

ROAD SAFETY AUDIT

The Intersection of Canton Street (Route 27) at School Street/Summer Street and the Intersection of Pleasant Street (Route 139) at Lincoln Street

Municipality of Stoughton, MA

June 2018

Prepared For:
MassDOT



On Behalf Of:



Prepared By: Old Colony Planning Council
70 School Street
Brockton, MA 02301



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Background

This Road Safety Audit (RSA) is for two intersections in Stoughton; it includes the Canton Street (Route 27)/School Street intersection and the Pleasant Street (Route 139)/Lincoln Street intersection. The Old Colony Planning Council (OCPC) conducted this RSA upon a request from the Town of Stoughton, and the request letter is included in the appendix to this report. Both of these intersections experience a high number of crashes, which is documented in a number of previous road safety audits and corridor studies. In addition, both intersections are included in MassDOT's Crash Cluster for the years 2015, 2014, and 2013.

The Canton Street (Route 27)/School Street/Summer Street intersection has been the subject of a number of previous studies including the *Route 27 Corridor Traffic Study* (Old Colony Planning Council 2008), *A Functional Operation and Design Report Canton Street (Route 27) at School Street and Summer Street* (prepared by a consultant in 2000), a *Signal Warrant Analysis Study Canton Street (Route 27) at School Street and Summer Street* by OCPC in 2005, and a *Road Safety Audit Canton Street (Route 27) at School Street and Summer Street* by an engineering consultant in 2009. In general, these studies show that this is a high crash location, with mostly angle type crashes, there is limited sight distance on the minor street southbound approach due to the proximity of a building on the northeast quadrant of the intersection, the peak hour level-of-service is at failure (LOS "F") on the side street approaches, (which causes "forced flow" conditions), the intersection is misaligned, and traffic on a fifth approach, from Summer Street, contributes to confusion creating merging and turning movement conflicts. In general, the recommendations from these previous studies included reconstructing, realigning, and signaling the intersection. These studies also included signal warrant analysis, which showed that the intersection satisfies the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) criteria.

The Pleasant Street (Route 139) at Lincoln Street intersection has also been the subject of previous studies. The *Route 139 Corridor Study* (Old Colony Planning Council 2010) cited angle collisions as problematic at the intersection, especially between vehicles on the Pleasant Street southbound and Lincoln Street westbound approaches, and vehicles taking left turns on the opposing approaches of Pleasant Street. The study cited limited sight distances on the Lincoln Street eastbound and westbound approaches looking toward the south due to a curve and grade in the Pleasant Street northbound approach. The study showed that the intersection satisfies the installation of a traffic signal based on the *Manual on Uniform Traffic Control Devices* (MUTCD) criteria. It recommended reconstruction of the intersection with geometric improvements and installation of traffic signals.

Project Data

The Road Safety Audit (RSA) took place on Tuesday May 8, 2018 at the Stoughton Police Department Conference Community Room, 26 Rose Street, Stoughton beginning at 10 AM. The meeting was facilitated by OCPC staff. OCPC provided collision diagrams and the latest crash experience data (2015 through 2017), based on crash reports provided by the Stoughton Police Department.

The RSA meeting consisted of three components. The first portion of the meeting focused on a discussion of the issues and concerns. The participants then left the meeting room and proceeded to the intersections to visit the sites for the second portion of the meeting. The discussion of issues was continued during the site visit as OCPC staff took notes. The third portion of the meeting focused on potential short term and long term potential improvements for the intersections. The agenda and the background materials are included in the appendix to this report. Table 1 lists the names and affiliations of the audit participants.

Table 1: Participating Audit Team Members

Audit Team Member	Agency/Affiliation
Teresa Tapper	Stoughton Youth Council
Christopher Falcos	MassDOT Traffic Safety
James O'Connor	Stoughton Police Department
Craig Horsfall	Stoughton Engineering
Connor Keating	MassDOT Traffic Safety
Raymond Guarino	Old Colony Planning Council
Shawn Bailey	Old Colony Planning Council
Jimmy Pereira	Old Colony Planning Council
Shawn Faria	Stoughton Police Department
Marc Tisdelle	Interim Stoughton Town Manager

Project Location and Description

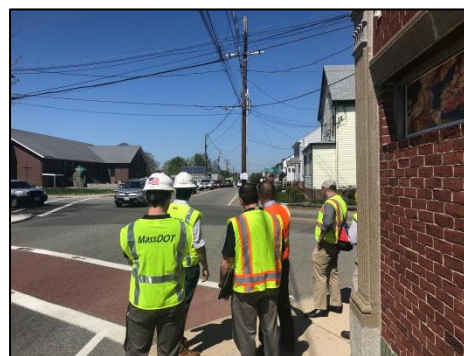
Canton Street (Route 27) at School Street and Summer Street

The intersection of Canton Street (Route 27) at School Street and Summer Street is stop controlled on the minor street approach (School Street northbound and southbound). It is a five-way intersection located approximately one-quarter mile west of Stoughton Center. Canton Street is designated as State Numbered Route 27 and is functionally classified as an Urban Principal Arterial. Route 27 is a significant regional roadway, which provides access to Route 24 and Brockton to the east and Sharon and Walpole to the west. In addition, Route 27 provides a connection to Route 138, and points north and south. School Street is functionally classified as an Urban Collector, and Summer Street is functionally classified as a Local Road. All three roads are under local jurisdiction (Town of Stoughton).

The Canton Street (Route 27)/School Street/Summer Street intersection is skewed on the School Street approach and under stop sign control on the northbound and southbound School Street approaches. In addition, the northbound School Street approach intersects with Summer Street, which merges into the intersection, creating a five-way intersection, although traffic movements in and out of Summer Street are few. Although Route 27 is a north-south route, it primarily has an east-west alignment in the vicinity of School Street. The Stoughton MBTA commuter rail station is located just south of Canton Street between the Canton Street/School Street/Summer Street intersection and Stoughton Center. Vehicles headed to and from the commuter rail station impact traffic volumes through the intersection, especially during the peak hours. Figures 1 shows the intersection locations and the surrounding area.

The area surrounding the intersection is a mix of residential and commercial uses. There is a warehouse, which is currently not in use, located on Summer Street approximately 300 feet south of the intersection. A Catholic church is located on the southwest corner of the intersection with a curb cut to Canton Street located about 200 feet west of the intersection and a curb cut to School Street located 300 feet south of the intersection. An at-grade railroad crossing is located on School Street approximately 200 feet north of the intersection, which causes vehicles to back up through the intersections during the time the gates are down and a train is crossing. A restaurant is located on the northeast corner of the intersection, which creates stopping sight limitations for vehicles on the School Street southbound approach. There are a number of schools, (high school, middle school, elementary school), within walking distance of the intersection, and a crossing guard is present at the intersection during school hours.

The intersection provides a single lane of travel on all approaches. Canton Street provides twelve foot lanes separated by a double yellow centerline, with single white edge lines, on the eastbound and westbound approaches. There are no usable shoulders on the Canton Street approaches. The width of the shoulders varies from less than one foot to two feet wide. School Street on the southbound approach provides twelve foot lanes separated by a double yellow centerline, with no shoulder or edge line. School Street on the northbound approach has twelve foot lanes separated by a double yellow centerline, with single white edge lines to delineate the edge of pavement. Summer Street is approximately twenty-one feet in width and has a curbed sidewalk on the east side. Canton Street provides curbed sidewalks on the eastbound and westbound approaches. There is a curbed sidewalk on the east side of School Street north of the intersection and on the westbound side south of the intersection. Street lighting is present on utility poles on the southeast corner and northwest corner. There is a crosswalk across Canton Street (Route 27) on the westbound approach (brick texture), and a crosswalk across School Street and Summer Street on the northbound approach. The crosswalk across School Street and Summer Street is approximately 65 feet long.



Canton Street (Route 27) looking westbound to the Canton Street (Route 27)/School Street intersection with restaurant building to the right on the northeast corner of the intersection.

The posted speed limit along Canton Street in the area of School Street is 30 miles per hour, reduced from 40 miles per hour approximately 1,000' west of the intersection for vehicles traveling eastbound. No speed limit signs were noted on School Street.

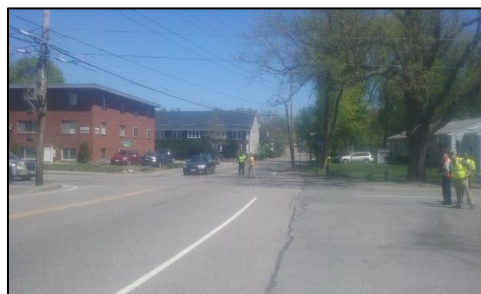
In 2018, the Old Colony Planning Council conducted intersection turning movement counts and 24-hour traffic counts in order to update the existing traffic volumes for Canton Street (Route 27) and School Street, and also to update the intersection Level-of-Service analyses and signal warrant analyses. The turning movement counts and automatic traffic recorder counts are included in the appendix to this report.

Intersection Level-of-Service (LOS) analysis was performed for the Canton Street (Route 27)/School Street intersection for the morning and afternoon peak hours. The LOS for the morning and afternoon peak hours is LOS "F" (Long delays and forced flow) for the stop controlled northbound and southbound School Street approaches to the intersection.

The Old Colony Planning Council updated 24-hour machine counts on all the approaches to the Canton Street (Route 27)/School Street intersection utilizing automatic traffic recorders. The automatic traffic recorder data was used to update signal warrant analyses performed in accordance with national standards established in the *Manual on Uniform Traffic Control Devices (MUTCD)* by the Federal Highway Administration (FHWA). The results of the signal warrants analyses show that the Canton Street (Route 27)/School Street intersection satisfies signal warrants under Warrant 1, Eight Hour Vehicular Volume, Warrant 2, Four Hour Vehicular Volume, and Warrant 3, Peak Hour Volume. The Signal Warrant Summary reports, along with the 24-hour traffic volumes, are included in the appendix to this report.

Pleasant Street (Route 139) at Lincoln Street

The intersection of Pleasant Street (Route 139) at Lincoln Street is a four-way intersection located approximately one half mile north of Stoughton Center. It is stop sign controlled on the Lincoln Street eastbound and westbound approaches. Pleasant Street (Route 139) is classified as an Urban Principal Arterial in Stoughton. Pleasant Street (Route 139) in Stoughton is an undivided, two lane highway under town jurisdiction. It provides east-west access in Southeastern Massachusetts connecting to Route 24 at Exit 20 in Stoughton. It provides access between Downtown Stoughton, where it intersects Route 27 and Route 138, to the east beyond Route 24 to connect to points east including Route 28 in Randolph. The speed limit is posted at 30 miles per hour on Pleasant Street about 50 feet north of the intersection.



Pleasant Street northbound approach showing the lack of access management to the convenient store.



Flashing Stop Sign recently installed by the Town of Stoughton on the westbound approach (there is also one on the eastbound approach)

Lincoln Street is a two lane road classified as an Urban Collector, which is under the jurisdiction of the Town of Stoughton. It connects between Route 138, just north of Downtown Stoughton, to Pleasant Street (Route 139) and to Central Street, which provides access to Route 24. There were no posted speed limit signs observed on Lincoln Street in the vicinity of the intersection.

There is a curbed sidewalk on the north side of Pleasant Street on the eastbound approach. There is also a curbed sidewalk on Pleasant Street (Route 139) on the west side on the northbound approach. There is a lack of access management for curb cuts and driveways at the intersection. There is a convenience store on the southeast corner of the intersection with its parking lot open to the eastside of Pleasant Street (Route 139). The open curb cut continues for another sixty feet on the south side of Lincoln Street. This open lot creates a situation whereby vehicles from the northbound Pleasant Street (Route 139) approach that are taking a right turn to Lincoln Street eastbound leave the travel lane and cut across the parking lot to complete the turning movement and by-pass any vehicles slowing or stopping in front of them that might be waiting to take a left turn to Lincoln Street westbound. In addition, there is an apartment building on the northwest corner of the intersection. There are several parking spaces on the west side of Pleasant Street (Route 139). There is a lack of curbing along this side of

Pleasant Street and access to these spaces is open to the street.

The Town of Stoughton recently installed flashing stop signs to provide greater awareness of the presence of stop signs on the eastbound and westbound Lincoln Street approaches. Previous crash experience at the intersection showed that motorists on the minor street Lincoln Street eastbound and westbound approaches were failing to stop at the stop signs due to stop sign visibility. Figure 2 shows the intersection location and the surrounding area.

In 2018, the Old Colony Planning Council conducted intersection turning movement counts and 24-hour traffic counts in order to update the existing traffic volumes for Pleasant Street (Route 139) and Lincoln Street, and also to update the intersection Level-of-Service analyses and signal warrant analyses. The turning movement counts and automatic traffic recorder counts are included in the appendix to this report.

Intersection Level-of-Service (LOS) analysis was performed for the Pleasant Street (Route 139)/Lincoln Street intersection for the morning and afternoon peak hours. The LOS for the morning peak hour is LOS “E”. The LOS for the afternoon peak hours is LOS “F” (Long delays and forced flow) for the stop controlled eastbound and westbound Lincoln Street approaches to the intersection.

The Old Colony Planning Council updated 24-hour machine counts on all the approaches to the Pleasant Street (Route 139)/Lincoln Street intersection utilizing automatic traffic recorders. The automatic traffic recorder data was used to update signal warrant analyses performed in accordance with national standards established in the Manual on Uniform Traffic Control Devices (MUTCD) by the Federal Highway Administration (FHWA). The results of the signal warrants analyses show that the Pleasant Street (Route 139)/Lincoln Street intersection satisfies signal warrants under Warrant 1, Eight Hour Vehicular Volume, and Warrant 2, Four Hour Vehicular Volume. The Signal Warrant Summary reports, along with the 24-hour traffic volumes, are included in the appendix to this report.

Figure 1: Locus Map



Figure 2: Locus Map



Audit Observations and Potential Safety Enhancements

Canton Street (Route 27) at School Street and Summer Street

Safety Issue: The intersection alignment is skewed and the Summer Street merge with School Street creates confusion.

The Canton Street (Route 27) at School Street intersection is skewed and the School Street northbound and southbound approaches do not intersect exactly at 90 degrees. The skewed alignment decreases sight distance for vehicles approaching on the School Street southbound approach due to a restaurant located on the northeast quadrant of the intersection, which blocks visibility. In addition, Summer Street intersects the northbound School Street approach, creating a fifth leg at the intersection. Vehicles exit Summer Street and merge on the northbound approach with traffic entering the intersection via School Street northbound. The movements in and out of Summer Street at the intersection create additional turning movements and confusion. Trucks utilize Summer Street to access some warehouse and commercial uses, as the roads and intersections that provide alternative access are narrow with inadequate space for truck movements.

Enhancements: Utilize temporary barriers (jersey barriers) to experiment with re-channelizing traffic. The first scenario can help eliminate the Summer Street merge by creating a “T” type intersection for Summer Street as it intersects School Street. The second scenario can utilize temporary barriers (jersey barriers) to completely block access to Summer Street via the School Street/Canton Street (Route 27) intersection. These scenarios can be tried using temporary barriers to ensure that they work before more permanent reconstruction is completed. These changes will be done in consultation with residences as driveway locations will be impacted under both temporary changes.

Enhancement: Add a “Yield” sign to Summer Street at its intersection with School Street to establish right of way as vehicles exit School Street and enter the intersection. Pavement markings can also be used in concert with the “Yield” sign to emphasize Summer Street traffic yielding to School Street traffic.

Enhancement: Post the restriction, “Do Not Enter Except Residents” sign at the entrance to Summer Street, (although this might create a burden on trucks, which have a difficult time negotiating roads and intersections that provide alternative access to Summer Street due to restrictions in width and turning space for truck turning movements.)

Enhancement: Make Summer Street a one-way street southbound.

Safety Issue: Inadequate sight distance on the School Street southbound approach.

The building located on the northeast corner of the intersection, which is currently occupied by a restaurant, along with the skewed angle at which School Street southbound intersects Canton Street (Route 27), creates a sight distance problem for southbound vehicles approaching the intersection. Southbound motorists are stopping beyond the stop sign until their vehicle is almost in the westbound

travel lane in order to improve their visibility for vehicles approaching westbound. Based on the crash data, just over 50 percent of the collisions involved vehicles on the westbound approach.

Enhancements: Reconstruct and realign the intersection.

Safety Issue: Excessive speeds on the Canton Street eastbound and westbound approaches.

The speeds on the Canton Street (Route 27 eastbound and westbound approaches to the intersection are in the 40 miles per hour range.

Enhancements: Install radar driver speed feedback signs on the eastbound and westbound Canton Street (Route 27) approaches.

Safety Issue: The utility poles are too close to the travel way.

The utility poles are too close to the travel way and get hit often by turning vehicles.

Enhancements: Realign and reconstruct the intersection and relocate utility poles. Relocating utilities underground can remove the utility poles from the side of the road, which has little right of way for accommodations.

Safety Issue: The intersection lacks proper pavement markings.

The intersection stop lines are faded and there is no crosswalk across School Street southbound.

Enhancements: Restripe stop lines and add a crosswalk across the northern leg of the intersection, which would tie in to ADA compliant ramps at the sidewalk curb. The School Street northbound crossing is long. A pedestrian refuge island could be used to provide refuge as well as help with channelizing vehicles.

Safety Issue: The intersection lacks pedestrian amenities.

Pedestrian traffic is high, pedestrian crossings need better visual cues for motorists, and curbs lack ADA compliance.

Enhancements: Reconstruct the intersection to ADA compliancy for pedestrians. If traffic signals are installed at the intersection, they should include Accessible Pedestrian Signals (APS), (devices that communicate information about the WALK and DON'T WALK intervals at signalized intersections in non-visual formats to pedestrians.)



Curbing on the southeast corner of the intersection lacks ADA ramps for the crosswalk at the Canton Street (Route 27)/School Street intersection.

Safety Issue: Congestion and Delays

The levels-of-service for the stop sign approaches are at failed levels during the peak hours, (based on previous studies), creating forced flow conditions, whereby vehicles from the minor street force their way into gaps on the major street that are inadequate for safe turning movements.

Enhancement: Install traffic signals at the intersection. Based on warrant analysis completed in previous studies, the intersection volumes satisfy warrants described in the *Manual On Uniform Traffic Devices (MUTCD)*.

Pleasant Street (Route 139) at Lincoln Street

Safety Issue: The stop sign on the westbound approach is set too far back and the stop lines are faded on the eastbound and westbound stop signed approaches. There is also a large tree on the Lincoln Street westbound approach that interferes with sight distance and sign location. In addition, the utility poles at the intersection are too close to the travel way, and vehicles park on Lincoln Street westbound and block the stop sign.

The stop sign on the Lincoln Street westbound approach is set too far back in the road, and the stop lines are faded on both approaches. A large tree on the westbound approach interferes with sight lines and sign location. Also, the utility poles at the intersection are too close to the travel way.

Enhancement: Relocate the stop sign, remove the tree, and restripe pavement markings at the intersection, and relocate the utility poles further back from the travel way.

Safety Issue: There is no curbing along the convenience store parking lot.

The parking lot for the convenience store on the southeast quadrant of the intersection is open with no curbing. Vehicles on Pleasant Street northbound taking a right turn to Lincoln Street eastbound cut through the parking lot to bypass vehicles waiting to take a left turn from Pleasant Street northbound to Lincoln Street westbound.

Enhancements: Install temporary barriers along Pleasant Street on the east side of the northbound approach and on Lincoln Street to channel vehicles and keep traffic on the road and out of the parking lot. Consider constructing the roadside to add curb along the edge to better define the limits of the shoulder.

Enhancements: Prohibit parking on Lincoln Street at the intersection.



Lack of curbing on the south side of Lincoln Street to contain vehicles in the convenience store parking spaces.

Safety Issue: The stopping sight distance on the Lincoln Street eastbound approach is limited, and vehicles on Pleasant Street northbound and southbound are travelling at excessive speeds.

The stopping sight distance for vehicles on the Lincoln Street eastbound stop sign approach is limited due to vegetation on the southwest corner and a grade and curve on the Pleasant Street northbound approach. In addition, there is a lack of advanced warning signs for vehicles approaching the intersection on the Pleasant Street northbound and southbound approaches.

Enhancements: Provide advanced warning signs on Pleasant Street northbound and southbound approaches, such as intersection warning sign, (*Manual on Uniform Traffic Control Devices, MUTCD, W2-1, page 127*).

Enhancements: Install radar driver speed feedback signs on the northbound and southbound Pleasant Street (Route 139) approaches.

Enhancements: Improve intersection visibility by installing overhead flashing beacons; flashing red facing the Lincoln Street eastbound and westbound approaches, and flashing yellow facing Pleasant Street (Route 139) northbound and southbound approaches.

Safety Issue: Pleasant Street (Route 139) is missing a posted speed limit sign.

The posting of speed limit signs is based on speed permits issued by the Massachusetts Department of Transportation. Pleasant Street is missing a posted speed limit sign at a location where a permit was issued.

Enhancements: Review all permits issued for Pleasant Street (Route 139) and Lincoln Street and post speed limits where appropriately permitted.

Safety Issue: The Lincoln Street stop sign eastbound and westbound approaches operate at failed levels-of-service (forced flow) during the morning and afternoon peak hours.

This results in a situation whereby the vehicles on the stop sign approaches force their way to Pleasant Street utilizing gaps in Pleasant Street traffic that are not sufficient for safe turning movements.

Enhancements: Reconstruct the intersection (and realign if necessary), reconstructing all curbing on all four approaches and install traffic signals.

Safety Issue: Vehicles on the eastbound approach experience limited visibility due to the sun glaring in motorists eyes.

Enhancement: Install back plates to the signal faces when signals are installed.

Summary of Road Safety Audit

Based on the review of data, on-site field observations and group discussion, the RSA team identified possible enhancements that could improve safety at the two intersections. Further study and design work will need to be conducted to determine the feasibility of making some of the improvements.

Table 2 summarizes the estimated time frame and costs breakdown and Table 3 summarizes the safety issues, possible enhancements, estimated safety payoff, time frame, cost, and responsibility. Safety payoff estimates are based on engineering judgment and are categorized as low, medium, and high. The time frame is categorized as short-term (<1 year), midterm (1 to 3 years), or long-term (typically >3 years). Long-term improvements are typically considered to be substantial improvements with an expected time frame for implementation greater than 3 years. The costs are categorized as low (<\$10,000), medium (\$10,001 to \$50,000), or high (>\$50,000). In addition to the cost categories, an additional estimate of cost is included for each potential improvement.

Table 2: Estimated Time Frame and Costs Breakdown

Time Frame		Costs	
Short-Term	<1 Year	Low	<\$10,000
Mid-Term	1-3 Years	Medium	\$10,001-\$50,000
Long-Term	>3 Years	High	>\$50,000

Table 3: Potential Safety Enhancement Summary for Canton Street (Route 27)/School Street/Summer Street

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost Category	Estimated Cost	Responsible Agency
School Street alignment is skewed and Summer Street merges with School Street northbound approach	Use temporary barriers to re-channel traffic and eliminate the Summer Street merge, two scenarios: 1. Create a “T” type intersection for School Street/Summer Street, or 2. Utilize temporary barriers to completely block access to Summer Street. Changes will be done in consultation with residences.	Medium	<1 Year	Medium	\$10,000	Stoughton
	Add a “Yield” sign to Summer Street as it intersects with School Street.	Medium	<1 Year	Low	< \$1,000	
	Post the restriction, “Do Not Enter Except Residents” sign at the entrance to Summer Street.	Medium	<1 Year	Low	< \$1,000	
	Make Summer Street one-way southbound.	Medium	<1 Year	Low	< \$1,000	
Inadequate sight distance on the School Street southbound approach.	Reconstruct and realign the intersection.	Medium	>3 Years	High	\$900,000	Stoughton
Excessive speeds on the Canton Street eastbound and westbound approaches.	Install radar driver speed feedback signs on the eastbound and westbound Canton Street (Route 27) approaches.	Medium	<1 Year	Medium	\$10,000 to \$15,000	Stoughton
The utility poles are too close to the travel way.	Reconstruct and realign the intersection.	Medium	>3 Years	High	\$900,000	Stoughton
The intersection lacks proper pavement markings.	Restripe stop lines and add a crosswalk across the northern leg of the intersection.	Medium	>1 Year	Low	\$5,000	Stoughton

Table 4: Potential Safety Enhancement Summary for Canton Street (Route 27)/School Street/Summer Street (continued)

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost Category	Estimated Cost	Responsible Agency
The intersection lacks pedestrian amenities.	Reconstruct and realign the intersection to ADA compliancy for pedestrians, and add traffic signals including pedestrian activated signals.	High	>3 Years	High	\$2,000,000*	Stoughton
The levels-of-service for the stop sign approaches are at failed levels during the morning and afternoon peak hours.	Reconstruct and realign the intersection to ADA compliancy for pedestrians, and add traffic signals including pedestrian activated signals.	High	>3 Years	High	\$2,000,000*	Stoughton

*Cost estimate is based on the average reconstruction and signalization of eleven similar projects in the OCPC region.

Table 4: Potential Safety Enhancement Summary for Pleasant Street (Route 139) at Lincoln Street

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost Category	Estimated Cost	Responsible Agency
The westbound stop sign is too far back, the stop lines are faded on both stop signed approaches, a large tree on the westbound approach interferes with sight distance and sign location, and the utility poles at the intersection are too close to the travel way.	Relocate the stop sign, remove the tree, restripe pavement markings at the intersection, and relocate the utility poles further back from the travel way.	Medium	1-3 Years	Medium	Under \$50,000	Stoughton
There is no curbing along the convenience store parking lot.	Install temporary barriers along Pleasant Street on the east side of the northbound approach and on Lincoln Street to channel vehicles and keep traffic on the road and out of the parking lot. Reconstruct the roadside to include curbing and better define the shoulder.	Medium	1-3 Years	Medium	Under \$50,000	Stoughton

Table 4: Potential Safety Enhancement Summary for Pleasant Street (Route 139) at Lincoln Street (continued)

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost Category	Estimated Cost	Responsible Agency
The stopping sight distance on the Lincoln Street eastbound approach is limited, and vehicles on Pleasant Street northbound and southbound are at excessive speeds.	Provide advanced warning signs on Pleasant Street northbound and southbound approaches.	Medium	<1 Year	Low	< \$1,000	Stoughton
	Install radar driver speed feedback signs on the northbound and southbound Pleasant Street (Route 139) approaches.	Medium	<1 Year	Medium	\$10,000 to \$15,000	Stoughton
	Improve intersection visibility by installing overhead flashing beacons; flashing red facing the Lincoln Street eastbound and westbound approaches, and flashing yellow facing Pleasant Street (Route 139) northbound and southbound approaches.	Medium	<1 Year	High	\$90,000	Stoughton
Pleasant Street (Route 139) is missing a posted speed limit sign.	Review all permits issued for Pleasant Street (Route 139) and Lincoln Street and post speed limits where appropriately permitted.	Low	<1 Year	Low	< \$1,000	Stoughton
The stop sign eastbound and westbound approaches operate at failed levels-of-service (forced flow) during the a.m. and p.m. Vehicles on these approaches force their way to Pleasant Street using insufficient gaps safe turning.	Reconstruct the intersection (and realign if necessary), reconstructing all curbing on all four approaches and install traffic signals.	High	>3 Years	High	\$2,000,000*	Stoughton
Safety Issue: Vehicles on the eastbound approach experience limited visibility due to the sun glaring in motorists eyes.	Install back plates to the signal faces when signals are installed.	Medium	>3 Years	Low	< \$10,000	Stoughton

*Cost estimate is based on the average reconstruction and signalization of eleven similar projects in the OCPC region

Appendix A. RSA Meeting Agenda

Agenda

Road Safety Audit

Stoughton, MA

Two Intersections:

**Canton Street (Route 27) at School Street
Pleasant Street (Route 139) at Lincoln Street**

Meeting Location: Stoughton Police Department (Conference Room)
26 Rose Street
Stoughton, MA 02072
Tuesday, May 8, 2018
10:00 AM – 12:00 PM

Type of meeting: Road Safety Audit
Attendees: Invited Participants to Comprise a Multidisciplinary Team
Please bring: Thoughts and Enthusiasm

10:00 AM Welcome and Introductions

10:05 AM Review of Site Specific Material - Review and Discuss Project

- Review of Traffic Data
- Existing Conditions and Known Challenges

10:45 AM Visit the Intersections and Discussion

- Identify deficiencies at the study area locations
- OCPC staff will document all observations and comments

11:30 AM Wrap up Site Visit and Post Visit Discussion Meeting

- Discuss project and document and finalize potential improvements

12:00 PM Adjourn for the Day

Instructions for Participants:

- Before attending the RSA participants are encouraged to drive through 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.
- 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.
- **CONTACT:** Please direct questions regarding this RSA to Raymond Guarino, OCPC, (508) 583-1833, Ext 212, rguarino@ocpcrpa.org.



Old Colony Planning Council
70 School Street
Brockton, MA 02301

Appendix B. RSA Audit Team Contact List

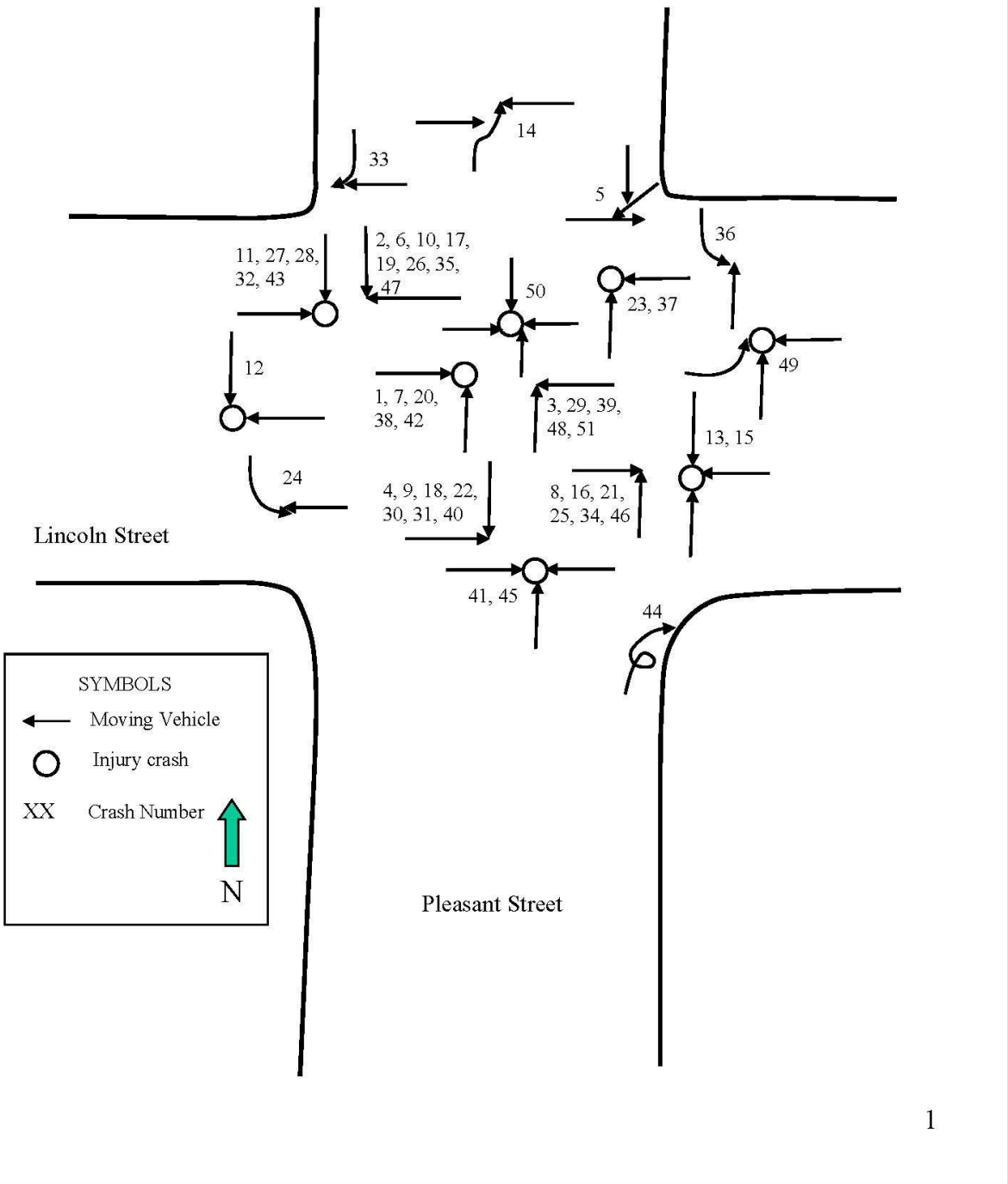
Participating Audit Team Members

Date: May 8, 2018 Location: Stoughton, MA

Audit Team Members	Agency/Affiliation	Email Address
Name	Agency	Email
Teresa Tapper	Stoughton Youth Council	ttapper@stoughton-ma.gov
Christopher Falcos	MassDOT Traffic Safety	Christopher.falcos@dot.state.ma.us
James O'Connor	Stoughton Police Department	joconnor@stoughton-ma.gov
Craig Horsfall	Stoughton Engineering	chorsfall@stoughton-ma.gov
Connor Keating	MassDOT Traffic Safety	Connor.keating@dot.state.ma.us
Raymond Guarino	Old Colony Planning Council	rguarino@ocpcrpa.org
Shawn Bailey	Old Colony Planning Council	sbailey@ocpcrpa.org
Jimmy Pereira	Old Colony Planning Council	jpereira@ocpcrpa.org
Shawn Faria	Stoughton Police Department	sfaria@Stoughton-ma.gov
Marc Tisdelle	Interim Town Manager	mtisdelle@stoughton-ma.gov

Appendix C. Detailed Crash Data

COLLISION DIAGRAM
 Pleasant Street (Route 139) at Lincoln Street
 Collision Diagram for Crashes (2015, 2016, 2017) Prepared by
 OCPC (RG 4/2018) (Source: Stoughton Police Department)



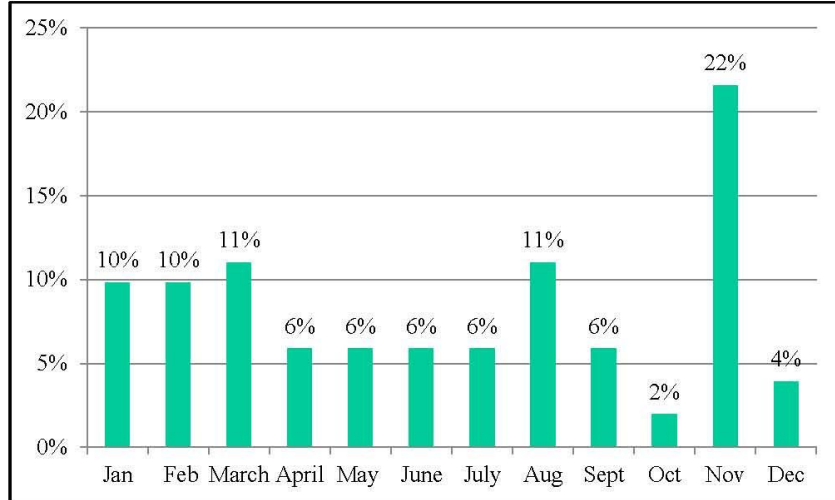
**Crash Data Summary Table 2015, 2016, 2017
Pleasant Street (Route 139)/ at Lincoln Street - Stoughton**

Crash Num	P.D. Code	Crash Date	Crash Day	Time of Day	Manner of Coll	Light Cond	Weather	Road Surf	Driver Contribute Code	Age 1	Age 2	Age 3	Comments
1	15-33-AC	1/14/2015	Wed	3:53 PM	Angle	Daylight	Cloudy	Dry	Motorist cited failure to stop at stop sign	61	65	32	Injuries
2	15-107-AC	2/7/2015	Sat	9:33 AM	Angle	Daylight	Cloudy	Wet	Motorist cited failure to stop at stop sign	38	45		Property Damage
3	15-165-AC	2/19/2015	Thur	4:05 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	28	29		Property Damage
4	15-233-AC	3/12/2015	Thur	1:18 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	59	25		Property Damage
5	15-236-AC	3/13/2018	Fri	12:55 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	73	62	55	Property Damage
6	15-314-AC	4/21/2015	Tues	2:53 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	25	80		Property Damage
7	15-440-AC	6/25/2015	Thur	1:51 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way at stop sign	49	25		Injuries
						Dark Lighted							
8	15-485-AC	7/21/2015	Tues	9:16 PM	Angle	Road	Rain	Wet	Failed to yield right of way at stop sign	33	24		Property Damage
9	15-495-AC	7/28/2015	Tues	11:56 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	19	36		Property Damage
10	15-527-AC	8/14/2015	Fri	11:18 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	33	57		Property Damage
11	15-554-AC	8/30/2015	Sun	11:54 AM	Angle	Daylight	Clear	Wet	Motorist cited failure to stop at stop sign	31	41		Injuries
12	15-591-AC	9/18/2015	Fri	12:20 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	49	44		Injuries
						Dark Lighted							
13	15-674-AC	11/5/2015	Thur	9:31 PM	Angle	Road	Clear	Dry	Motorist cited failure to stop at stop sign	26	33	35	Injuries
14	15-686-AC	11/12/2015	Thur	10:19 AM	Angle	Daylight	Cloudy	Wet	Failed to yield right of way at stop sign	45	24	47	Property Damage
15	15-719-AC	11/23/2015	Mon	1:58 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	75	28	21	Injuries
16	16-2-AC	1/2/2016	Sat	2:46 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	45	30		Property Damage
						Dark Lighted							
17	16-40-AC	1/18/2016	Mon	8:10 PM	Angle	Road	Clear	Ice	Failed to yield right of way at stop sign	26	28		Property Damage
18	16-48-AC	1/23/2016	Sat	3:14 PM	Angle	Daylight	Snow	Ice	Vehicle could not stop due to snow and ice Driver stated did not see stop sign issued	45	35		Property Damage
19	16-81-AC	2/10/2016	Wed	12:48 PM	Angle	Daylight	Cloudy	Wet		24	64		Injuries
20	16-94-AC	2/16/2016	Tues	1:58 PM	Angle	Daylight	Cloudy	Wet	Motorist cited failure to stop at stop sign	50	23		Injuries
21	16-103-AC	2/19/2016	Fri	3:45 PM	Angle	Daylight	Cloudy	Dry	Inattention	52	23		Property Damage
						Dark Lighted							
22	16-126-AC	3/4/2016	Fri	9:01 PM	Angle	Road	Snow	Ice	Vehicle could not stop due to snow and ice	35	32		Property Damage
23	16-184-AC	3/23/2016	Wed	12:19 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	69	82		Injuries
24	16-226-AC	4/5/2016	Tues	7:59 AM	Angle	Daylight	Clear	Wet	Motorist cited failure to stop at stop sign	54	64		Property Damage
25	16-474-AC	7/29/2016	Fri	4:21 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	38	20		Property Damage
26	16-525-AC	8/22/2016	Mon	2:06 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way at stop sign	29	57		Injuries

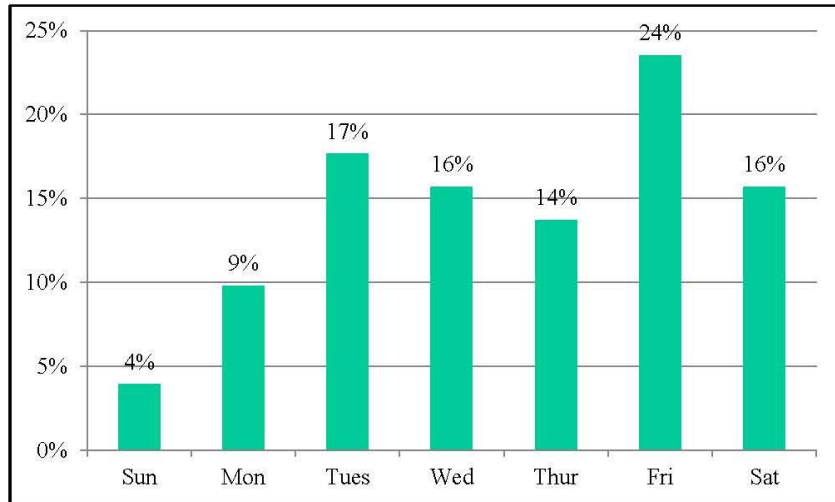
Crash Data Summary Table 2015, 2016, 2017
Pleasant Street (Route 139)/ at Lincoln Street - Stoughton

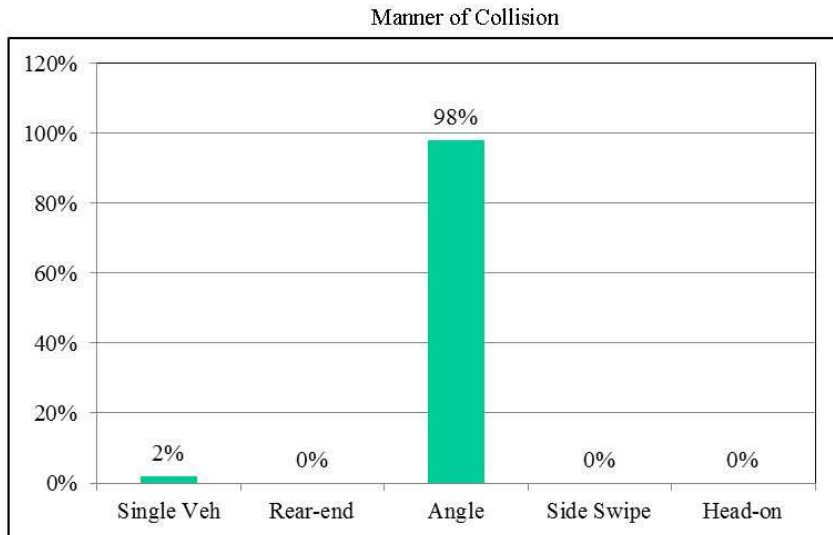
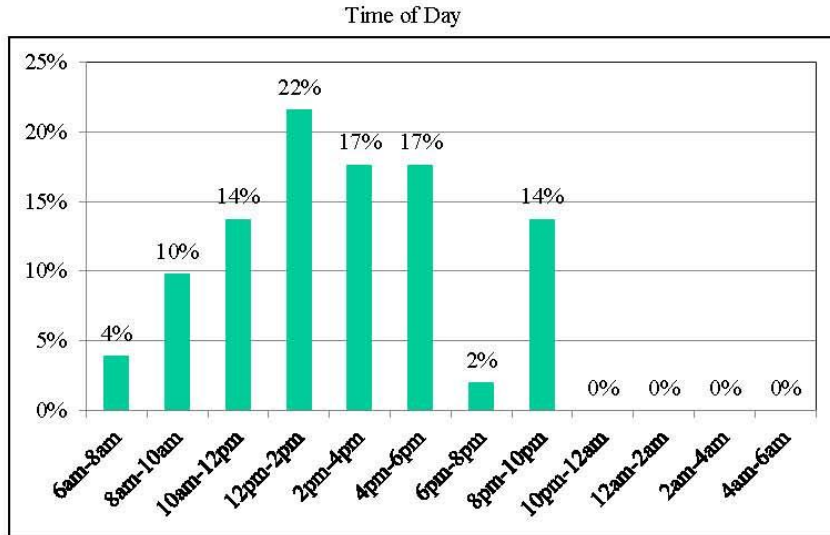
Crash Num	P.D. Code	Crash Date	Crash Day	Time of Day	Manner of Coll	Light Cond	Weather	Road Surf	Driver Contribute Code	Age 1	Age 2	Age 3	Comments
27	16-555-AC	9/13/2016	Tues	8:28 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	51	32		Injuries
28	16-585-AC	9/28/2016	Wed	12:13 PM	Angle	Daylight	Rain	Wet	Motorist cited failure to stop at stop sign	28	76		Injuries
29	16-623-AC	10/15/2016	Sat	5:07 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way at stop sign	31	51		Property Damage
30	16-667-AC	11/8/2016	Tues	10:56 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	33	38		Property Damage
						Dark Lighted							
31	16-674-AC	11/11/2016	Fri	9:10 PM	Angle	Road	Clear	Dry	Motorist cited failure to stop at stop sign	24	30		Property Damage
32	16-701-AC	11/23/2016	Wed	3:59 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	74	61		Injuries
						Dark Lighted							
33	16-711-AC	11/26/2016	Sat	5:40 PM	Angle	Road	Clear	Dry	Motorist cited failure to stop at stop sign	16	18		Property Damage
34	17-8-AC	1/4/2017	Wed	8:45 AM	Angle	Daylight	Cloudy	Dry	Motorist cited failure to stop at stop sign	44	72	44	Property Damage
35	17-165-AC	3/11/2017	Sat	11:32 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	69	20		Property Damage
36	17-199-AC	3/28/2017	Tues	12:07 PM	Angle	Daylight	Cloudy	Dry	Motorist cited failure to stop at stop sign	75	24		Property Damage
37	17-233-AC	4/16/2017	Sun	1:01 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	22	42		Injuries
						Dark Lighted							
38	17-263-AC	5/5/2017	Fri	9:50 PM	Angle	Road	Cloudy	Wet	Failed to yield right of way at stop sign	61	24		Injuries
39	17-281-AC	5/12/2017	Fri	4:55 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	20	38		Property Damage
40	17-298-AC	5/20/2017	Sat	11:12 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	34	46		Property Damage
41	17-337-AC	6/2/2017	Fri	6:52 PM	Angle	Dusk	Clear	Dry	Motorist cited failure to stop at stop sign	47	28	33	Injuries
42	17-389-AC	6/28/2017	Wed	8:31 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	29	21		Injuries
43	17-454-AC	8/4/2017	Fri	5:37 PM	Angle	Daylight	Clear	Dry	Driver cited innattention - Semi-truck involved	22	54		Injuries
					Single								
44	17-458-AC	8/5/2017	Sat	5:59 PM	Veh	Daylight	Clear	Dry	Inattention due to cell phone	22			Property Damage
45	17-505-AC	8/31/2017	Thur	7:55 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	51	52	53	Injuries
						Dark Lighted							
46	17-653-AC	11/7/2017	Tues	4:50 PM	Angle	Road	Clear	Dry	Motorist cited failure to stop at stop sign	27	45		Property Damage
47	17-655-AC	11/8/2017	Thur	8:06 AM	Angle	Daylight	Cloudy	Wet	Citation given	83	41		Property Damage
48	17-664-AC	11/13/2017	Mon	3:26 PM	Angle	Daylight	Cloudy	Wet	Motorist cited failure to stop at stop sign	25	92		Property Damage
49	17-713-AC	11/29/2017	Wed	9:52 AM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	29	24	36	Injuries
						Dark Lighted						47	
50	17-717-AC	12/1/2017	Fri	4:20 PM	Angle	Road	Clear	Dry	Motorist cited failure to stop at stop sign	34	53	55	Injuries
51	17-741-AC	12/4/2017	Mon	2:09 PM	Angle	Daylight	Clear	Dry	Motorist cited failure to stop at stop sign	33	33		Property Damage

Crash Month



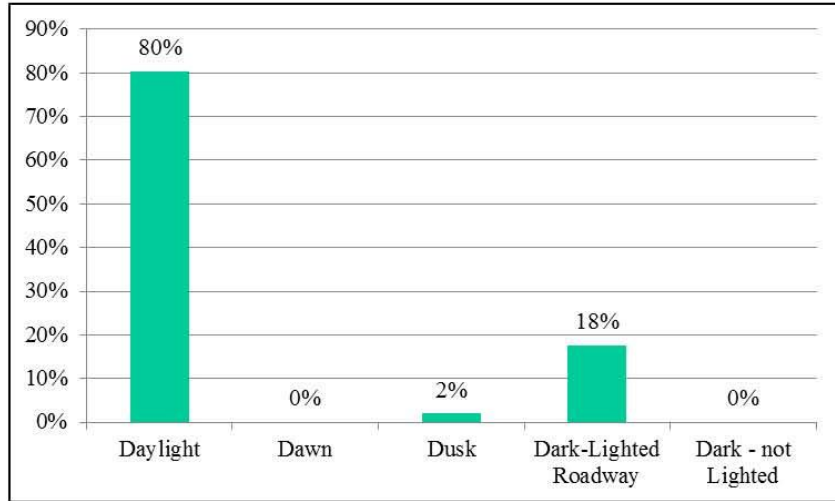
Day of the Week



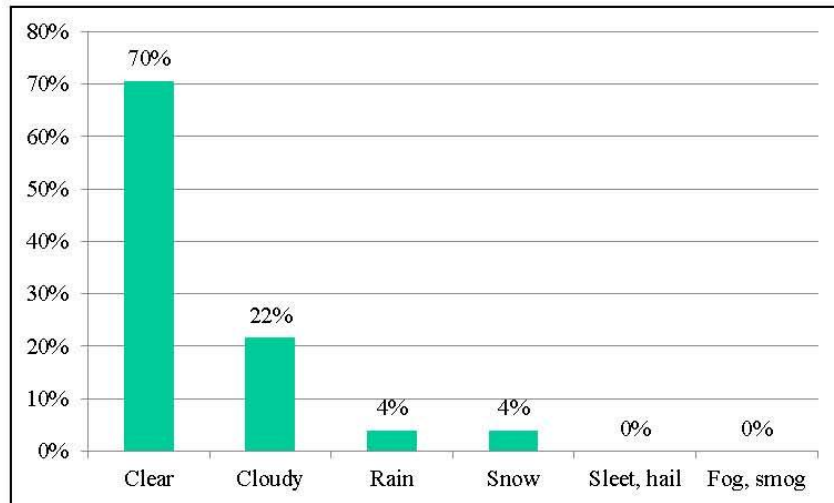


Pleasant Street (Route 139)
at Lincoln Street

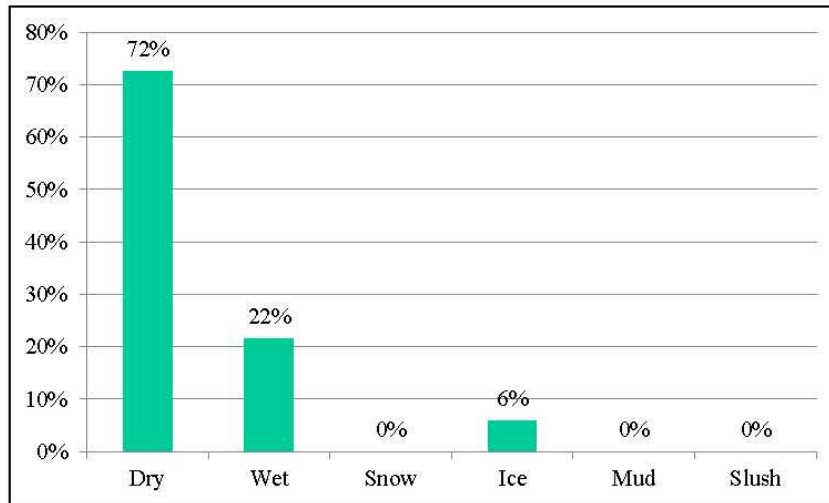
Light Conditions



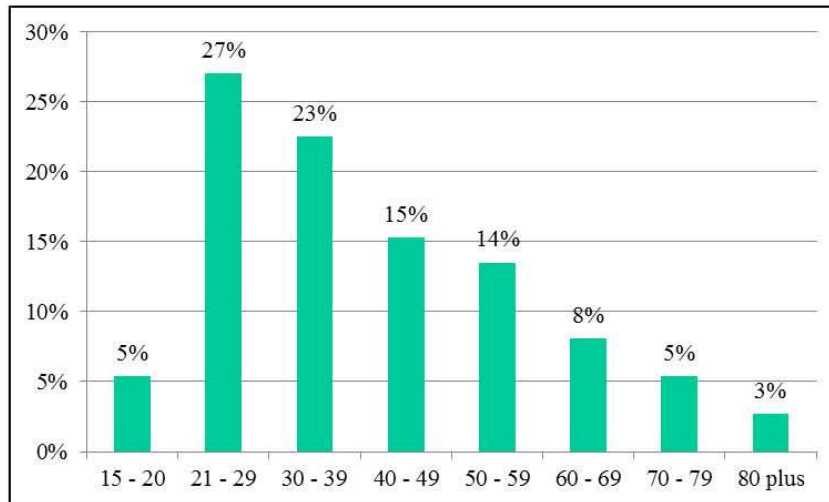
Weather Conditions



Road Surface Conditions

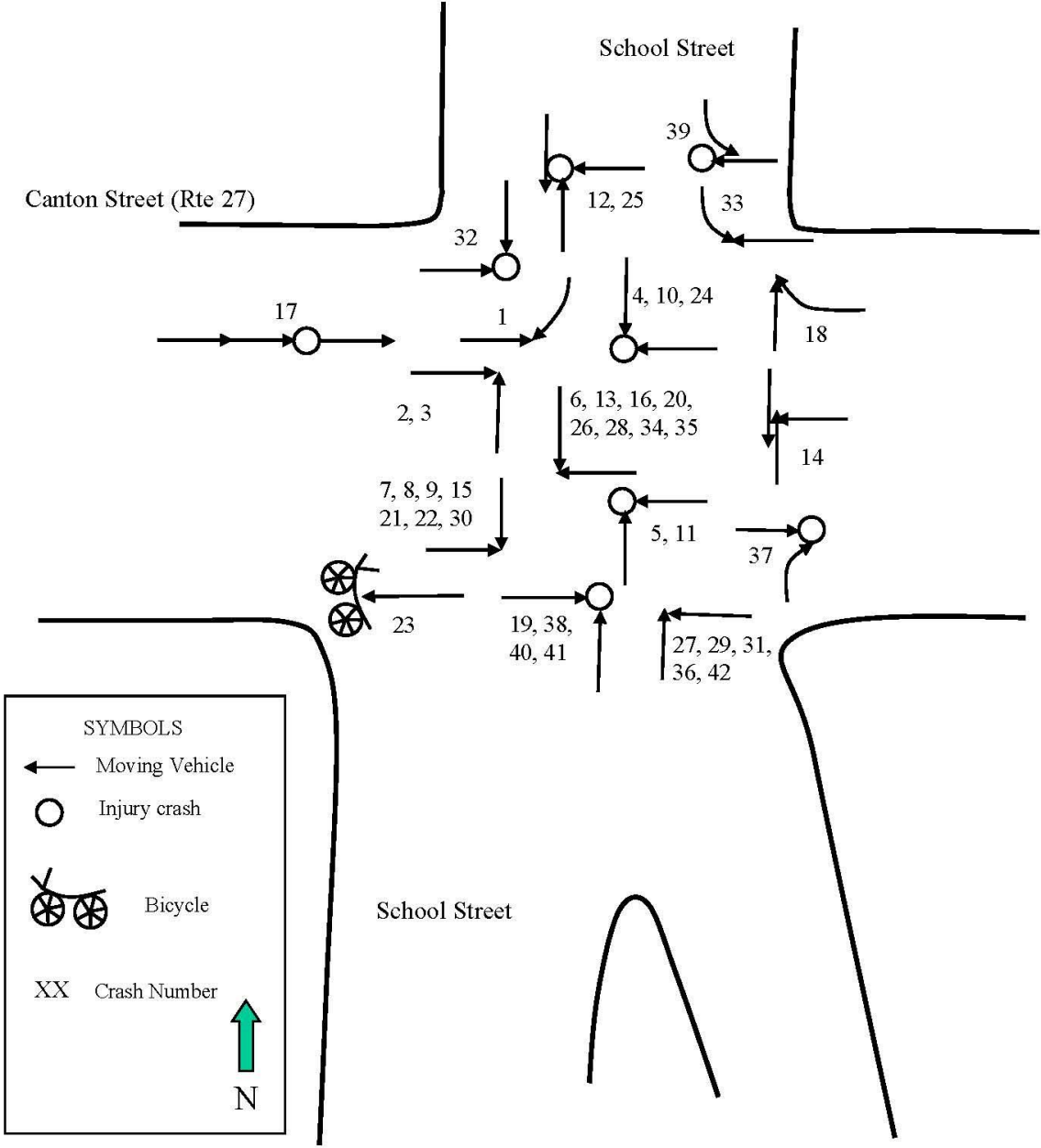


Age



Pleasant Street (Route 139)
at Lincoln Street

COLLISION DIAGRAM
Canton Street (Route 27) at School Street
 Collision Diagram for Crashes (2015, 2016, 2017) Prepared by
 OCPC (RG 2/2018) (Source: Stoughton Police Department)



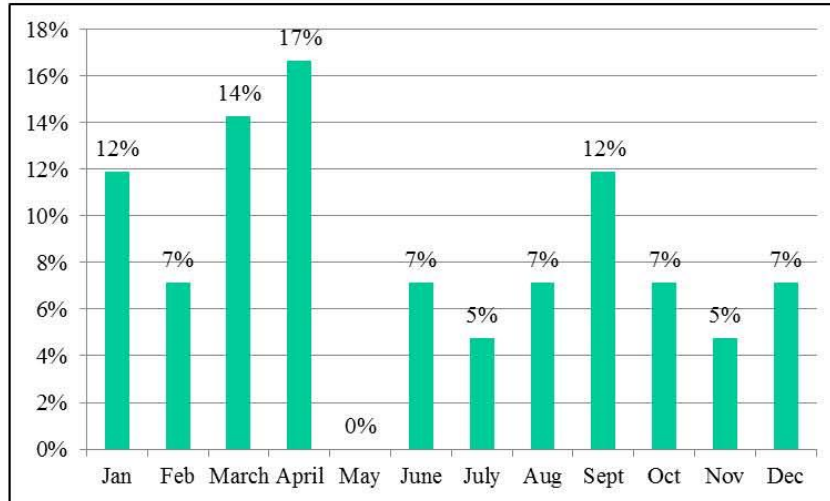
**Crash Data Summary Table 2015, 2016, 2017
Canton Street (Route 27)/ at School Street - Stoughton**

Crash Num	P.D. Code	Crash Date	Crash Day	Time of Day	Manner of Coll	Light Cond	Weather	Road Surf	Driver Contribute Code	Age 1	Age 2	Age 3	Comments
1	15-26-AD	1/9/2015	Fri	4:43 PM	angle	dusk	clear	dry	LT SB Failed to yield ROW	18	64		No injuries
2	15-75-AC	1/28/2015	Sat	7:04 PM	angle	dark - light roadway	clear	snow	Failed to yield ROW	19	52		No injuries
3	15-217-AC	3/6/2015	Fri	9:27 AM	angle	daylight	clear	wet		65	48		No injuries
4	15-267-AC	3/27/2015	Fri	2:34 PM	angle	daylight	cloudy/clear	dry	Failed to yield ROW	37	80		Personal Injury
5	15-283-AC	4/6/2015	Mon	3:58 PM	angle	daylight	clear	dry	Failed to yield ROW	30	26		Personal Injury
6	15-403-AC	6/6/2015	Sat	7:21 PM	angle	daylight	clear	dry	Innatention failed to stop at stop sign, driver issued a citation	41	23		No injuries
7	15-728-AC	11/27/2015	Fri	9:11 AM	angle	daylight	cloudy	wet	Failed to yield ROW	33	48		No injuries
8	16-46-AC	1/21/2016	Thur	3:32 PM	angle	daylight	clear	dry	Sun glare	42	49		No injuries
9	16-47-AC	1/22/2016	Fri	4:46 PM	angle	dusk	cloudy	dry	Failed to yield ROW	26	60		No injuries
10	16-144-AC	3/8/2016	Tues	12:04 PM	angle	daylight	clear	dry	Driver at stop sign cited for failure to grant ROW	32	64		Personal Injury
11	16-192-18	3/26/2016	Sat	2:16 PM	angle	daylight	clear	dry	Driver innattentive and disregarding traffic control	43	25		Personal Injury
12	16-238-AC	4/11/2016	Mon	11:44 AM	angle	daylight	clear	dry	Citation for failed to yield ROW	90	34	59	Personal Injury
13	16-247-AC	4/14/2016	Thur	2:29 PM	angle	daylight	clear	dry	Failed to yield ROW	59	19		No injuries
14	16/249/AC	4/14/2016	Thur	5:14 PM	angle	daylight	clear	dry	Failed to yield ROW	67	17		No injuries
15	16-280-AC	4/27/2016	Wed	5:01 PM	angle	daylight	clear	dry	Driver cited for failure to yield ROW	24	32		No injuries
16	16-287-AC	4/29/2016	Fri	4:02 PM	angle	daylight	clear	dry	Failed to yield ROW	18	39		No injuries
17	16-389-AC	6/15/2016	Wed	4:45 PM	rear-end	daylight	clear	dry		18	33	18	Personal Injury
18	16-467-AC	7/25/2016	Mon	12:20 PM	angle	daylight	clear	dry		28	89		No injuries
19	16-505-AC	8/15/2016	Mon	6:42 AM	angle	daylight	clear	dry	Driver cited for failure to yield ROW	28	30		Personal Injury
20	16-556-AC	9/13/2016	Tues	3:29 PM	angle	daylight	clear	dry		68	68		No injuries
21	16-583-AC	9/27/2016	Tues	4:29 PM	angle	daylight	clear	dry	Failed to yield ROW	47	23		No injuries
22	16-680-AC	11/15/2016	Tues	8:55 PM	angle	dark - light roadway	Rain	wet	Driver cited for failure to yield ROW	40	50		No injuries
23	16-747-AC	12/13/2016	Tues	2:34 PM	angle	dusk	clear	dry	Collision with Bicycle, Cyclist cited for crosswalk violation	50	17		No injuries
24	17-63-AC	1/24/2017	Tues	7:38 AM	angle	daylight	cloudy/Rain	wet	Failed to yield ROW	22	54		Personal Injury
25	17-109-AC	2/11/2017	Sat	11:21 AM	angle	daylight	snow	wet		43	57		Personal Injury
26	17-112-AC	2/12/2017	Sun	10:40 AM	angle	daylight	cloudy	wet	Driver cited for failure to yield ROW	60	55		No injuries
27	17-133-AC	2/20/2017	Mon	10:40 AM	angle	daylight	clear	dry	Driver cited for failure to yield ROW	47	52		No injuries
28	17-159-AC	3/8/2017	Wed	12:03 AM	angle	dark - light roadway	clear	dry	Failed to yield ROW	47	33		No injuries
29	17-187-AC	3/19/2017	Sun	845 PM	angle	dark - light roadway	clear	dry	Driver cited for failure to yield ROW	65	55		No injuries

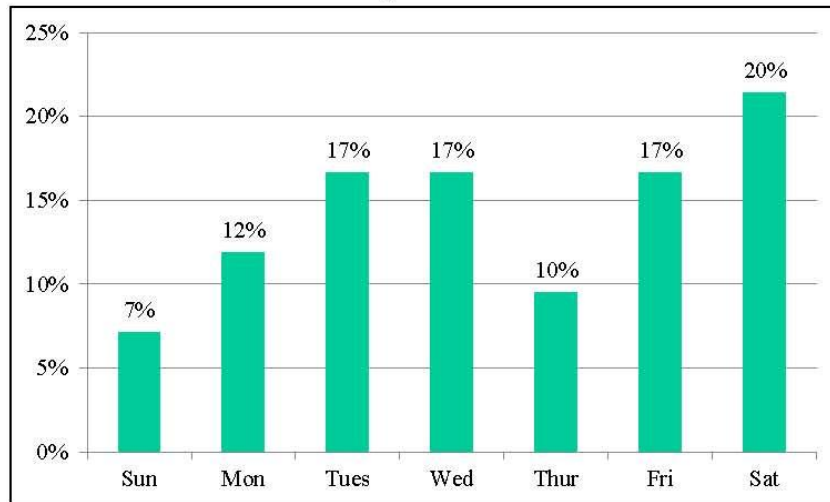
**Crash Data Summary Table 2015, 2016, 2017
Canton Street (Route 27)/ at School Street - Stoughton**

Crash Num	P.D. Code	Crash Date	Crash Day	Time of Day	Manner of Coll	Light Cond	Weather	Road Surf	Driver Contribute Code	Age 1	Age 2	Age 3	Comments
30	17-217-AC	4/5/2017	Wed	4:57 PM	angle	daylight	clear	dry	Failed to yield ROW	68	31		Personal Injury
31	17-363-AC	6/15/2017	Thur	6:27 AM	angle	daylight	clear	dry	Failed to yield ROW	56	58		No injuries
32	17-391-AC	7/1/2017	Sat	1:03 PM	angle	daylight	rain	wet		86	60		Personal Injury
33	17-451-AC	8/2/2017	Wed	7:47 PM	angle	dark - light roadway	rain	wet		59	67		No injuries
34	17-464-AC	8/9/2017	Wed	2:24 PM	angle	daylight	clear	dry		59	63		No injuries
35	17-507-AC	9/2/2017	Sat	1:17 PM	angle	daylight	clear	dry	Failed to yield ROW	25	46		No injuries
36	17-544-AC	9/15/2017	Fri	2:14 PM	angle	daylight	cloudy	dry	Driver cited for unlicensed operation	19	27		No injuries
37	17-555-AC	9/24/2017	Sun	6:00 PM	angle	dusk	clear	dry	Failed to yield ROW	72	53		Personal Injury
38	17-585-AC	10/10/2017	Tues	7:13 PM	angle	dark - light roadway	clear	dry	Failed to yield ROW	66	18		Personal Injury
39	17-595-AC	10/14/2017	Sat	11:13 AM	Side-swipe opposite	daylight	cloudy/rain	wet		41	39		Personal Injury
40	17-606-AC	10/18/2017	Wed	11:00 AM	angle	daylight	clear	dry	Driver cited on Canton for not yielding to funeral	77	48		Personal Injury
41	17-758-AC	12/16/2017	Sat	5:06 PM	angle	dark - light roadway	cloudy	dry	Failed to yield ROW	62	63		Personal Injury
42	17-773-AC	12/23/2017	Sat	9:22 AM	angle	daylight	sleet/hail/rain	ice	Driver cited for failure to yield ROW	35	68		No injuries

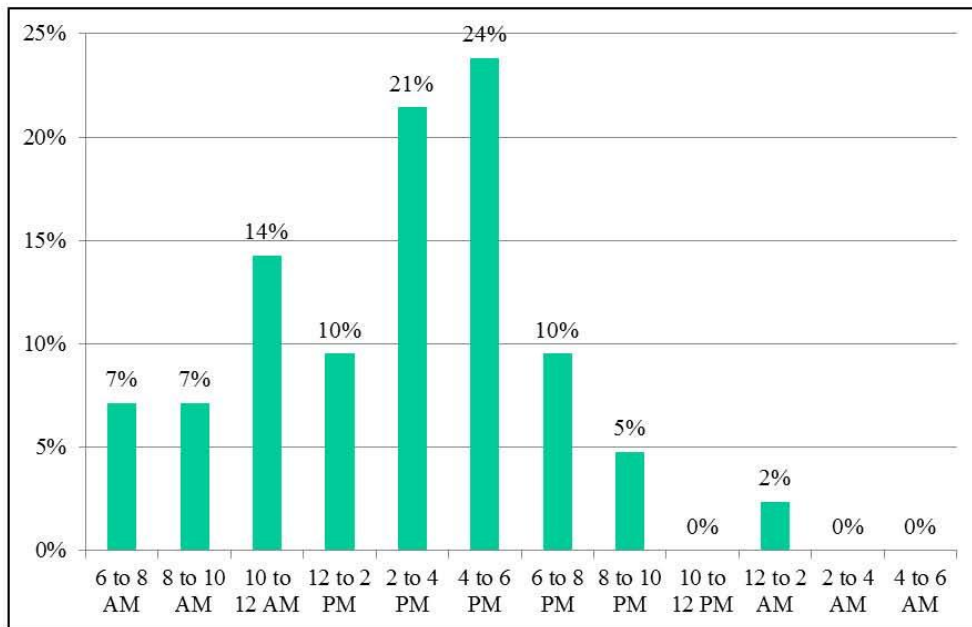
Crash Month



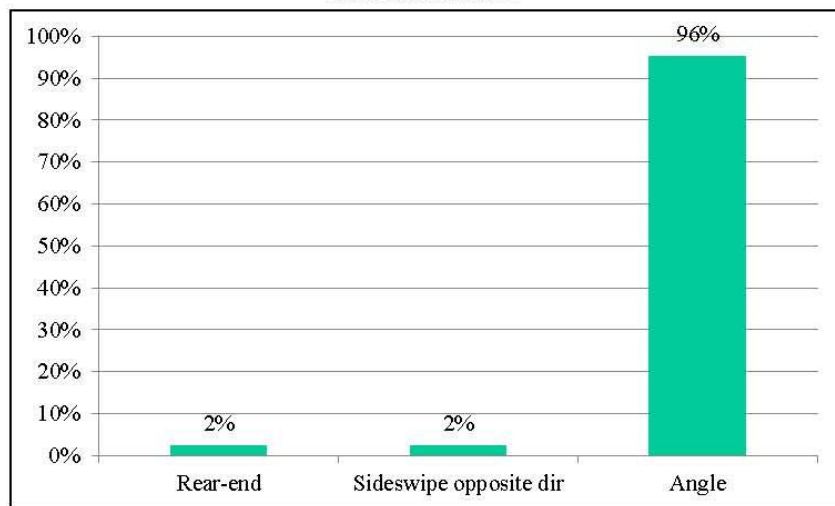
Day of the Week



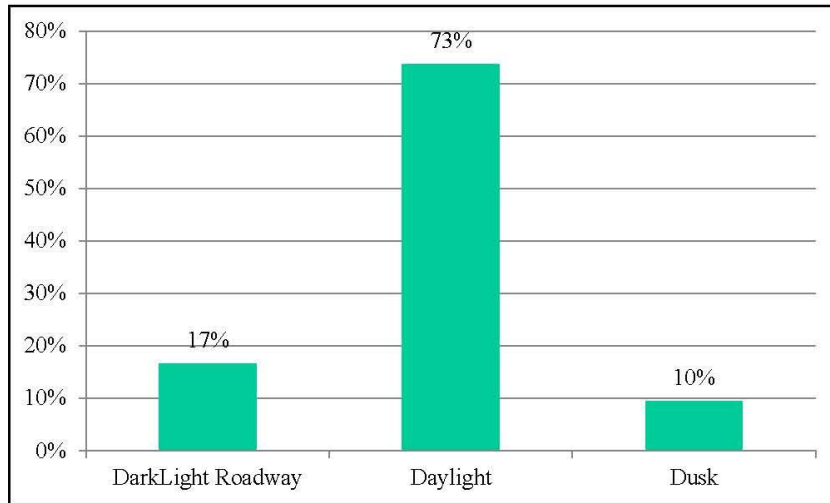
Time of Day



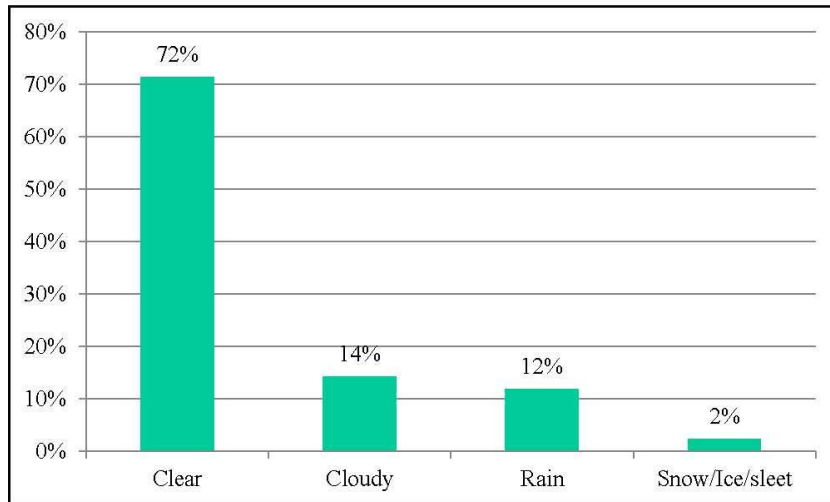
Manner of Collision



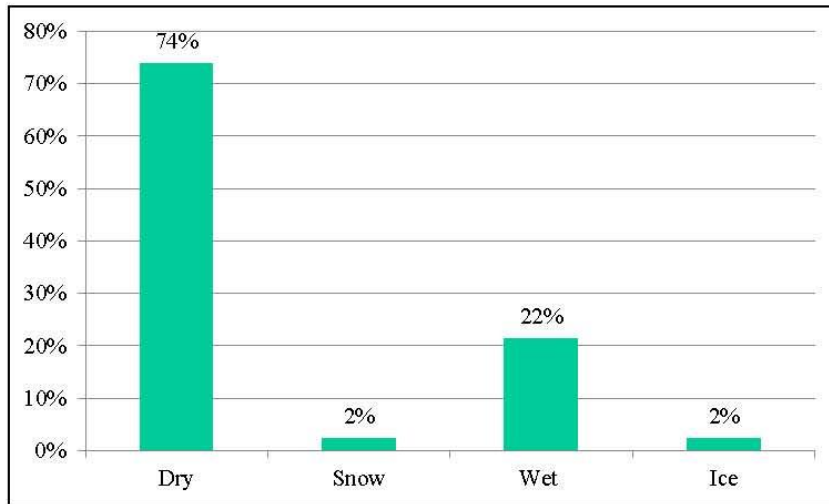
Light Conditions



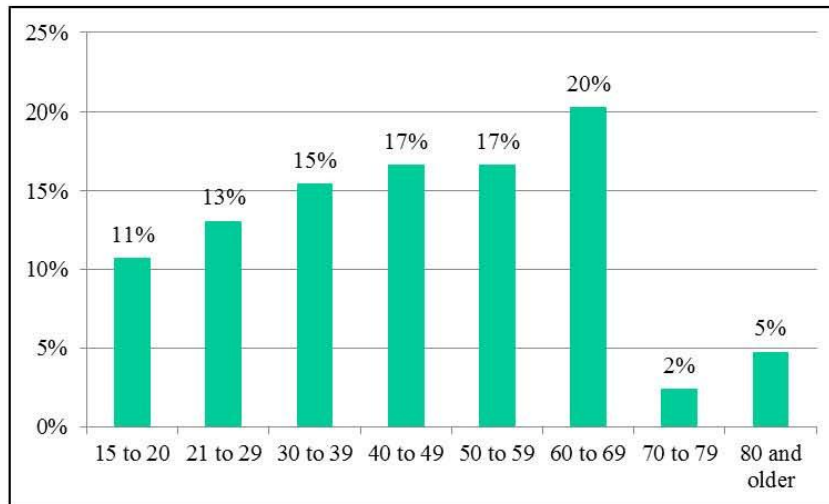
Weather Conditions



Road Surface Conditions



Driver Age



Appendix D. Additional Information



TOWN OF STOUGHTON

-Engineering Department-

Town Hall
10 Pearl Street, 2nd Floor
Stoughton, MA 02072

December 4, 2017

Pasquale Ciaramella
Old Colony Planning Council - Executive Director
70 School Street
Brockton, MA 02301

RE: Request for Technical Assistance

I am writing this letter to you respectfully requesting your technical assistance to perform an Intersection and Roadway Audit for the following intersections:

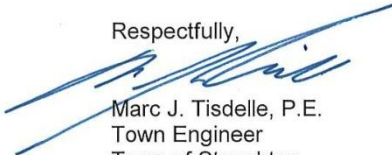
1. Canton & School Street Intersection
2. Lincoln & Pleasant Street Intersection

Over the last several years, there have been a number of serious accidents at or near these intersections. These intersections cause an unsafe and dangerous situation for vehicles and pedestrians traveling in the area. These intersections have had studies performed in the past but we believe it is now time to update the studies to depict current conditions.

At our previous Transportation Task Force meeting, the group discussed these issues and agreed that the intersections should be studied to determine what type of improvements including the possibility of installing traffic signals that could make these areas safer for vehicles and pedestrians.

The Town of Stoughton greatly appreciates the technical assistance and professionalism that the Old Colony Planning Council (OCPC) is giving and has given to Stoughton. We look forward to hearing back from you on this request. Thank you for your consideration on this matter.

Respectfully,



Marc J. Tisdelle, P.E.
Town Engineer
Town of Stoughton

CC: Town Manager, Police Department, Town Planner

W:_Projects Engineering\Town Projects\Traffic\Intersections\Canton St - School St Intersection\Request for Roadway Audit 120417.doc



Old Colony Planning Council

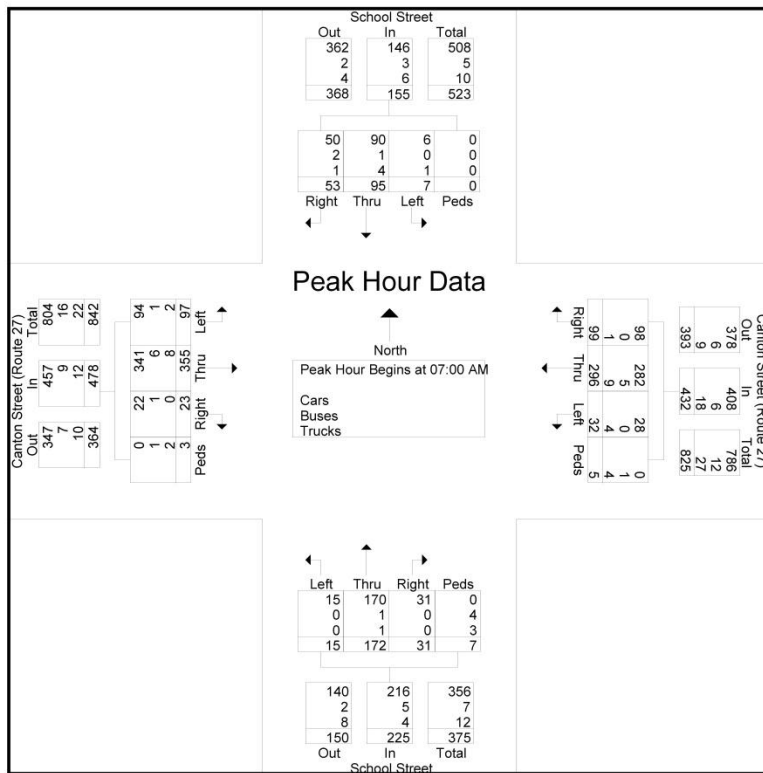
70 School Street
 Brockton, MA 02301
 (508) 583-1833

www.ocpcrpa.org

Community: Stoughton
 Weather: Clear
 Board # & Staff: DB-400 (4) / SB
 Traffic Control: Stop Sign

File Name : Canton Street (Route 27) & School Street_AM
 Site Code : 285
 Start Date : 3/27/2018
 Page No : 4

Start Time	School Street Southbound					Canton Street (Route 27) Westbound					School Street Northbound					Canton Street (Route 27) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	13	12	0	0	25	34	80	5	1	120	4	43	5	1	53	8	73	32	0	113	311
07:15 AM	11	28	6	0	45	49	73	6	4	132	8	54	4	1	67	4	90	39	0	133	377
07:30 AM	10	38	0	0	48	8	74	11	0	93	10	36	3	4	53	7	86	16	3	112	306
07:45 AM	19	17	1	0	37	8	69	10	0	87	9	39	3	1	52	4	106	10	0	120	296
Total Volume	53	95	7	0	155	99	296	32	5	432	31	172	15	7	225	23	355	97	3	478	1290
% App. Total	34.2	61.3	4.5	0		22.9	68.5	7.4	1.2		13.8	76.4	6.7	3.1		4.8	74.3	20.3	0.6		
PHF	.697	.625	.292	.000	.807	.505	.925	.727	.313	.818	.775	.796	.750	.438	.840	.719	.837	.622	.250	.898	.855
Cars	50	90	6	0	146	98	282	28	0	408	31	170	15	0	216	22	341	94	0	457	1227
% Cars	94.3	94.7	85.7	0	94.2	99.0	95.3	87.5	0	94.4	100	98.8	100	0	96.0	95.7	96.1	96.9	0	95.6	95.1
Buses	2	1	0	0	3	0	5	0	1	6	0	1	0	4	5	1	6	1	1	9	23
% Buses	3.8	1.1	0	0	1.9	0	1.7	0	20.0	1.4	0	0.6	0	57.1	2.2	4.3	1.7	1.0	33.3	1.9	1.8
Trucks	1	4	1	0	6	1	9	4	4	18	0	1	0	3	4	0	8	2	2	12	40
% Trucks	1.9	4.2	14.3	0	3.9	1.0	3.0	12.5	80.0	4.2	0	0.6	0	42.9	1.8	0	2.3	2.1	66.7	2.5	3.1





Old Colony Planning Council

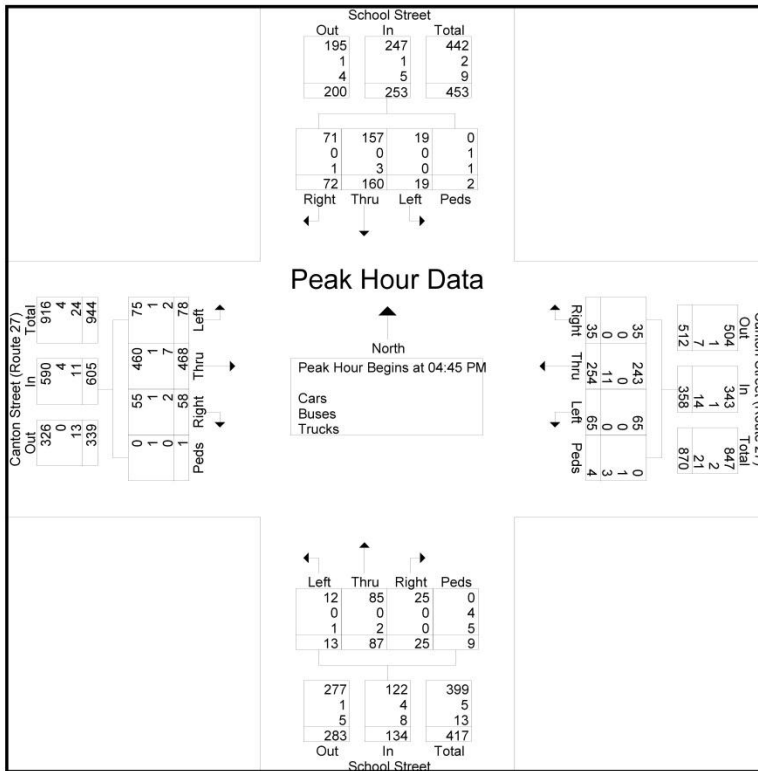
70 School Street
 Brockton, MA 02301
 (508) 583-1833

www.ocpcrpa.org

Community: Stoughton
 Weather: Clear
 Board # & Staff: DB-400 (4) / SB
 Traffic Control: Stop Sign

File Name : Canton Street (Route 27) & School Street_PM
 Site Code : 285
 Start Date : 3/27/2018
 Page No : 4

Start Time	School Street Southbound					Canton Street (Route 27) Westbound					School Street Northbound					Canton Street (Route 27) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	25	40	7	0	72	6	56	16	0	78	6	32	3	3	44	6	104	17	0	127	321
05:00 PM	15	32	5	1	53	11	73	16	3	103	9	19	5	5	38	21	115	22	0	158	352
05:15 PM	12	50	2	1	65	10	69	9	1	89	4	15	3	1	23	17	127	19	1	164	341
05:30 PM	20	38	5	0	63	8	56	24	0	88	6	21	2	0	29	14	122	20	0	156	336
Total Volume	72	160	19	2	253	35	254	65	4	358	25	87	13	9	134	58	468	78	1	605	1350
% App. Total	28.5	63.2	7.5	0.8		9.8	70.9	18.2	1.1		18.7	64.9	9.7	6.7		9.6	77.4	12.9	0.2		
PHF	.720	.800	.679	.500	.878	.795	.870	.677	.333	.869	.694	.680	.650	.450	.761	.690	.921	.886	.250	.922	.959
Cars	71	157	19	0	247	35	243	65	0	343	25	85	12	0	122	55	460	75	0	590	1302
% Cars	98.6	98.1	100	0	97.6	100	95.7	100	0	95.8	100	97.7	92.3	0	91.0	94.8	98.3	96.2	0	97.5	96.4
Buses	0	0	0	1	1	0	0	0	1	1	0	0	0	4	4	1	1	1	1	1	4
% Buses	0	0	0	50.0	0.4	0	0	0	25.0	0.3	0	0	0	44.4	3.0	1.7	0.2	1.3	100	0.7	0.7
Trucks	1	3	0	1	5	0	11	0	3	14	0	2	1	5	8	2	7	2	0	11	38
% Trucks	1.4	1.9	0	50.0	2.0	0	4.3	0	75.0	3.9	0	2.3	7.7	55.6	6.0	3.4	1.5	2.6	0	1.8	2.8





Old Colony Planning Council

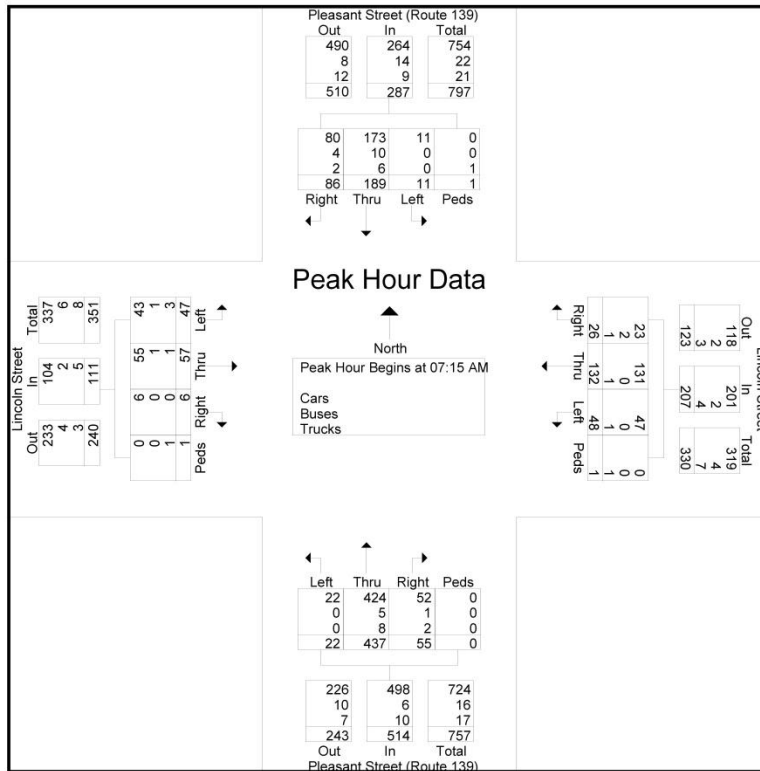
70 School Street
 Brockton, MA 02301
 (508) 583-1833

www.ocpcrpa.org

Community: Stoughton
 Weather: Clear
 Board # & Staff: DB-400 (4) / SB
 Traffic Control: Stop Sign

File Name : Pleasant Street (Route 139) & Lincoln Street_AM
 Site Code : 285
 Start Date : 3/29/2018
 Page No : 4

Start Time	Pleasant Street (Route 139) Southbound					Lincoln Street Westbound					Pleasant Street (Route 139) Northbound					Lincoln Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	34	46	3	1	84	6	43	19	1	69	13	102	8	0	123	0	13	7	0	20	296
07:30 AM	14	39	0	0	53	5	27	16	0	48	15	113	4	0	132	3	24	15	1	43	276
07:45 AM	23	46	2	0	71	7	35	7	0	49	14	112	2	0	128	3	7	9	0	19	267
08:00 AM	15	58	6	0	79	8	27	6	0	41	13	110	8	0	131	0	13	16	0	29	280
Total Volume	86	189	11	1	287	26	132	48	1	207	55	437	22	0	514	6	57	47	1	111	1119
% App. Total	30	65.9	3.8	0.3		12.6	63.8	23.2	0.5		10.7	85	4.3	0		5.4	51.4	42.3	0.9		
PHF	.632	.815	.458	.250	.854	.813	.767	.632	.250	.750	.917	.967	.688	.000	.973	.500	.594	.734	.250	.645	.945
Cars	80	173	11	0	264	23	131	47	0	201	52	424	22	0	498	6	55	43	0	104	1067
% Cars	93.0	91.5	100	0	92.0	88.5	99.2	97.9	0	97.1	94.5	97.0	100	0	96.9	100	96.5	91.5	0	93.7	95.4
Buses	4	10	0	0	14	2	0	0	0	2	1	5	0	0	6	0	1	1	0	2	24
% Buses	4.7	5.3	0	0	4.9	7.7	0	0	0	1.0	1.8	1.1	0	0	1.2	0	1.8	2.1	0	1.8	2.1
Trucks	2	6	0	1	9	1	1	1	1	4	2	8	0	0	10	0	1	3	1	5	28
% Trucks	2.3	3.2	0	100	3.1	3.8	0.8	2.1	100	1.9	3.6	1.8	0	0	1.9	0	1.8	6.4	100	4.5	2.5





Old Colony Planning Council

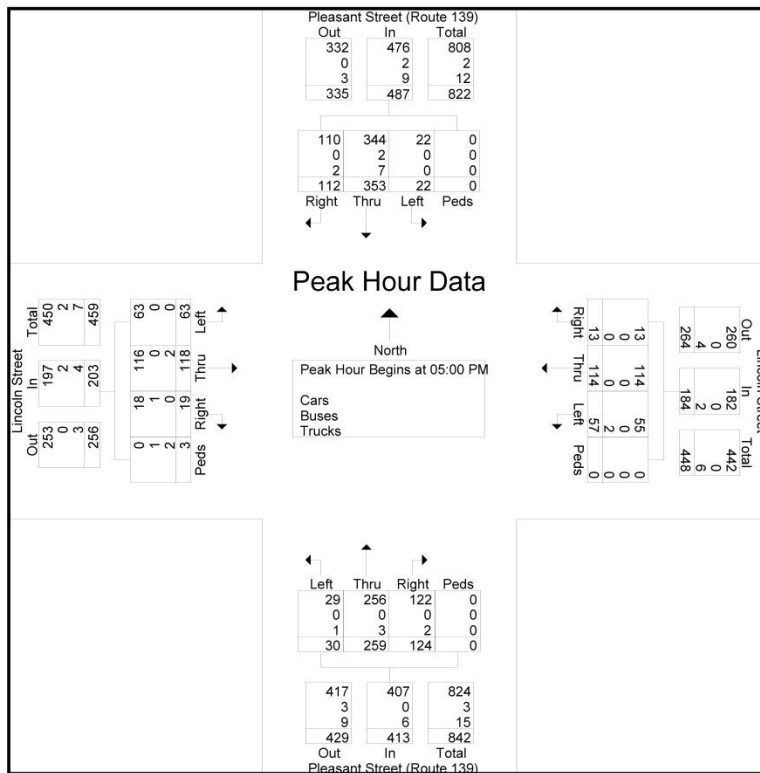
70 School Street
 Brockton, MA 02301
 (508) 583-1833

www.ocpcrpa.org

Community: Stoughton
 Weather: Clear
 Board # & Staff: DB-400 (4) / SB
 Traffic Control: Stop Sign

















File Name : Pleasant Street (Route 139) & Lincoln Street_PM
 Site Code : 285
 Start Date : 3/29/2018
 Page No : 4

Start Time	Pleasant Street (Route 139) Southbound					Lincoln Street Westbound					Pleasant Street (Route 139) Northbound					Lincoln Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	28	94	5	0	127	6	19	12	0	37	26	61	6	0	93	3	32	16	0	51	308
05:15 PM	31	91	4	0	126	2	38	11	0	51	33	66	9	0	108	5	27	10	2	44	329
05:30 PM	27	80	6	0	113	1	34	15	0	50	28	68	8	0	104	7	31	15	1	54	321
05:45 PM	26	88	7	0	121	4	23	19	0	46	37	64	7	0	108	4	28	22	0	54	329
Total Volume	112	353	22	0	487	13	114	57	0	184	124	259	30	0	413	19	118	63	3	203	1287
% App. Total	23	72.5	4.5	0		7.1	62	31	0		30	62.7	7.3	0		9.4	58.1	31	1.5		
PHF	.903	.939	.786	.000	.959	.542	.750	.750	.000	.902	.838	.952	.833	.000	.956	.679	.922	.716	.375	.940	.978
Cars	110	344	22	0	476	13	114	55	0	182	122	256	29	0	407	18	116	63	0	197	1262
% Cars	98.2	97.5	100	0	97.7	100	100	96.5	0	98.9	98.4	98.8	96.7	0	98.5	94.7	98.3	100	0	97.0	98.1
Buses	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	4
% Buses	0	0.6	0	0	0.4	0	0	0	0	0	0	0	0	0	0	5.3	0	0	33.3	1.0	0.3
Trucks	2	7	0	0	9	0	0	2	0	2	2	3	1	0	6	0	2	0	2	4	21
% Trucks	1.8	2.0	0	0	1.8	0	0	3.5	0	1.1	1.6	1.2	3.3	0	1.5	0	1.7	0	66.7	2.0	1.6



HCM Unsignalized Intersection Capacity Analysis
 2: School Street & Canton Street (Route 27)

am peak
 06/05/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	355	23	32	296	99	15	172	31	7	95	53
Future Volume (Veh/h)	97	355	23	32	296	99	15	172	31	7	95	53
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	105	386	25	35	322	108	16	187	34	8	103	58
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	430			411			1164	1108	398	1182	1067	376
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	430			411			1164	1108	398	1182	1067	376
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			97			81	0	95	0	47	91
cM capacity (veh/h)	1129			1148			84	184	651	0	195	670
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	516	465	237	169								
Volume Left	105	35	16	8								
Volume Right	25	108	34	58								
cSH	1129	1148	189	0								
Volume to Capacity	0.09	0.03	1.26	Err								
Queue Length 95th (ft)	8	2	323	Err								
Control Delay (s)	2.6	0.9	200.9	Err								
Lane LOS	A	A	F	F								
Approach Delay (s)	2.6	0.9	200.9	Err								
Approach LOS			F	F								
Intersection Summary												
Average Delay				Err								
Intersection Capacity Utilization			72.8%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 2: School Street & Canton Street (Route 27)

pm peak hour
 06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	468	58	65	254	35	13	87	25	19	160	72
Future Volume (Veh/h)	78	468	58	65	254	35	13	87	25	19	160	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	85	509	63	71	276	38	14	95	27	21	174	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	314			572			1312	1166	540	1222	1179	295
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	314			572			1312	1166	540	1222	1179	295
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			93			0	43	95	72	0	90
cM capacity (veh/h)	1246			1001			0	168	541	74	165	744
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	657	385	136	273								
Volume Left	85	71	14	21								
Volume Right	63	38	27	78								
cSH	1246	1001	0	189								
Volume to Capacity	0.07	0.07	Err	1.44								
Queue Length 95th (ft)	5	6	Err	416								
Control Delay (s)	1.8	2.3	Err	272.8								
Lane LOS	A	A	F	F								
Approach Delay (s)	1.8	2.3	Err	272.8								
Approach LOS			F	F								
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			63.3%		ICU Level of Service				B			
Analysis Period (min)			15									


















HCM Unsignalized Intersection Capacity Analysis
 2: Pleasant Street (Route 139) & Lincoln Street

am peak
 06/05/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	47	57	6	48	132	26	22	437	55	11	189	86
Future Volume (Veh/h)	47	57	6	48	132	26	22	437	55	11	189	86
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	62	7	52	143	28	24	475	60	12	205	93
Pedestrians		2			2			1			2	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	932	862	254	870	879	509	300			537		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	932	862	254	870	879	509	300			537		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	78	99	76	48	95	98			99		
cM capacity (veh/h)	135	283	782	218	276	562	1259			1029		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	120	223	559	310								
Volume Left	51	52	24	12								
Volume Right	7	28	60	93								
cSH	198	277	1259	1029								
Volume to Capacity	0.61	0.81	0.02	0.01								
Queue Length 95th (ft)	85	160	1	1								
Control Delay (s)	47.7	55.7	0.6	0.4								
Lane LOS	E	F	A	A								
Approach Delay (s)	47.7	55.7	0.6	0.4								
Approach LOS	E	F										
Intersection Summary												
Average Delay			15.3									
Intersection Capacity Utilization			54.0%		ICU Level of Service					A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
 2: Pleasant Street (Route 139) & Lincoln Street

pm peak
 06/05/2018

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	63	118	19	57	114	13	30	259	124	22	353	112	
Future Volume (Veh/h)	63	118	19	57	114	13	30	259	124	22	353	112	
Sign Control		Stop			Stop			Free			Free		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Hourly flow rate (vph)	68	128	21	62	124	14	33	282	135	24	384	122	
Pedestrians		2			2			1			2		
Lane Width (ft)		12.0			12.0			12.0			12.0		
Walking Speed (ft/s)		3.5			3.5			3.5			3.5		
Percent Blockage		0			0			0			0		
Right turn flare (veh)													
Median type								None			None		
Median storage (veh)													
Upstream signal (ft)													
pX, platoon unblocked													
vC, conflicting volume	988	980	448	996	974	354	508			419			
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	988	980	448	996	974	354	508			419			
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1			
tC, 2 stage (s)													
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2			
p0 queue free %	46	46	97	47	48	98	97			98			
cM capacity (veh/h)	125	236	609	118	238	688	1055			1138			
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total	217	200	450	530									
Volume Left	68	62	33	24									
Volume Right	21	14	135	122									
cSH	194	188	1055	1138									
Volume to Capacity	1.12	1.07	0.03	0.02									
Queue Length 95th (ft)	265	237	2	2									
Control Delay (s)	151.5	136.3	1.0	0.6									
Lane LOS	F	F	A	A									
Approach Delay (s)	151.5	136.3	1.0	0.6									
Approach LOS	F	F											
Intersection Summary													
Average Delay			43.6										
Intersection Capacity Utilization			53.7%		ICU Level of Service				A				
Analysis Period (min)			15										

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Stoughton
 Com#: UR/FC: 285_U6
 Recorder #: 19651
 Layout: L6 Basic (2')

Station ID:
 Site Code: 285
 Date Start: 23-May-18
 Date End: 24-May-18
 Lincoln St. east of Pleasant St (139)

Start Time	21-May-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	20	11	21	21	*	*	*	*	*	*	20	16
01:00	*	*	*	*	11	6	8	2	*	*	*	*	*	*	10	4
02:00	*	*	*	*	8	4	8	5	*	*	*	*	*	*	8	4
03:00	*	*	*	*	3	2	7	4	*	*	*	*	*	*	5	3
04:00	*	*	*	*	11	6	15	4	*	*	*	*	*	*	13	5
05:00	*	*	*	*	52	20	47	24	*	*	*	*	*	*	50	22
06:00	*	*	*	*	82	99	94	113	*	*	*	*	*	*	88	106
07:00	*	*	*	*	153	188	105	179	*	*	*	*	*	*	129	184
08:00	*	*	*	*	136	156	129	149	*	*	*	*	*	*	132	152
09:00	*	*	*	*	142	113	133	109	*	*	*	*	*	*	138	111
10:00	*	*	*	*	135	100	139	104	*	*	*	*	*	*	137	102
11:00	*	*	*	*	135	126	148	124	*	*	*	*	*	*	142	125
12:00 PM	*	*	*	*	137	119	158	122	*	*	*	*	*	*	148	120
01:00	*	*	*	*	163	143	159	142	*	*	*	*	*	*	161	142
02:00	*	*	*	*	202	149	171	166	*	*	*	*	*	*	186	168
03:00	*	*	*	*	211	159	233	150	*	*	*	*	*	*	222	154
04:00	*	*	*	*	290	215	258	171	*	*	*	*	*	*	274	193
05:00	*	*	*	*	251	234	271	207	*	*	*	*	*	*	261	220
06:00	*	*	*	*	198	171	211	133	*	*	*	*	*	*	204	152
07:00	*	*	*	*	188	134	190	131	*	*	*	*	*	*	189	132
08:00	*	*	*	*	193	98	212	93	*	*	*	*	*	*	202	96
09:00	*	*	*	*	114	67	151	71	*	*	*	*	*	*	132	69
10:00	*	*	*	*	49	46	85	44	*	*	*	*	*	*	67	45
11:00	*	*	*	*	47	18	55	22	*	*	*	*	*	*	51	20
Lane Day	0	0	0	0	2931	2384	3008	2310	0	0	0	0	0	0	2969	2345
AM Peak Vol	-	-	-	-	07:00	07:00	11:00	07:00	-	-	-	-	-	-	11:00	07:00
PM Peak Vol	-	-	-	-	153	188	148	179	-	-	-	-	-	-	142	184
Vol	-	-	-	-	16:00	17:00	17:00	17:00	-	-	-	-	-	-	16:00	17:00
Vol	-	-	-	-	290	234	271	207	-	-	-	-	-	-	274	220
Comb. Total	0	0	0	0	5315	5318	5318	5318	0	0	0	0	0	0	5314	5314

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
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Community: Stoughton
 Com#: UR/FC_285_U3
 Recorder #: 13209
 Layout: L6 Basic (2')

Station ID:
 Site Code: 285
 Date Start: 23-May-18
 Date End: 24-May-18
 Pleasant St (139), north of Lincoln St

Start Time	21-May-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	20	47	22	67	*	*	*	*	*	*	21	57
01:00	*	*	*	*	9	27	10	18	*	*	*	*	*	*	10	22
02:00	*	*	*	*	11	19	14	15	*	*	*	*	*	*	12	17
03:00	*	*	*	*	14	10	14	11	*	*	*	*	*	*	14	10
04:00	*	*	*	*	61	13	52	22	*	*	*	*	*	*	56	18
05:00	*	*	*	*	161	34	177	34	*	*	*	*	*	*	169	34
06:00	*	*	*	*	377	133	377	122	*	*	*	*	*	*	377	128
07:00	*	*	*	*	469	305	444	247	*	*	*	*	*	*	456	276
08:00	*	*	*	*	422	270	491	260	*	*	*	*	*	*	456	265
09:00	*	*	*	*	305	219	315	229	*	*	*	*	*	*	310	224
10:00	*	*	*	*	248	201	294	211	*	*	*	*	*	*	271	206
11:00	*	*	*	*	237	244	248	247	*	*	*	*	*	*	242	246
12:00 PM	*	*	*	*	250	234	259	333	*	*	*	*	*	*	254	284
01:00	*	*	*	*	251	239	243	237	*	*	*	*	*	*	247	238
02:00	*	*	*	*	276	334	335	322	*	*	*	*	*	*	306	328
03:00	*	*	*	*	294	366	306	352	*	*	*	*	*	*	300	364
04:00	*	*	*	*	300	421	343	435	*	*	*	*	*	*	322	428
05:00	*	*	*	*	297	504	304	503	*	*	*	*	*	*	300	504
06:00	*	*	*	*	269	384	317	382	*	*	*	*	*	*	293	383
07:00	*	*	*	*	242	305	254	311	*	*	*	*	*	*	248	308
08:00	*	*	*	*	262	242	224	256	*	*	*	*	*	*	243	249
09:00	*	*	*	*	176	167	184	184	*	*	*	*	*	*	180	176
10:00	*	*	*	*	107	118	129	120	*	*	*	*	*	*	118	119
11:00	*	*	*	*	57	97	75	69	*	*	*	*	*	*	66	83
Lane Day	0	0	0	0	5115	4933	5431	4997	0	0	0	0	0	0	5271	4967
AM Peak Vol	-	-	-	-	469	305	491	260	-	-	-	-	-	-	456	276
PM Peak Vol	-	-	-	-	300	421	343	435	-	-	-	-	-	-	322	428

Comb. Total 0 0 10048 10428 0 0 0 10238

Old Colony Planning Council
70 School Street
Brockton, MA 02301
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Community: Stoughton
 Com#: UR/FC, 285_U6
 Recorder #: 32540
 Layout: L6 Basic (2')

Station ID:
 Site Code: 285
 Date Start: 23-May-18
 Date End: 24-May-18
 School St, north of Canton St (27)

Start Time	21-May-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	7	18	17	28	*	*	*	*	*	*	12	23
01:00	*	*	*	*	7	13	7	21	*	*	*	*	*	*	7	17
02:00	*	*	*	*	11	7	4	8	*	*	*	*	*	*	8	8
03:00	*	*	*	*	8	10	8	10	*	*	*	*	*	*	8	10
04:00	*	*	*	*	32	8	33	12	*	*	*	*	*	*	32	10
05:00	*	*	*	*	79	30	83	24	*	*	*	*	*	*	81	27
06:00	*	*	*	*	177	108	194	103	*	*	*	*	*	*	186	106
07:00	*	*	*	*	326	299	334	291	*	*	*	*	*	*	330	295
08:00	*	*	*	*	245	183	225	174	*	*	*	*	*	*	235	178
09:00	*	*	*	*	198	135	167	148	*	*	*	*	*	*	182	142
10:00	*	*	*	*	144	108	162	125	*	*	*	*	*	*	153	116
11:00	*	*	*	*	126	133	176	127	*	*	*	*	*	*	151	130
12:00 PM	*	*	*	*	166	164	191	180	*	*	*	*	*	*	178	172
01:00	*	*	*	*	171	205	146	187	*	*	*	*	*	*	158	196
02:00	*	*	*	*	306	239	337	266	*	*	*	*	*	*	322	252
03:00	*	*	*	*	288	260	279	242	*	*	*	*	*	*	284	251
04:00	*	*	*	*	237	255	237	271	*	*	*	*	*	*	237	263
05:00	*	*	*	*	271	321	265	299	*	*	*	*	*	*	268	310
06:00	*	*	*	*	238	268	234	271	*	*	*	*	*	*	236	270
07:00	*	*	*	*	178	206	213	207	*	*	*	*	*	*	196	206
08:00	*	*	*	*	208	166	194	172	*	*	*	*	*	*	201	169
09:00	*	*	*	*	101	108	129	136	*	*	*	*	*	*	115	122
10:00	*	*	*	*	39	66	61	95	*	*	*	*	*	*	50	80
11:00	*	*	*	*	41	43	43	59	*	*	*	*	*	*	42	51
Lane Day	0	0	0	0	3604	3353	3739	3456	0	0	0	0	0	0	3672	3404
AM Peak Vol	-	-	-	-	07:00	07:00	07:00	07:00	-	-	-	-	-	-	07:00	07:00
PM Peak Vol	-	-	-	-	14:00	17:00	14:00	17:00	-	-	-	-	-	-	14:00	17:00
Comb. Total	0	0	0	0	6957	7195	7195	7195	0	0	0	0	0	0	7076	7076

Old Colony Planning Council
70 School Street
Brockton, MA 02301
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Community: Stoughton
 Com#: UR/FC, 285_U6
 Recorder #: 25236
 Layout: L6 Basic (2')

Station ID:
 Site Code: 285
 Date Start: 23-May-18
 Date End: 24-May-18
 School St, south of Canton St (27)

Start Time	21-May-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	*	*	6	16	11	13	*	*	*	*	*	*	8	14
01:00	*	*	*	*	3	6	2	6	*	*	*	*	*	*	2	6
02:00	*	*	*	*	3	1	5	5	*	*	*	*	*	*	4	3
03:00	*	*	*	*	8	7	4	6	*	*	*	*	*	*	6	6
04:00	*	*	*	*	21	4	21	5	*	*	*	*	*	*	21	4
05:00	*	*	*	*	57	14	64	6	*	*	*	*	*	*	60	10
06:00	*	*	*	*	130	35	134	49	*	*	*	*	*	*	132	42
07:00	*	*	*	*	197	105	196	111	*	*	*	*	*	*	196	108
08:00	*	*	*	*	177	129	169	84	*	*	*	*	*	*	173	106
09:00	*	*	*	*	130	91	114	89	*	*	*	*	*	*	122	90
10:00	*	*	*	*	84	69	98	84	*	*	*	*	*	*	91	76
11:00	*	*	*	*	67	86	100	72	*	*	*	*	*	*	84	79
12:00 PM	*	*	*	*	110	127	117	106	*	*	*	*	*	*	114	116
01:00	*	*	*	*	91	109	97	107	*	*	*	*	*	*	94	108
02:00	*	*	*	*	137	177	144	168	*	*	*	*	*	*	140	172
03:00	*	*	*	*	121	184	133	191	*	*	*	*	*	*	127	188
04:00	*	*	*	*	126	217	146	226	*	*	*	*	*	*	136	222
05:00	*	*	*	*	147	292	129	254	*	*	*	*	*	*	138	273
06:00	*	*	*	*	143	201	133	205	*	*	*	*	*	*	138	203
07:00	*	*	*	*	158	157	136	163	*	*	*	*	*	*	147	160
08:00	*	*	*	*	76	139	79	115	*	*	*	*	*	*	78	127
09:00	*	*	*	*	35	68	55	93	*	*	*	*	*	*	45	80
10:00	*	*	*	*	27	40	34	66	*	*	*	*	*	*	30	53
11:00	*	*	*	*	24	24	30	43	*	*	*	*	*	*	27	34
Lane Day	0	0	0	0	2078	2298	2151	2267	0	0	0	0	0	0	2113	2280
AM Peak Vol	-	-	-	-	197	129	196	111	-	-	-	-	-	-	196	108
PM Peak Vol	-	-	-	-	158	170	160	170	-	-	-	-	-	-	158	170
Comb. Total	0	0	0	0	4376	4418	0	0	0	0	0	0	0	0	4393	2280

Warrants Summary Report

1: Canton Street at School Street

Intersection Information

	Major Street	Minor Street
Street Name	Canton Street	School Street
Direction	EB/WB	NB/SB
Number of Lanes	1	1
Approach Speed	30	30

Warrant	Met?	Notes
Warrant 1, Eight-Hour Vehicular Volume		
	Yes	
Condition A or B Met?	Yes	11 Hours met (8 required)
Condition A and B Met?	Yes	10 Hours met (8 required)
Warrant 2, Four-Hour Vehicular Volume		
	Yes	8 Hours met (4 required)
Warrant 3, Peak Hour		
	Yes	
Condition A Met?	No	0 Hours met (1 required)
Condition B Met?	Yes	3 Hours met (1 required)
Warrant 4, Pedestrian Volume		
	No	
Peds > 100 Condition A	No	0 Hours met (4 required)
Peds > 190 Condition A	No	0 Hours met (1 required)
Warrant 5, School Crossing		
	No	

Warrants Summary Report

1: Pleasant Street at Lincoln Street

Intersection Information

	Major Street	Minor Street
Street Name	Pleasant Street	Lincoln Street
Direction	NB/SB	EB/WB
Number of Lanes	1	1
Approach Speed	30	30

Warrant	Met?	Notes
Warrant 1, Eight-Hour Vehicular Volume		
	Yes	
Condition A or B Met?	Yes	11 Hours met (8 required)
Condition A and B Met?	Yes	10 Hours met (8 required)
Warrant 2, Four-Hour Vehicular Volume		
	Yes	6 Hours met (4 required)
Warrant 3, Peak Hour		
	No	
Condition A Met?	No	0 Hours met (1 required)
Condition B Met?	No	0 Hours met (1 required)
Warrant 4, Pedestrian Volume		
	No	
Peds > 100 Condition A	No	0 Hours met (4 required)
Peds > 190 Condition B	No	0 Hours met (1 required)
Warrant 5, School Crossing		
	No	

Appendix E. Road Safety Audit References

Road Safety Audit References

Massachusetts Traffic Safety Toolbox, Massachusetts Highway Department,
www.mhd.state.ma.us/safetytoolbox.

Road Safety Audits, A Synthesis of Highway Practice. NCHRP Synthesis 336. Transportation Research Board, National Cooperative Highway Research Program, 2004.

Road Safety Audits. Institute of Transportation Engineers and U.S. Department of Transportation, Federal Highway Administration, www.roadwaysafetyaudits.org.

FHWA Road Safety Audit Guidelines. U.S. Department of Transportation, Federal Highway Administration, 2006.

Road Safety Audit, 2nd edition. Austroads, 2000.

Road Safety Audits. ITE Technical Council Committee 4S-7. Institute of Transportation Engineers, February 1995.