MEMORANDUM

TO: **Route 138 Corridor Planning Study Committee** **1 March, 2000**

FROM: **Robert Sievert, Anil Chagari, and Efi Pagitsas**

RE: **Task 4: Review of Existing Traffic, Bicycle, Pedestrian, and Transit Conditions**

INTRODUCTION

Prior to the 12 January Route 138 committee meeting, CTPS distributed a draft memorandum[1] describing the progress of the study's data collection effort (Task 3 in the project work program), and review of existing conditions (Task 4), to date. Task 3 is now complete, and was summarized in a memorandum[2] which was included in the mailing for the 1 March Route 138 committee meeting.

The review of existing traffic conditions in the Route 138 corridor is also complete, and is summarized in this memorandum, which is also the product for Task 4 of the project work program. Following the Introduction and Background are six sections describing existing conditions in the nearly 11-mile Route 138 corridor. These include intersection level of service (LOS), queue lengths, collision diagrams, truck traffic, bicycles and pedestrians, and transit.

BACKGROUND

Route 138 in Milton, Canton, and Stoughton is a state-numbered highway. It is functionally classified as a principal arterial from Route 28 in Milton to Stoughton Square. South of the Square, it is classified as a minor arterial. The study area spans 10.8 miles from Route 28 to just south of Plain Street in Stoughton, 1.7 miles from the Easton line.

The roadway is under the jurisdiction of MassHighway, except for a 0.6-mile section in Stoughton (Walnut Street to Lincoln Street), which is under local control. The study area is also located in two MassHighway Districts, the section in Milton and Canton being in District 4, and the Stoughton portion in District 5.

For most of its length, Route 138 is a two-lane road. Exceptions are a four-lane section at the interchange area with I-93 (Route 128), a three-lane section (i.e., dual center left-turn lane) in Stoughton between School Street and Lincoln Street, and various added turning lanes at numerous signalized and unsignalized intersections.

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[1] R. Sievert, "Status Report: Data Collection and Existing Conditions," CTPS memorandum, 3 January, 2000.

[2] R. Sievert, "Task 3: Data Collection," CTPS memorandum, 22 February, 2000.

INTERSECTION LEVEL OF SERVICE

Thirty-six signalized and unsignalized intersections in the Route 138 corridor where traffic counts were performed were also evaluated for operational level of service (LOS)[3]. LOS analysis was performed for both the AM and PM peak hours using Highway Capacity Software (HCS)[4]. The results of the LOS analysis are presented as measures of intersection delay, ranging from A to F. Results of A through D for an intersection, or for specific movements within an intersection, are acceptable measures while results of E or F are unacceptable. See Table 1 below for a summary of established LOS criteria at signalized and unsignalized intersections.

Table 1
Level of Service Criteria for Signalized and Unsignalized Intersections

Level of Service	Signalized Intersection Delay (secs/veh)	Unsignalized Intersection Delay (secs/veh)
A	≤ 5	≤ 5
B	> 5 and ≤ 15	> 5 and ≤ 10
C	> 15 and ≤ 25	> 10 and ≤ 20
D	> 25 and ≤ 40	> 20 and ≤ 30
E	> 40 and ≤ 60	> 30 and ≤ 45
F	> 60	> 45

For the Route 138 analysis, information was collected on signal phasings and timings at signalized intersections, and on numbers of lanes, exclusive lanes, crosswalks, and other pertinent data for both signalized and unsignalized intersections. The results of the LOS analysis are shown in Table 2. Here it is seen that ten of the thirty-six intersections are signalized, five of which operate at LOS E or F. Of these five, three are being mitigated as part of the Reebok improvements. The remaining two intersections, Route 138 at Central Street (Stoughton) and Central Street at Pearl Street (Stoughton), will be analyzed further and potential suggestions for improvements will be made as part of the next project task, Task 5, "Develop and Test Corridor Improvement Alternatives." Table 2 also shows that whenever turning movements are at LOS E or F at unsignalized intersections, it is always for the side street's/driveway's movements onto Route 138, never for the Route 138 movements onto the side street.

[3] The Reebok project EIR (VHB, Inc., January 1998) analyzed and developed geometric improvements for three of these locations (Route 138 at Royall Street, Washington Street, and Randolph Street in Canton), and this study is adopting those results.

[4] Version 2.4g (signalized intersections); Version 2.1g (unsignalized intersections), Center for Microcomputers in Transportation, U. of Florida.

TABLE 2
1999 Intersection Level of Service

(NOTE: Some of the information in this table has been revised since originally distributed to the Route 138 Committee in March, 2000)

TOWN	INTERSECTION	SIGNALIZED or UN-SIGNALIZED	MOVEMENT	Level of Service / Average Total Delay AM Pk Hr	PM Pk Hr
Milton	Route 138 at Brook Rd	S	Brook Rd EB, all turns	C / 19	C / 20
			Route 138 NB, all turns	B / 8	A / 5
			Route 138 SB, all turns	A / 5	B / 6
	Route 138 at Milton St/Dollar La.	S	Milton St EB, all turns	B / 13	C / 19
			Dollar Lane WB, all turns	B / 14	B / 12
			Route 138 NB lefts	A / 5	A / 4
			Route 138 SB lefts	A / 5	B / 5
	Route 138 at Neponset Vall. Pkwy	U	Nep. Vall. Pkwy EB lefts and rights	C / 13	B / 9
			Route 138 NB lefts	B / 8	B / 6
	Route 138 at Brush Hill Rd	S	Brush Hill Rd EB lefts and rights	B / 14	B / 15
			Brush Hill Rd WB lefts	C / 16	B / 12
			Br. Hill Rd WB throughs and rights	B / 13	B / 11
			Route 138 NB throughs	C / 16	B / 13
			Route 138 SB throughs and rights	C / 18	D / 26
Canton	Route 138 at Royall St / Blue Hill River Road	S	Royall St EB lefts and throughs	C / 24	F / *
			Royall St EB rights	C / 22	C / 25
			Bl. H. R. Rd WB lefts and throughs	D / 37	F / *
			Blue Hill River Rd WB rights	C / 24	C / 17
			Route 138 NB, all turns	B / 8	B / 6
			Route 138 SB lefts	C / 18	N.A.
	(Source: Reebok EIR, VHB, Inc., January 1998)		Route 138 SB throughs and rights	F / *	N.A.
			Route 138 SB, all turns	N.A.	F / *
	Route 138 at Greenlodge St	U	Greenlodge St EB lefts and rights	F / *	F / *
			Route 138 NB lefts	C / 13	C / 14
	Route 138 at Washington St / Ponkapoag Golf Club	S	Washington St EB, all turns	F / *	D / 29
			Ponkapoag Golf Club WB, all turns	B / 8	B / 9
			Route 138 NB all turns	F / *	F / *
	(Source: Reebok EIR, VHB, Inc., January 1998)		Route 138 SB lefts and throughs	C / 17	C / 18
			Route 138 SB rights	B / 7	B / 10
	Route 138 at Randolph St	S	Randolph St EB, all turns	F / *	F / *
			Randolph St WB, all turns	F / *	F / *
			Route 138 NB lefts	F / 64	F / *
			Route 138 NB throughs and rights	B / 8	B / 8
	(Source: Reebok EIR, VHB, Inc., January 1998)		Route 138 SB lefts	B / 6	D / 30
			Route 138 SB throughs and rights	C / 23	B / 13
	Route 138 at Pequot Pk/US Trust	U	US Trust EB, all turns	D / 27	D / 26
			Pequot Park WB, all turns	D / 26	F / 53
			Route 138 NB lefts	B / 8	B / 5
			Route 138 SB lefts	B / 6	B / 7
	Route 138 at #320-348/Plaza	U	Plaza EB, all turns	F / *	E / 40
			#320-348 WB, all turns	E / 38	E / 36
			Route 138 NB lefts	B / 7	B / 5
			Route 138 SB lefts	B / 8	B / 7

(NOTE: shaded cells denote movements with unacceptable levels of service; * = delay of 75 seconds or more for signalized intersections, 60 seconds or more for unsignalized intersections)

(ReS, 010621, LOS99.xls)

TABLE 2 (cont.)

1999 Intersection Level of Service

TOWN	INTERSECTION	SIGNALIZED or UN-SIGNALIZED	MOVEMENT	Level of Service / Average Total Delay	
				AM Pk Hr	PM Pk Hr
Canton (cont.)	Route 138 at Dunkin' Donuts (Northern entrance)	U	North entrance WB lefts and rights	F / *	E / 42
			Route 138 SB lefts	B / 7	B /6
	Route 138 at Dunkin' Donuts (Southern entrance)	U	South entrance WB lefts and rights	F / *	E / 38
			Route 138 SB lefts	B / 9	B / 7
	Route 138 at Orchard Cove/ '99s Restaurant	U	Orchard Cove EB, all turns	F / 57	E / 41
			'99s Restaurant WB, all turns	F / 59	E / 41
			Route 138 NB lefts	B / 8	B / 7
			Route 138 SB lefts	B / 7	B / 6
	Route 138 at Whitman Rd/#425	U	#425 EB, all turns	E / 38	D / 29
			Whitman Rd WB, all turns	E / 30	F / 50
			Route 138 NB lefts	B / 7	B / 6
			Route 138 SB lefts	B / 6	B / 7
	Route 138 at Merkert Corp. (Northern Merkert driveway)	U	Merkert Corp. WB lefts and rights	C / 15	B / 10
			Route 138 SB lefts	B / 6	B / 6
	Route 138 at Merkert Corp./#437 (Southern Merkert driveway)	U	#437 EB, all turns	D / 24	E / 41
			Merkert Corp. WB, all turns	E / 43	F / *
			Route 138 NB lefts	B / 6	B / 6
			Route 138 SB lefts	B / 7	B / 5
	Route 138 at Tuthill Corp.	U	Tuthill Corp. EB lefts and rights	D / 25	E / 33
			Route 138 NB lefts	B / 5	B / 7
	Route 138 at #555/Arboretum Wy	U	#555 EB, all turns	E / 41	F / *
			Arboretum Way WB, all turns	F / *	F / *
			Route 138 NB lefts	B / 6	B / 8
			Route 138 SB lefts	B / 7	B / 6
	Route 138 at Dan Rd	S	Dan Rd EB lefts	B / 14	C / 19
			Dan Rd EB rights	B / 14	B / 15
			Route 138 NB lefts	A / 2	A / 3
			Route 138 NB throughs	B / 13	A / 3
			Route 138 SB throughs	A / 2	B / 13
			Route 138 SB rights	A / 2	A / 2
	Route 138 at #960 (Foxford Business Center)	U	#980 WB lefts and rights	D / 23	E / 38
			Route 138 SB lefts	C / 10	A / 3
	Route 138 at Boston Dr/#980	U	Boston Dr EB, all turns	E / 31	C / 20
			#980 WB, all turns	F / *	E / 34
			Route 138 NB lefts	A / 4	B / 9
			Route 138 SB lefts	C / 10	A / 3
	Route 138 at Tracy Wood Rd	U	Tracy Wood Rd WB lefts and rights	D / 26	F / 58
			Route 138 SB lefts	C / 13	A / 4
	Route 138 at Stagecoach Rd	U	Stagecoach Rd WB lefts and rights	E / 42	E / 37
			Route 138 SB lefts	C / 13	A / 3
Stoughton	Route 138 at York St	U	York St WB lefts and rights	F / *	F / *
			Route 138 SB lefts	C / 14	B / 5

(NOTE: shaded cells denote movements with unacceptable levels of service; * = delay of 75 seconds or more for signalized intersections, 60 seconds or more for unsignalized intersections)

TABLE 2 (cont.) 1999 Intersection Level of Service

TOWN	INTERSECTION	SIGNALIZED or UN-SIGNALIZED	MOVEMENT	Level of Service / Average Total Delay	
				AM Pk Hr	PM Pk Hr
Stoughton (cont.)	Route 138 at Stop & Shop/T.Bell (Northern entrance)	S	Taco Bell EB, all turns	B / 14	B / 9
			Stop & Shop WB, all turns	B / 14	B / 9
			Route 138 NB, all turns	A / 3	A / 3
			Route 138 SB, all turns	A / 2	B /10
	Route 138 at Kimball Ave (Stop & Shop, southern entrance)	U	Kimball Ave WB lefts and rights	F / 50	F / *
			Route 138 SB lefts	C / 14	B / 5
	Central St at Pearl St	S	Central St EB, all turns	F / *	F / *
			Central St WB lefts	B / 15	B / 9
			Central St WB throughs and rights	F / *	F / *
			Pearl St NB, all turns	E / 45	C / 17
			Pearl St SB, all turns	F / *	F / *
	Route 138 at Central St	S	Central St EB, all turns	F / *	D / 28
			Central St WB lefts and throughs	C / 19	C / 21
			Central St WB rights	C / 24	C / 19
			Route 138 NB lefts	E / 42	D / 33
			Route 138 NB throughs and rights	C / 24	C / 24
			Route 138 SB lefts	D / 38	F / *
			Route 138 SB throughs and rights	C / 21	F / *
	Route 138 at Block Buster Plaza	U	Plaza EB lefts	E / 39	F / *
			Plaza EB rights	A / 4	C / 12
			Route 138 NB lefts	A / 3	B / 9
	Route 138 at Lincoln St/Parkway	U	Parkway EB, all turns	C / 14	F / *
			Lincoln St WB, all turns	F / *	F / *
			Route 138 NB lefts	A / 3	B / 8
			Route 138 SB lefts	B / 7	B / 8
	Pearl St at School St (all-way Stop-controlled intersection)	U	School St EB, all turns	B / 10	N.A.
			School St WB, all turns	E / 36	N.A.
			Pearl St NB, all turns	D / 22	N.A.
			Pearl St SB, all turns	C / 11	N.A.
	Route 138 at School St	U	School St EB lefts and rights	F / *	F / *
			Route 138 NB lefts	A / 4	B / 9
	Stoughton Square North	U	Route 27 EB rights	B / 7	C / 14
			Route 138 SB throughs and rights	F / *	F / *
			Routes 138/27 NB lefts	A / 4	B / 5
	Stoughton Square Middle	U	Wyman St EB, all turns	F / *	N.A.
			Wyman St EB rights	N.A.	C / 11
			Freeman St WB, all turns	B / 7	A / 5
			Route 138 NB lefts	B / 9	C / 17
			Route 138 SB lefts	C / 16	B / 8
	Stoughton Square South	U	Route 138 NB throughs and rights	F / *	F / *
			Route 139 WB rights	B / 6	A / 5
			Routes 138/27 SB lefts	C / 11	B / 5
	Route 138 at Plain St	U	Plain St EB lefts and rights	F / *	F / *
			Route 138 NB lefts	A / 4	B / 8

(NOTE: shaded cells denote movements with unacceptable levels of service; * = delay of 75 seconds or more for signalized intersections, 60 seconds or more for unsignalized intersections)

(ReS, 010621, LOS99.xls)

QUEUE LENGTHS

Included in verifying congestion levels at signalized intersections were field observations of queue lengths. The queue lengths were recorded in number of vehicles, and are explained as follows:

> Vehicles do not start up instantaneously upon the start of green time. Although vehicles at the head of the queue begin to dissipate at the start of the green, there still may well be vehicles arriving at the back of the queue. When the wave of start up vehicles leaving the stop line meets the stopping wave of vehicles arriving at the queue, the maximum back of queue is reached and no additional vehicles are required to stop.[5]

It was seen earlier (Table 2) that five of the ten signalized intersections in the Route 138 corridor operate at LOS E or F (i.e., "unacceptable"). Of these five, four were observed for queue lengths in the field. The one intersection not observed for queue lengths, Route 138 at Royall Street, is currently undergoing geometric and signalization improvements as part of the Reebok project mitigation.

The queues at the four intersections were observed during the AM and PM peak periods. The results of these observations are shown in Table 3 below. The patterns and relative order of magnitude of queue lengths resembled those calculated by means of the MassHighway Standard Queueing Analysis Spreadsheet.

COLLISION DIAGRAMS

The goal of the traffic accident analysis was to determine whether the intersections in the study area have any safety deficiencies. This was done by tabulating and mapping out accidents by type and other characteristics and, by searching for accident patterns that repeat themselves over time. When crash patterns are related to the geometric and operational characteristics of the intersection, one may identify the causes of these accidents.

Tables 4–12 and Figures 1–6 describe collision data for the intersections with the highest accident frequencies in the Route 138 corridor. The information contains data on the frequency of when, where, and how accidents occurred in each of these intersections during 1997–1999. Included are also summaries of the probable causes for accidents occurring at each location.

Accident Data Analysis for Milton, Canton, and Stoughton

For study intersections in Canton and Stoughton accident statistics were compiled from town police department records for the three-year period 1997 to 1999. For the three intersections in Milton, after consultation with town officials, it was decided to use Massachusetts Registry of Motor Vehicles data that appear to be more representative of the accident history at those locations. These data are for the three-year period 1995 to 1997.

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[5] Neil Boudreau, "MHD Standard Queuing Analysis Spreadsheet (Version 2.0)," MassHighway–Traffic Operations, 14 May 1996, p.2.

Table 3
Existing Queue Lengths at Route 138 Corridor Intersections with LOS E or F (*)
(AM and PM Peak Periods)

Location	Approach	Maximum Observed Queue Lengths (in number of vehicles) AM	PM
Rt.138/	EB Lt/Th/Rt	24	30
Central St	WB Lt/Th	22	20
(Stoughton)	NB Lt	6	9
	NB Th/Rt	24	18
	SB Lt	3	14
	SB Th/Rt	5	28
Central St/	EB Lt/Th/Rt	20	14
Pearl St	WB Lt	4	1
(Stoughton)	WB Th/Rt	23	25+ (**)
	NB Lt/Th/Rt	13	7
	SB Lt/Th/Rt	9	15
Route 138/	EB Lt/Th/Rt	9	12
Randolph St	WB Lt/Th/Rt	18	9
(Canton)	NB Lt/Th/Rt	14	22
	SB Lt/Th/Rt	19+ (**)	15
Route 138/	EB Lt/Th/Rt	18+ (**)	16
Washington St	WB Lt/Th/Rt	1	3
(Canton)	NB Lt/Th/Rt	21+ (**)	15
	SB Lt/Th/Rt	17	13

(*) The Route 138 at Royall intersection also operated at LOS E or F (see Reebok EIR, VHB, Inc., January 1998); however, current design improvements prevented field observation of realistic queue lengths.
(**) '+' signifies that the actual queue was longer than the observed and recorded volume. The end of the queue was obscured by trees, a bend in the road, etc.

Generally, the data studied include traffic accidents that occurred in the immediate vicinity of each intersection. However, in the case of Route 138 at Central Street, in order to capture the effect of the numerous nearby driveways and curbcuts, accidents that occurred approximately within 200 feet of the center of the intersection were included.

For each year of analysis, accident information was summarized by total number of accidents, collision type, severity, time of day, day of week, pavement conditions, light conditions, and weather conditions. Most of this information is also displayed pictorially in the form of collision diagrams that follow the tables. Collision diagrams were not drawn for the three Milton intersections because the exact locations of the crashes within the intersection are not included in the Registry data.

Route 138 at Brush Hill Road, Milton

As Table 4 shows, a total of 49 accidents were recorded during the three-year period 1995 through 1997. The majority of the accidents were rear end collisions and occurred under dry pavement conditions, in clear weather, and in daylight hours. On an hourly basis, most crashes happened during the off-peak. Less than 50 percent of the incidents involved personal injury.

Usually, rear end collisions are due to congested traffic conditions: stop-and-go traffic and delays associated with vehicles trying to maneuver sharp-angle turns. At this location, it appears that most of the rear end crashes occurred on Route 138 northbound in the vicinity of the Montessori School driveway where numerous turning maneuvers were observed, some taken safely and some unsafely. In addition, the sharp angle at which Brush Hill Road meets Route 138 may limit the drivers' view of Route 138 traffic in order to find an acceptable gap and turn right. When Brush Hill drivers accept unsafe gaps, that can force Route 138 drivers to use their brakes suddenly and cause rear end collisions. Of course, in these cases, the speed at which the Route 138 vehicles travel may also be a factor.

Table 4
Summary of Accident Data (1/1/95–12/31/97)
Route 138 at Brush Hill Road, Milton

Year		1995	1996	1997
Collision Type	Rear End	10	12	8
	Head On	0	0	0
	Angle	3	6	4
	Other	3	3	0
	Total	16	21	12
Severity	Property Damage	16	21	12
	Personal Injury	13	8	2
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	2	3	0
	4:00-6:00 PM	2	5	4
	Other	12	13	8
Day of Week	Mon-Fri	No Information	No Information	No Information
	Sat-Sun	No Information	No Information	No Information
Pavement Conditions	Dry	10	12	6
	Wet	6	6	5
	Ice/Snow	1	2	0
Light Conditions	Daylight	10	14	8
	Dawn or Dusk	1	1	1
	Dark-No Lights	0	1	0
	Dark-Lighted	3	4	2
Weather Conditions	Clear	8	11	7
	Foggy	1	0	1
	Rain	4	4	2
	Snow/Sleet	2	0	0
	Other		3	1

Route 138 at Milton Street, Milton

A total of 21 accidents were recorded during the three-year period 1995 through 1997. From Table 5, rear end collisions were the most common accident type accounting for more than 50 percent of the crashes. Also, most of the accidents occurred under dry pavement condition, clear weather conditions and, during daylight off-peak hours. Personal injury was involved in about half of the cases.

Again, as at Brush Hill Road, it is believed that the majority of these rear end collisions are on Route 138 and that they are caused by speed differences between vehicles turning into Milton Street/Dollar Lane and those continuing through along Route 138. Another cause of rear end crashes may be drivers exiting Milton Street/Dollar Lane and forcing themselves into Route 138 traffic. Intersection geometric characteristics appear to play a secondary role in the cause of accidents at this location.

Table 5
Summary of Accident Data (1/1/95–12/31/97)
Route 138 at Milton Street, Milton

Year		1995	1996	1997
Collision Type	Rear End	7	4	4
	Head On	0	0	0
	Angle	3	1	2
	Other	0	0	0
	Total	10	5	6
Severity	Property Damage	10	1	6
	Personal Injury	7	3	3
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	2	0	1
	4:00-6:00 PM	1	1	2
	Other	7	4	3
Day of Week	Mon-Fri	No Information	No Information	No Information
	Sat-Sun	No Information	No Information	No Information
Pavement Conditions	Dry	7	3	5
	Wet	3	2	3
	Ice/Snow	0	0	0
Light Conditions	Daylight	5	3	3
	Dawn or Dusk	2	0	0
	Dark-No Lights	1	0	0
	Dark-Lighted	2	2	5
Weather Conditions	Clear	6	2	5
	Foggy	1	0	1
	Rain	2	1	2
	Snow/Sleet	0	0	0
	Other	1	2	0

Route 138 at Neponset Valley Parkway, Milton

From Table 6, a total of 18 accidents were recorded during the three-year period 1995 through 1997. Again, rear end collisions were the most common accident type. However, about one third of the crashes were angle collisions. More than half of the accidents occurred under dry pavement condition, clear weather condition and, in daylight off-peak hours. Finally, most of the crashes were not severe and caused no injuries.

The cause for the high number of rear end collisions at this location could be, for peak period accidents, stop-and-go traffic on Route 138 or, for off-peak period accidents, high Route 138 vehicle speeds coupled with sudden turning maneuvers into/from Neponset Valley Parkway.

The reason for angle collisions at this location may be the limited visibility of Route 138 approaches from Neponset Valley Parkway. The angle at which Neponset Valley Parkway intersects Route 138 may limit the drivers' view in finding an acceptable gap to merge safely into the Route 138 traffic. In some cases drivers may miscalculate acceptable gaps. At other times, out of frustration, drivers may attempt to hurry into the northbound and southbound flow. All these scenarios may result in traffic accidents.

Table 6
Summary of Accident Data (1/1/95–12/31/97)
Route 138 at Neponset Valley Parkway, Milton

Year		1995	1996	1997
Collision Type	Rear End	3	2	6
	Head On	0	0	0
	Angle	4	2	0
	Other	0	1	0
	Total	7	5	6
Severity	Property Damage	7	5	6
	Personal Injury	4	0	1
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	3	1	No Information
	4:00-6:00 PM	0	1	No Information
	Other	4	3	No Information
Day of Week	Mon-Fri	No Information	No Information	No Information
	Sat-Sun	No Information	No Information	No Information
Pavement Conditions	Dry	7	4	1
	Wet	1	1	5
	Ice/Snow	0	0	1
Light Conditions	Daylight	7	2	4
	Dawn or Dusk	0	0	0
	Dark-No Lights	0	1	1
	Dark-Lighted	1	2	2
Weather Conditions	Clear	7	4	1
	Foggy	0	0	0
	Rain	1	0	3
	Snow/Sleet	0	0	0
	Other	0	1	2

Route 138 at Greenlodge Street, Canton

Nineteen accidents were recorded during the three-year period 1997–1999 (8, 7, and 4 accidents during 1997, 1998 and 1999, respectively). This yields an average of 6.3 accidents per year, exceeding the MUTCD[6] threshold (5 accidents per year) for assessment for potential corrective action. The accident data is summarized in Table 7.

Based on the police reports, angle and rear end collisions were the most common accident types. A majority of all accidents were angle collisions between a left turning vehicle and a vehicle going straight, while one-third were rear end collisions. More than 50% of the accidents occurred under dry pavement conditions, on weekdays, during clear weather conditions and in daylight hours. On an accidents-per-hour basis, over half of the accidents occurred during the peak hours. Just under half of the accidents involved personal injury. See Figure 1 for a collision diagram of this three-legged intersection.

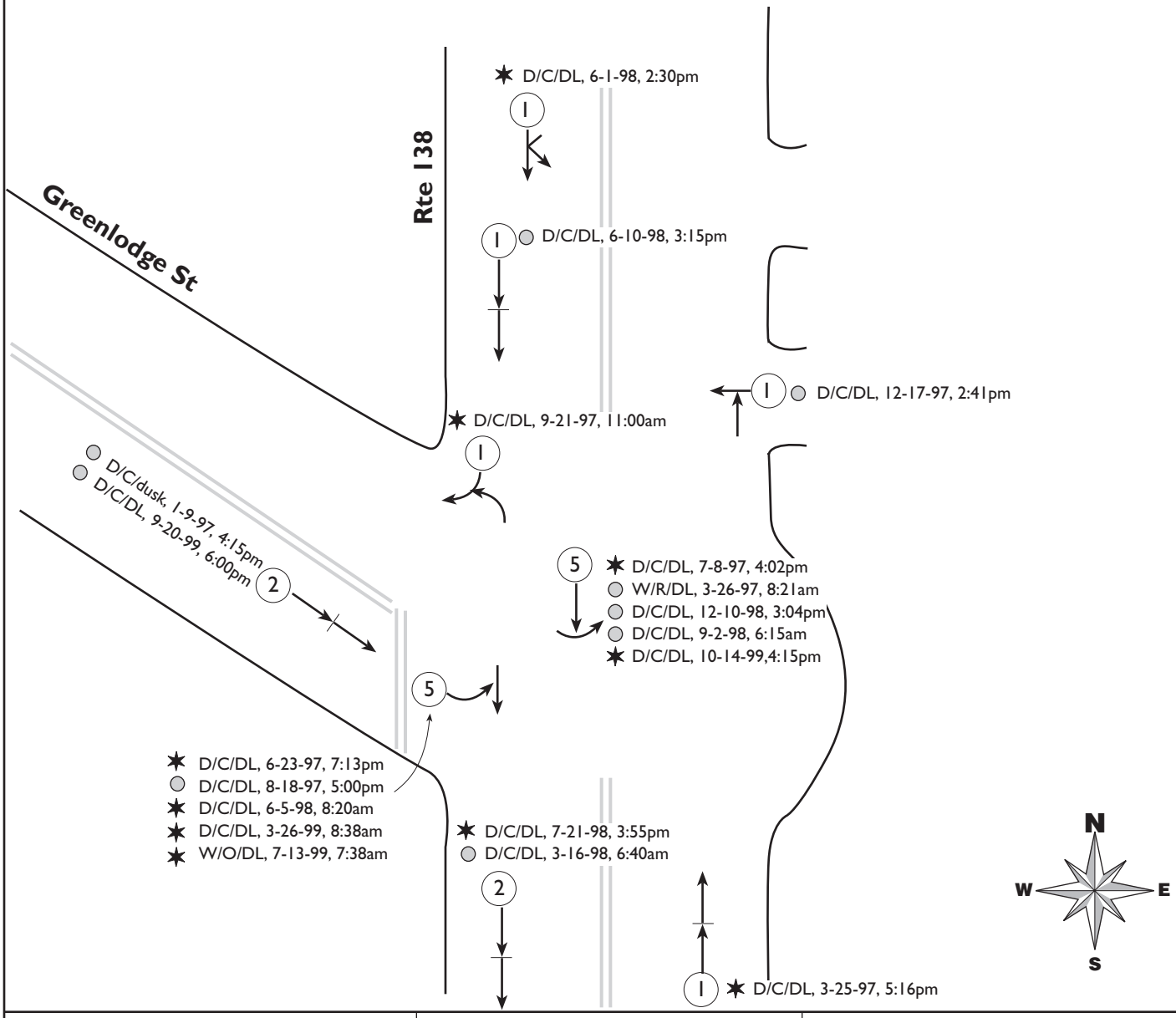
The skewed geometry and steep grade of the intersection of these two roadways are major factors in the number of accidents occurring. The angle at which Greenlodge Street intersects Route 138 forces exiting vehicles making a left turn onto Route 138 to nearly enter the southbound approach. High speeds on Route 138 (30-38 mph in the peak hours, higher in the off-peak) also contribute to the difficulty for left turning vehicles to exit from Greenlodge Street.

Table 7
Summary of Accident Data (1/1/97–12/31/99)
Route 138 at Greenlodge Street, Canton

Year		1997	1998	1999
Collision Type	Rear End	2	3	1
	Head On	0	0	0
	Angle	6	4	3
	Other	0	0	0
	Total	8	7	4
Severity	Property Damage	8	7	4
	Personal Injury	4	4	1
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	1	1	2
	4:00-6:00 PM	4	0	2
	Other	3	6	0
Day of Week	Mon-Fri	7	7	4
	Sat-Sun	1	0	0
Pavement Conditions	Dry	7	7	3
	Wet	1	0	1
	Ice/Snow	0	0	0
Light Conditions	Daylight	7	7	4
	Dawn or Dusk	1	0	0
	Dark-No Lights	0	0	0
	Dark-Lighted	0	0	0
Weather Conditions	Clear	7	7	3
	Foggy	0	0	0
	Rain	1	0	0
	Snow/Sleet	0	0	0
	Other	0	0	1

[6] Manual on Uniform Traffic Control Devices (for streets and highways), U.S.DOT/FHWA, 1988.

Figure 1
Collision Diagram
1/1/97 to 12/31/99
Route 138 @ Greenlodge St
Canton



SYMBOLS	PAVEMENT/WEATHER/LIGHTING	TYPES OF COLLISIONS
Moving Vehicle	D Dry	Head On
Backing Vehicle	C Clear	Angle
Pedestrian	W Wet	Rear End
Parked Vehicle	R Rain	Sideswipe
Property Damage Only	F Foggy	Broadside
Injury	S Snowy, Icy	
Fatality	O Other	
Fixed Object	DL Daylight	
Out of Control	N Dark – No Lights	
(#) Number of Accidents	L Dark – Lighted	

CTPS

Route 138 at Dan Road, Canton

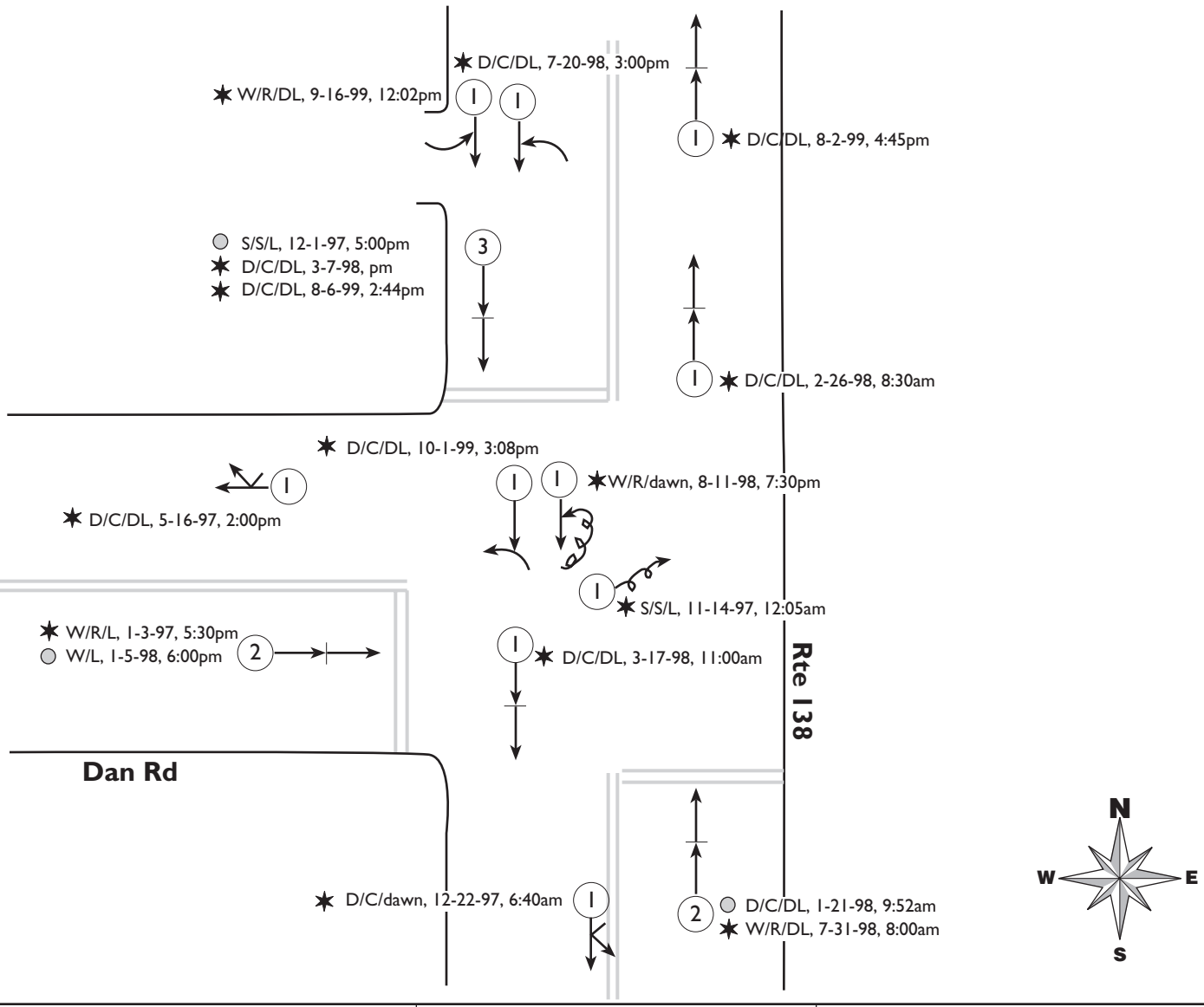
A total of 17 accidents were reported during 1997–1999 at this signalized intersection, an average of 5.7 accidents per year. Based on the accident information obtained, just over half of the accidents were rear end collisions, common at signalized intersections. Two of the accidents resulted from out of control vehicles. More than 50% of the accidents occurred under dry pavement conditions, on weekdays, during clear weather, and in daylight hours. On an accidents-per-hour basis, two-thirds of the accidents happened during the off peak hours. Only three of seventeen accidents involved personal injury (see Table 8).

The reason for the rear end collisions is likely stop-and-go Route 138 traffic volumes, and the speed difference between through and right-turning traffic using the same lane. Figure 2 shows the collision diagram for this location.

Table 8
Summary of Accident Data (1/1/97–12/31/99)
Route 138 at Dan Road, Canton

Year		1997	1998	1999
Collision Type	Rear End	2	6	2
	Head On	0	0	0
	Angle	0	1	2
	Other	3	1	0
	Total	5	8	4
Severity	Property Damage	5	8	4
	Personal Injury	1	2	0
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	0	2	0
	4:00-6:00 PM	2	1	1
	Other	3	5	3
Day of Week	Mon-Fri	5	7	4
	Sat-Sun	0	1	0
Pavement Conditions	Dry	2	5	3
	Wet	1	3	1
	Ice/Snow	2	0	0
Light Conditions	Daylight	1	6	4
	Dawn or Dusk	1	1	0
	Dark-No Lights	0	0	0
	Dark-Lighted	3	1	0
Weather Conditions	Clear	2	5	3
	Foggy	0	0	0
	Rain	1	2	0
	Snow/Sleet	0	0	0
	Other	0	1	0

Figure 2
Collision Diagram
1/1/97 to 12/31/99
Route 138 @ Dan Rd
Canton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS	
←	Moving Vehicle	D	Dry	→ ←	Head On
←≈	Backing Vehicle	C	Clear	↙	Angle
-- -- --	Pedestrian	W	Wet	← ←	Rear End
▨	Parked Vehicle	R	Rain	↙ ↘	Sideswipe
✶	Property Damage Only	F	Foggy	↓ ←	Broadside
○	Injury	S	Snowy, Icy		
●	Fatality	O	Other		
□	Fixed Object	DL	Daylight		
↩	Out of Control	N	Dark – No Lights		
(#)	Number of Accidents	L	Dark – Lighted		

CTPS

Route 138 at Central Street, Stoughton

One hundred nineteen accidents were reported during 1997 through 1999 within 200 feet of the intersection[7]. There were 35, 45, and 39 accidents during the years 1997, 1998 and 1999, respectively. The accident data is summarized in Table 9. This table shows that angle collisions were by far the most common (82%). Three-fourths of the accidents occurred under dry pavement conditions, on weekdays, during clear weather conditions, and in daylight hours. On an accidents-per-hour basis, most accidents occurred during the off peak. One third of the accidents involved personal injury. The collision diagrams are presented in Figures 3a through 3c.

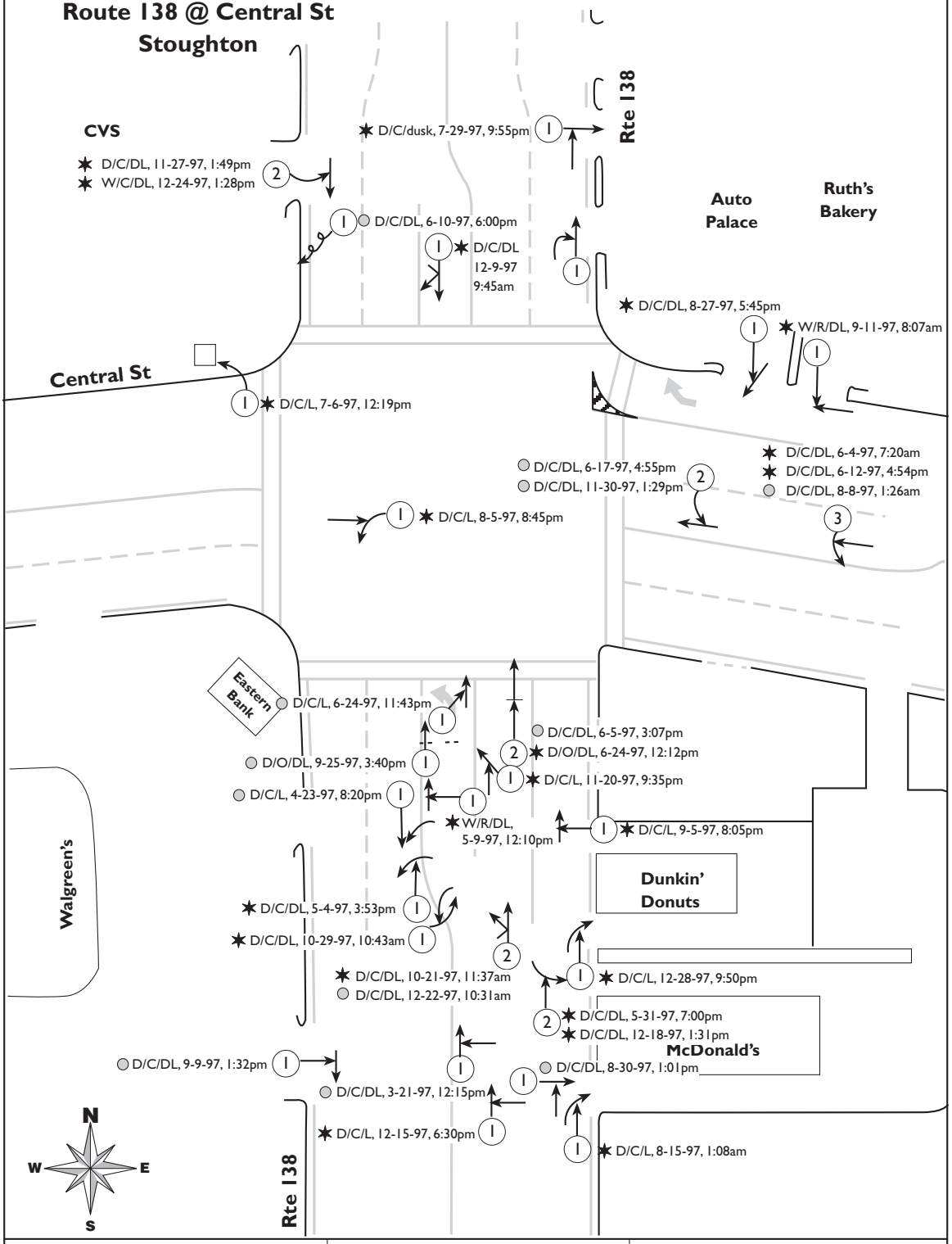
The reason for the high number of angle collisions in this area is due to heavy turning movements made at the Dunkin' Donuts, McDonald's, and Walgreens driveways to the south, the Mobil station and Ruth's Bakery/Auto Palace driveways to the east, and the CVS driveway to the north of the intersection. The left and right turns in and out of these driveways to Route 138 and Central Street are very difficult under the current heavy traffic flows. In addition, vehicles must traverse extensive pavement area (two or three lanes of traffic) to make left turns and it is difficult to find enough acceptable gaps to merge safely into the traffic. The few rear end collisions occurring at this location (13%) may be due to stop-and-go traffic volumes and delays associated with turning movements at the signalized intersection proper.

Table 9
Summary of Accident Data (1/1/97–12/31/99)
Route 138 at Central Street, Stoughton

Year		1997	1998	1999
Collision Type	Rear End	2	5	9
	Head On	0	1	0
	Angle	30	38	30
	Other	3	1	0
	Total	35	45	39
Severity	Property Damage	35	45	39
	Personal Injury	12	16	12
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	2	4	5
	4:00-6:00 PM	4	9	7
	Other	29	33	26
Day of Week	Mon-Fri	28	35	31
	Sat-Sun	7	11	8
Pavement Conditions	Dry	32	37	32
	Wet	3	7	7
	Ice/Snow	0	1	0
Light Conditions	Daylight	24	34	33
	Dawn or Dusk	1	0	0
	Dark-No Lights	0	0	0
	Dark-Lighted	10	12	6
Weather Conditions	Clear	31	35	31
	Foggy	0	0	0
	Rain	2	5	5
	Snow/Sleet	0	0	0
	Other	2	5	3

[7] Numerous commercial driveways access Route 138 or Central Street very close to the actual intersection, and the vast majority of accidents involve vehicles entering or exiting these establishments. Therefore, the area for analyzing collisions was expanded beyond the actual intersection footprint.

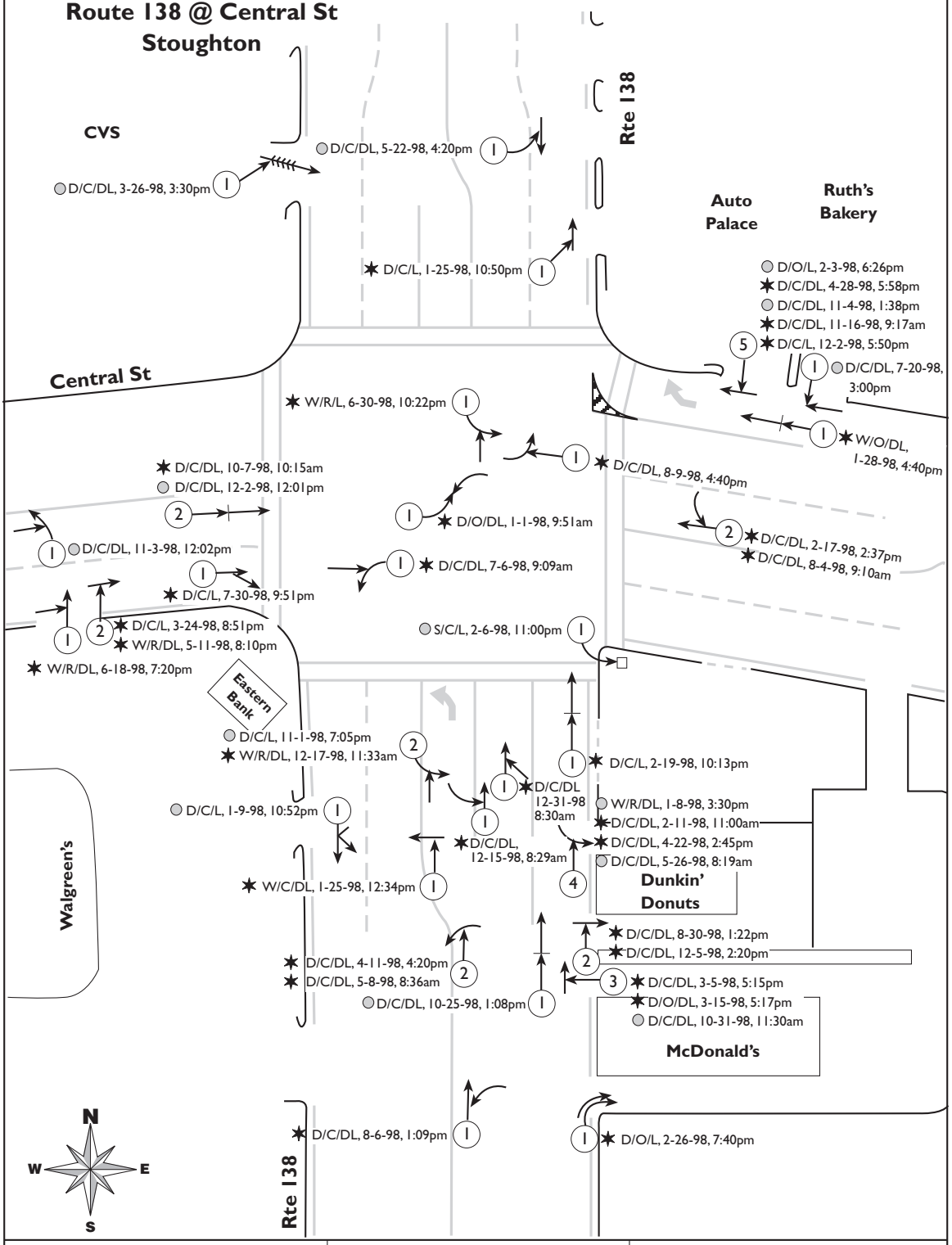
Figure 3a
Collision Diagram
1/1/97 to 12/31/97
Route 138 @ Central St
Stoughton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS
←	Moving Vehicle	D	Dry	Head On
←≈	Backing Vehicle	C	Clear	Angle
- - -	Pedestrian	W	Wet	Rear End
▭	Parked Vehicle	R	Rain	Sideswipe
✶	Property Damage Only	F	Foggy	Broadside
○	Injury	S	Snowy, Icy	
●	Fatality	O	Other	
□	Fixed Object	DL	Daylight	
↩	Out of Control	N	Dark – No Lights	
(#)	Number of Accidents	L	Dark – Lighted	

CTPS

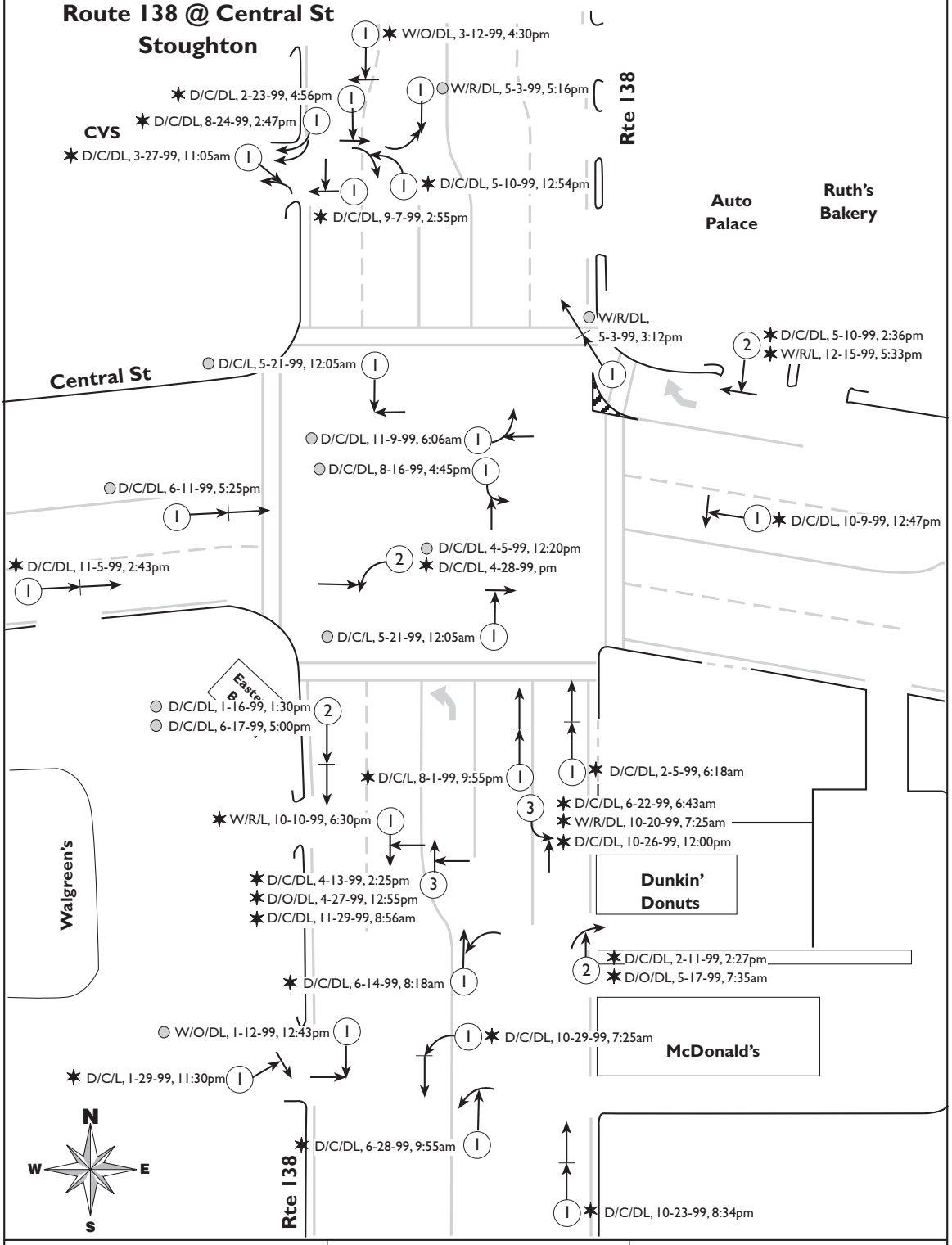
Figure 3b
Collision Diagram
1/1/98 to 12/31/98
Route 138 @ Central St
Stoughton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS
Moving Vehicle		D	Dry	Head On
Backing Vehicle		C	Clear	Angle
Pedestrian		W	Wet	Rear End
Parked Vehicle		R	Rain	Sideswipe
Property Damage Only		F	Foggy	Broadside
Injury		S	Snowy, Icy	
Fatality		O	Other	
Fixed Object		DL	Daylight	
Out of Control		N	Dark – No Lights	
Number of Accidents	(#)	L	Dark – Lighted	

CTPS

Figure 3c
Collision Diagram
1/1/99 to 12/31/99
Route 138 @ Central St
Stoughton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS
←	Moving Vehicle	D	Dry	→ ←	Head On
←≈	Backing Vehicle	C	Clear	↙ ←	Angle
- - -	Pedestrian	W	Wet	← ←	Rear End
▭	Parked Vehicle	R	Rain	↙ ↖	Sideswipe
✶	Property Damage Only	F	Foggy	↓ ←	Broadside
○	Injury	S	Snowy, Icy		
●	Fatality	O	Other		
□	Fixed Object	DL	Daylight		
↩	Out of Control	N	Dark – No Lights		
(#)	Number of Accidents	L	Dark – Lighted		

CTPS

Route 138 at School Street, Stoughton

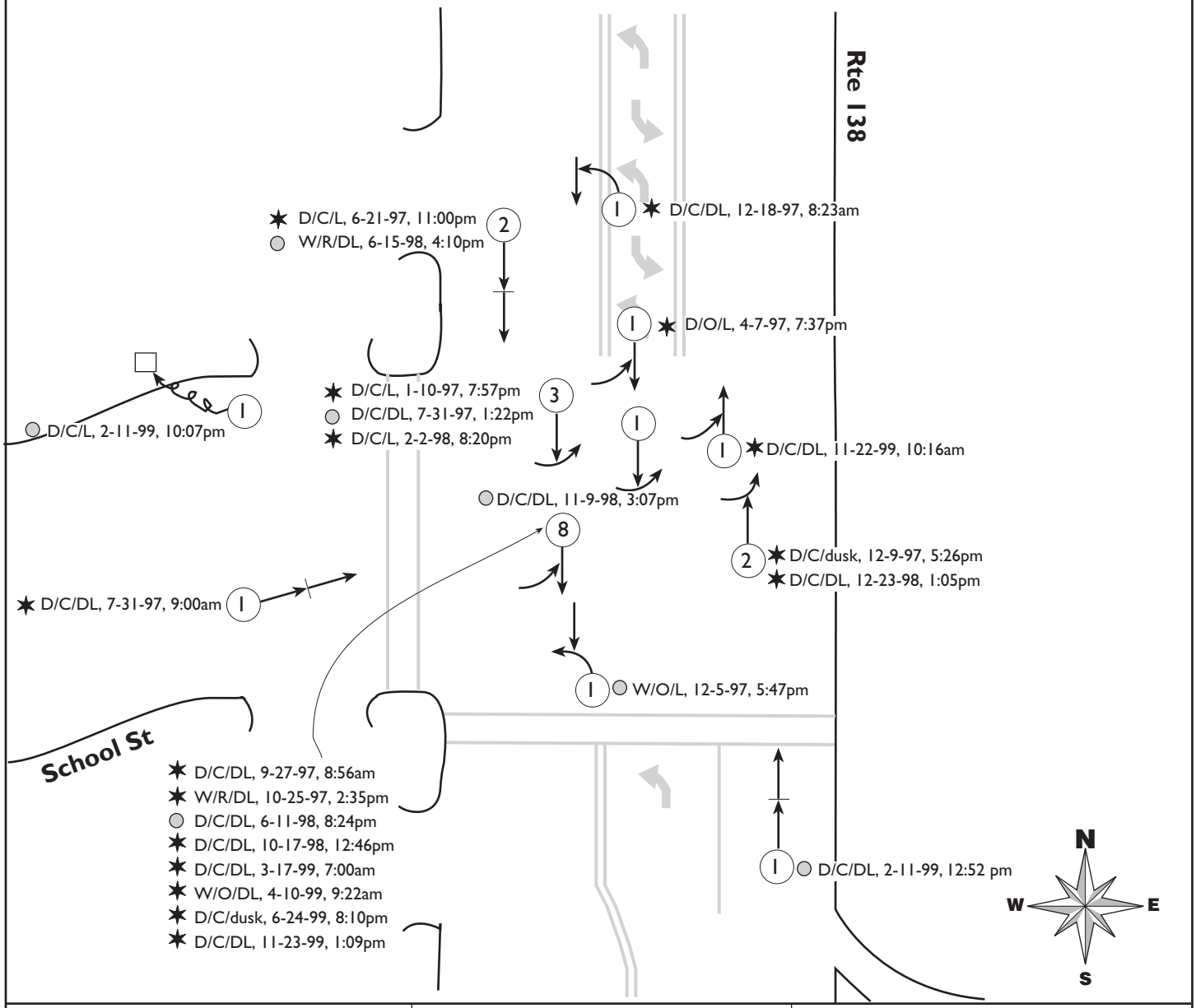
A total of 23 accidents were recorded during the three-year period 1997 through 1999. During these three years. there were 10, 6, and 7 accidents, respectively, an average of 7.7 accidents per year. The accident data is summarized in Table 10. Based on the accident reports, angle collisions were by far the most common accident types. Over 50% of the accidents occurred under dry pavement conditions, on weekdays, during clear weather, and in daylight hours. On an accidents-per-hour basis, most accidents happened during the off peak hours. Almost a third of the accidents involved personal injury.

The major reason for the high number of angle collisions at this location seems to be due to the limited sight distance of the Route 138 approaches for vehicles on School Street. This appears to be directly related to the geometric configuration of the intersection, a three-legged intersection with a two-way left-turn lane on the Route 138 southbound approach, and an exclusive left-turn lane on the northbound approach. The sight distance to safely cross the intersection seems to be inadequate, due to the added roadway width from the two left-turn lane approaches. Additionally, because of the moderate to high speeds (18–32 mph in the peak hours, higher during off-peak), it is difficult for School Street traffic to find acceptable gaps to merge safely into the Route 138 traffic. In some cases drivers may miscalculate acceptable gaps. At other times, perhaps out of frustration, drivers may rush onto Route 138, particularly vehicles making left turns. As seen in Figure 4, sixteen of the twenty-three accidents involve left turns from School Street colliding with either southbound or northbound Route 138 vehicles.

Table 10
Summary of Accident Data (1/1/97–12/31/99)
Route 138 at School Street, Stoughton

Year		1997	1998	1999
Collision Type	Rear End	2	1	1
	Head On	0	0	0
	Angle	8	5	5
	Other	0	0	1
	Total	10	6	7
Severity	Property Damage	10	6	7
	Personal Injury	2	3	2
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	3	0	1
	4:00-6:00 PM	2	1	0
	Other	5	5	6
Day of Week	Mon-Fri	7	5	6
	Sat-Sun	3	1	1
Pavement Conditions	Dry	8	5	6
	Wet	2	1	1
	Ice/Snow	0	0	0
Light Conditions	Daylight	5	5	5
	Dawn or Dusk	1	0	1
	Dark-No Lights	0	0	0
	Dark-Lighted	4	1	1
Weather Conditions	Clear	7	5	6
	Foggy	0	0	0
	Rain	1	1	0
	Snow/Sleet	0	0	0
	Other	2	0	1

Figure 4
Collision Diagram
1/1/97 to 12/31/99
Route 138 @ School St
Stoughton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS	
←	Moving Vehicle	D	Dry	→ ←	Head On
←≈	Backing Vehicle	C	Clear	↙ ↗	Angle
- - -	Pedestrian	W	Wet	← ←	Rear End
▨	Parked Vehicle	R	Rain	↙ ↙	Sideswipe
✶	Property Damage Only	F	Foggy	↓ ←	Broadside
○	Injury	S	Snowy, Icy		
●	Fatality	O	Other		
□	Fixed Object	DL	Daylight		
↩	Out of Control	N	Dark – No Lights		
(#)	Number of Accidents	L	Dark – Lighted		

CTPS

Route 138 at Stoughton Square, Stoughton

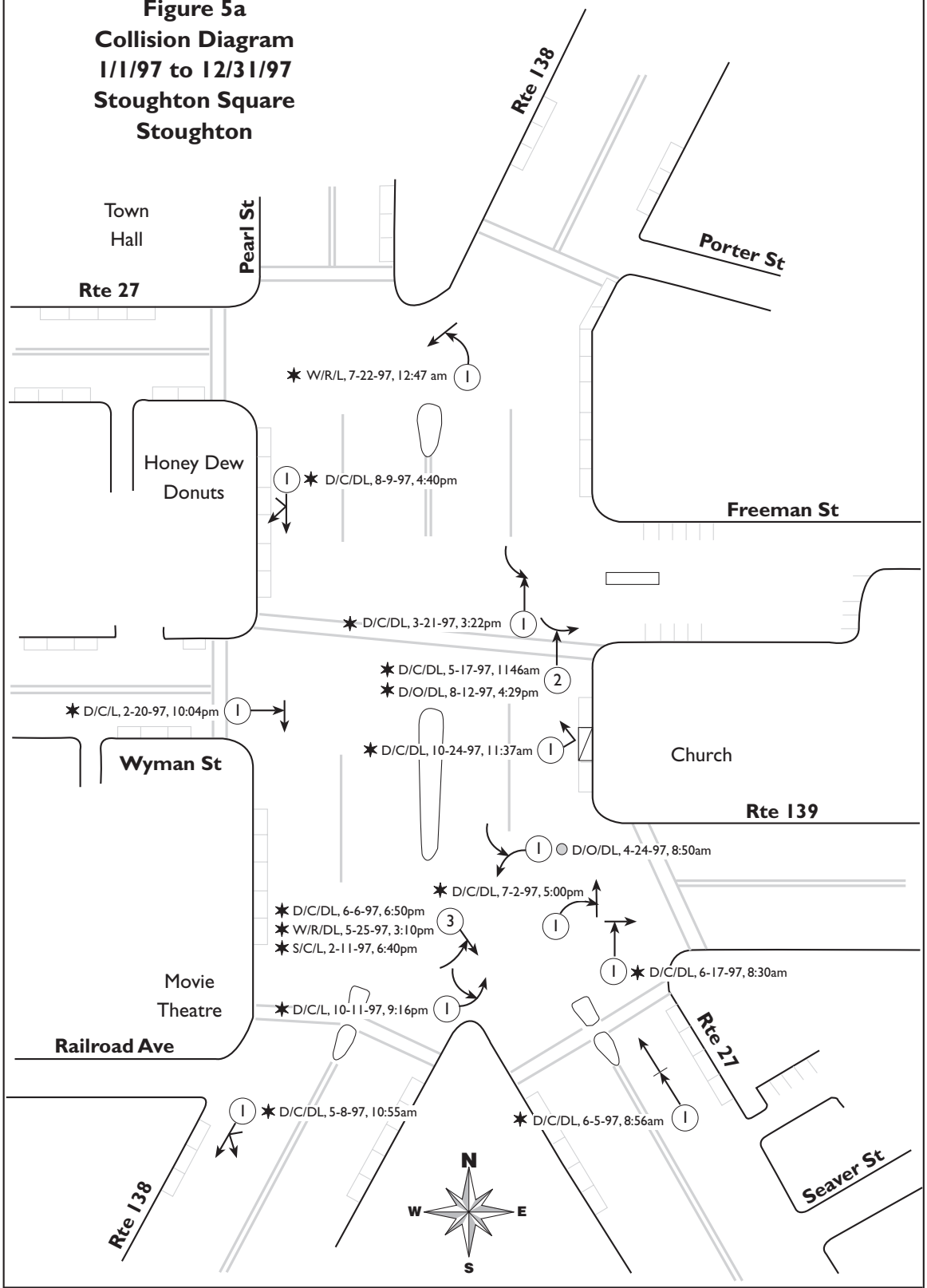
During the three-year period 1997 through 1999, a total of 54 accidents were reported at this location, an average of 18 accidents per year. There were 16, 20, and 18 accidents during each of the three years, respectively. The accident data is summarized in Table 11. Based on accident reports, angle (72%) and rear end (24%) collisions were the most common accident types. A majority of all accidents were angle collisions between a left-turning vehicle and a vehicle going straight. Five accidents involved collision with a parked vehicle, and one involved collision with a pedestrian. More than three-fourths of the accidents occurred under dry pavement conditions, on weekdays, during clear weather, and in daylight hours. Two-thirds of the accidents occurred during the off peak hours, while one-fourth of the accidents involved personal injury. The collision diagrams are seen in Figures 5a through 5c.

Stoughton Square is unsignalized, and is a combination of eight streets merging into one 370 feet long area. It can be quite precarious to traverse during periods of heavy traffic, particularly for side street left turns onto Route 138/Route 27 during heavy northbound and southbound traffic flows. Side street vehicles must also traverse extensive pavement area (two or three lanes) to make left turns. Further, weaving movements within the Square sometimes result in chaotic conditions. Other factors contributing to angle collisions are from the confusion caused by signs that restrict left turns during certain periods of the day, and from parking within the Square. Rear end collisions at this location may occur due to wet pavement conditions, high stop-and-go traffic volumes, and delays associated with turning movements.

Table 11
Summary of Accident Data (1/1/97–12/31/99)
Stoughton Square, Stoughton

Year		1997	1998	1999
Collision Type	Rear End	1	7	3
	Head On	1	0	0
	Angle	13	12	15
	Other	1	1	0
	Total	16	20	18
Severity	Property Damage	16	20	18
	Personal Injury	1	7	5
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	3	1	1
	4:00-6:00 PM	3	5	5
	Other	10	14	12
Day of Week	Mon-Fri	12	17	16
	Sat-Sun	4	3	2
Pavement Conditions	Dry	13	17	12
	Wet	2	3	5
	Ice/Snow	1	0	1
Light Conditions	Daylight	12	14	12
	Dawn or Dusk	0	1	2
	Dark-No Lights	0	0	0
	Dark-Lighted	4	5	4
Weather Conditions	Clear	12	16	9
	Foggy	0	0	0
	Rain	2	3	5
	Snow/Sleet	0	0	0
	Other	2	1	4

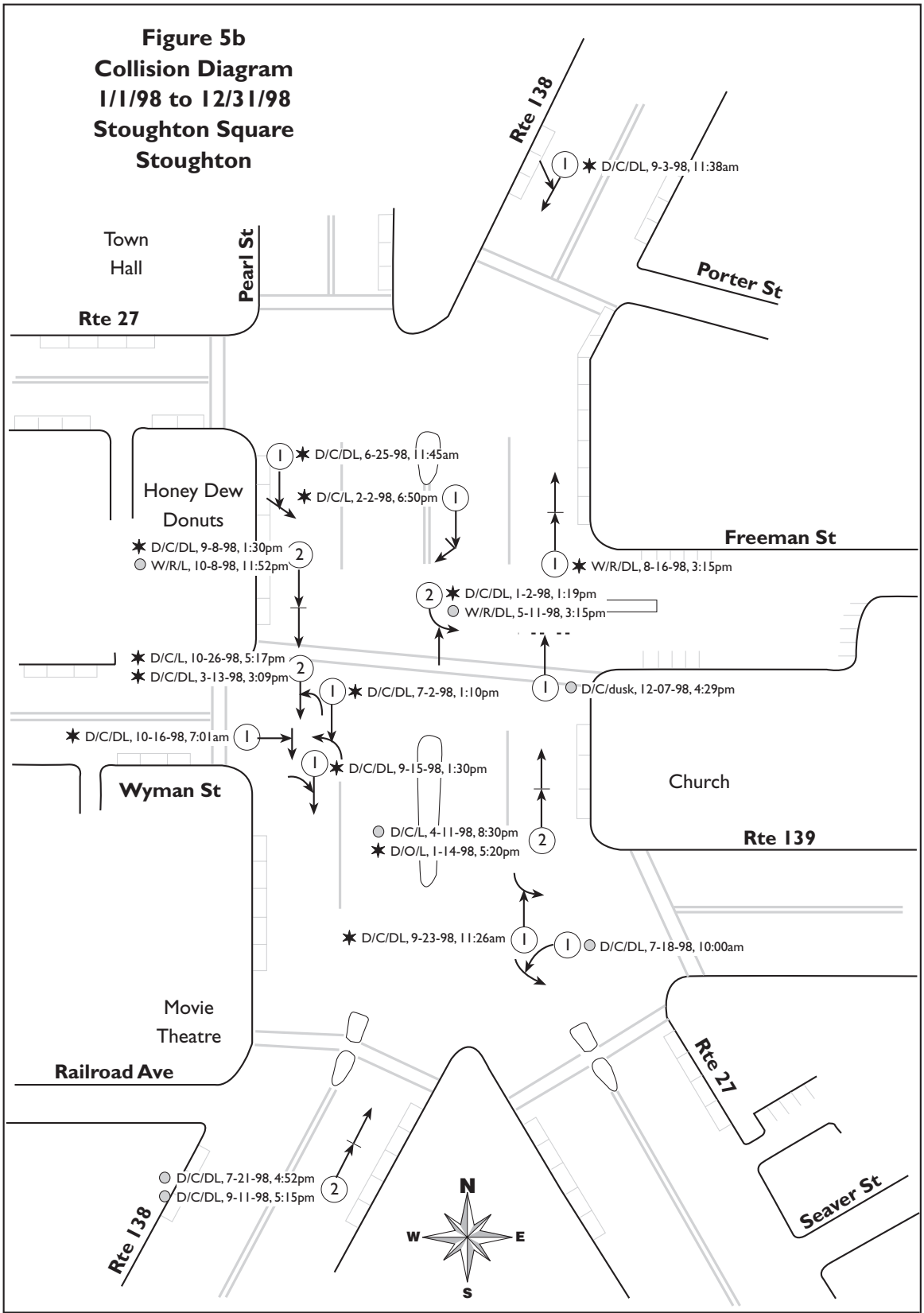
Figure 5a
Collision Diagram
1/1/97 to 12/31/97
Stoughton Square
Stoughton



SYMBOLS	PAVEMENT/WEATHER/LIGHTING	TYPES OF COLLISIONS
Moving Vehicle	D Dry	Head On
Backing Vehicle	C Clear	Angle
Pedestrian	W Wet	Rear End
Parked Vehicle	R Rain	Sideswipe
Property Damage Only	F Foggy	Broadside
Injury	S Snowy, Icy	
Fatality	O Other	
Fixed Object	DL Daylight	
Out of Control	N Dark – No Lights	
Number of Accidents	L Dark – Lighted	

CTPS

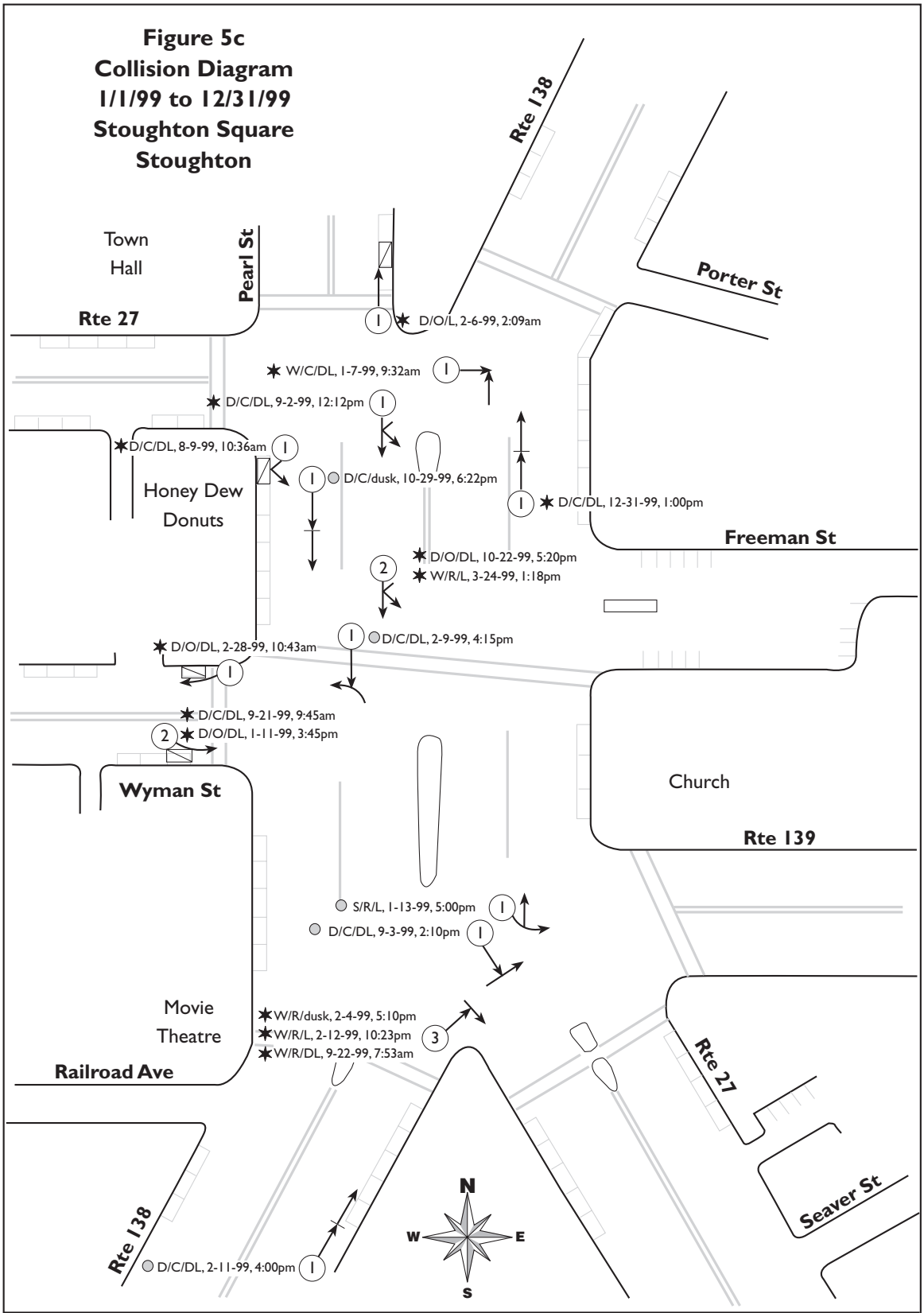
Figure 5b
Collision Diagram
1/1/98 to 12/31/98
Stoughton Square
Stoughton



SYMBOLS	PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS
Moving Vehicle	D	Dry	Head On
Backing Vehicle	C	Clear	Angle
Pedestrian	W	Wet	Rear End
Parked Vehicle	R	Rain	Sideswipe
Property Damage Only	F	Foggy	Broadside
Injury	S	Snowy, Icy	
Fatality	O	Other	
Fixed Object	DL	Daylight	
Out of Control	N	Dark – No Lights	
(#) Number of Accidents	L	Dark – Lighted	

CTPS

Figure 5c
Collision Diagram
1/1/99 to 12/31/99
Stoughton Square
Stoughton



SYMBOLS		PAVEMENT/WEATHER/LIGHTING		TYPES OF COLLISIONS	
←	Moving Vehicle	D	Dry	→ ←	Head On
←≈	Backing Vehicle	C	Clear	↙ ←	Angle
- - -	Pedestrian	W	Wet	← ←	Rear End
▨	Parked Vehicle	R	Rain	↙ ↙	Sideswipe
✶	Property Damage Only	F	Foggy	↓ ←	Broadside
○	Injury	S	Snowy, Icy		
●	Fatality	O	Other		
□	Fixed Object	DL	Daylight		
↩	Out of Control	N	Dark – No Lights		
(#)	Number of Accidents	L	Dark – Lighted		CTPS

Route 138 at Plain Street, Stoughton

Nineteen accidents were reported during 1997–1999. There were 8, 2, and 9 accidents during the three individual years, respectively, an average of 6.3 accidents per year. The accident data is summarized in Table 12.

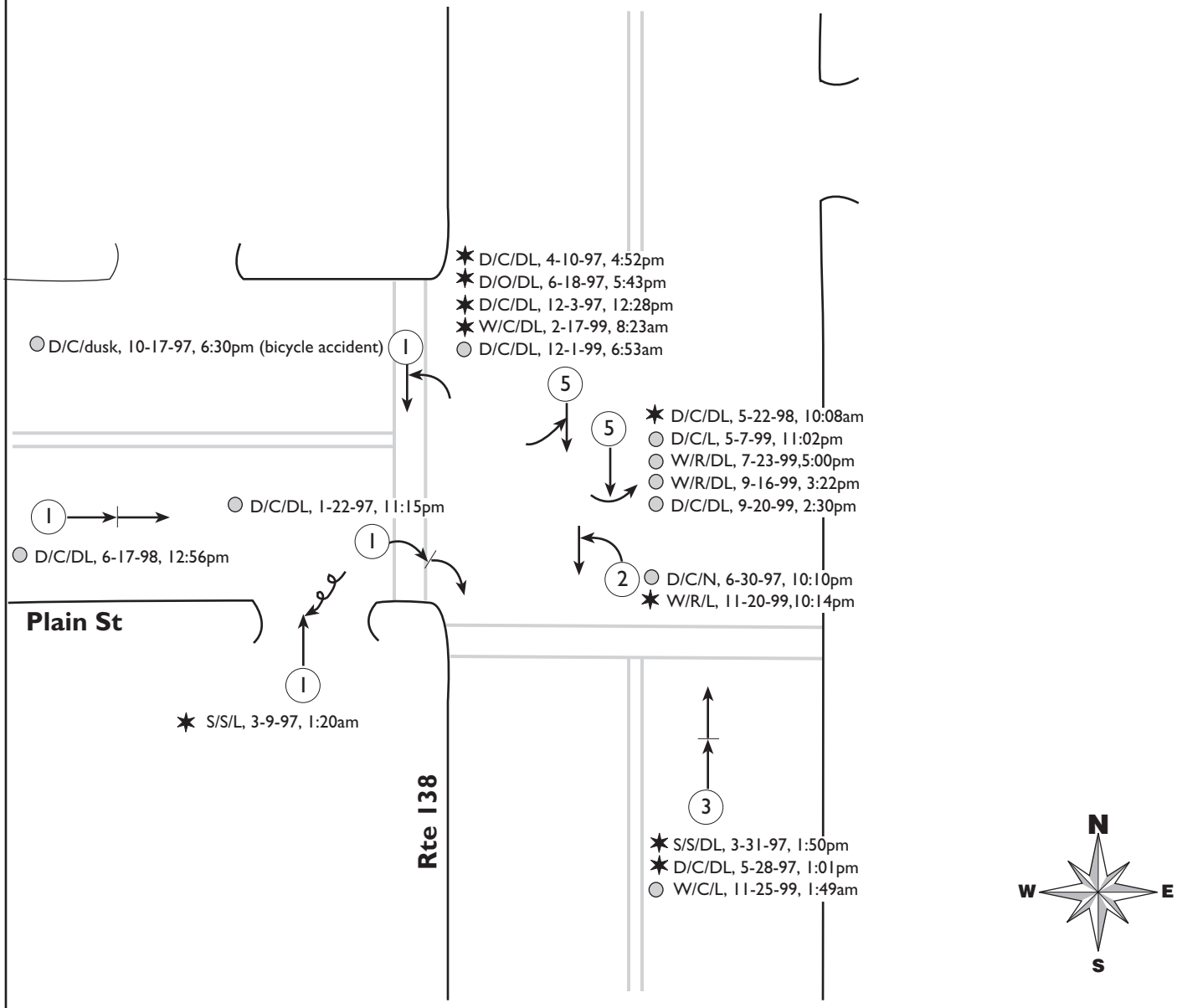
Based on the accident reports, angle and rear end collisions were the most common accident types, 68% and 26%, respectively. More than half of the accidents occurred under dry pavement conditions, on weekdays, during clear weather conditions, and in daylight hours. On a per-hour basis, three-fourths of the accidents occurred during the off peak hours. Just over half of the accidents involved personal injury. Figure 6 shows the collision diagram for this location.

The reason for the high number of angle collisions at this location is due to vehicles turning left from Plain Street to Route 138 northbound. High speeds on Route 138, especially during off peak hours, are likely factors as well (21–32 mph in the peak hours, higher in the off-peak) The causes for rear end accidents are stop-and-go conditions and left-turning vehicles waiting on Route 138 northbound to turn onto Plain Street.

Table 12
Summary of Accident Data (1/1/97–12/31/99)
Route 138 at Plain Street, Stoughton

Year		1997	1998	1999
Collision Type	Rear End	2	1	2
	Head On	0	0	0
	Angle	5	1	7
	Other	1	0	0
	Total	8	2	9
Severity	Property Damage	8	2	9
	Personal Injury	2	1	7
	Fatality	0	0	0
Time of Day	7:00-9:00 AM	0	0	1
	4:00-6:00 PM	2	0	1
	Other	6	2	7
Day of Week	Mon-Fri	8	2	8
	Sat-Sun	0	0	1
Pavement Conditions	Dry	6	2	4
	Wet	0	0	5
	Ice/Snow	2	0	0
Light Conditions	Daylight	5	2	6
	Dawn or Dusk	1	0	0
	Dark-No Lights	1	0	0
	Dark-Lighted	1	0	3
Weather Conditions	Clear	5	2	6
	Foggy	0	0	0
	Rain	0	0	3
	Snow/Sleet	2	0	0
	Other	1	0	0

Figure 6
Collision Diagram
1/1/97 to 12/31/99
Route 138 @ Plain St
Stoughton



SYMBOLS	PAVEMENT/WEATHER/LIGHTING	TYPES OF COLLISIONS
Moving Vehicle	D Dry	Head On
Backing Vehicle	C Clear	Angle
Pedestrian	W Wet	Rear End
Parked Vehicle	R Rain	Sideswipe
Property Damage Only	F Foggy	Broadside
Injury	S Snowy, Icy	
Fatality	O Other	
Fixed Object	DL Daylight	
Out of Control	N Dark – No Lights	
(#) Number of Accidents	L Dark – Lighted	

CTPS

TRUCKS

As a principal arterial, Route 138 links the various neighborhoods of the three towns to the regional highway network. A direct connection with the Interstate highway system exists in Canton at the Route 138/I-93 (Route 128) interchange. Indirect connections exist via Route 27 (to I-95 in Sharon and to Route 24 in Brockton) and Route 139 (to Route 24 in Stoughton). These connections are particulary important, since it is the goal of any community to minimize truck traffic through local residential areas.

During the data collection task, there was no effort to count trucks throughout the entire corridor. However, trucks were counted at certain key locations, and, combined with existing truck data from previous studies, a general picture of the level of truck traffic was obtained. Only trucks with six or more tires are included in this analysis.

Other than the existence of truck exclusion routes in two areas, prohibiton of truck traffic was not observed anywhere in the Route 138 corridor. The two locations where restrictions were found were York Street (Stoughton), where trucks over two tons are prohibited between 6AM–7PM, and Milton Streeet and Brush Hill Road (Milton), where trucks are completely excluded. In this latter instance, trucks are directed to Neponset Valley Parkway. This facility runs between, and parallel to the two restricted streets, and is the link between Route 138 and the Stop & Shop Distribution Center located in Hyde Park (Readville). Table 13 summarizes existing percentages of truck traffic in the Route 138 corridor.

Table 13
Existing Truck Percentages in the Route 138 Corridor

	7:00–9:00 AM			4:00–6:00 PM			
Segments	No. of trucks	Total traffic	%	No. of trucks	Total traffic	%	Sources
Stoughton Square (5 of 8 entry points combined)	313	3,556	9	373	4,938	8	Old Col. Plng. Cncl, 1999
Stoughton Square to Central Street	139	2,915	5	69	3,766	2	CTPS, 1999
Stop & Shop to Canton line	201	3,933	5	89	4,049	2	CTPS, 1999
Canton line to Dan Road (3 locations averaged)	134	3,318	4	73	3,363	2	Coler & Colantonio, 1998; CTPS, 1999 and 2000
Dan Road to Randolph Street (3 locations averaged)	159	3,838	4	92	3,672	3	VHB, 1997; CTPS, 1999
Washington Street to Royall Street	287	5,704	5	153	5,987	3	Earth Tech, 1997
Milton line to Brush Hill Road	234	4,249	6	143	4,138	4	Rizzo Associates, 1998
Neponset Valley Parkway west of Route 138	190	1,593	12	106	1,446	7	CTPS, 2000

In Stoughton Square, the range of truck percentages for entering traffic were 3% (Pleasant Street WB) to 11% (Park Street NB) during the AM peak period. In the PM peak period, the same two facilities were again the low and high truck percentages, 5% (Pleasant St WB) and 10% (Park Street NB).

Noteworthy are also the percentages in the Brush Hill Road/Neponset Valley Parkway area. Route 138 truck traffic in the vicinity of Brush Hill Road constitutes 6% and 4% of the total AM and PM peak period traffic, respectively. Just north of this location, total traffic splits into two nearly equal halves onto Route 138 (Blue Hill Avenue) and Neponset Valley Parkway. The vast majority of trucks, however (about 79%), travel onto Neponset Valley Parkway. Therefore, the approximate doubling of truck percentages (6% to 12%, AM, and 4% to 7%, PM) makes sense.

BICYCLES AND PEDESTRIANS

No explicit counts of bicycle or pedestrian traffic were done in the data collection phase. However, during vehicle traffic counts and other field work, any observations of pedestrians or bicycles were generally noted. It was found that bicycle use in the corridor was very infrequent and random during the weekday commuter (peak) hours. Bicycle use, though not common as a commuter mode in this corridor, has been observed more regularly during the warmer months of the year and generally for recreational use on the weekends. It should be noted that part of the Route 138 corridor, the segment between Milton Street in Milton and Randolph Street in Canton, is part of the long established Boston–Cape Cod Bikeway[8].

Throughout Milton and Canton, and in some parts of Stoughton, a white painted line forms a shoulder to the right of the travel lane. This area appears to be wide enough for bicycle use, particularly in the section of Route 138 north of Neponset Valley Parkway where traffic volumes are relatively low (approximately 9,500 vehicles per day). In Stoughton, the white line is missing in only the non-state highway portion of Route 138 (from Walnut Street, through Stoughton Square, to Lincoln Street).

Pedestrian traffic tended to be concentrated to very few locations in the corridor. One or two pedestrians could be seen randomly at any time during the day, anywhere on Route 138; however, only at certain specific locations was "regular" pedestrian traffic observed. These locations tended to be in the vicinity of relatively dense residential locations (in the northern section of Route 138 in Milton, and near Washington Street/Ponkapoag in Canton), recreational areas (on weekends near the Blue Hills/Trailside Museum at the Canton–Milton line), schools (near Lincoln Street and School Street a block or two away from the Stoughton Junior and Senior High Schools), and at commercial/retail areas (mainly in Stoughton Square and between the Shaw's and Stop & Shop supermarket areas in Stoughton).

Sidewalks do not exist along much of Route 138. At some "natural" pedestrian crossings, e.g., near Route 138 at Lincoln Street and at School Street in Stoughton (both unsignalized intersections), where sidewalks and crosswalks are present, pedestrians must wait for infrequent gaps in peak hour traffic before being able to cross. In other areas, such as at the Blue Hills, sidewalks are missing, forcing hikers to walk close to the roadway for hundreds of yards. In addition, pedestrian phases or buttons do not exist at the Route 138 at Dan Road, Washington Street, Royall Street, Brush Hill Road, and Milton Street signalized intersections.

[8] Dedicated in 1978 and also known as the Claire Saltonstall Bikeway.

TRANSIT

There is no extensive transit service on Route 138. No commuter rail stops exist other than Stoughton Station one block to the west of Stoughton Square. With respect to bus service, a new "reverse commute" bus route was established in August of 1999 between Boston and the Canton Commerce Center. The route, operated by Interstate Coach, runs from South Station making stops at two Red Line stations before arriving at the Commerce Center at Route 138 at Dan Road. Current estimated ridership on this route is about 40 passengers per day to/from the Commerce Center[9].

Other existing bus routes in the Route 138 corridor include one operated privately by A&B Coach Lines, and one operated by Brockton Area Transit (BAT). The A&B route runs from Cobbs Corner in Canton to Mattapan, ending at the MBTA Red Line high-speed trolley. It runs via Washington Street in Canton and Route 138 in Canton and Milton, making stops at all painted crosswalks when flagged by passengers.

The BAT route runs between Westgate Mall in Brockton, through Stoughton, to Cobbs Corner. In Stoughton, the bus enters Route 138 at Stoughton Square, continues north on Washington Street, and leaves Route 138 by turning left at Central Street.

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[9] Canton Association of Industries, January 2000.