

SOUTH WINDSOR ROAD SAFETY AUDIT

Route 5 (John Fitch Boulevard) between town lines of East Hartford and East Windsor



TABLE OF CONTENTS

1	ROAD SAFETY AUDIT PROGRAM	1
1.1	Program Background.....	1
1.2	South Windsor RSA Study Area and Location	2
2	PRIOR EFFORTS IN STUDY AREA.....	6
2.1	Economic Growth in South Windsor	6
2.2	Traffic Calming	6
3	PRE-AUDIT MEETING	6
3.1	Pre-Audit Information	6
3.3	Pre-Audit Discussion.....	10
4	RSA ASSESSMENT	11
4.1	Route 5 at Route 194 (Sullivan Avenue).....	11
4.2	Route 5 at Strong Road	11
4.3	Route 5 at Pleasant Valley Road.....	12
4.4	Route 5 at Chapel Road.....	12
4.5	Route 5 at I-291 Eastbound Ramp/Route 30 (Ellington Road).....	12
5	RECOMMENDATIONS	13
5.1	Route 5 and Route 194 (Sullivan Avenue) Intersection.....	16
5.2	Route 5 and Strong Road Intersection.....	18
5.3	Route 5 and Pleasant Valley Road Intersection	19
5.4	Route 5 and Chapel Road Intersection	20
5.5	Route 5 and I-291 Ramp/ Route 30 (Ellington Road) Intersection	22
6	SUMMARY	23
	APPENDICES	24

1 ROAD SAFETY AUDIT PROGRAM

1.1 Program Background

The Connecticut Department of Transportation (CTDOT) has created a Road Safety Audit (RSA) Program that focuses on improving the state's transportation network for all users. An RSA is a formal safety assessment of the existing roadway at selected locations. It is a qualitative review by an independent team experienced in traffic, pedestrian, and bicycle operations and design that considers the safety of all road users and proactively assesses mitigation measures to improve the safe operation of the facility by reducing the potential crash risk frequency and/or severity.

RSAs are a collaborative effort led by a team of diverse professionals including CTDOT staff, consultants, municipal officials and staff, municipal police, the Local Traffic Authority (LTA), as well as local stakeholders and community leaders. The RSA team is established for each municipality based on the requirements of the individual location. They assess and review factors that can promote or obstruct safe walking and bicycling routes. These factors include traffic volumes and speeds, topography, roadway geometrics, crash data, roadway inventory (i.e. signage, curbs, bicycle/pedestrian facilities, amenities, safety components), and sidewalks.

Each RSA is conducted using RSA protocols published by the Federal Highway Administration (FHWA). For details on this program, please refer to the CTDOT RSA Program [webpage](#).

Prior to the site visit, area topography, land use characteristics, intersection sight distance concerns, sidewalk locations, parking, and bicycle facilities are examined using available mapping and imagery. The site visit includes a pre-audit meeting, the field audit, and a post-audit meeting immediately following the field audit to discuss the observations and formulate recommendations. This procedure and the summary results are discussed in the following sections.

The summary results section of this report, Chapter 5: Recommendations, includes several recommendations and concepts that can be considered for implementation by the municipality, regional planning organization, and / or CTDOT. While many of these recommendations are less complex and easier to implement, many of the more complex ones will require further analysis to ensure that they are feasible to implement.

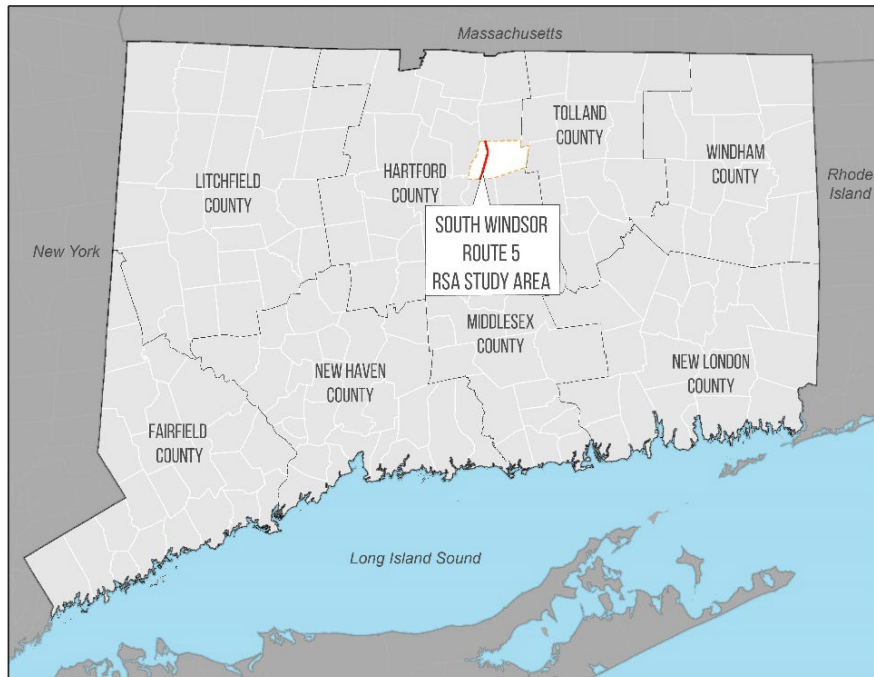
In addition, many of the more complex recommendations will likely be costly and require longer timeframes for further planning, design, and / or right-of-way (ROW) acquisition. This document does not replace future planning, design, and ROW work that may be necessary for project delivery. The more complex recommendations should be the subject of continued conversations amongst the LTA, regional planning organization, and CTDOT on planning, programming, and funding opportunities. Currently there is no dedicated funding available for construction through the RSA Program. The RSA Program [webpage](#) not only explains the RSA process but also provides information regarding potential State and Federal funding resources and guidance to help municipalities and their COGs implement RSA recommendations in the Final RSA Report.

1.2 South Windsor RSA Study Area and Location

CTDOT sponsored an RSA for the Town of South Windsor along Route 5. The study area includes the entirety of Route 5 in South Windsor from the town lines of East Windsor to the north and East Hartford to the south.

Exhibit 1 shows the study area in context to the State of Connecticut, while Exhibit 2 shows the study area in further detail.

Exhibit 1: South Windsor RSA Regional Location



The purpose of the RSA is to observe and document existing concerns followed by recommendations for improvements to safety and operations within the study area, paying particular attention to the quality of travel for bicyclists and pedestrians. The Route 5 corridor is South Windsor's busiest employment hub, and provides access to local residential areas, restaurants and commercial big-box businesses, warehousing and logistics centers, and car dealerships. There are considerable pedestrian and bicyclist movements through and around the corridor. CTtransit operates the 92 and 96 bus services, the latter of which runs almost the entire length of the study area. Bus services experience long headways and have limited facilities. There are also several at-grade freight railroad crossings along Route 5. Exhibit 3 displays points of interest located along the corridor.

Route 5 is a principal arterial. It primarily serves longer trips between major economic/recreational areas with limited access. Route 5 intersects with an interstate, another principal arterial, minor arterials, major and minor collectors, and local roads. The study area is unique in that it serves a variety of purposes locally, regionwide, and inter-state, each with its own set of priorities for its users.

Average Daily Traffic (ADT) in the study area ranges between 9,700 and 22,700 vehicles per day, with the highest volumes seen at the southern end where Route 5 intersects with Interstate 291. Exhibit 4 displays daily traffic in the study area.

The study area contains a mix of signalized and unsignalized intersections as well as many curb cuts and entrances in to and out of property parcels. This RSA focuses around the signalized major intersections where the safety concerns and pedestrian movements are greatest.

Exhibit 2: South Windsor RSA Study Area

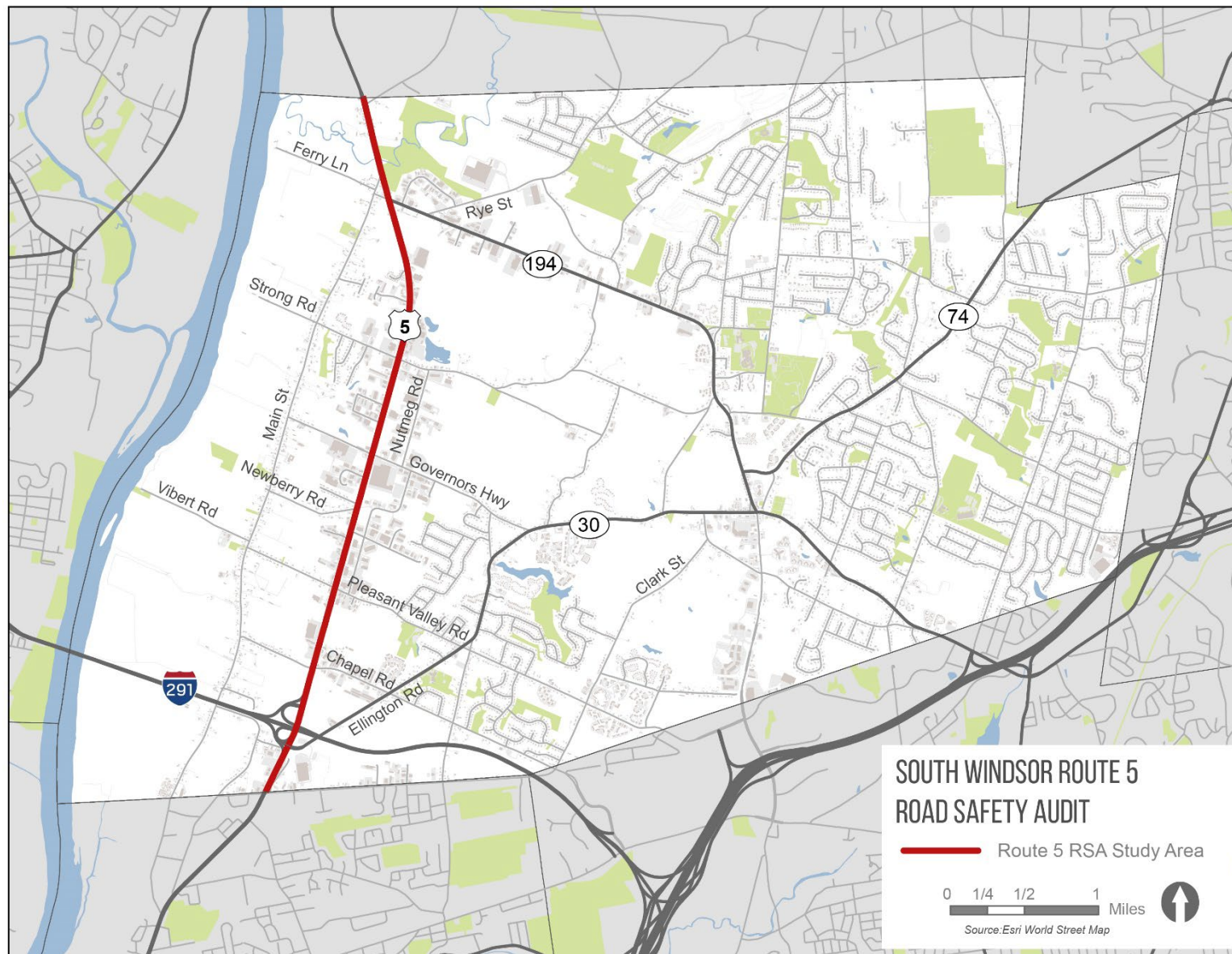


Exhibit 3: Study Area Points of Interest

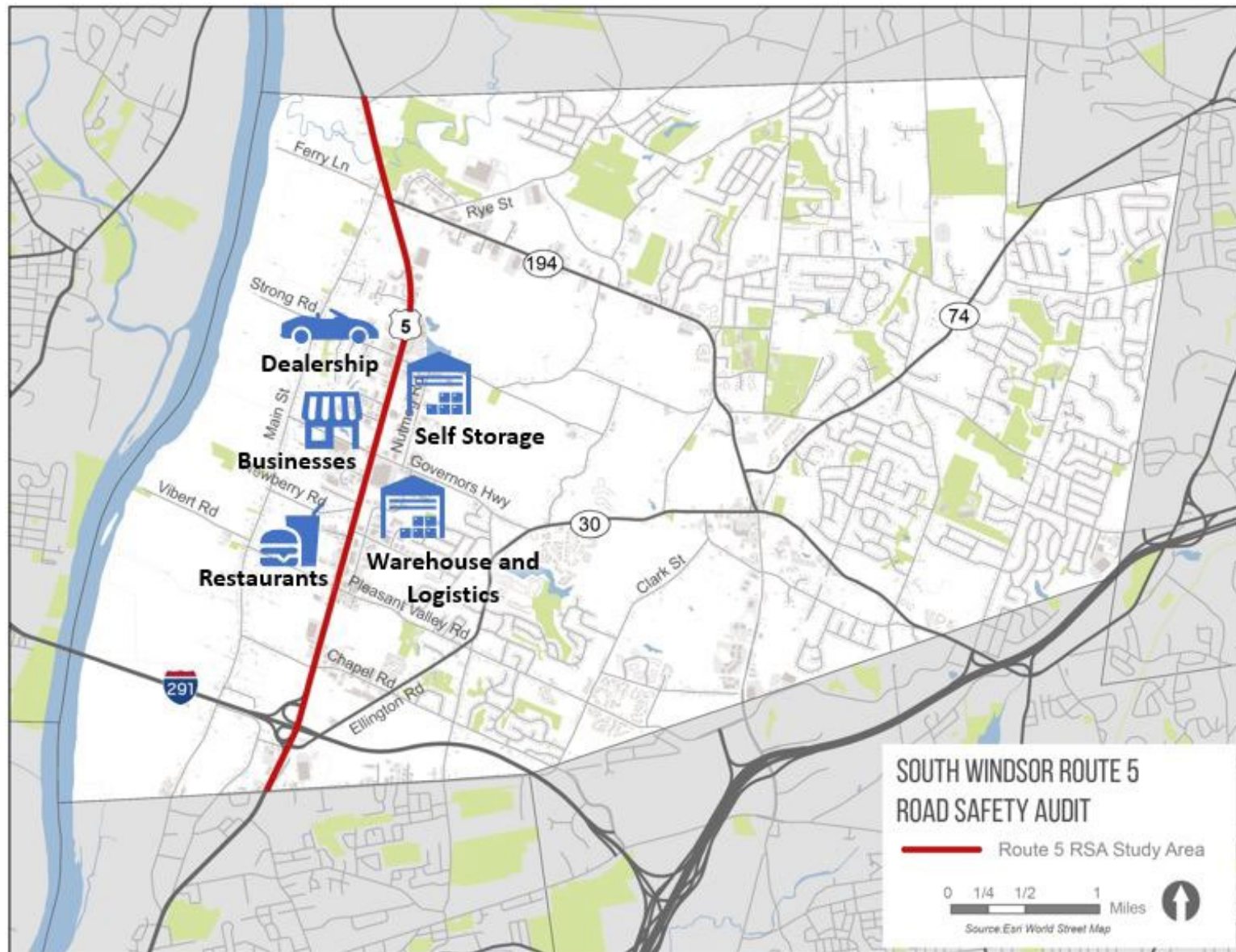
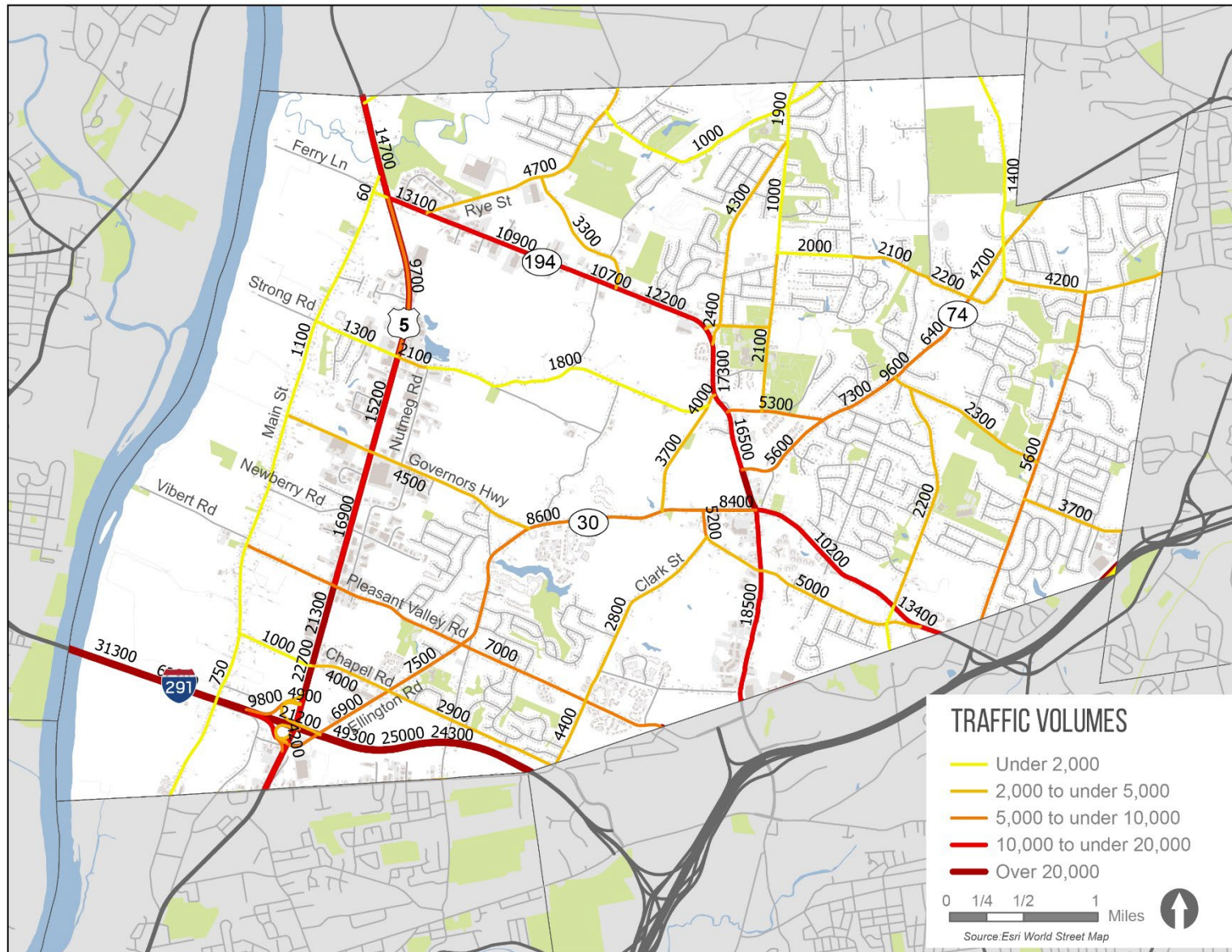


Exhibit 4: Average Daily Traffic Volumes



2 PRIOR EFFORTS IN STUDY AREA

2.1 Economic Growth in South Windsor

The Route 5 corridor through South Windsor has seen substantial economic growth and activity in recent years. Companies like Coca-Cola, Home Depot, Macy's, and Amazon have distribution centers located within a ¼ mile of the study area and are utilizing its proximity to I-291 and the freight rail line. There are many other trip generators like restaurants, car dealerships, office buildings, gas stations, and recreational facilities located on Route 5. Other empty parcels along Route 5 present the potential for even more activity, traffic, and safety concerns.

2.2 Traffic Calming

The Town of South Windsor implemented a traffic calming program in 2019, however, it only applies to local roads. Route 5 is owned and operated by CTDOT and therefore does not qualify for any traffic calming implementation measures under this program.

3 PRE-AUDIT MEETING

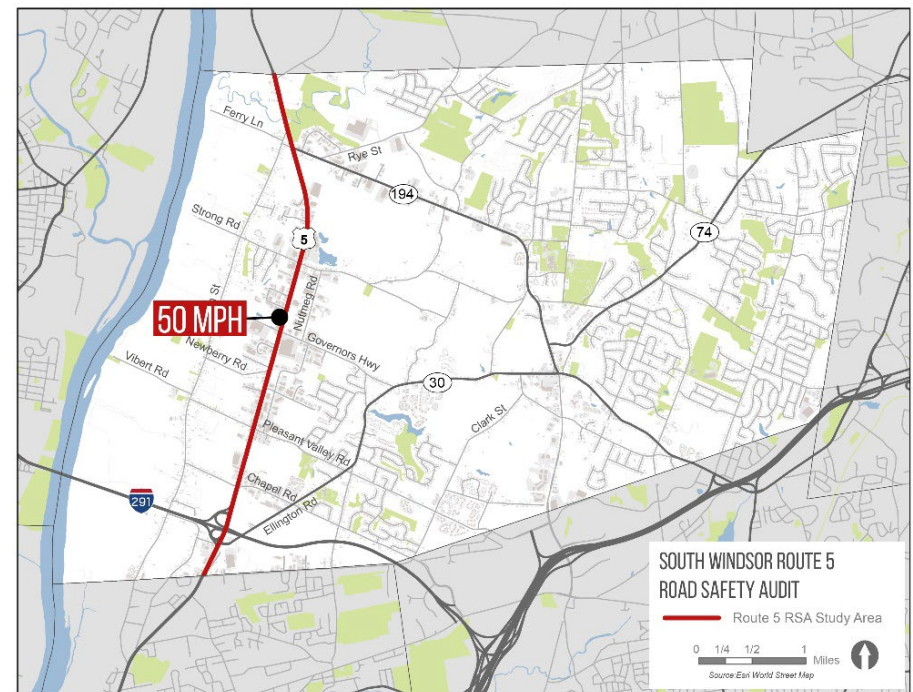
3.1 Pre-Audit Information

The RSA team conducted a pre-audit virtual meeting on Monday, February 26, 2024. The RSA team presented a brief presentation that included an overview of the South Windsor RSA goals and purpose, the study area, and

key existing conditions findings. Key themes discussed during the pre-audit meeting are presented below.

Speeds: Speed limits in the study area are 50 miles per hour (MPH) along the entire length of the corridor. Exhibit 5 displays speed limits in the study area.

Exhibit 5: Study Area Speed Limits



Crashes: Based on data retrieved from the Connecticut Crash Data Repository (CTCDR) for the five-year period between January 2018 through December 2022, there were a total of 484 crashes in the South Windsor RSA study area. Crashes were concentrated highest at the intersections of Route 5 with Route 194 (Sullivan Avenue) and the I-291 EB Ramp / Route 30 (Ellington Road). An analysis of crash rates per million entering vehicles at each intersection was performed. Exhibit 6 displays the study area crash summary, Exhibit 7 displays the crash rates per million vehicles entering the intersection, and Exhibit 8 displays an overall study area crash heatmap.

Exhibit 6: Study Area Crash Summary

Year	Fatality	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	TOTAL
2018		2	13	18	62	95
2019		3	18	23	73	117
2020		2	17	10	56	85
2021	1	6	13	16	60	96
2022		3	13	10	65	91
TOTAL	1	16	74	77	316	484

Exhibit 7: Study Area Crash Rates per Entering Vehicle Volume

Intersecting Street	Annual Million Entering Vehicles	5 Year Crash Total	Crashes per Million Entering Vehicles
Sullivan Ave	7.1	74	2.10
Strong Rd	5.2	36	1.39
I-291 EB Ramp / Ellington Rd	8.5	59	1.38
Chapel Rd	8.9	42	0.94
Governors Hwy	7.0	31	0.89
Pleasant Valley Rd	8.4	34	0.81
Scantic Rd	5.7	22	0.78
Burnham St	7.9	29	0.73
Mascolo Rd	6.4	16	0.50
Kimberly Dr	3.7	9	0.48
I-291 WB Ramp	7.5	18	0.48
South Satellite Rd	6.4	9	0.28
Bidwell Rd	6.4	8	0.25

Exhibit 8: Study Area Crash Heatmap

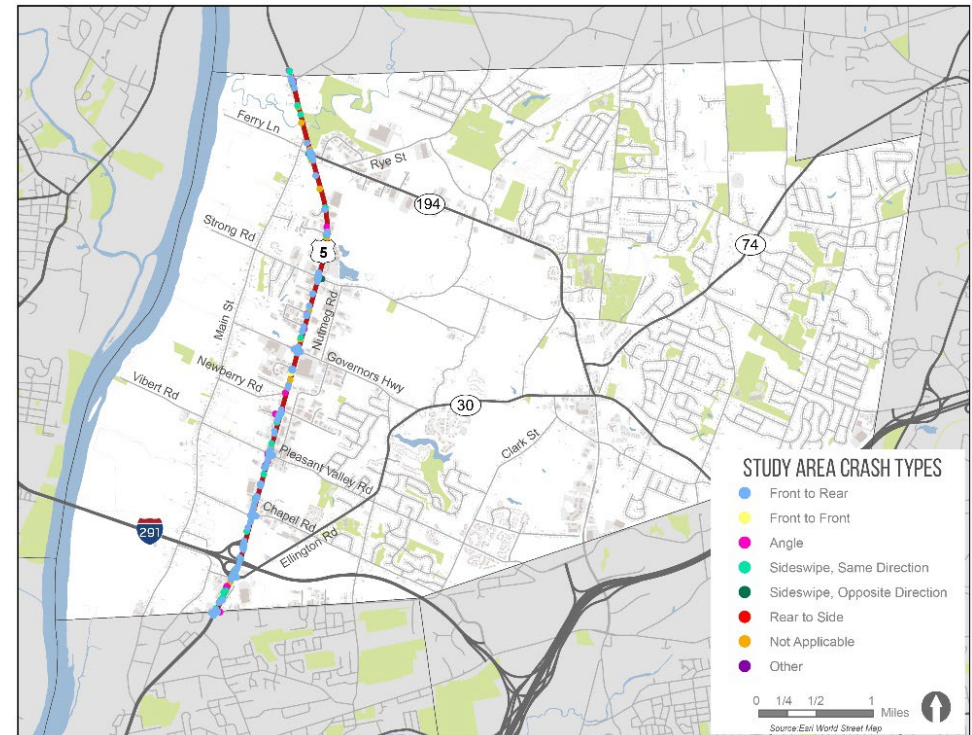


Crashes by Type: Most crashes were front to rear (rear end) and angle types. Front to rear crashes occur most commonly at intersections where cars are queued to make turning movements. Angle crashes are typical in areas with ingress / egress movements at property entrances. Exhibit 9 and Exhibit 10 display the breakdown and locations of crashes by type in the corridor, respectively.

Exhibit 9: Crashes by Type

	Fatality	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	TOTAL
Angle	1	6	25	11	51	94
Front to front		1		3	2	6
Front to rear		2	34	50	158	244
Sideswipe, opposite direction					8	8
Sideswipe, same direction		1	4	5	59	69
Rear to Side						0
Rear to Rear					1	1
Not Applicable		6	8	8	30	52
Other			3		7	10
TOTAL	1	16	74	77	316	484
Crashes Involving Pedestrians		2	1	2		5
Crashes Involving Bicyclists						0

Exhibit 10: Crashes by Type



Crash Severity: Most crashes (316) are classified as “no apparent injury” or “property damage only”. Of these, 158 were rear end crashes, which suggests low speed and low impact fender benders. There were 74 minor injury crashes that were caused mostly by angle and rear end crashes. 16 crashes resulted in serious injury, with angle and not applicable incidents as the majority. Not applicable applies typically to non-motorized vehicle crashes, including pedestrians, utility poles, and embankments, for example. There was one fatal angle crash reported in

2021 at the intersection of Route 5 with Governors Highway. Exhibit 11 displays the severity of crashes and their locations.

Crashes by Involved Person: There were five crashes involving pedestrians from 2018-2022. Of these, two were reported as serious injury. Four of the five crashes occurred at night or early morning hours.

Exhibit 12 identifies the locations of the pedestrian crashes.

Exhibit 11: Crash Severity by Location

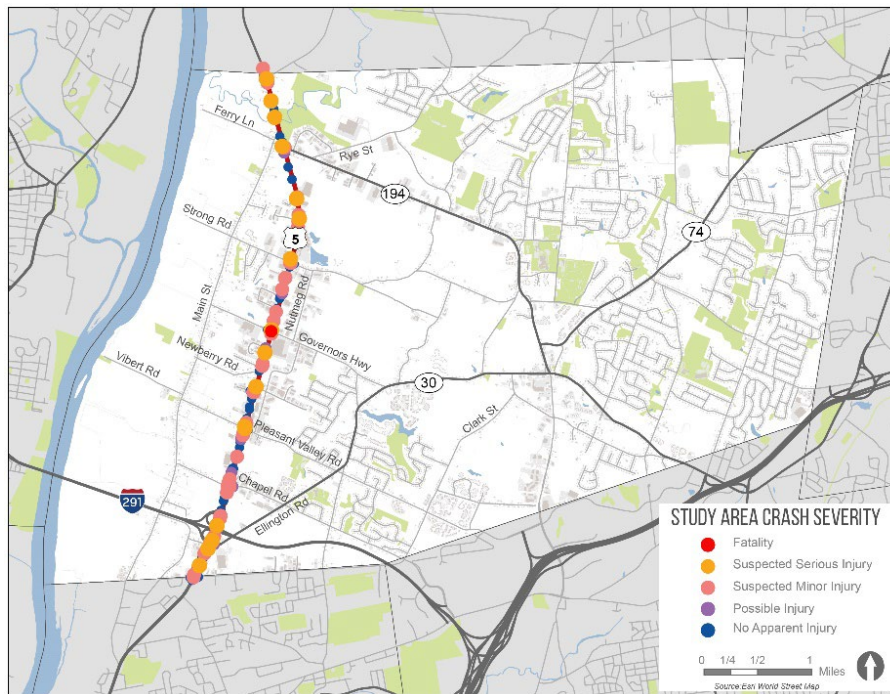
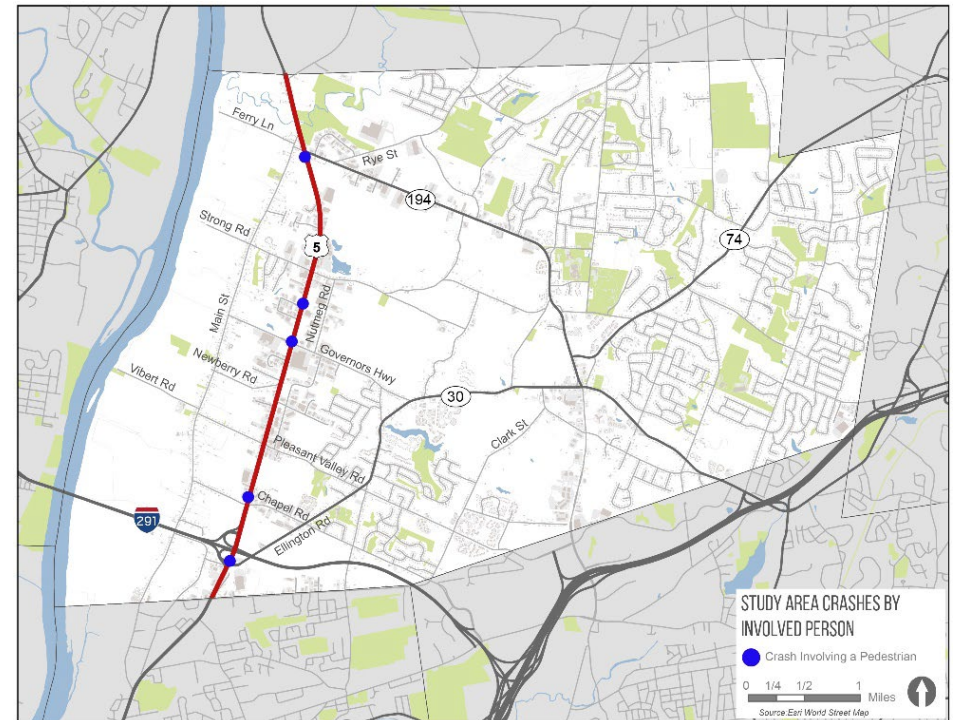


Exhibit 12: Crash by Involved Person



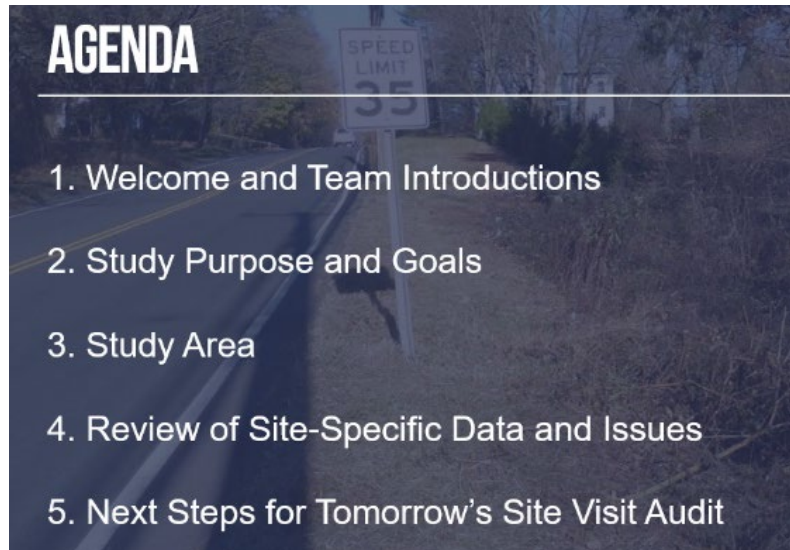
3.3 Pre-Audit Discussion

Immediately following the pre-audit presentation, a discussion followed that highlighted concerns and notes regarding the South Windsor RSA study area. Highlights from this discussion are presented below:

- Town officials feel that the use of the freight rail corridor has significantly impacted the business and growth of the corridor.
- Town officials would like to see efforts made to aesthetic upgrades and street beautification, with specific mention to the state of the guard rails.
- There are many zoning variances along the corridor, and thus a variety of uses for the network. Town officials would like to avoid making the corridor more car dependent.
- Large traffic volumes and heavy truck traffic have made noise levels a main concern.
- Transit service is present but amenities for passengers are severely lacking.
- Town officials would like to see better access management that is safer and more efficient for all mode choices.
- There are very few sidewalks, crosswalks, and other pedestrian facilities that encourage walking.
- Town officials noted that wrong-way driving is a problem, along with distracted driving and speeding.

Sample slides from the pre-audit presentation are shown in Exhibit 13.

Exhibit 13: Sample slides from Pre-Audit Presentation



4 RSA ASSESSMENT

A summary of the team's findings from documenting conditions seen in the field, along with comments by stakeholders from the Town, is presented below. Exhibit 14 shows RSA participants engaging in conversation during the RSA. Discussions were held at each of the noted locations below.

Exhibit 14: RSA participants gather at the freight railroad crossing for a discussion



4.1 Route 5 at Route 194 (Sullivan Avenue)

- Truck and heavy vehicle traffic in this area is high and produces excessive noise. Residents on Main Street can hear truck traffic.
- Intersection does not meet all Americans with Disabilities Act (ADA) compliance requirements.
- Existing crosswalk is very long and diagonal across the intersection, which is not desirable.

- The area is unpleasant aesthetically and lacks clear wayfinding yet is considered in the Town's Plan of Conservation and Development (POCD) to be a neighborhood hub.
- There are plans to implement a multi-use path from this intersection to Rye Street to the east.
- A roundabout could be an option at this location.

Exhibit 15: View southeast on Route 5



4.2 Route 5 at Strong Road

- Intersection does not meet all ADA compliance requirements.
- The railroad crossing has unclear stop bar lines for vehicles.
- The pedestrian crosswalk distance is long and does not connect to sidewalks on the either side of the road as shown in Exhibit 16.
- A portion of the width of the crosswalk has faded away and the current width is about three feet, well below the eight-foot minimum.
- Transit users have no facilities at bus stops.

Exhibit 16: Strong Road crosswalk over Route 5



4.3 Route 5 at Pleasant Valley Road

- Town officials noted that access management is needed at this intersection with many businesses and curb cuts in a ¼ mile vicinity.
- Like Sullivan Avenue, the POCD identifies this intersection area to be a neighborhood hub. Exhibit 17 shows a bicyclist using the shoulder of Route 5.

Exhibit 17: Southbound view of Route 5



4.4 Route 5 at Chapel Road

- Vegetation causes sight line challenges for certain approaches and turning movements.
- Pedestrian scale lighting is missing.

4.5 Route 5 at I-291 Eastbound Ramp/Route 30 (Ellington Road)

- There are no crosswalks or pedestrian amenities at this notably wide intersection except green light push buttons, seen in Exhibit 18.
- There is no dedicated bicycle infrastructure or amenities, and it was noted that bicyclists do use this road.

Exhibit 18: Minimal pedestrian accommodations at Route 5 and Route 30 (Ellington Road)



5 RECOMMENDATIONS

Based on the findings discussed during the RSA, a set of recommendations for the study area was compiled. These recommendations are organized by study area location. Due to the length of the study area and the existing conditions of the road, the RSA team did not walk through the entire corridor. Instead, the RSA team made several stops at the signalized intersections traveling south from Sullivan Avenue to I-291 / Route 30 (Ellington Road) while collecting data / photos and discussing relevant issues. The sections below are not intended to reduce the importance of other aspects of the corridor, but rather to organize the recommendations in a coherent way. Many of the recommendations identified by the RSA team are applicable to any / all intersections in the study area. A table of recommendations organized by location is presented in Exhibit 19.

All recommendations for all locations are categorized by their complexity of implementation and are generally categorized as follows.

- **Least Complex Recommendations:** These recommendations are typically low-cost recommendations such as striping and signage. These recommendations generally do not require extensive engineering or construction costs. More extensive recommendations which have funding previously committed may be included.
- **Moderately Complex Recommendations:** These are improvements that may require more substantial engineering than those generally included as least complex recommendations. These may require establishment of funding in capital improvement plans, or a dedicated funding item. However, these recommendations fall between the least complex and most complex, requiring some level of design and

funding, but typically do not include ROW acquisitions, extensive environmental permitting, etc.

- **Most Complex Recommendations:** These are improvements that require substantial study and engineering. These recommendations generally require significant funding for implementation and may require several years of planning to budget.

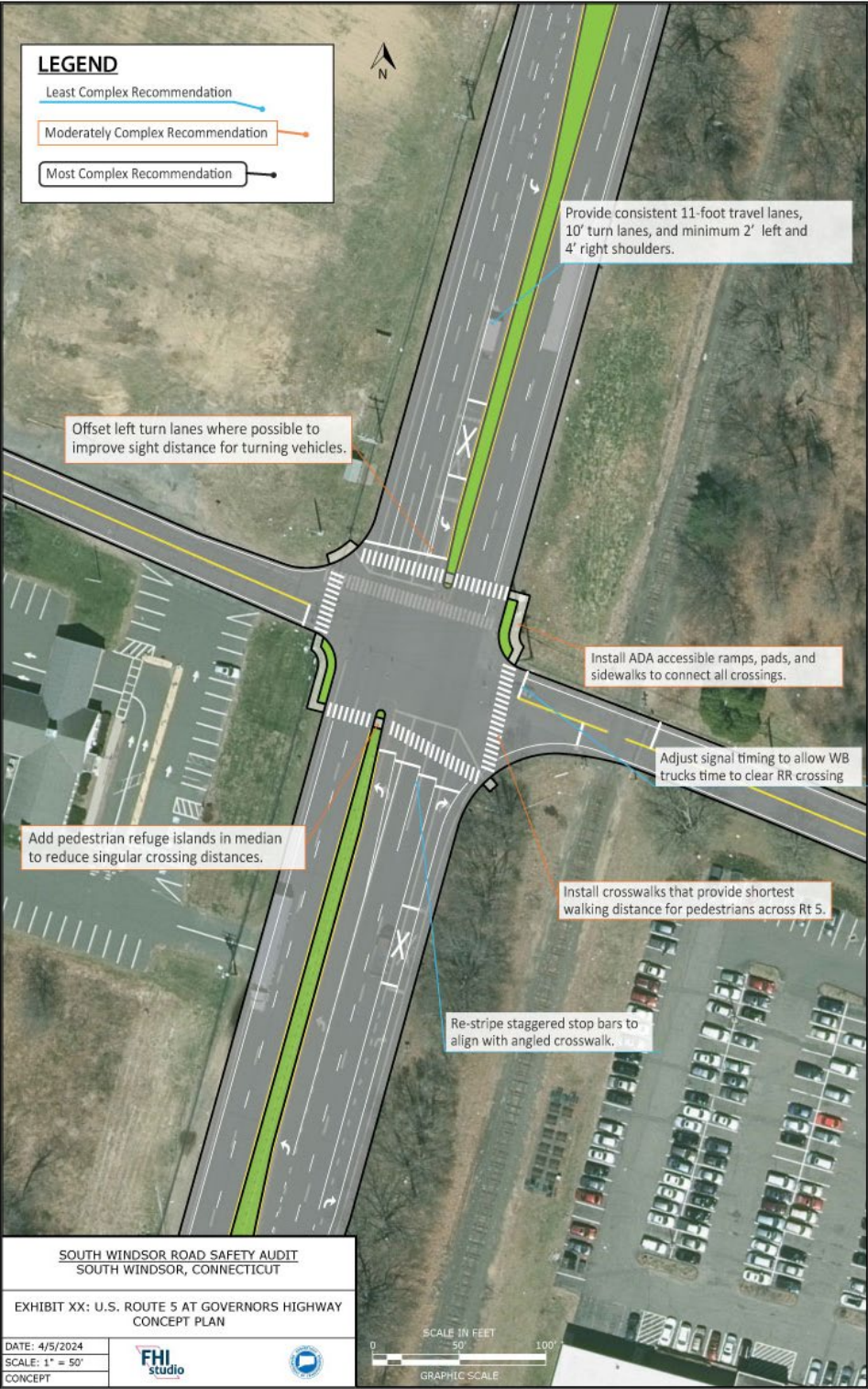
It should be noted that any work within the State ROW to be done by non-State forces will require an encroachment permit from the District 1 Permit Office and/or an official request from the South Windsor Local Traffic Authority.

Exhibit 20 provides concept designs for a “standard” intersection along Route 5. Further detail is provided in the sections below.

Exhibit 19: Route 5 Corridor Recommendations Summary

Recommendation	Location					
	General	Route 194 (Sullivan Ave)	Strong Rd	Pleasant Valley Rd	Chapel Rd	I-291/Route 30 (Ellington Rd)
Least Complex						
Restripe 11' travel lanes, 10' turn lanes, 4' min. right shoulders, 2' min. left shoulders.	●					
Restripe staggered stop bars to align with angled crosswalks		●	●	●	●	
Adjust signal timing to allow WB trucks to clear RR crossing			●	●	●	
Trim vegetation obstructing sight lines					●	
Moderately Complex						
Create green median			●	●	●	●
Install pedestrian refuge islands	●					
Install ADA compliant sidewalks, curb ramps, landings	●					
Install landings at bus stops		●	●			
Most Complex						
Construct restricted crossing U-turns (RCUT)	●					
Construct a hybrid roundabout (2x1)		●				
Pursue access management for adjacent property owners				●		

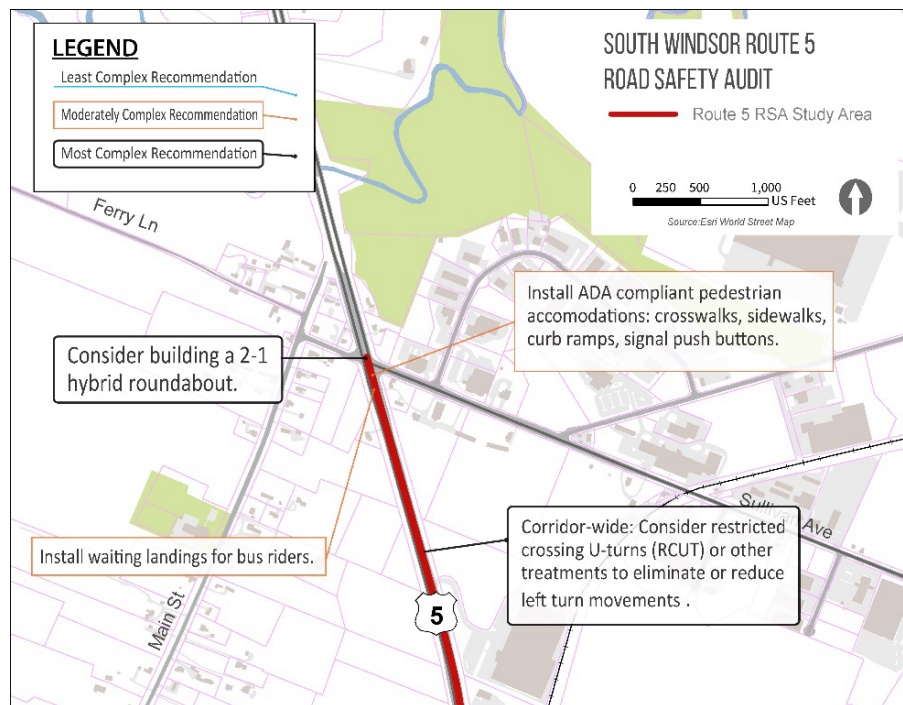
Exhibit 20: Representative Concept



5.1 Route 5 and Route 194 (Sullivan Avenue) Intersection

The recommendations for the intersection of Route 5 and Route 194 (Sullivan Avenue) are focused on pedestrians, bicyclists, and transit users while maintaining capacity for the high vehicular volumes through the corridor. The Town of South Windsor has identified this intersection as a “neighborhood hub” in the POCD, which emphasizes the importance for accommodating network users of all modes. Exhibit 21 displays the recommendations for the area.

Exhibit 21: Sullivan Avenue Recommendations



Least Complex Recommendations

- 1) Provide consistent 11' travel lanes, 10' turning lanes, and a minimum of 2' left and 4' right shoulders in order to reduce travel speeds and provide additional room for bicyclists. See Exhibit 20 for concept details.

➤ **Next Step:** LTA to contact DOT.TrafficEngineering@ct.gov

Moderately Complex Recommendations

- 1) Install landing pads at bus stop locations for transit riders.
 - **Next Step:** Municipality should contact DOT.BusStops@ct.gov to coordinate with CDOT to identify bus stop enhancements
 - **Next Step:** Check available ROW for feasibility. Town should consider applying for an Encroachment Permit. [Encroachment Permit \(ct.gov\)](https://www.ct.gov/transportation/encroachment-permit)
- 2) Install appropriate ADA compliant pedestrian accommodations such as crosswalks across all legs of the intersection, sidewalks, curb ramps, signal push buttons, and pedestrian refuge islands.
 - **Next Step:** Town to apply for an Encroachment Permit. Town may install via Encroachment Permit. [Encroachment Permit \(ct.gov\)](https://www.ct.gov/transportation/encroachment-permit)
 - **Next Step:** LTA to contact DOT.TrafficEngineering@ct.gov
- 3) Offset left turn lanes to improve sight line for left-turning vehicles. Exhibit 20 displays concept details.
 - **Next Step:** LTA to contact DOT.TrafficEngineering@ct.gov

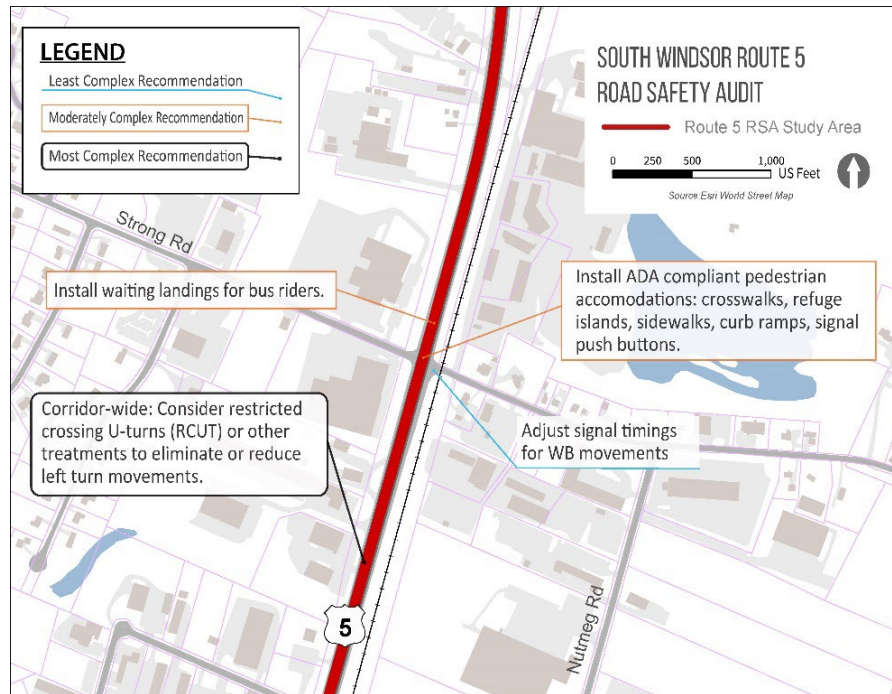
Most Complex Recommendations

- 1) Consider a roundabout with one and two circulating lanes, which is most appropriate for a minor road intersecting a major road.
 - **Next Step:** Contact CRCOG for potential funding sources.
Check available ROW
- 2) Corridor-wide: Consider eliminating left-turn movements at unsignalized intersections by installing restricted crossing U-turns along Route 5. Several designs and variations are available for consideration.
 - **Next Step:** Contact CRCOG for potential funding sources.
Check available ROW

5.2 Route 5 and Strong Road Intersection

The intersection at Strong Road is adjacent to the freight rail line that runs parallel to Route 5. The focus at this intersection is also on pedestrian facilities and increased safety. Exhibit 22 displays a map with the recommendations.

Exhibit 22: Strong Road Recommendations



Least Complex Recommendations

- 1) Adjust signal timings so that westbound traffic, particularly trucks, do not get caught between the at-grade railroad crossing and the intersection.
 - **Next Step:** LTA to send request to DOT.TrafficEngineering@ct.gov
- 2) Provide consistent 11' travel lanes, 10' turning lanes, and a minimum of 2' left and 4' right shoulders. See Exhibit 20 for concept details.
 - **Next Step:** LTA to send request to DOT.TrafficEngineering@ct.gov
- 3) Re-stripe staggered stop bars to align with angled crosswalk. See Exhibit 20 for concept details. CTDOT to provide 11-foot travel lanes with the next resurfacing project. Typical Vendor-In-Place paving (VIP) cycles can range between 10 and 20 years.
 - **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

Moderately Complex Recommendations

- 1) Install landing pads at bus stop locations for transit riders.
 - **Next Step:** Municipality should contact Dot.BusStops@ct.gov to coordinate with CTDOT to identify bus stop enhancements
- 2) Install appropriate ADA compliant pedestrian accommodations such as crosswalks, sidewalks, curb ramps, signal push buttons, and pedestrian refuge islands. Traffic Signal is currently under consideration for a complete upgrade with design completion in FY

2027. Pedestrian amenities will be included. CTDOT Traffic Engineering will coordinate with the town.

- **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information
- 3) Offset left turn lanes to improve sight line for left-turning vehicles. Exhibit 20 displays concept details.
 - **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

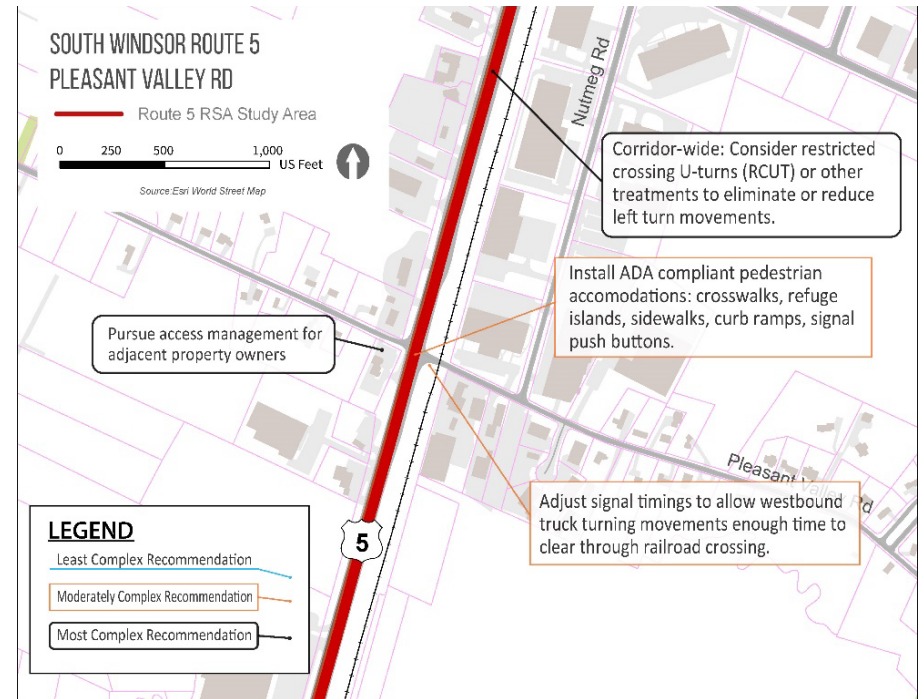
Most Complex Recommendations

- 1) Corridor-wide: Consider eliminating left-turn movements at unsignalized intersections by installing restricted crossing U-turns along Route 5. Several designs and variations are available for consideration.
 - **Next Step:** Check available ROW for feasibility. Town should consider applying for an Encroachment Permit. [Encroachment Permit \(ct.gov\)](https://www.ct.gov/transportation/encroachment-permit)

5.3 Route 5 and Pleasant Valley Road Intersection

The recommendations at Pleasant Valley Road are like those at Strong Road and are shown below in Exhibit 23 but with an added emphasis on reducing the number of curb cuts and driveways. This intersection has been included in a state project for traffic signal improvements/replacement. Concerns and recommendations will be provided to the project engineer. Coordination will be required.

Exhibit 23: Pleasant Valley Road Recommendations



Least Complex Recommendations

- 1) Adjust signal timings so that westbound traffic, particularly trucks, do not get caught between the at-grade railroad crossing and the intersection.
 - **Next Step:** Contact LTA to send request to DOT.TrafficEngineering@ct.gov
- 2) Provide consistent 11' travel lanes, 10' turning lanes, and a minimum of 2' left and 4' right shoulders. CTDOT to provide 11" travel lanes with the next resurfacing project. Typical Vendor-In-Place paving (VIP)

cycles can range between 10 and 20 years. See Exhibit 20 for concept details.

- **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

Moderately Complex Recommendations

- 1) Install appropriate ADA compliant pedestrian accommodations such as crosswalks, sidewalks, curb ramps, signal push buttons, and pedestrian refuge islands. Town may install via Encroachment Permit. [Encroachment Permit \(ct.gov\)](https://www.ct.gov/dot/transportation/encroachment-permit). Traffic Signal is currently under consideration for a complete upgrade with design completion in FY 2027. Pedestrian amenities will be included. CTDOT Traffic Engineering will coordinate with the town.

- **Next Step:** Contact CRCOG for potential funding sources
- **Next Step:** For new crosswalk locations with or without RRFB, have the LTA contact DOT.TrafficEngineering@ct.gov

- 2) Offset left turn lanes to improve sight line for left-turning vehicles in order to reduce travel speeds and provide additional room for bicyclists. See Exhibit 20 for concept details.

- **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

Most Complex Recommendations

- 1) Corridor-wide: Consider eliminating left-turn movements at unsignalized intersections by installing restricted crossing U-turns along Route 5. Several designs and variations are available for consideration.

- **Next Step:** Contact CRCOG for potential funding sources

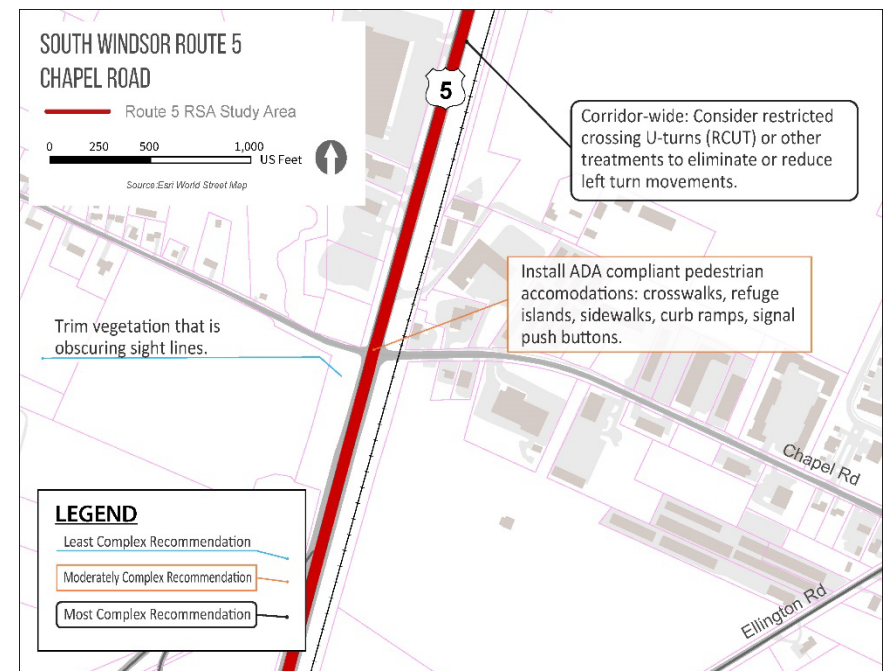
- 2) Pursue access management in concert with adjacent property owners due to many curb cuts near the intersection.

- **Next Step:** Municipality will need to initiate and coordinate access management with respected property owners

5.4 Route 5 and Chapel Road Intersection

Chapel Road should be fitted with similar pedestrian accommodations to the previous intersections. The southwest corner has ample vegetation that should be trimmed to reduce the obstruction of sight lines.

Exhibit 24: Chapel Road Recommendations



Least Complex Recommendations

- 1) Adjust signal timings so that westbound traffic, particularly trucks, do not get caught between the at-grade railroad crossing and the intersection.
 - **Next Step:** Contact LTA to send request to DOT.TrafficEngineering@ct.gov
- 2) Provide consistent 11' travel lanes, 10' turning lanes, and a minimum of 2' left and 4' right shoulders. CTDOT to provide 11-foot travel lanes with the next resurfacing project. Typical Vendor-In-Place paving (VIP) cycles can range between 10 and 20 years. See Exhibit 20 for concept details.
 - **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

Moderately Complex Recommendations

- 1) Install appropriate ADA compliant pedestrian accommodations such as crosswalks, sidewalks, curb ramps, signal push buttons, and pedestrian refuge islands.
 - **Next Step:** Town to apply for an Encroachment Permit. Town may install via Encroachment Permit. [Encroachment Permit \(ct.gov\)](#)
 - **Next Step:** For new crosswalk locations with or without RRFB, have the LTA contact DOT.TrafficEngineering@ct.gov
- 2) Offset left turn lanes to improve sight line for left-turning vehicles. See Exhibit 20 for concept details.
 - **Next Step:** Contact LTA to send request to DOT.TrafficEngineering@ct.gov

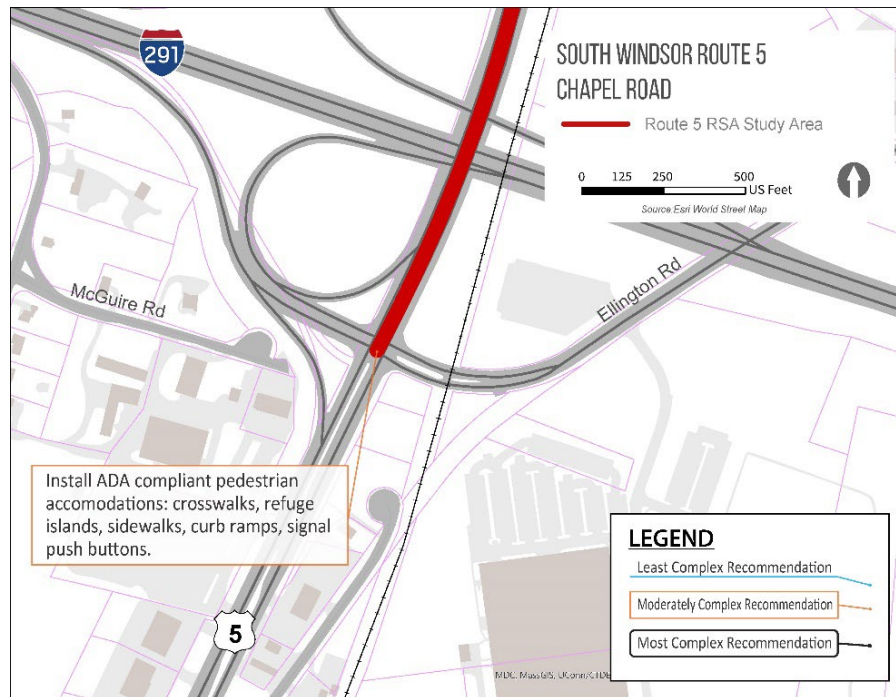
Most Complex Recommendations

- 1) Corridor-wide: Consider eliminating left-turn movements at unsignalized intersections by installing restricted crossing U-turns along Route 5. Several designs and variations are available for consideration.
 - **Next Step:** Contact LTA to send request to DOT.TrafficEngineering@ct.gov
- 2) Pursue access management in concert with adjacent property owners due to many curb cuts near the intersection.
 - **Next Step:** Municipalities to initiate and coordinate access management with respected property owners

5.5 Route 5 and I-291 Ramp/ Route 30 (Ellington Road) Intersection

The intersection of Route 5 and Route 30 (Ellington Road) sees high volumes and many turning movements due to the I-291 eastbound ramps. There is no connection to a nearby sidewalk network, however there are pedestrian signal buttons. Recommendations at this intersection are focused on pedestrian safety and are shown in Exhibit 25.

Exhibit 25: I-291 / Route 30 (Ellington Road) Recommendations



Least Complex Recommendations

- 1) Provide consistent 11' travel lanes, 10' turning lanes, and a minimum of 2' left and 4' right shoulders. CTDOT to provide 11-foot travel lanes with the next resurfacing project. Typical Vendor-In-Place paving (VIP) cycles can range between 10 and 20 years. See Exhibit 20 for concept details.
 - **Next Step:** Contact DOT.TrafficEngineering@ct.gov for more information

Moderately Complex Recommendations

- 1) Install appropriate ADA compliant pedestrian accommodations such as crosswalks, sidewalks, curb ramps, signal push buttons, and pedestrian refuge islands.
 - **Next Step:** Contact CROCG for potential funding sources
 - **Next Step:** Town to apply for an Encroachment Permit. Town may install via Encroachment Permit. Encroachment Permit (ct.gov)
 - **Next Step:** For new crosswalk locations with or without RRFB, have the LTA contact DOT.TrafficEngineering@ct.gov
- 2) Offset left turn lanes to improve sight line for left-turning vehicles. See Exhibit 20 for concept details.
 - **Next Step:** Contact LTA to send request to DOT.TrafficEngineering@ct.gov

6 SUMMARY

This report documents the observations, discussions, and recommendations developed during the completion of the Town of South Windsor's RSA. It provides the Town with an outlined strategy to improve the transportation network for all users in the study area, particularly focusing on pedestrians and cyclists. Moving forward, the Town of South Windsor and CTDOT may use this report to prepare strategies for funding and implementing the improvements. This report provides South Windsor with a toolkit to plan for including these multi-modal recommendations into future development within the study area.

This Road Safety Audit Report is an objective review intended for the municipality to use to help assess the existing conditions within a predetermined area of Town selected by the municipality. The conclusions of this report are advisory and intended for general planning purposes to help identify bicycle, pedestrian and non-motorized transportation needs that encourage walking and bicycling, as well as assists in developing recommendations to improve the existing conditions. The contents of this report are not intended to be legally binding, but rather offer recommendations to improve safety in the vicinity of the audit location and create a more appealing transportation alternative.

APPENDICES

A: Pre-Audit Presentation

B: Walk Audit Materials

C. Walk Audit Notes

SOUTH WINDSOR ROAD SAFETY AUDIT

Route 5 (John Fitch Boulevard) between town line
with East Hartford and town line with East Windsor



FEBRUARY 2024

INTRODUCTIONS



AGENDA

1. Welcome and Team Introductions
2. Study Purpose and Goals
3. Study Area
4. Review of Site-Specific Data and Issues
5. Next Steps for Tomorrow's Site Visit Audit

PROJECT TEAM

- Connecticut Department of Transportation (CTDOT) is sponsoring
- Town of South Windsor
- FHI Studio is conducting the Road Safety Audit reporting

PURPOSE AND GOALS OF THE ROAD SAFETY AUDIT

Safety assessment of existing walking and biking routes

Improve transportation network for all users by making conditions safer and more comfortable for pedestrians and cyclists

Identify the issues that may discourage or prevent walking and bicycling

Identify next steps, evaluate feasibility of proposed improvements, and potential funding sources.

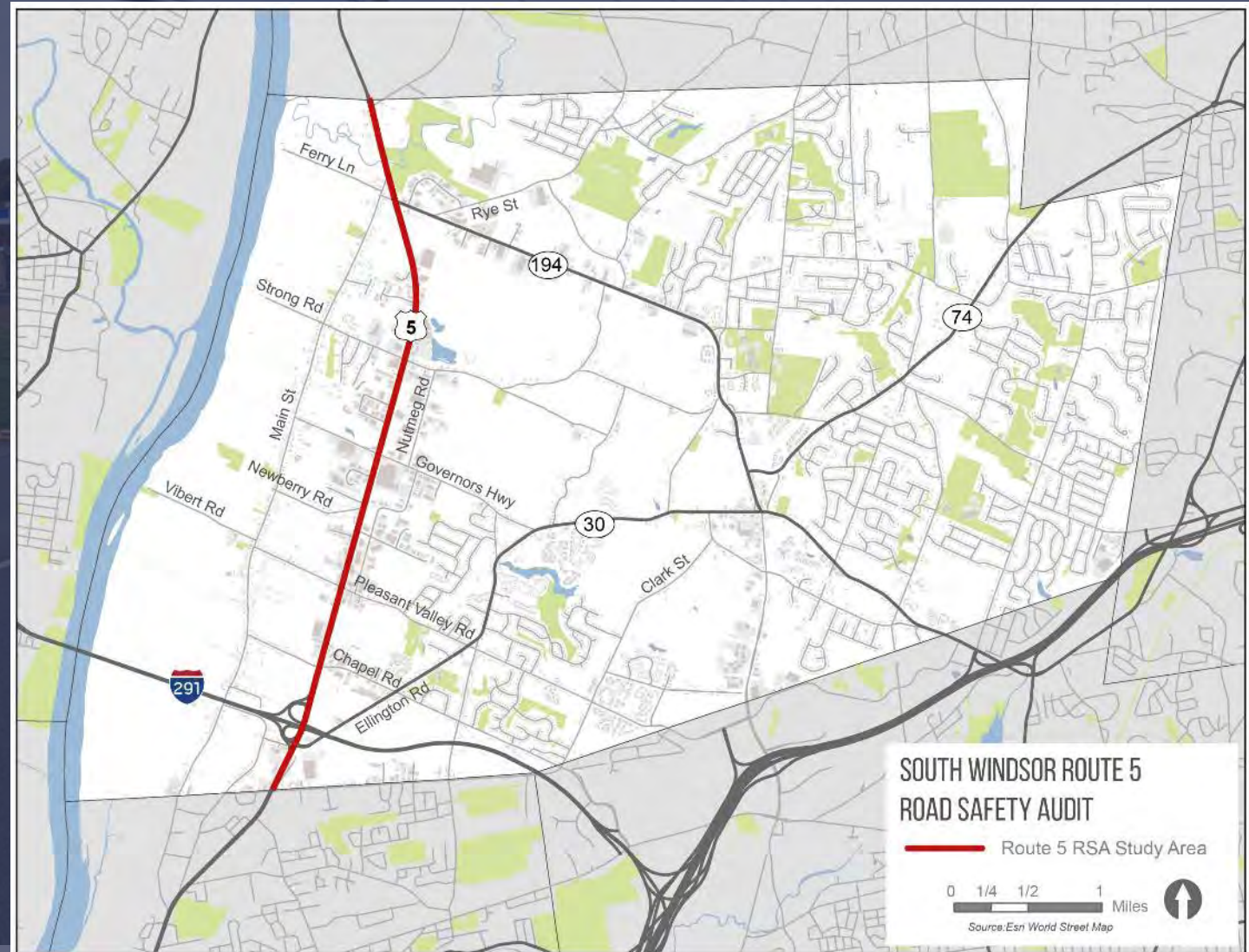
DELIVERABLES

- Existing Conditions Data Collection
- Pre-Audit Meeting
- Field Audit
- Post Audit Meeting
- Road Safety Audit Report



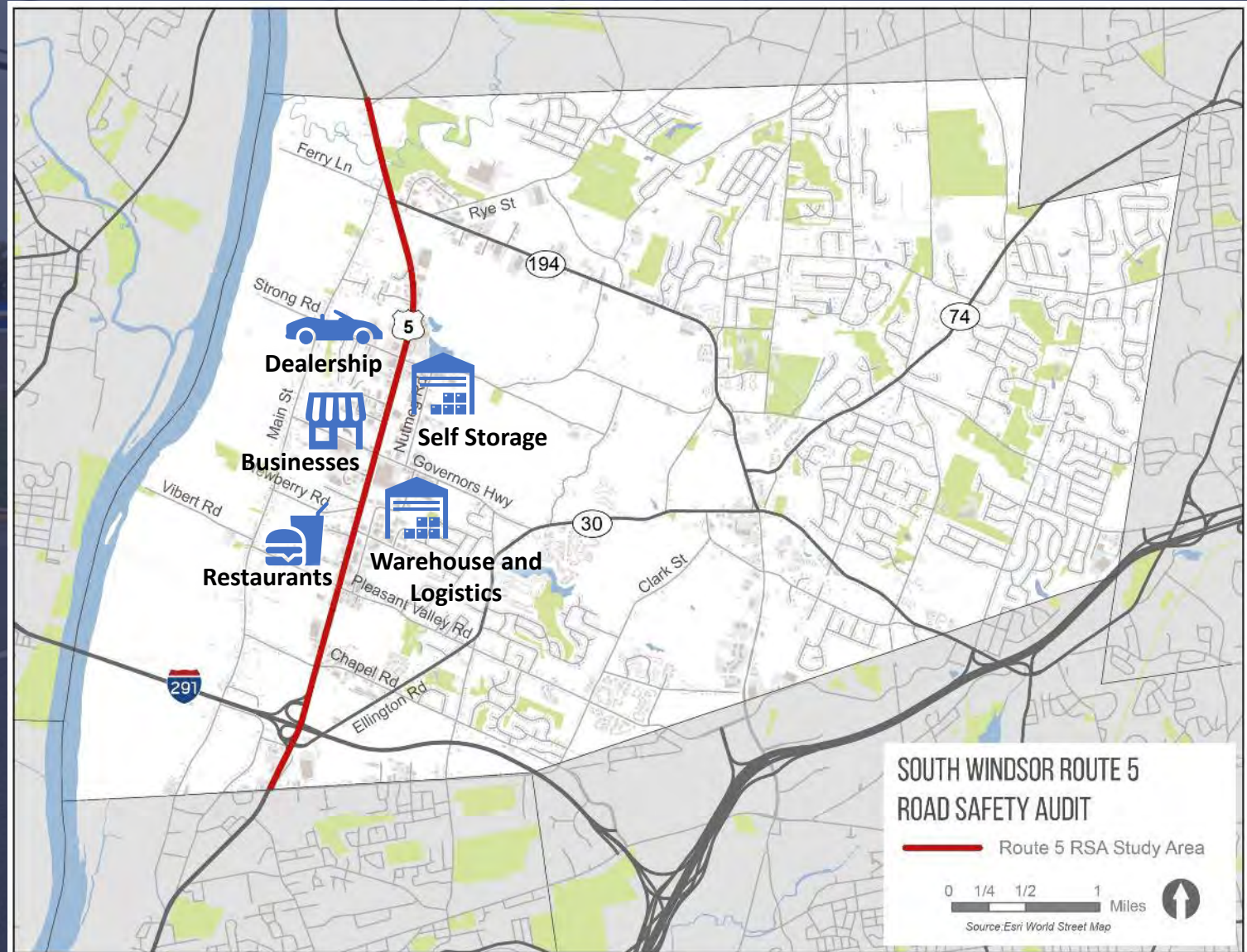
STUDY AREA

- Route 5 (John Fitch Boulevard) between town line with East Windsor and the town line with East Hartford
- Entire length of Route 5 in South Windsor



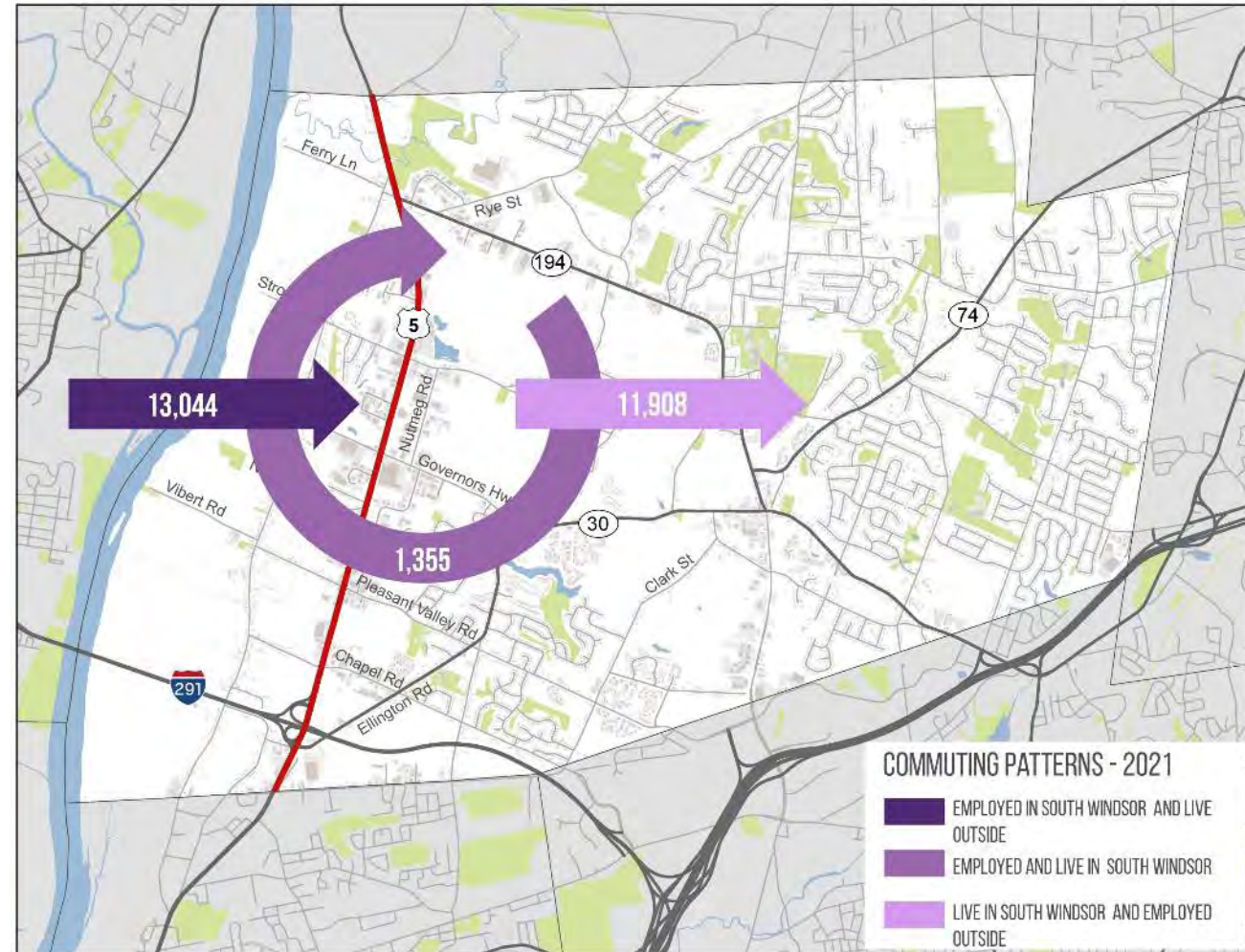
POINTS OF INTEREST

- Many Businesses
- Car Dealerships
- Restaurants
- Warehousing and Logistics
- Macy's Distribution Center
- Gas Stations



EMPLOYMENT AND COMMUTER PATTERNS

- A greater share of workers commute into South Windsor for work than the number of South Windsor residents leaving the Town for work.
- The Route 5 corridor is South Windsor's top employment hub.
- Workers are commuting into South Windsor from neighboring Towns such as:
 - East Hartford
 - Hartford
 - Manchester
 - New Britain
 - West Hartford



TRANSIT



- Transit service to Hartford
 - Longer headways
 - Limited facilities

WEEKDAY SERVICE

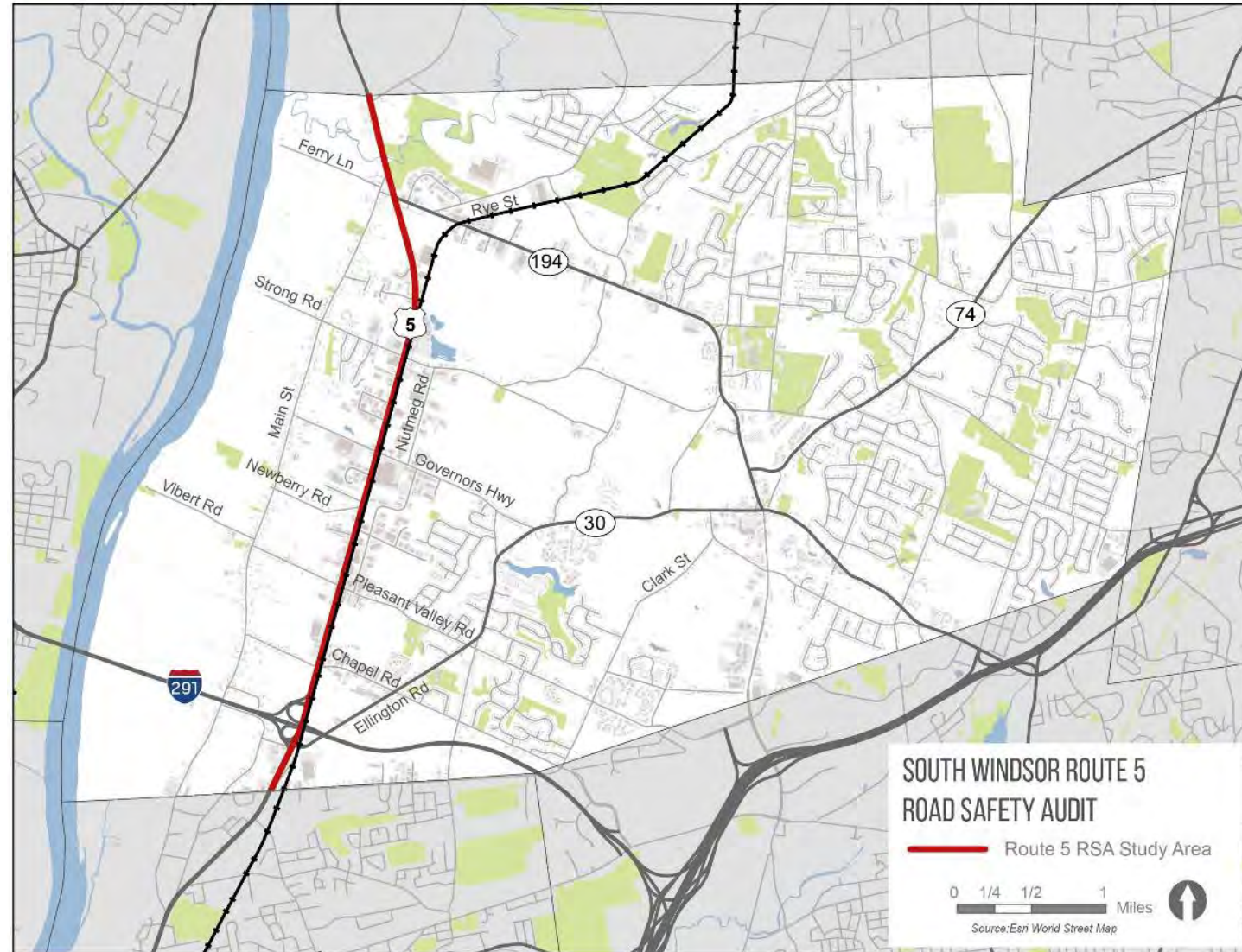
Hartford ➤ via Main St ➤ South Windsor/East Hartford										
Timepoints	1	2	3	4	5	6	7	8	10	
Route	Downtown Hartford Market Street	Church Corner CT Blvd & Main	Main & Park	South Windsor Main & King	Ellington & Burnham	Nutmeg Road South & Pleasant Valley Road	Macy's/Bloomingtondale's Governor's Highway	Commerce & Rye	East Windsor Hill Main & Sullivan	
96	5:15	5:21	5:25	..	5:30	5:34	5:38	5:45	5:48	
96A	6:20	6:27	6:31	..	6:36	6:40	6:44	..	..	
96	6:25	6:32	6:36	..	6:41	6:45	6:49	6:56	6:59	
96	6:55	7:02	7:06	..	7:11	7:15	7:19	7:26	7:29	
96	7:35	7:42	7:46	..	7:51	7:55	7:59	8:06	8:09	
96	8:20	8:27	8:31	..	8:36	8:40	8:44	8:51	8:54	
96	9:30	9:37	9:41	..	9:46	9:50	9:54	10:00	10:03	
96	11:30	11:37	11:41	..	11:46	11:50	11:54	12:00	12:03	
PM										
96	1:20	1:28	1:32	1:38	..	..	..	..	1:47	
96	3:10	3:19	3:23	3:30	..	..	..	..	3:39	
96	4:05	4:14	4:18	4:25	..	..	..	..	4:34	
96	4:45	4:54	4:58	5:05	..	..	..	..	5:14	
96	5:25	5:34	5:38	5:45	..	..	..	..	5:54	
96	6:10	6:19	6:23	6:30	..	..	..	..	6:39	

ROUTE

96 JOHN FITCH BL–East Windsor Hill via Nutmeg Rd or Main St
96A JOHN FITCH BL–Nutmeg Rd

FREIGHT RAILROAD

- At grade active rail crossings



REVIEW OF PAST/CURRENT WORK

- Discussion

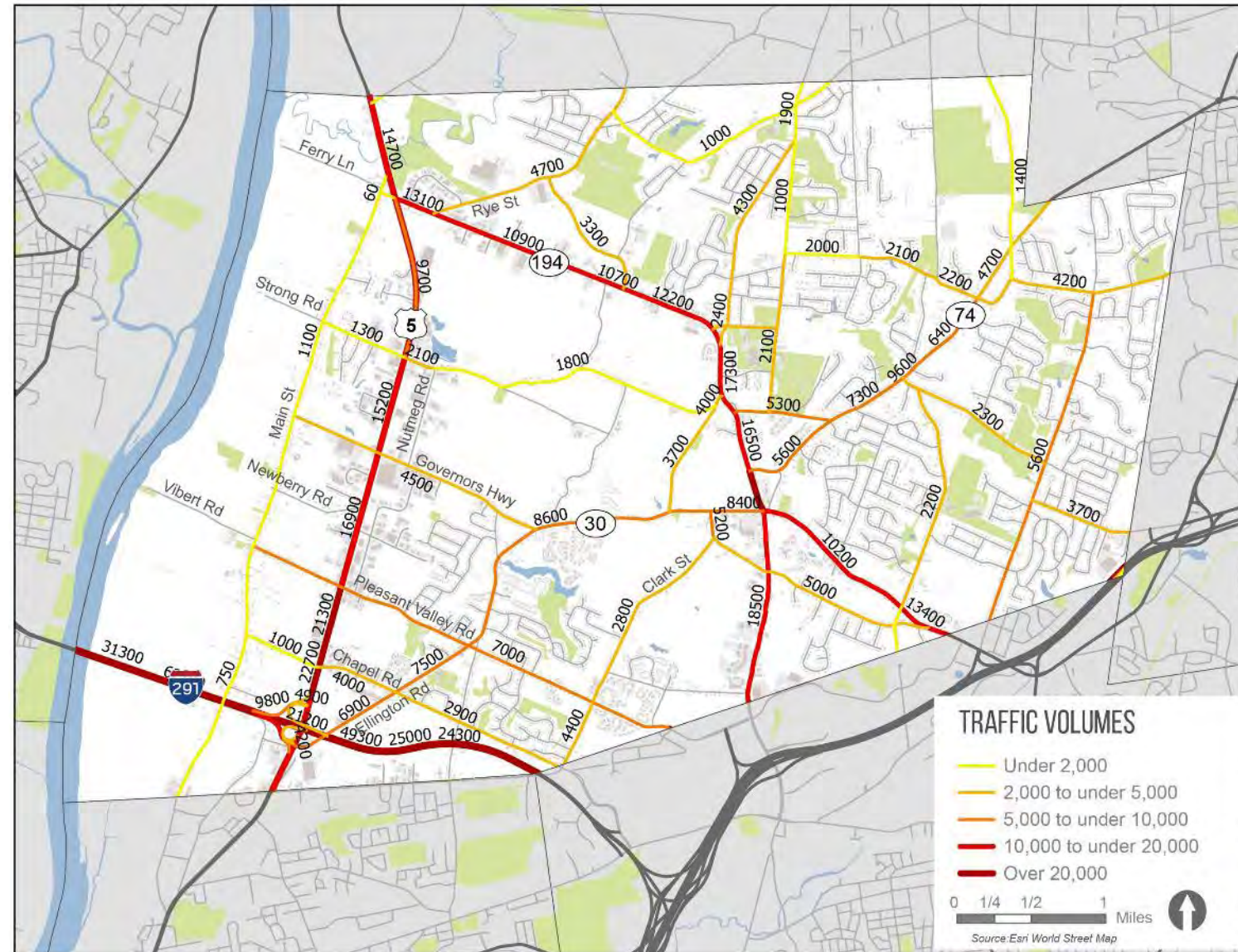
EXISTING CONDITIONS FINDINGS

Route 5 (John Fitch Boulevard) between town line with East Windsor and the town line with East Hartford

- Regional and local traffic – Route 5 and Interstate 291
- Access to South Windsor's neighborhoods
- Access to points north and south
- Access to major employment center
- Active freight rail crossings
- Transit

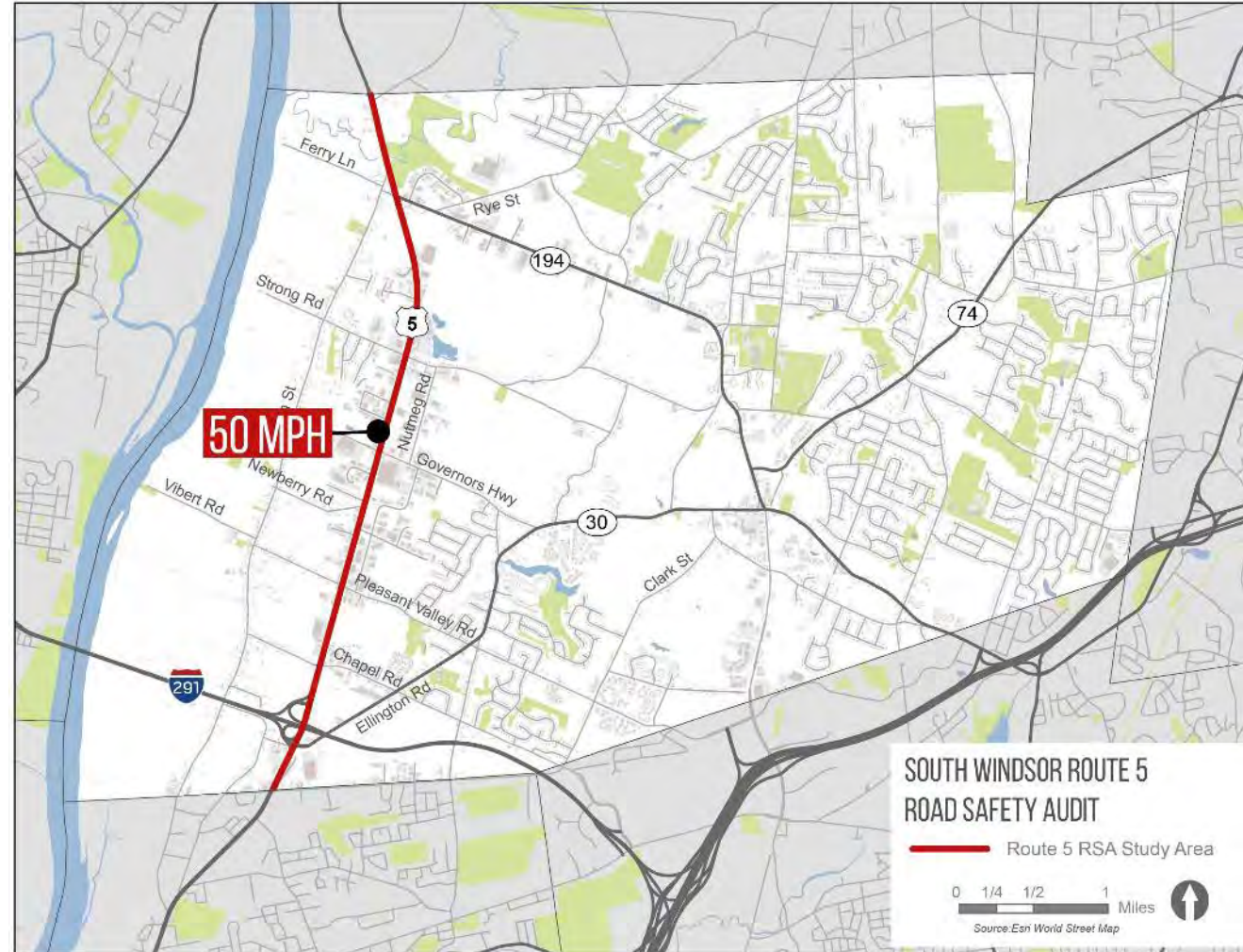
TRAFFIC VOLUMES

- Highest traffic volumes found on Route 5
- Note- some volumes are directional, showing north and southbound volumes



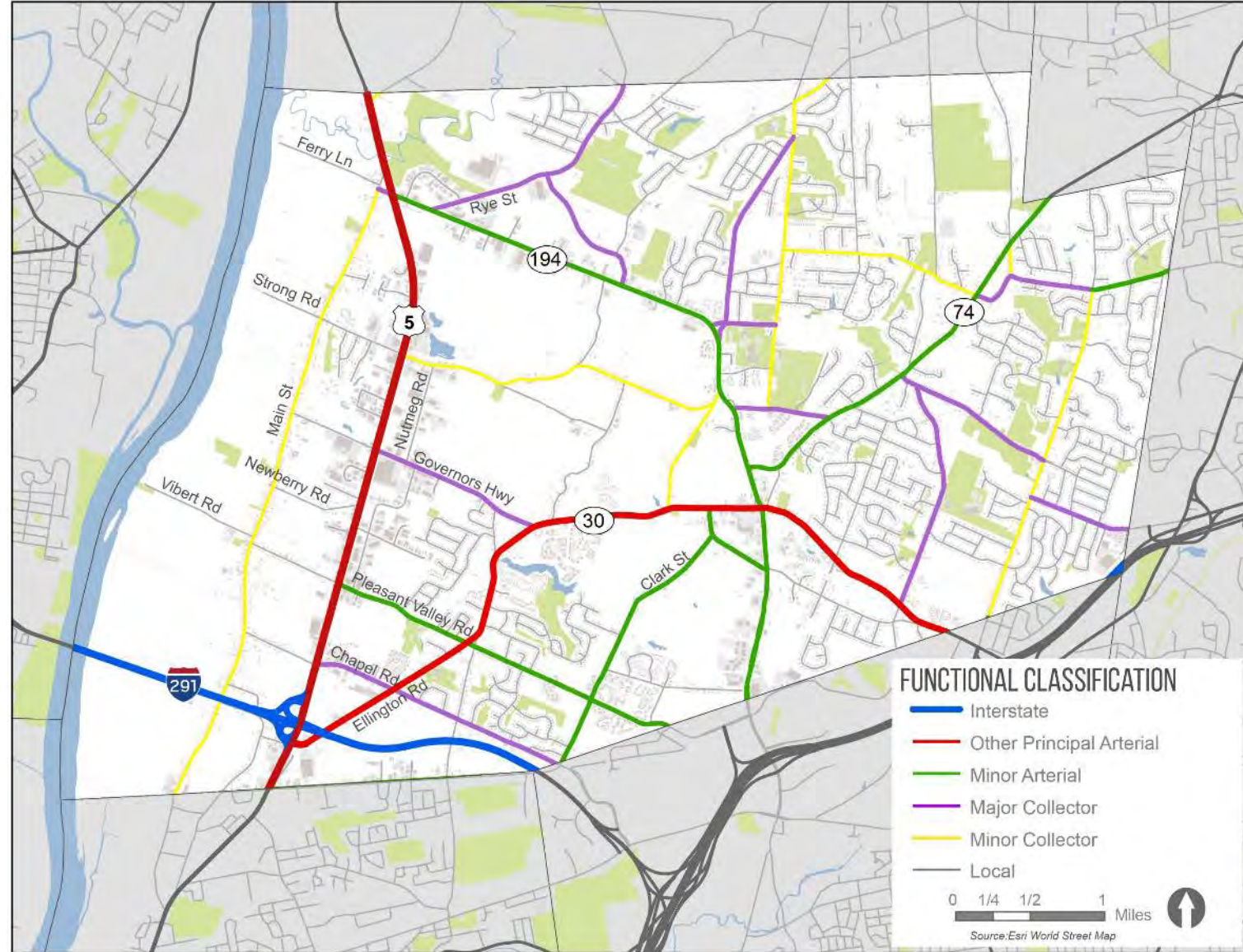
TRAFFIC SPEED LIMITS

- Speed is 50 MPH the entire length of the Route 5 Corridor
- 85th percentile speeds taken near intersections, not truly reflective of the actual speeds as drivers are often slowing down or stopping at yellow/red lights



FUNCTIONAL CLASSIFICATION

- Route 5 is a Principal Arterial
- The Interstate 291 interchange is located at the southern end of Route 5
- Mix of Minor Arterials, Collectors and Local Roads intersect Route 5



ROADWAY GEOMETRY

South Windsor - RSA - Route 5
Street Inventory

Road	From	To	Distance	Functional Classification	Speed Limit	Direction	Lanes	Lane Width	Sidewalk			ADA Ramps		Curb	Parking	Shoulder	On DOT Bike Network	Notes
Route 5 (John Fitch Blvd)	Burnham St	Sullivan Avenue	4.3 Mi	Principal Arterial	50 mph	NB	2	12'	N/A	N/A	N/A	No	N/A	Granite	No	5-7'	No	+/- 20' Median typical Crosswalks at Chapel, Pleasant Valley, S. Satellite Governors, Sullivan
						SB	2	12'	N/A	N/A	N/A	No	N/A	Granite	No	5-7'	No	

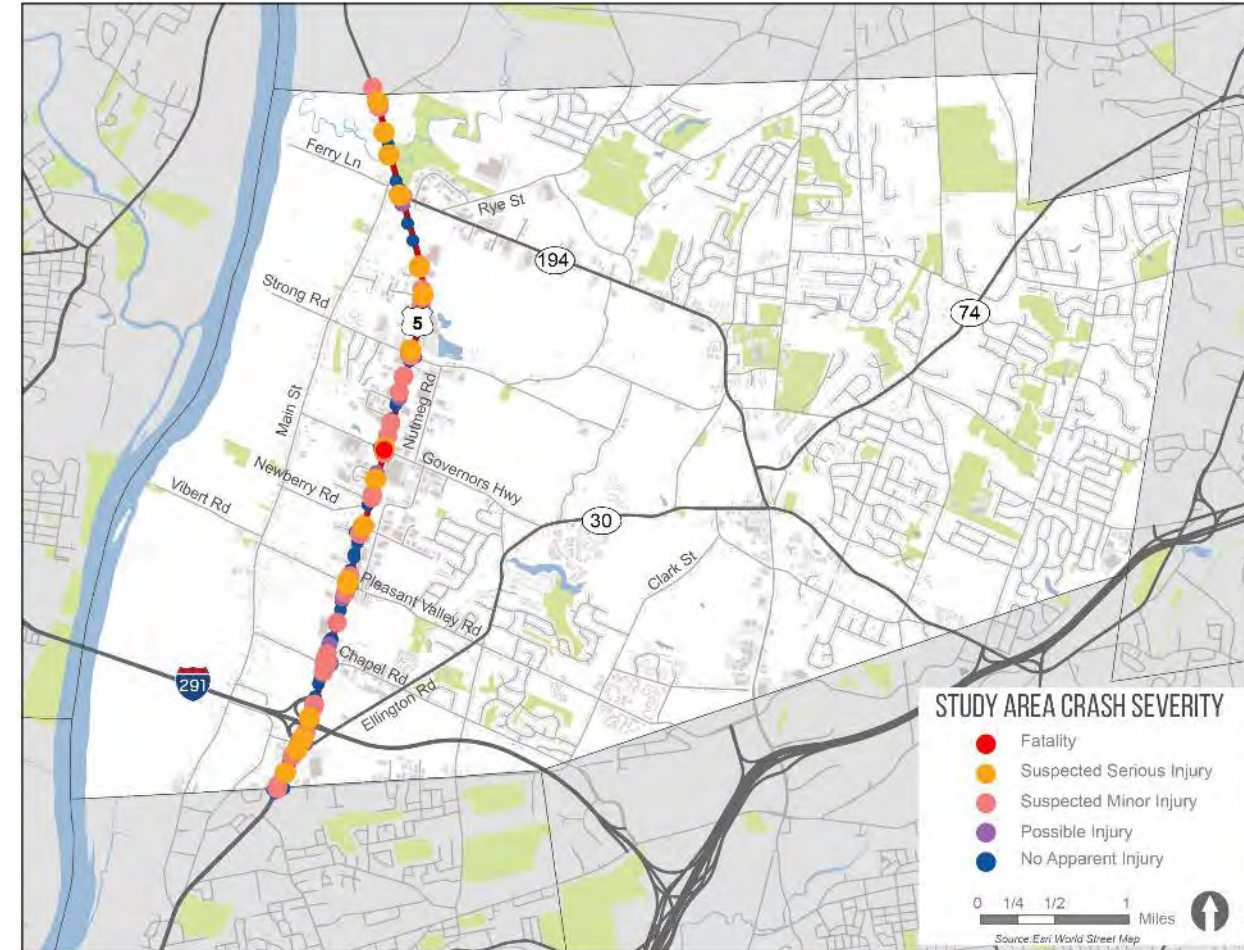
*CONDITION - "Good" is Serviceable Condition that meets current design standards. "Fair" is generally serviceable, but may need minor repairs, or may not completely align with current design standards. "Poor" is not serviceable, and generally inadequate for continued long-term use.

Highlighted cells indicate values which may warrant further investigation

CRASH ANALYSIS

2018 - 2022

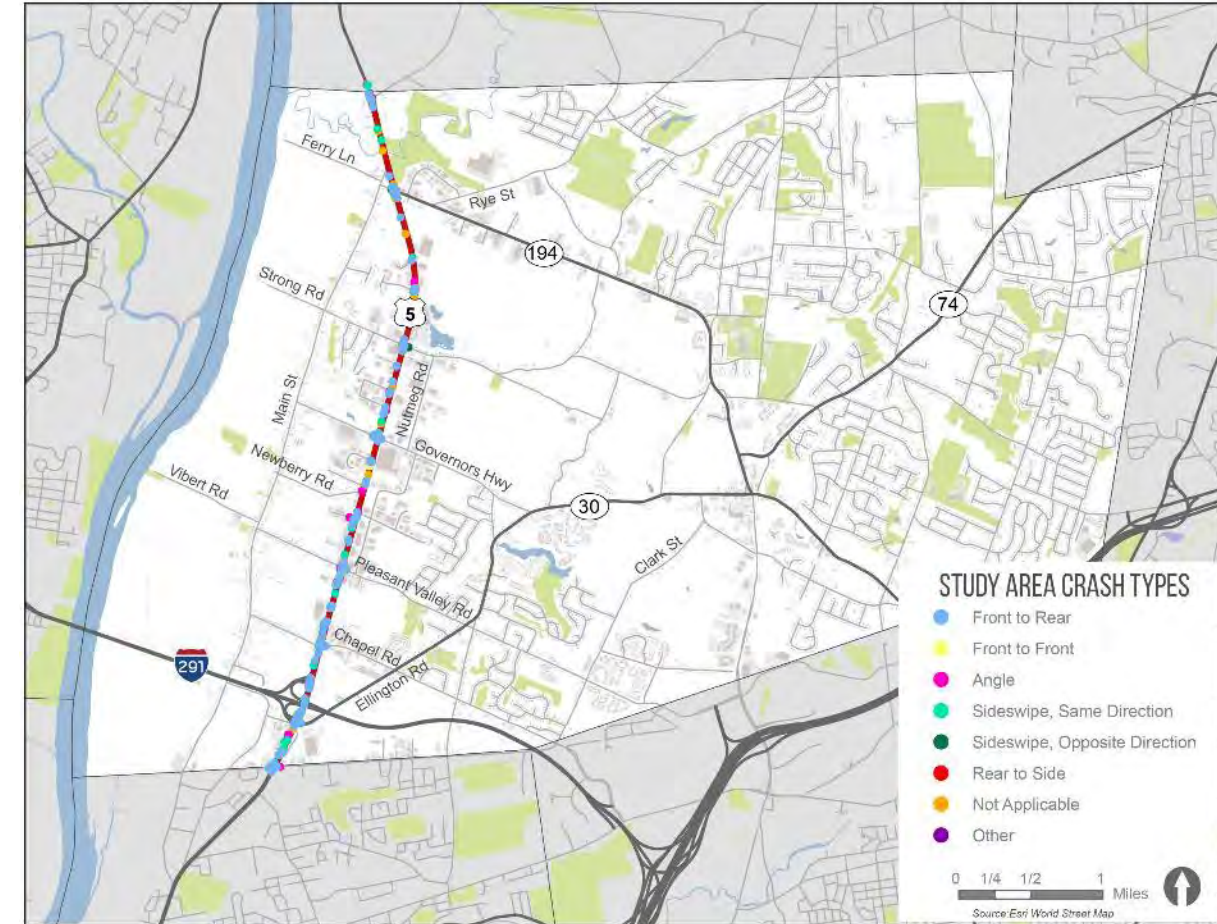
Year	Fatality	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	TOTAL
2018		2	13	18	62	95
2019		3	18	23	73	117
2020		2	17	10	56	85
2021	1	6	13	16	60	96
2022		3	13	10	65	91
TOTAL	1	16	74	77	316	484



CRASH ANALYSIS

2018 - 2022

	Crash Severity					TOTAL
	Fatality	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	
Angle	1	6	25	11	51	94
Front to front		1		3	2	6
Front to rear		2	34	50	158	244
Sideswipe, opposite direction					8	8
Sideswipe, same direction		1	4	5	59	69
Rear to Side						0
Rear to Rear					1	1
Not Applicable		6	8	8	30	52
Other			3		7	10
TOTAL	1	16	74	77	316	484
Crashes Involving Pedestrians		2	1	2		5
Crashes Involving Bicyclists						0



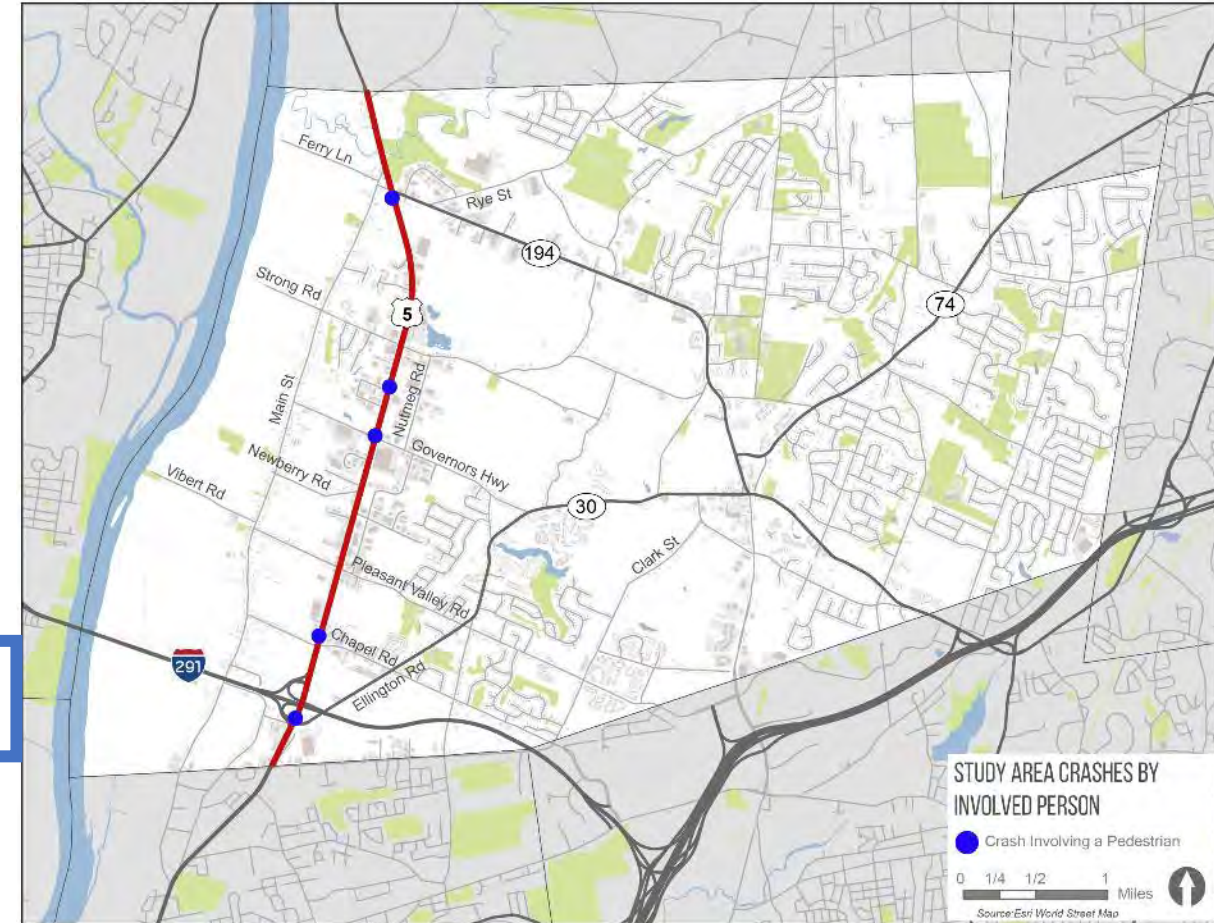
CRASH ANALYSIS

2018 - 2022

	Crash Severity					TOTAL
	Fatality	Serious Injury	Minor Injury	Possible Injury	Property Damage Only	
Angle	1	6	25	11	51	94
Front to front		1		3	2	6
Front to rear		2	34	50	158	244
Sideswipe, opposite direction					8	8
Sideswipe, same direction		1	4	5	59	69
Rear to Side						0
Rear to Rear					1	1
Not Applicable		6	8	8	30	52
Other			3		7	10
TOTAL	1	16	74	77	316	484
Crashes Involving Pedestrians		2	1	2		5
Crashes Involving Bicyclists						0



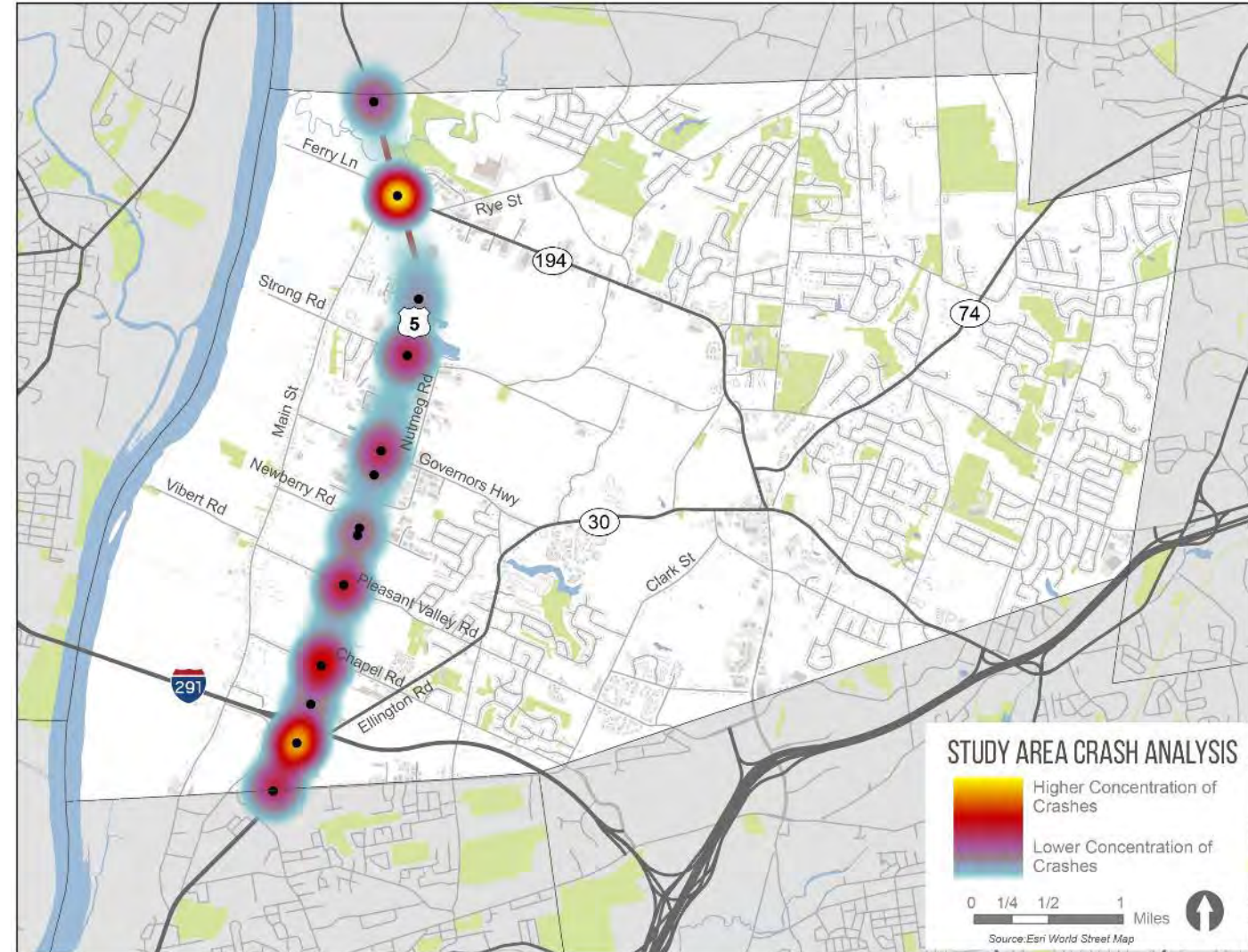
Crash involving a pedestrian



CRASH ANALYSIS

Crash Hotspots (5 Year Crash Total approx.) 484 Crashes Total

Intersecting Street	Annual Million Entering Vehicles	5 Year Crash Total	Crashes per Million Entering Vehicles
Sullivan Ave	7.1	74	2.10
I-291 EB Ramp / Ellington Rd	8.5	59	1.38
Chapel Rd	8.9	42	0.94
Strong Rd	5.2	36	1.39
Pleasant Valley Rd	8.4	34	0.81
Governors Hwy	7.0	31	0.89
Burnham St	7.9	29	0.73
Scantic Rd	5.7	22	0.78
I-291 WB Ramp	7.5	18	0.48
Mascolo Rd	6.4	16	0.50
South Satellite Rd	6.4	9	0.28
Kimberly Dr	3.7	9	0.48
Bidwell Rd	6.4	8	0.25





SAMPLE IMPROVEMENTS TO IMPROVE SAFETY IN THE STUDY AREA

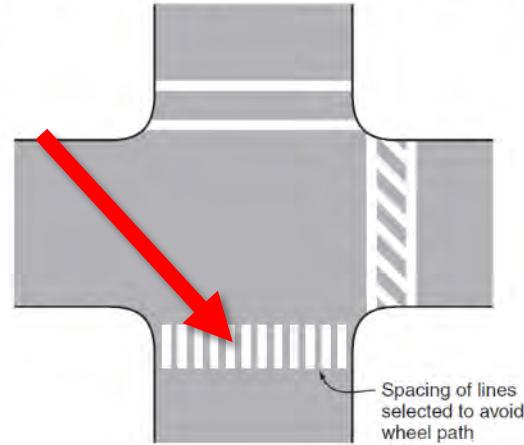
Some countermeasures may not be appropriate on certain facilities

PEDESTRIAN COUNTER MEASURES



Sidewalks

Figure 3B-19. Examples of Crosswalk Markings



Crosswalks



Pedestrian Signal Heads & APS



Pedestrian Refuge



Sidepaths



Bus Stops & Locations

BICYCLIST COUNTER MEASURES



Bike Lanes



Buffered Bike Lanes



Sidepaths

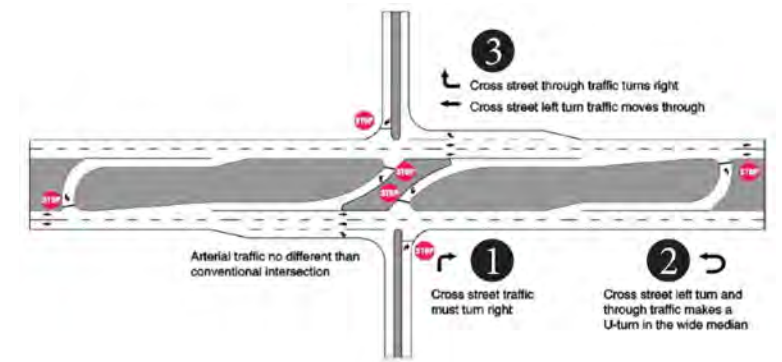
OTHER POTENTIAL COUNTERMEASURES



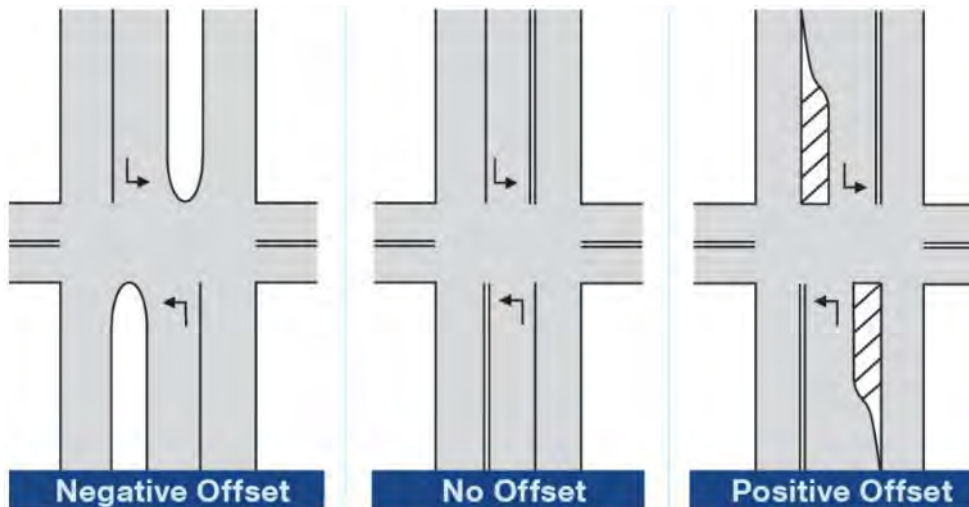
Wider Edge Lines



Rumble Strips



Access Management /
RCUT Intersections



Offset Left-Turn Lanes



Railroad Crossing Improvements

OTHER POTENTIAL COUNTERMEASURES



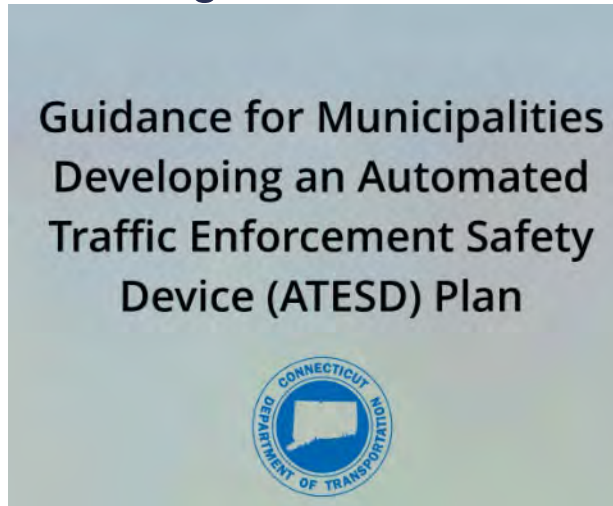
Incident Management
Systems / Signal Timings



Wrong-Way
Countermeasures



Street Lighting



Automated Enforcement



Dynamic Speed Signs

**DISCUSSION ON
ISSUES IN THE STUDY AREA AND
OPPORTUNITIES**

TOMORROW'S WALK AUDIT

- Review safety protocols, reflective vests, etc.
- Meeting Location
- Walk the Study Area corridor and assess existing conditions and identify areas for improvement
- Post Audit discussion immediately following



THANK YOU!

Route 5 Corridor – South Windsor Road Safety Audit (RSA)

Site Walk / Visit

South Windsor, CT

Tuesday, February 27, 2024

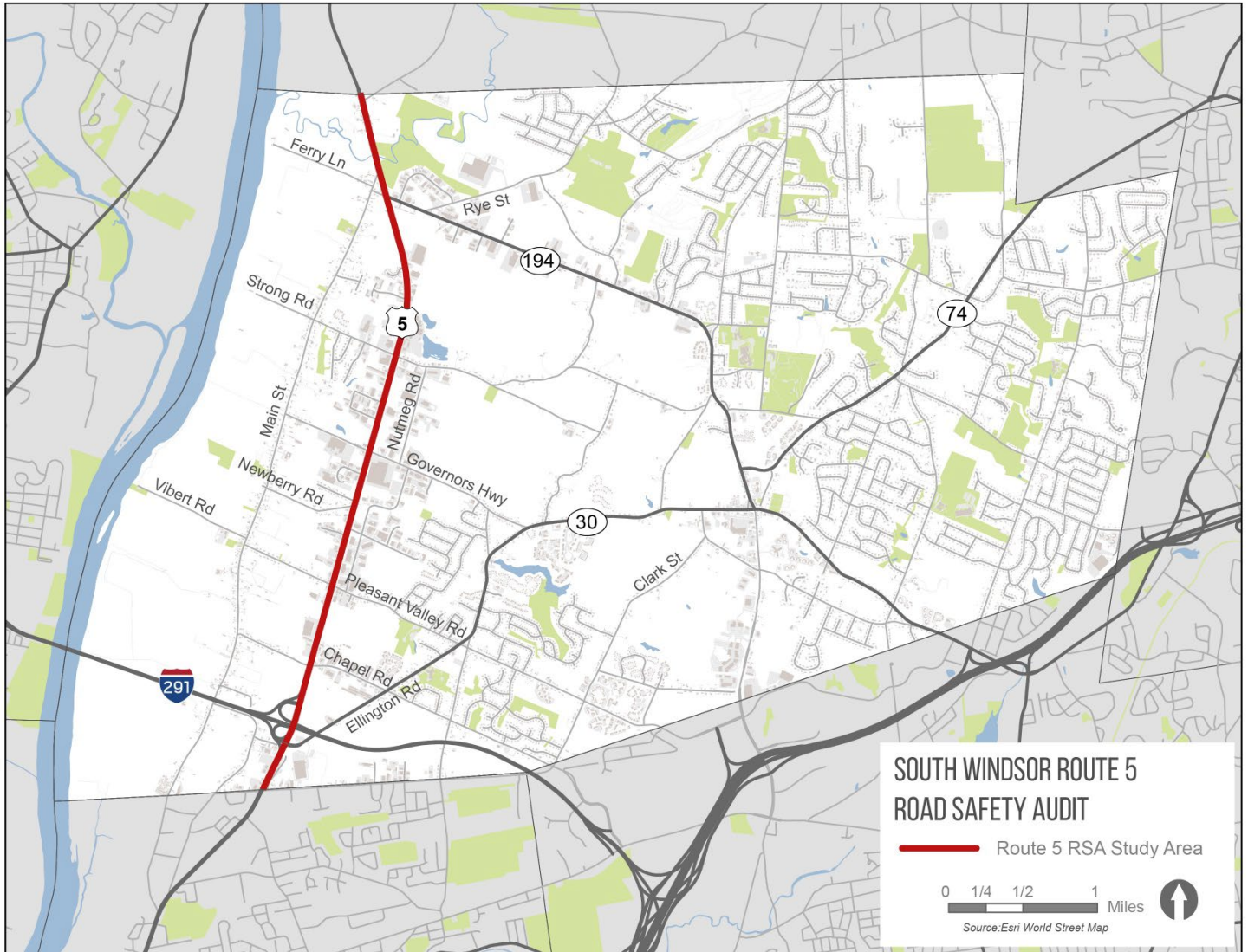
AGENDA

- 1. Welcome and Introductions**
- 2. Route Review**
- 3. Safety Reminders**
- 4. Site Walk**
 - Distribute and discuss field packets
 - Suggestions for adding feedback
 - Identify issues and improvement opportunities (all participants)
- 5. Post-Audit Recap**
 - Discuss observations and potential improvements
 - Next steps

Participant Expectations

All participants should plan to be actively involved during the entire RSA process. Participants are encouraged to share their ideas, concerns, and comments with the study team at the pre-audit meeting and during the site visit. In addition, after the RSA site visit, participants will be asked to review and comment on the draft report to assure it is reflective of the RSA completed by the multidisciplinary team. Stakeholders' opinions are key elements to the success of the RSA.

Overall Study Area



RSA Field Sheet

Location 1: Sullivan Avenue Intersection Area

For each noteworthy feature that you observe along the walking route, write a number at the location on the map below. Write a brief description of your observation for that number under the Notes section. See the attached RSA Field Considerations list for suggested items to observe.



Image Credit: Google Earth Pro, accessed on February 22, 2024

Notes:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____
- 10) _____
- 11) _____
- 12) _____

RSA Field Sheet

Location 2: Strong Road Intersection Area

For each noteworthy feature that you observe along the walking route, write a number at the location on the map below. Write a brief description of your observation for that number under the Notes section. See the attached RSA Field Considerations list for suggested items to observe.



Image Credit: Google Earth Pro, accessed on February 22, 2024

Notes:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____
- 10) _____
- 11) _____
- 12) _____

RSA Field Sheet

Location 3: I-291 EB Ramp / Ellington Rd

For each noteworthy feature that you observe along the walking route, write a number at the location on the map below. Write a brief description of your observation for that number under the Notes section. See the attached RSA Field Considerations list for suggested items to observe.



Image Credit: Google Earth Pro, accessed on February 22, 2024

Notes:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____
- 10) _____
- 11) _____
- 12) _____

RSA Field Sheet

Location 4: Chapel Road Intersection

For each noteworthy feature that you observe along the walking route, write a number at the location on the map below. Write a brief description of your observation for that number under the Notes section. See the attached RSA Field Considerations list for suggested items to observe.



Image Credit: Google Earth Pro, accessed on February 22, 2024

Notes:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____
- 10) _____
- 11) _____
- 12) _____

RSA Field Considerations

Pedestrian Facilities

- Sidewalk - width, slope, condition, drainage, obstruction
- Bus shelter - wheelchair access, boarding area
- Shared use path - width, slope, detectable warning surface

Pedestrian Crossings

- Crosswalks - marked crosswalk, striping, width
- Curb ramps - width, slope, orientation, detectable warning surface, wheelchair accessible grade
- Pedestrian signals - push button height, reach distance
- Crossing time
- Signage
- Sight distance
- Pavement marking
- Refuge island - width, slope, detectable warning surface

Pedestrian Accommodations

- Illumination
- Amenities - benches, trash receptacles

Bicycle Accommodations

- Bicycle facility / design
- Separation from traffic
- Roadway speed limit
- Traffic volume
- Truck / heavy vehicle %
- On-street parking conflict
- Pedestrian conflict
- Visibility
- Bicycle signage / marking
- Shared lane width
- Shoulder condition / width
- Pavement condition
- Debris

Road Facilities

- Access point
- Drainage
- Taper / lane shift
- Roadside clear zone / slope
- Guide rail / barrier
- Capacity issue
- Curbing

Road Surface Condition

- Pavement - roughness or rutting, potholes, loose material
- Edge drop-off
- Drainage

Intersections

- Geometry
- Sight distance
- Traffic control device
- Turning vehicle storage
- Through vehicle bypass width

Signals

- Visibility
- Sight distance
- Operation
- Equipment placement
- Lane capacity

Signage

- MUTCD complaint
- Visibility / placement
- Retro-reflectivity
- Clear / consistent messaging

Pavement Markings

- MUTCD compliant
- Visibility
- Condition
- Snow storage
- Edgeline

Driver Behavior

- Speed limit compliance
- Safe passing
- Distraction
- Unaware of pedestrians / cyclists
- Sight distance

Miscellaneous

- Landscaping / vegetation
- Seasonal events
- Weather impacts

South Windsor RT 5 Notes

- RT 5 at Sullivan Avenue:
 - Heavy truck traffic in this area
 - Traffic noise is excessive
 - Potential roundabout location
 - Lack of aesthetics, wayfinding, etc
 - In POCD area considered a neighborhood hub
 - Residents on Main Street can hear truck traffic
 - Plan for multi-use path extending to Rye Street
- RT 5 at Strong Road Intersection Area:
 - ADA compliance issues
 - Train crossing has unclear stop bar lines for vehicles
 - Long pedestrian crossing distance
- RT 5 at Pleasant Valley:
 - Access management needed
 - Opportunities to reduce curb cuts
 - In POCD area considered a neighborhood hub
- RT 5 at Chapel Road Intersection:
 - Site line issues
 - Extra wide stop bar
 - No pedestrian scale lighting
- RT 5 at 1-291 EB Ramp/Ellington Road:
 - No crosswalks or pedestrian amenities
 - Very wide intersection
 - No bike infrastructure despite riders being on road