

Signing Modifications

- Eliminate Speed Limit Sign

Signing Modifications

- Potential Upgrade to Dynamic Speed Display Sign

Potential Roadway Modifications

- Corner Radius Reduction on Southbound Spring Road Approach to Potter Road

Signing Modifications

- Eliminate Speed Limit Sign

Potential Roadway Modifications

- Flush Median on Southbound Spring Road Approach to Livingston Drive
- Raised Median on Northbound Approach
- Raised Median on Livingston Drive Approach

Potential Roadway Modifications

- Pavement Area Reduction on Northbound Spring Road at Route 17 Intersection

Signing Modifications

- Eliminate Speed Limit Sign

Potential Road Modifications

- Raised/Flush Median on Northbound & Southbound Spring Road Approaches to Beach Street
- Raised/Flush Median on Beach Street Approach

Signing Modifications

- Potential Upgrade to Dynamic Speed Display Sign

Potential Roadway Modifications

- Raised/Flush Median Island on Southbound Spring Road Approach to Mill Road
- Corner Radius Reduction on Mill Road Approach

Signing Modifications

- Install Bike Warning & 'Share the Road' Signs

Signing Modifications

- Eliminate Speed Limit Sign

Narrowed Travel Lanes

- Provide Edge Lines on Spring Road

Signing Modifications

- Relocate Sign Assembly to Just North of Fitch Street

Signing Modifications

- Install Bike Warning & 'Share the Road' Sign

Signing Modifications

- Move Truck Prohibition to Right Side
- Eliminate Speed Limit Sign

