

Thomaston

Main Street (Route 254, Route 6), Branch Road (Route 109) and Northfield Road (Route 254) – Road Safety Audit

October 12, 2016





Acknowledgements:

OFFICE OF INTERMODAL PLANNING BUREAU OF POLICY AND PLANNING CONNECTICUT DEPARTMENT OF TRANSPORTATION

With assistance from AECOM Transportation Planning Group

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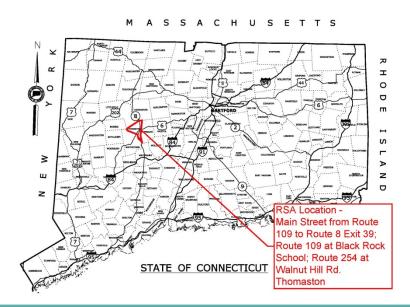
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The Connecticut Department of Transportation (CTDOT) is undertaking a Community Connectivity Program that focuses on improving the state's transportation network for all users, with an emphasis on bicyclists and pedestrians. A major component of this program is conducting Road Safety Audits (RSA's) at selected locations. An RSA is a formal safety assessment of the existing conditions of walking and biking routes and is intended to identify the issues that may discourage or prevent walking and bicycling. 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 or severity.

The RSA team is made up of CTDOT staff, municipal officials and staff, enforcement agents, AECOM staff, and community leaders. An 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, presence or absence of bicycle lanes or sidewalks, and social influences.

Each RSA was conducted using RSA protocols published by the Federal Highway Administration (FHWA). For details on this program, please refer to www.ctconnectivity.com. Prior to the site visit, area topography and land use characteristics are examined using available mapping and imagery. Potential sight distance issues, sidewalk locations, on-street and off-street parking, and bicycle facilities are also investigated using available resources. The site visit includes a "Pre-Audit" meeting, the "Field Audit" itself, and a "Post-Audit" meeting to discuss the field observations and formulate recommendations. This procedure is discussed in the following sections.



1 Introduction to Main Street, Branch Road and Northfield Road, Thomaston RSA

The Town of Thomaston submitted an application to complete an RSA on Main Street to improve safety for pedestrians and bicyclists travelling along the corridor primarily between Watertown Road (Route 109) and the Exit 39 northbound off-ramp from Route 8. This corridor, which is also designated as Route 254, experiences moderate traffic volumes and speeds, but has limited sidewalks south of Northfield Street. This has resulted in concerns for pedestrians and cyclists through this area. At the RSA, the Town also requested that two additional areas be considered as part of the audit, a small section of Branch Road (Route 109) at the Black Rock Elementary School, and the intersection of Northfield Road (Route 254) and Walnut Hill Road. There are concerns about the crosswalks in front of Black Rock Elementary School due to poor sight distance approaching the crossings and high vehicle speeds. On Route 254, vehicle speeds are also high and sight distance is limited in one direction, leading to traffic safety concerns.

The Town of Thomaston's application contained background information on the area and a brief description of the corridor. The application is included in Appendix A.

1.1 Location

The primary RSA site is the section of Main Street (Route 254) between State Route 109 (Watertown Road) and the Route 8 northbound Exit 39 off ramp (Figure 1). The Average Daily Traffic (ADT) on Main Street near the Route 109 intersection is 14,200 vehicles per day (vpd) and the ADT on Main Street near the Route 8 interchange 39 is 18,200 vpd. Main Street consists of a single 12 to13 foot wide lane in each direction, separated by a double yellow center line. There are striped shoulders on each side of the road, with widths that vary from 3-8 feet.

The section of Route 109 surrounding Black Rock Elementary School consists of a single 13 foot wide lane in each direction, separated by a double yellow center line. There are striped shoulders on each side of the road with widths of 3 to 4 feet.

Route 254, at the intersection with Walnut Hill Road and Litchfield Street, consists of a single 14 to 15 foot wide lane in each direction, separated by a double yellow center line. There are striped shoulders on each side of the road with widths of 5 to 7 feet. South of the intersection with Route 254, Walnut Hill Road consists of a single 15 foot wide lane in each direction, separated by a double yellow center line. There are no striped shoulders on Walnut Hill Road. North of Route 254, Walnut Hill Road is a short one way northbound road at the intersection with Route 254 and varies in width with no striping. Walnut Hill Road to the north connects with Litchfield Street.

There are several signalized intersections within the study area, but the Town wanted to focus on the signalized intersection of Route 109 and Main Street.

Main Street contains curves with limited sight lines that are compounded by steep slopes adjacent to the roadway, adding complexity to walking and bicycling maneuvers through the area. Figure 2 shows the study area in a regional context.

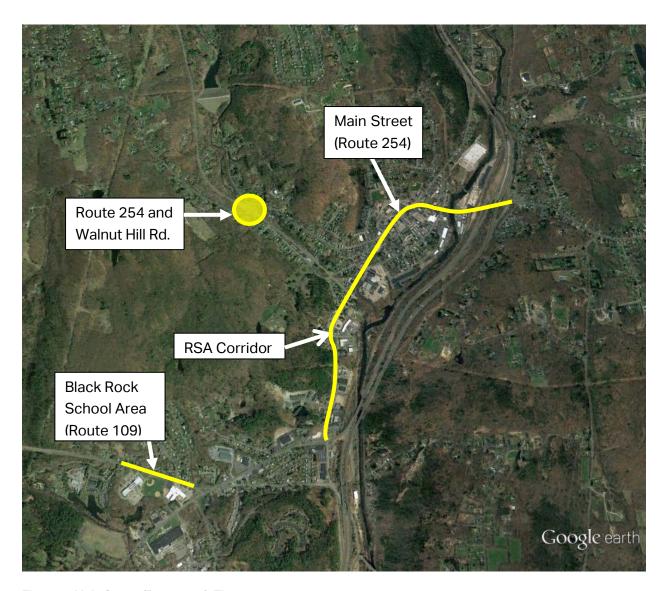


Figure 1. Main Street (Route 254), Thomaston



Figure 2. Study Area - Regional Context

2 Pre-audit Assessment

2.1 Pre-audit Information

Main Street is located in the center of Thomaston and is oriented in a northeast/southwest direction. There are several facilities along this corridor that have the potential to generate pedestrian traffic, including the Center School, the public library, town offices, and several business and retail establishments.

The crash history on Main Street is moderate and there was one accident involving pedestrians and no accidents involving bicyclists between 2012 and 2014 (Table 1 and Table 2). Figure 3 displays crashes that occurred in this area during 2015. There were several crashes (30) that caused injuries and a high percentage of crashes (38%) were rear-end type crashes.

The crash history for Route 109 in front of Black Rock Elementary School and at the intersection of Route 254 and Walnut Hill Road were both considered separately since both locations were outside of the Main Street corridor. The crash history in both locations was moderate and neither had any accidents involving pedestrians or bicyclists between 2012 and 2014 (Table 3, Table 4, Table 5, and Table 6). The most common crash type for Route 109 in front of Black Rock Elementary School were 10 rear-end type crashes (63%) and the most common crash type at the intersection of Route 254 and Walnut Hill Road were 3 angle

crashes (38%). Figure 4 and Figure 5 show the crashes that occurred in these two areas in 2015.

Severity Type	Number o	of Crashes
Property Damage Only	69	70%
Injury (No fatality)	30	30%
Property Damage Only Injury (No fatality) Fatality	0	0%
Total	99	

Table 1. Main Street Crash Severity 2012-2014

Source: UConn Connecticut Crash Data Repository

Manner of Crash / Collision Impact	Number of C	rashes
Unknown	0	0%
Sideswipe-Same Direction	8	8%
Rear-end	38	38%
Turning-Intersecting Paths	17	17%
Turning-Opposite Direction	3	3%
Fixed Object	18	18%
Backing	1	1%
Angle	4	4%
Turning-Same Direction	1	1%
Moving Object	4	4%
Parking	1	1%
Pedestrian	1	1%
Overturn	1	1%
Head-on	0	0%
Sideswipe-Opposite Direction	2	2%
Miscellaneous- Non Collision	0	0%
Total	99	

Table 2. Main Street Crash Type 2012-2014

Source: UConn Connecticut Crash Data Repository

Severity Type	Number o	of Crashes
Property Damage Only Injury (No fatality) Fatality	14	88%
Injury (No fatality)	2	13%
Fatality	0	0%
Total	16	

Table 3. Route 109 Crash Severity 2012-2014

Manner of Crash / Collision Impact	Number of C	rashes
Unknown	0	0%
Sideswipe-Same Direction	2	13%
Rear-end	10	63%
Turning-Intersecting Paths	1	6%
Turning-Opposite Direction	0	0%
Fixed Object	1	6%
Backing	0	0%
Angle	0	0%
Turning-Same Direction	1	6%
Moving Object	1	6%
Parking	0	0%
Pedestrian	0	0%
Overturn	0	0%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	16	

Table 4. Route 109 Crash Type 2012-2014

Source: UConn Connecticut Crash Data Repository

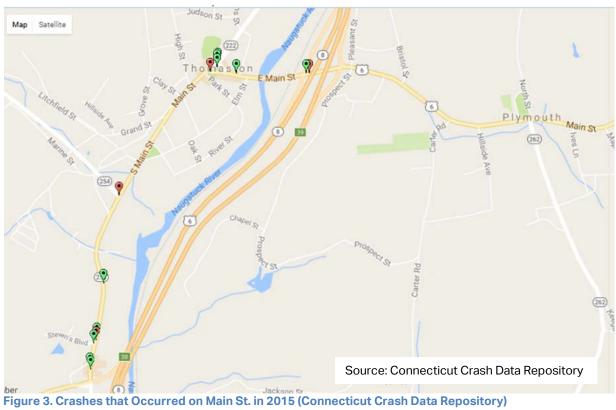
Severity Type	Number of Cr	of Crashes		
Property Damage Only	5	63%		
Injury (No fatality)	3	38%		
Fatality	0	0%		
Total	8			

Table 5. Route 254 Crash Severity 2012-2014

Manner of Crash / Collision Impact	Number Crashes	of
Unknown	0	0%
Sideswipe-Same Direction	1	13%
Rear-end	0	0%
Turning-Intersecting Paths	1	13%
Turning-Opposite Direction	0	0%
Fixed Object	1	13%
Backing	0	0%
Angle	3	38%
Turning-Same Direction	1	13%

Moving Object	0	0%
Parking	0	0%
Pedestrian	0	0%
Overturn	1	13%
Head-on	0	0%
Sideswipe-Opposite Direction	0	0%
Miscellaneous- Non Collision	0	0%
Total	8	100%

Table 6. Route 254 Crash Type 2012-2014



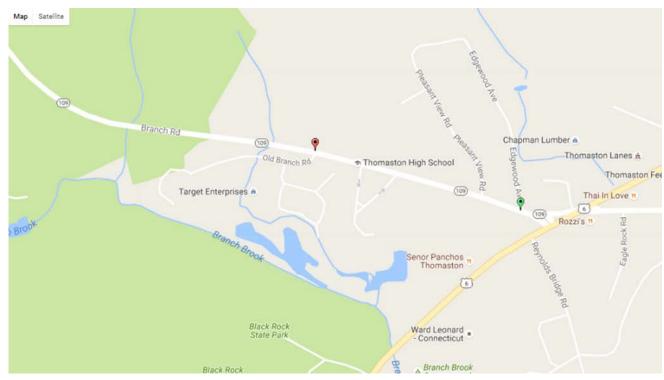


Figure 4. Crashes that Occurred on Route 109 in 2015 (Connecticut Crash Data Repository)

Source: UConn Connecticut Crash Data Repository

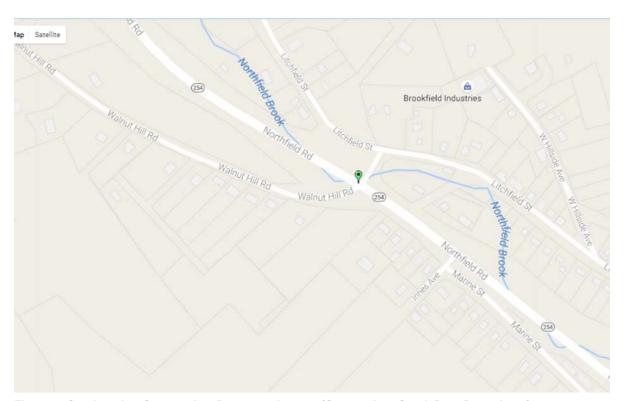


Figure 5. Crashes that Occurred on Route 254 in 2015 (Connecticut Crash Data Repository)

The Town of Thomaston would like to make the RSA area around Black Rock Elementary School more accommodating to pedestrians. The vertical alignment of the road restricts sight lines at the two crosswalks in front of the school. The horizontal alignment of the road is straight which lends itself to high vehicle speeds. Because pedestrians, especially children, are common in this area, the Town would like to improve pedestrian accommodations and safety if possible. The Town would also like to consider options to improve pedestrian accommodations at the southern end of the Main Street study area as well. There are currently several sections of concrete sidewalk on Main Street, especially in the Town Center area but the southern end of the RSA area is disconnected. The Town would like to increase connectivity to make the southern section more inviting to pedestrians.

At the northern end of the Main Street RSA area and the intersection of Route 254 and Walnut Hill Road the Town would like to improve vehicle operations. At the northern end of the Main Street corridor, the sight line is limited for vehicles making left turns after exiting Route 8 northbound at Exit 39. Vehicles travelling west on Main Street in this area are on a long downhill, which encourages high vehicle speeds at the intersection. The Town would like to look at options to improve vehicle operations in this area, as well as ensuring the safety of pedestrians. At the intersection of Route 254 and Walnut Hill Road, the alignment of Route 254 is straight and the road is very wide, again encouraging high vehicle speeds. Sight lines are limited for vehicles on Walnut Hill Road crossing Route 254 and the Town would like to consider alternatives to improve vehicle safety in this area.

Figure 6 and Table 7 summarize the roadway geometrics in the Main Street study area.

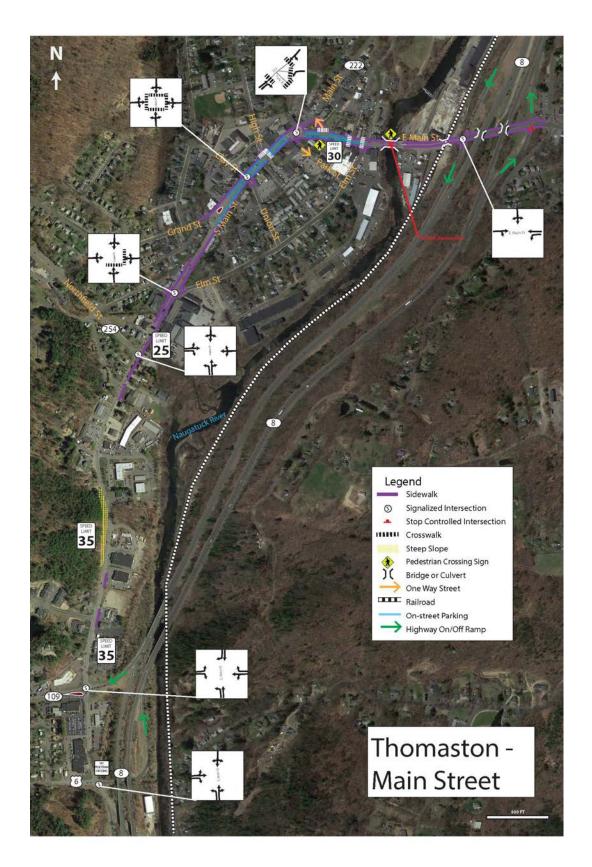


Figure 6. Main Street Geometrics

Thomaston - Main Street, Route 109 and Route 254 Street Inventory

						Sidewalk					Ram	ps
Street	Route	Lanes	Avg. Lane Width	Side	Туре	Width	Condition*	Curb	Parking	Shoulder	Exist	Compliant
Main Street	Route 254	1	11-13'	NB	Concrete	5-8'	Good	Concrete	Some	2-8'	Yes	Some
		1	11-13'	SB	Concrete	5-8'	Good	Concrete	Some	2-12'	Yes	Some
Branch Road	Route 109	1	13'	EB	Concrete	5'	Good	Asphalt	No	3-4'	Yes	Some
		1	13'	WB	No	N/A	N/A	Asphalt	No	3-4'	No	N/A
Northfield Road	Route 254	1	15'	NB	No	N/A	N/A	Asphalt	No	8'	No	N/A
		1	14'	SB	No	N/A	N/A	Asphalt	No	8'	No	N/A
Walnut Hill Road		1	15'	NB	No	N/A	N/A	Asphalt	No	No	No	N/A
		1	15'	SB	No	N/A	N/A	Asphalt	No	No	No	N/A

^{*}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.

Table 7. Street Inventory

2.2 Prior Successful Effort

The Town has installed several pedestrian amenities in the RSA area at Black Rock Elementary School including several retro-reflective pedestrian signs and Yield to Pedestrian bollards. The Town would like to expand on these efforts to further enhance pedestrian safety in this area.

There is a new multi-family residential development on Steven's Boulevard. It was noted that residents are having difficulty making turns out of Steven's Boulevard onto Main Street due to sight constraints looking north and high traffic volumes.

CT Transit runs a new shuttle service between Torrington and Waterbury with three stops in downtown Thomaston.

The Town will be constructing small portions of The Greenway to the south along Old Waterbury Road. The Naugatuck Valley Council of Governments is evaluating a connection of The Greenway to Watertown.

Thomaston is a member of the CTDOT Safe Routes to School Program.

There are currently several concrete sidewalks in the center of the Main Street RSA area and the Town has stated that they are generally satisfied with pedestrian operations and safety at these facilities.

2.3 Pre-Audit Meeting

The RSA was conducted on October 12, 2016. The Pre-Audit meeting was held at 8:30 AM in the Town Hall located on Main Street in Thomaston.

The RSA Team was comprised of staff from AECOM, staff from CTDOT, and representatives from Thomaston departments including the First Selectman, Highway Department and the Police Chief. The complete list of attendees can be found in Appendix B.

Several items were presented for general information prior to conducting the Audit in the field:

- There is a new condominium complex at Stevens Boulevard located on the south end of the Main Street RSA area.
 - There is a steep embankment and a horizontal curve north of Steven's Boulevard on Main Street that limits sightlines.
 - There is also a Dunkin Donuts across from Steven's Boulevard and vehicles often queue on Main Street to turn into Dunking Donuts in the morning; this has resulted in several accidents.
 - There was a fatal accident in front of Dunkin Donuts approximately 15 years ago.

- There is a gap in the sidewalk at the southern end of Main Street near the new condominium complex at Steven's Boulevard.
 - There are already many pedestrians in this area with more expected since it is an area where additional development is anticipated.
 - The existing sidewalks in this area were required by the Town as part of new developments and there is a worn path where people walk in sections that do not have sidewalk.
- There is a switchback curve on Main Street near the CTDOT District 4 office where there have been several accidents.
- Residents in motorized wheel chairs are observed riding on Main Street in the southern section where there are no sidewalks.
- There is a long stretch on Route 254 where vehicle speeds are high and vehicles do not realize they are approaching the intersection with Main Street. There have been several accidents at the intersection of Route 254 and Main Street.
- There was a pedestrian accident on Main Street, but it was caused by a fleeing driver under the influence and not insufficient pedestrian facilities.
- There is CT Transit bus service in Thomaston now on the Torrington-Waterbury line with three designated unsheltered bus stops, although buses can be hailed from anywhere on the route.
 - o This is the first year that this bus has been in service in Thomaston.
- The Town does not currently have a defined pedestrian or bicycle plan.
- There is a plan for a greenway currently in progress that will connect to Waterbury and Litchfield.
 - o The Town has funding in place for a small section of this trail and a parking lot with the intention to connect to this section in the future.
- Town ordinances require that residents clear snow from sidewalks in front of their property.
- Bicycles are not prohibited from using sidewalks, but not very many are observed in the RSA area.
- School zones are a concern for the Town, especially the area around the Black Rock Elementary School on Route 109.
 - o There is significant pedestrian traffic around all of the schools in the area.
 - Sight distance is limited at the Black Rock Elementary School crosswalks and the Town would like to improve pedestrian signage.
 - The Town installed constant flashing speed limit signs in advance of the crosswalks but would prefer push button activated flashers if they could secure funding for them.
 - The Town requested that CTDOT address the need for additional pedestrian signing approximately one month prior to the audit but had not received a positive response.
 - The Town is part of the CTDOT Safe Routes to School program but there has not been an audit done in several years.

- o There was a fatal accident within one of the crosswalks on Route 109 several years ago.
- The Town requested that the RSA area be modified to include the area on Route 109 in front of Black Rock Elementary School.

3 RSA Assessment

3.1 Field Audit Observations

Black Rock Elementary School (Route 109):

- A vertical crest restricts drivers' view of the crosswalk markings (Figure 7).
- There are currently advance pedestrian signs (Figure 8).
- School zone signs are not placed according to standards.
- The advance flashing sign may be too far in advance (to the west for eastbound motorists) of the crosswalks to be effective.
- There is a 5-foot concrete sidewalk on the south side of Route 109.
- Thomaston High School is adjacent to the Elementary School and houses grades 7-12.
- There are many signs at the southeast end of the study area which can be confusing to drivers.
- Roadway widths were measured as single 13-foot lanes with 3 to 4-foot shoulders in each direction.
- There are no handicap ramps or landings on the north side of the crosswalk at Pleasant View Road and Edgewood Road crosswalk (Figure 9).



Figure 7. One crosswalk visible, one behind crest



Figure 8. Advance pedestrian sign



Figure 9. Crosswalk without ramp or landing

- The pedestrian crosswalk sign at Edgewood Avenue facing eastbound traffic is located too far from the crosswalk to be visible to motorists.
- There are no detectable warning strips at the handicap ramps at both crosswalks.
- There is no crosswalk across the school exit driveway.
- East of Edgewood Avenue, the sidewalk on the south side of Route 109 does not have a snow shelf and the sidewalk directly abuts the roadway.
- The Town placed a Yield to Pedestrians bollard at the Edgewood Avenue crosswalk.
- The existing two-cable wood post guiderail on the south side of Route 109 has a deflection distance that will not protect pedestrians on the sidewalk behind it.
- Shifting the eastern crosswalk up the hill (west) could improve visibility for drivers.
- A pedestrian was observed in the crosswalk and complained to the audit team that drivers usually do not yield to pedestrians.
- There are no school crossing guards.
- Vegetation could be trimmed around the "End School Zone" sign to improve visibility.
- The intersection of Route 109 and Watertown Road just east of the school encourages high vehicle speeds with a wide channelized westbound right turn.

Main Street (Southern Portion):

- Sight distance is limited for vehicles exiting the new condominium complex at Steven's Boulevard onto Main Street due to ledge and a commercial sign to the north (Figure 10).
- There is a short sidewalk on the east side of Main Street in front of Dunkin Donuts and the Lutheran Church.
- A new sidewalk on the east side of Main Street extending south to Route 109 appears to be the most feasible. Existing parking just off of Main Street at Foster's Farm on the east side of Main Street may be a constraint to a new sidewalk in this area.
- A new sidewalk on the west side of Main Street between Route 109 and Steven's Boulevard would also provide pedestrian connectivity.
- There are no crosswalks at the intersection of Main Street and Route 109.
- Access management is poor in this area, with several wide driveways that create a challenge for pedestrian crossings (Figure 11).
- There are no crosswalks or pedestrian signal heads at the intersection US Route 6/Route 254/Route 109. There is a pedestrian pushbutton on the southeast corner that provides pedestrians with a concurrent crossing with the vehicle phase.

Intersection of Route 254 and Walnut Hill Road:

 There is limited sight distance for vehicles making the straight movement across Route 254 from Walnut Hill Road. Several crashes have occurred at this location. (Figure 12).



Figure 10. Steven's Boulevard looking north on Main St.



Figure 11. Wide driveways



Figure 12. Looking east on Route 254 from intersection

- There is an overhead flashing beacon (yellow for Northfield Road and red for Walnut Hill Road).
- Walnut Hill Road is an access point to a large residential area.
- The intersection is very wide, with additional right of way that may be able to accommodate a roundabout or other intersection improvements.
- There is a large culvert beneath the intersection.
- Guiderails at this location were damaged, indicating that high speed crashes had occurred (Figure 13).

Main Street at the Route 8 Northbound Exit 39 On- and Off -Ramps:

- The intersection is unsignalized.
- There is limited sight distance for vehicles on the off-ramp attempting to make a left turn onto Main Street.
- Westbound traffic on Main Street is on a long and steep downgrade at this intersection, leading to high vehicle speeds (Figure 14).
- There are 5 foot wide sidewalks on both sides of Main Street, but no snow shelf, crosswalks or handicap ramps (Figure 14).
- The second eastbound lane on Main Street may not be needed until east of the off-ramp (Figure 15).
- The intersection of Main Street with Prospect Street/Pleasant Street is very close to the intersection with the Route 8 northbound on- and off-ramps (Figure 14). There are no crosswalks or handicap ramps at this intersection.
- The steep hill is difficult to travel on during snow storms.



Figure 13. Damaged guardrail



Figure 14. Main St. looking east from off ramp



Figure 15. Main St. eastbound climbing lane

• There are utility poles in the sidewalk, restricting the space available to pedestrians (Figure 14).

Main Street (Downtown Area):

 A windshield survey of this area noted that some of the handicap ramps are not ADA compliant, and there are no detectable warning strips. Some of the crosswalks are not aligned correctly.

3.2 Post Audit Workshop - Key Issues

General

The Thomaston Police Commission serves as the Legal Traffic Authority (LTA).

Black Rock Elementary School (Route 109):

- Vehicle speeds are high in this area and crosswalk visibility is limited due to the vertical crest.
- Flashing beacons or other advanced pedestrian measures should be considered.
- School Zone signage and pavement markings need to conform to industry standards.
- The Town would like to have a 20-mph speed limit through the school zone.
- Sidewalk ramps and detectable warning strips are needed at all crossings (Figure 16).
- There should be crosswalks across both school driveways (Figure 17).
- A stop bar should be added at the eastern school driveway exit.
- A better location for the eastern crosswalk at Edgewood Avenue may be on the west side of the school driveway so that it is shifted up the hill to become more visible.
- The intersection of Route 109 and Watertown Road adjacent to the school promotes high speeds with its wide channelized westbound right



Figure 16. Crosswalk without ramp or warning strip



Figure 17. School driveway without a crosswalk

turn lane. A long-term solution would be to realign this movement to 90-degrees.

Main Street (Southern Portion):

- The pedestrian pushbutton at the intersection of Route 109 and Main Street is not ideally located and provides only limited pedestrian accommodation.
- Pedestrian signal heads, pushbuttons, crosswalks, and ramps would be needed at the intersection of Route 109 and Main Street if sidewalks were extended to the intersection.
- A sidewalk on both the east and west sides of Main Street from Route 109 to Steven's Boulevard would improve pedestrian connectivity.
- A sidewalk on the southeast side of Main Street linking the southern section of the RSA area to the downtown area to the north is a long term goal for the Town.
 - Lanes and shoulders are currently wide and some of this width can be used for a sidewalk if there are right of way constraints.
- Sight lines for vehicles exiting Steven's Boulevard are limited by brush on the steep embankment on the west side of Main Street and a sign at a local business.
- Access management is currently poor and it may be helpful to consolidate some of the driveways in the future.
- There is no stop sign or stop bar on Steven's Boulevard at the intersection with Main Street.
- Lane widths on Main Street are currently 13-feet, which is wider than the CTDOT standard 11-foot lanes.

Intersection of Route 254 and Walnut Hill Road:

- The intersection is very wide (Figure 18).
- Vehicle speeds on Route 254 are high through the intersection.
- The flashing beacon at the intersection could be made more visible to drivers.
- Long-term improvement options including a roundabout and other intersection improvements should be considered.
- The large culvert causes some construction limitations, but there should still be space available for several different options.

Main Street at the Route 8 Northbound Exit 39 On- and Off-Ramps:

- There are several challenges at this intersection including sight lines, high speeds, a steep grade and close intersection spacing (Figure 19).
- Eliminating one of the eastbound travel lanes on Main Street west of the northbound ramps may improve operations.
- Additional delineators or stanchions in a median may be effective in slowing vehicles down.
- A long-term option to consider is to link Prospect Street and the northbound off-ramp to eliminate one of the intersections on Main Street.
- There are sidewalks but no crosswalks or sidewalk ramps at the Route 8 ramps (Figure 20) or at the Prospect Street/Pleasant Street intersection.
- In the morning peak period many vehicles turn in and out of the Dunkin Donuts that has access on Pleasant Street just west of Main Street. This exacerbates turning vehicle conflicts in this area.
- Measures to reduce vehicle speed in this area would help reduce the number of crashes.



Figure 18. Wide intersection



Figure 19. Main St. and Route 8 NB off ramp, looking east



Figure 20. Sidewalks without crosswalk or ramps

- There is a park-and-ride lot adjacent to the intersection on the northwest corner that generates traffic.
- It may be possible to improve this area with additional striping and delineation.

4 Recommendations

From the discussions during the Post-Audit meeting, the RSA team compiled a set of recommendations that are divided into short-term, mid-term, and long-term categories. For the purposes of the RSA, **Short-term** is understood to mean modifications that can be expected to be completed very quickly, perhaps within six months, and certainly in less than a year if funding is available. These include relatively low-cost alternatives, such as striping and signing, and items that do not require additional study, design, or investigation (such as right-of way acquisition). **Mid-term** recommendations may be more costly and require establishment of a funding source, or they may need some additional study or design in order to be accomplished. Nonetheless, they are relatively quick turn-around items, and should not require significant lengths of time before they can be implemented. Generally, they should be completed within a window of eighteen months to two years if funding is available. **Long-term** improvements are those that require substantial study and engineering, and may require significant funding mechanisms and/or right-of-way acquisition. These projects generally fall into a horizon of two or more years when funding is available.

4.1 Short Term

- 1. Town to coordinate with CTDOT to evaluate re-striping Main Street with 11-foot wide lanes when the roadway is next repayed under the Vendor In-Place (VIP) program.
- 2. Town to coordinate with CTDOT to trim vegetation around the "End School Zone" sign on Route 109 near Black Rock Elementary School.
- 3. Town to coordinate with CTDOT to trim vegetation at the steep embankment on the west side of Main Street just north of Steven's Boulevard.
- 4. Town to coordinate with the business owner adjacent to Steven's Boulevard to raise the sign to improve vehicle sight distance.
- Town to coordinate with CTDOT to install a stop sign at Steven's Boulevard and Main Street and consider installing an intersection ahead sign on southbound Main Street approaching Steven's Boulevard.
- Town to stripe crosswalks on the two driveways at Black Rock Elementary School and provide compliant handicap ramps and detectable warning strips. Stripe a stop bar on the eastern school driveway.

7. Town to coordinate with CTDOT to upgrade the flashing beacon at the intersection of Route 254 and Walnut Hill Road to a more visible signal such as an LED lens and/or larger signal heads.

Figure 21 depicts some of these recommendations.

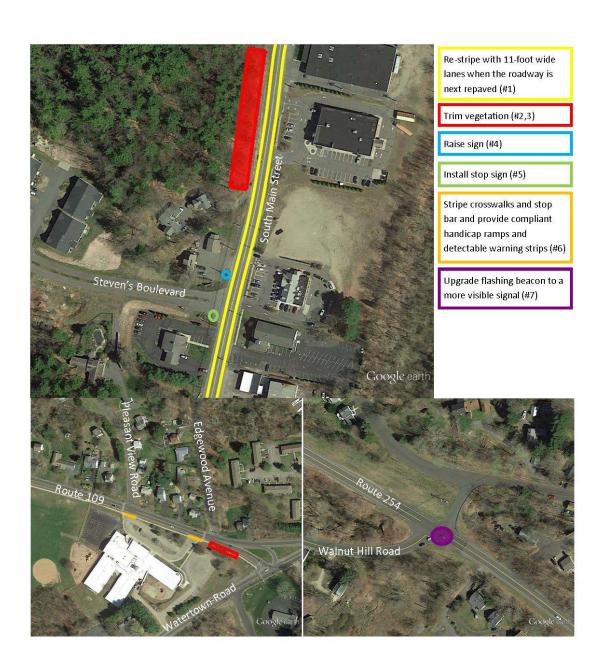


Figure 21. Short term recommendations

4.2 Medium Term

- 1. Town to coordinate with CTDOT to evaluate the following School Zone and crosswalk improvements on Route 109 at the Black Rock Elementary School:
 - a. School Zone signage and modify as needed to comply with standards.
 - b. Provide 20 mph School Zone signs.
 - c. Add School Zone pavement markings on Route 109.
 - d. Relocate the existing crosswalk on Route 109 east of Edgewood Avenue to the west side of Edgewood Avenue and provide a short connecting sidewalk on the north side of Route 109 to Edgewood Avenue.
 - e. Install rapid flashing beacons or other advanced pedestrian safety measures at the two crosswalks on Route 109 in front of Black Rock Elementary School. Evaluate connecting the two crosswalk locations as one coordinated pedestrian safety zone.
- 2. Town to coordinate with CTDOT to:
 - a. Construct handicap sidewalk ramps with detectable warning strips on Route 109 at Black Rock Elementary School.
 - b. Rebuild sidewalk on the south side Route 109 east of Edgewood Avenue to provide a snow shelf/pedestrian buffer between the roadway and the sidewalk.
 - c. Replace the existing post/cable guard rail on the south side of Route 109 west of Pleasant View Road.
 - d. Construct handicap sidewalk ramps with detectable warning strips and crosswalks on Main Street at the Route 8 northbound exit 39 on- and off ramps and Prospect Street/Pleasant Street.
- 3. Town to coordinate with CTDOT to consider operations and safety options on Main Street at the Route 8 northbound exit 39 on- and off-ramp and Prospect Street and Pleasant Street. These may include striping and delineation; narrowing lanes; flush median with stanchions and reflectors; eliminating one of the eastbound Main Street lanes west of the ramps; and providing turn (deceleration) lanes into Pleasant Street. Long-Term options are discussed below.
- 4. Town to develop a pedestrian and bike plan for the study area.

Figure 22 depicts some of the recommendations.



Figure 22. Medium term recommendations

4.3 Long Term

- Town to coordinate with CTDOT to evaluate alternative intersection configurations for the intersection of Route 109 and Watertown Road including a standard T-intersection to eliminate the high speed right turn movement from westbound Route 109 towards Black Rock Elementary School.
- Town to coordinate with CTDOT to construct a sidewalk on the west side of Main Street from Route 109 to Steven's Boulevard and complete the missing sections of sidewalk on the east side of Main Street, including crosswalks, ramps, detectable warning strips, pedestrian signals and pushbuttons at the intersection with Route 109.
- Town to coordinate with CTDOT to remove ledge on the west side of Main north of Steven's Boulevard to improve sight lines for southbound drivers on Main Street approaching the intersection.
- 4. Town to coordinate with existing business owners on Main Street to consolidate or eliminate curb openings and require property owners to improve access management as part of any proposed development/redevelopment.
- 5. Town to coordinate with CTDOT to evaluate alternative intersection designs including a roundabout and other geometric configurations for the intersection of Route 254 and Walnut Hill Road.
- 6. Town to coordinate with CTDOT to evaluate alternative roadway and intersection options on Main Street between the Route 8 northbound exit 39 on- and off ramps and Prospect Street/Pleasant Street. Options to evaluate should include combining the Route 8 off-ramp and Prospect Street into a single roadway intersection with Main Street to eliminate the close spacing between these two intersections and reduce vehicle turning movements and conflicts.

Figure 23 and Figure 24 depict some of these recommendations.

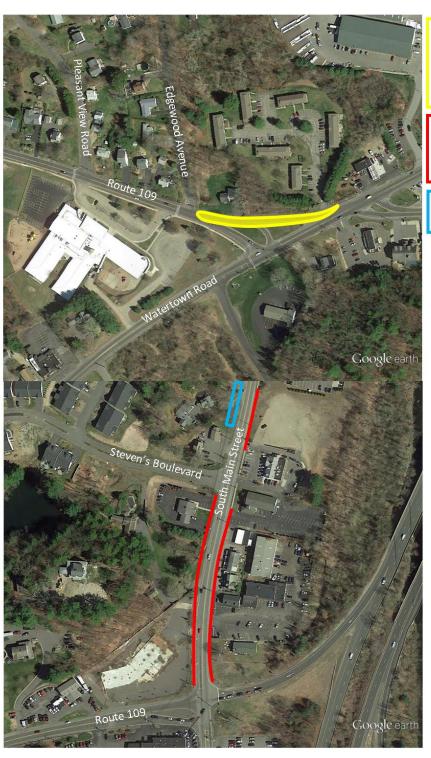


Figure 23. Long term recommendations

Evaluate alternative intersection configurations such as eliminating the channelized right turn lane (#1)

Construct sidewalk including crosswalks, ramps, warning strips etc. (#2)

Remove ledge to improve sight lines (#3)

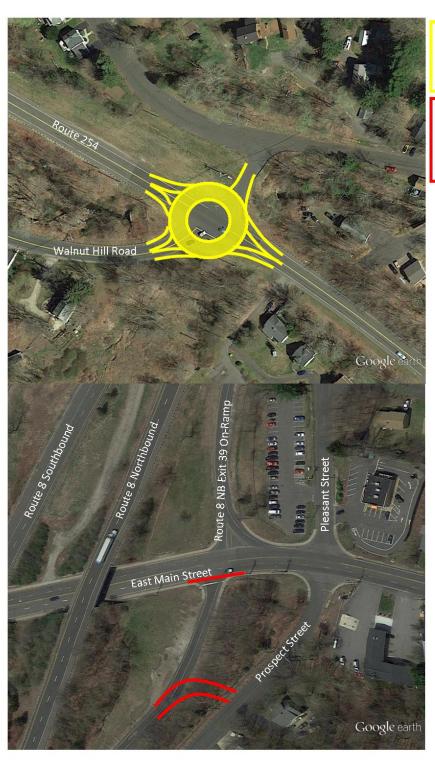


Figure 24. Long term recommendations

Evaluate alternative intersection designs including a roundabout (#5)

Evaluate alternative roadway and intersection options including combining the off-ramp with Prospect Street (#6)

4.4 Summary

This report documents the observations, discussions and recommendations developed during the successful completion of the Town of Thomaston RSA. It provides Thomaston with an outlined strategy to improve the transportation network for all road users between Route 109 and the Route 8 exit 39 northbound on- and off-ramp on Main Street within the town center, at the intersection of Route 254 with Walnut Hill Road, and on Route 109 at Black Rock Elementary School, particularly focusing on pedestrians and cyclists. Moving forward, Thomaston may use this report to prepare strategies for funding and implementing the improvements, and as a tool to plan for including these recommendations into future development.



Appendix A





Welcome to the Community Connectivity Program Application



Please fill in the following information to provide the Audit team leaders with a comprehensive description of the area contained in this application.

1. Applicant contact information

Name	
Title	
Email Address	
Telephone	
Number	
2. Location infor	nation
Address	
Description	
City / Town	

State r	oad		
Local	oad		
Private	Road		
Other (please specify)		
4. Zoning (Please	select all that apply)		
Indust	ial		
Reside	ntial		
Comm	ercial		
Mixed	Jse		
Retail			
N/A (ne	et applicable)		
Other (please specify)		
5. Approx	imate mile radius around the I	ocation	

Community Centers
Business Districts
Restaurant/Bar Districts
Churches
Housing Complexes
Proximity to Schools
Tourist Locations (examples – Casino, Malls, Parks, Aquarium, etc)
N/A (not applicable)
Other (please specify)
Employment Facilities (Retail, Industrial, etc)
No
If Yes please describe (please specify)

Public, Paroc	hial, Private Schools (mor	e than 1 school wi	thin a ½ mile)	
University / 0	Community Colleges			
N/A (not appl	cable)			
Other (please	specify)			
9. Transit facil				
(Please selec	t all that apply)			
Bus				
Rail				
Ferry				
Airport				
Park and Ride	. Lot			
N/A (not appli				
Other (please	specify)			

Traffic (volumes & speed)
Collisions
Sidewalks
Traffic Signals
Traffic Signs
Parking Restrictions / Additions
Drainage
ADA Accommodations
Agricultural & Live Stock crossing
Maintenance issues (cutting grass, leaves, snow removal)
N/A (not applicable)
Other (please specify)

If Yes please de	scribe and list all _l	projects.		
n ree predee de		<u> </u>		

Page 6 of 11

If Yes please desc	ribe and list.		

Page 7 of 11

Page 9 of 11

Thank you for completing the Community Connectivity application.

Please click on the "submit button" below and include the following attachments

- 1 Location map (google, GIS) (Required)
- 2 Collision data (If available)
- 3 Traffic data (ADT or VMT) (If available)
- 4 Pedestrian/bicycle data (If available)



Appendix B









Road Safety Audit

Town: Thomaston RSA Location: Main Street

Meeting Location: Thomaston Town Hall Selectman's Conference Room

Address: 158 Main St #1, Thomaston, CT 06787

Date: 10/12/2016 **Time:** 8:30 AM

Participating Audit Team Members

Audit Team Member	Agency/Organization
Brad Sabean	Aecom
Ed Mone	Town of Thomaston
Craig Babowicz	CTDOT
Glenn Clark	Thomaston DPW
James Campbell	Thomaston Police
Jeff Maxtutis	Aecom



Appendix C









Road Safety Audit – Thomaston

Meeting Location: Thomaston Town Hall Selectman's Conference Room

Address: 158 Main St #1

Thomaston, CT 06787

Date: 10/12//2016 **Time:** 8:30 AM

Agenda

Type of Meeting: Road Safety Audit – Pedestrian Safety

Attendees: Invited Participants to Comprise a Multidisciplinary Team

Please Bring: Thoughts and Enthusiasm!!

8:30 AM Welcome and Introductions

Purpose and Goals

Agenda

8:45 AM Pre-Audit

Definition of Study Area

Review Site Specific Data:

o Average Daily Traffic

o Crash Data

Geometrics

Issues

Safety Procedures

10:00 AM Audit

Visit Site

As a group, identify areas for improvements

12:00 PM Post-Audit Discussion / Completion of RSA

Discussion observations and finalize findings

Discuss potential improvements and final recommendations

Next Steps

2:30 PM Adjourn for the Day – but the RSA has not ended

Instruction for Participants:

- Before attending the RSA, participants are encouraged to observe the intersection and complete/consider elements on the RSA Prompt List with a focus on safety.
- All participants will be actively involved in the process throughout. Participants are encouraged to
 come with thoughts and ideas, but are reminded that the synergy that develops and respect for
 others' opinions are key elements to the success of the overall RSA process.
- After the RSA meeting, participants will be asked to comment and respond to the document materials to assure it is reflective of the RSA completed by the multidisciplinary team.





Audit Checklist

Pedestrians and Bicycles	Comment
Pedestrian Crossings Sufficient time to cross (signal) Signage Pavement Markings Detectable warning devices (signal) Adequate sight distance Wheelchair accessible ramps Grades Orientation Tactile Warning Strips Pedestrian refuge at islands Other	
Pedestrian Facilities	
 Sidewalk Width Grade Materials/Condition Drainage Buffer Pedestrian lighting Pedestrian amenities (benches, trash receptacles) Other 	





Bicycles

- Bicycle facilities/design
- Separation from traffic
- · Conflicts with on-street parking
- Pedestrian Conflicts
- Bicycle signal detection
- Visibility
- Roadway speed limit
- Bicycle signage/markings
- Shared Lane Width
- Shoulder condition/width
- Traffic volume
- Heavy vehicles
- Pavement condition
- Other

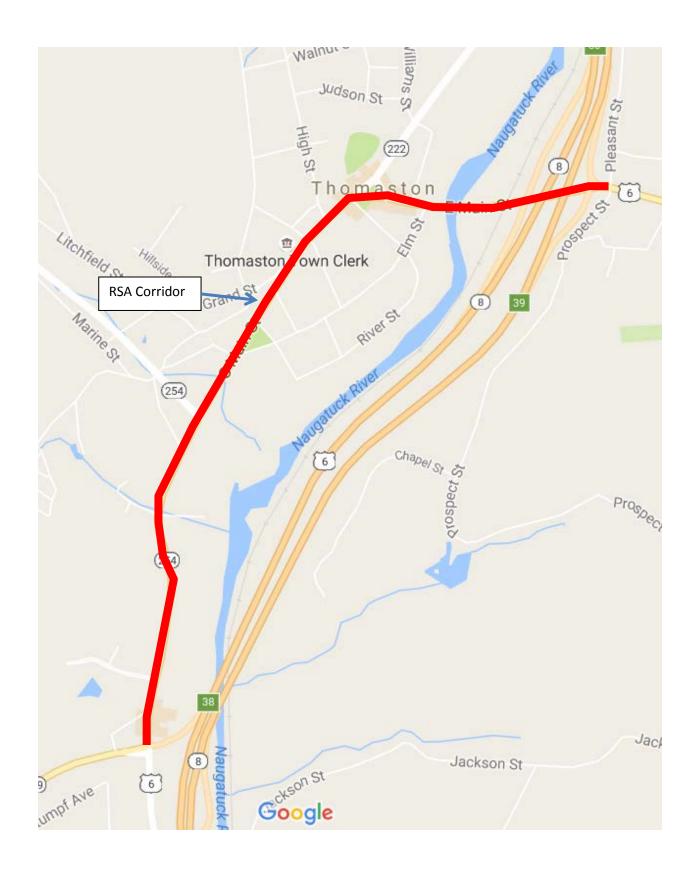
Intersections

- Geometrics
- o Sight Distance
- Traffic control devices
- Safe storage for turning vehicles
- Capacity Issues

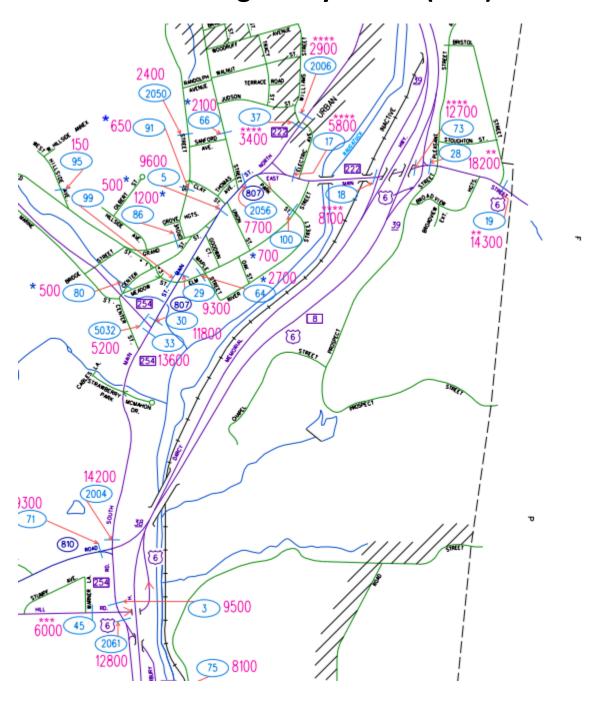




 Pavement Pavement Condition (excessive roughness or rutting, potholes, loose material) Edge drop-offs Drainage issues Lighting Adequacy 	
 Signing Correct use of signing Clear Message Good placement for visibility Adequate retroreflectivity Proper support 	
 Signals Proper visibility Proper operation Efficient operation Safe placement of equipment Proper sight distance Adequate capacity 	
 Pavement Markings Correct and consistent with MUTCD Adequate visibility Condition Edgelines provided 	
 Miscellaneous Weather conditions impact on design features. Snow storage 	



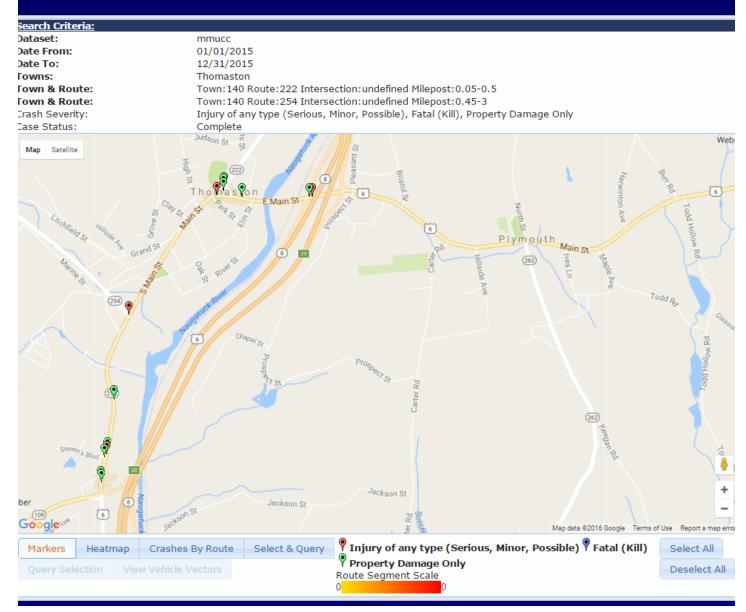
Average Daily Traffic (ADT)



2015 Crashes

UCONN

Connecticut Crash Data Repository







Road Safety Audit – Thomaston

Crash Summary

Data: 3 years (2012-2014)

There was 1 crash that involved pedestrians.

There were no crashes involving bicyclists.

Severity Type	Number o	of Crashes
Property Damage Only	69	70%
Injury (No fatality)	30	30%
Fatality	0	0%
Total	99	

Manner of Crash / Collision Impact	Number of Crashes	
Unknown	0	0%
Sideswipe-Same Direction	8	8%
Rear-end	38	38%
Turning-Intersecting Paths	17	17%
Turning-Opposite Direction	3	3%
Fixed Object	18	18%
Backing	1	1%
Angle	4	4%
Turning-Same Direction	1	1%
Moving Object	4	4%
Parking	1	1%
Pedestrian	1	1%
Overturn	1	1%
Head-on	0	0%
Sideswipe-Opposite Direction	2	2%
Miscellaneous- Non Collision	0	0%
Total	99	





Weather Condition	Number of Crashes	
Snow	9	9%
Rain	13	13%
No Adverse Condition	77	78%
Unknown	0	0%
Blowing Sand, Soil, Dirt or		
Snow	0	0%
Severe Crosswinds	0	0%
Sleet, Hail	0	0%
Total	99	

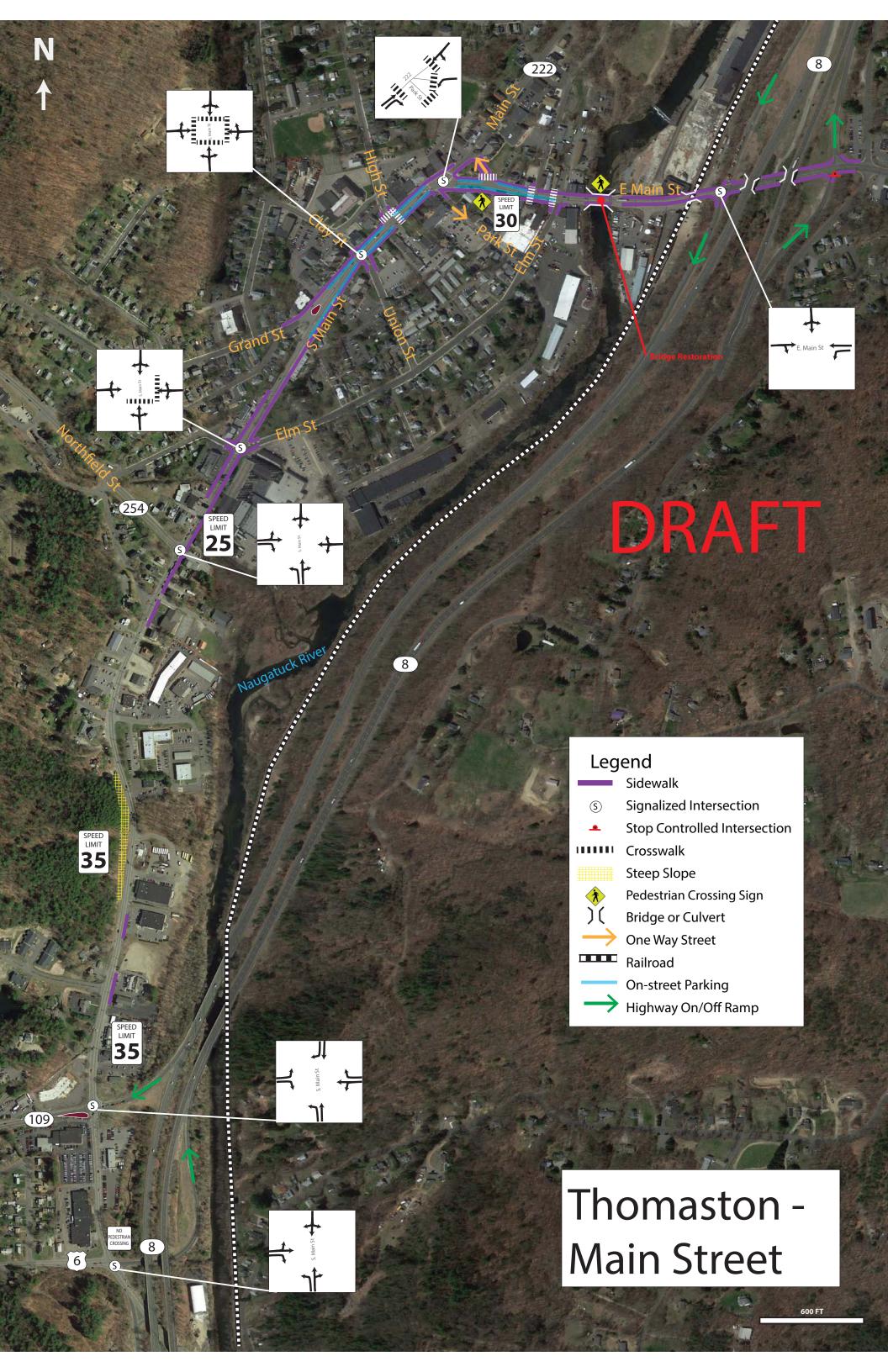
Light Condition	Number of Crashes	
Dark-Not Lighted	8	8%
Dark-Lighted	10	10%
Daylight	75	76%
Dusk	4	4%
Unknown	1	1%
Dawn	1	1%
Total	99	

Road Surface Condition	Number of Crashes	
Snow/Slush	8	8%
Wet	17	17%
Dry	74	75%
Unknown	0	0%
Ice	0	0%
Other	0	0.0%
Total	99	





Time	Time Number of Crashe		ashes
0:00	0:59	1	1%
1:00	1:59	1	1%
2:00	2:59	0	0%
3:00	3:59	0	0%
4:00	4:59	2	2%
5:00	5:59	0	0%
6:00	6:59	2	2%
7:00	7:59	5	5%
8:00	8:59	4	4%
9:00	9:59	3	3%
10:00	10:59	7	7%
11:00	11:59	6	6%
12:00	12:59	6	6%
13:00	13:59	4	4%
14:00	14:59	7	7%
15:00	15:59	10	10%
16:00	16:59	10	10%
17:00	17:59	9	9%
18:00	18:59	6	6%
19:00	19:59	7	7%
20:00	20:59	3	3%
21:00	21:59	2	2%
22:00	22:59	1	1%
23:00	23:59	3	3%
Total		99	







Post-Audit Discussion Guide

Safety Issues

• Confirmation of safety issues identified during walking audit

Potential Countermeasures

• Short Term recommendations

• Medium Term recommendations

• Long Term recommendations

Next Steps

• Discussion regarding responsibilities for implementing the countermeasures (including funding)





Road Safety Audit – Thomaston

Fact Sheet

Functional Classification:

Main Street is classified as a Minor Arterial

ADT

• ADT on Main Street ranges from 7,700 to 12,700

Population and Employment Data (2014):

Population: 7,793Employment: 2,860

Urbanized Area

Thomaston is in the Hartford Urbanized Area

Demographics

- The statewide average percentage below the poverty line is 10.31%. There are no areas in Thomaston exceeding the state average
- The statewide average percentage minority population is 30.53%. There are no areas in Thomaston exceeding the state average

Air Quality

- Thomaston's CIPP number 320
- Thomaston is within the Greater CT Marginal Ozone Area
- Thomaston is within a CO Maintenance Area

