8.0 ACCIDENTS/SAFETY ANALYSIS

8.1 Introduction

The loss of life and property damage due to traffic and other transportation related accidents bring safety issues into the center of the traffic and transportation planning debate.

To identify safety issues and address traffic accidents problems, it was necessary first to examine the accident history in the study area and to see if there are any patterns. Consequently, all existing accident data for a three year period (1998, 1999 and 2000) was assembled and analyzed. These records were collected from the NYSDMV and NYSDOT. This data provide information such us location, severity type, accident type, collision type, time of the accident, and weather conditions among other criteria. The data was used to identify critical locations with high accident frequency and or severity in the study area.

After reviewing all the intersections on the main corridors the intersections with 20 or more average annual accidents for the analysis period were subjected to a detailed accident analysis. There are thirteen locations that met the criteria and are listed and shown in Exhibit 8-1 and Table 8-1.

Table 8-1: Three Year Accident History

No	Node #	Main St	Cross St	1998	1999	2000	Total	Average
1	10047	LEXINGTON AV	E 125TH ST	39	47	39	125	42
2	1187	AMSTERDAM AV	W 125TH ST	32	31	51	114	38
3	9266	MANHATTAN AV/ST	W 125TH ST	36	31	32	99	33
4	10086	3RD AV	E 125TH ST	32	25	41	98	33
5	9345	7TH AV/Adam Clayton	W 125TH ST	42	28	27	97	32
6	9368	LENOX AV	W 125TH ST	36	35	26	97	32
8	9377	LENOX AV	W 116TH ST	30	25	38	93	31
7	1149	BROADWAY NB	W 125TH ST	39	30	16	85	28
10	9391	5TH AV	125TH ST	28	27	22	77	26
11	9354	7TH AV/Adam Clayton	W 116TH ST	22	29	24	75	25
9	1369	LENOX AV	W 135TH ST	20	26	27	73	24
12	9943	MADISON AV	E 125TH ST	17	28	19	64	21
13	10129	2ND AV	E 116TH ST	21	21	22	64	21

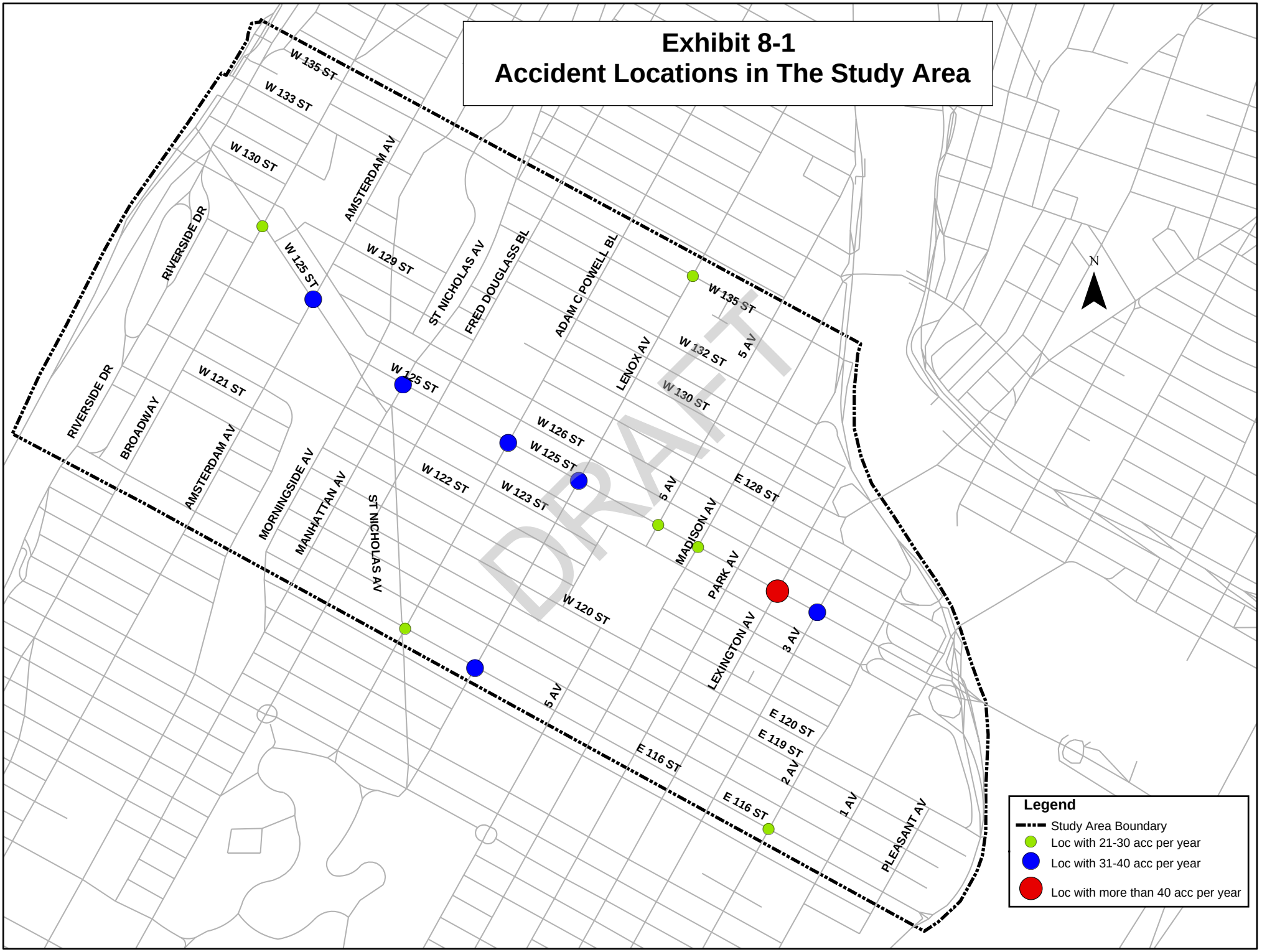


Exhibit 8-1
Accident Locations in The Study Area
W 135 ST
W 133 ST
W 130 ST
AMSTERDAM AV
RIVERSIDE DR
W 125 ST
W 129 ST
ST NICHOLAS AV
FRED DOUGLASS BL
ADAM C POWELL BL
W 135 ST
LENOX AV
W 132 ST
5 AV
W 130 ST
W 121 ST
W 125 ST
RIVERSIDE DR
BROADWAY
AMSTERDAM AV
MORNINGSIDE AV
MANHATTAN AV
ST NICHOLAS AV
W 126 ST
W 125 ST
W 122 ST
W 123 ST
5 AV
E 128 ST
MADISON AV
PARK AV
W 120 ST
LEXINGTON AV
3 AV
5 AV
E 120 ST
E 119 ST
E 116 ST
2 AV
E 116 ST
1 AV
PLEASANT AV
N
DRAFT
Legend
Study Area Boundary
Loc with 21-30 acc per year
Loc with 31-40 acc per year
Loc with more than 40 acc per year

The data showed that of the 13 locations, eight are along the 125th Street corridor. The intersection of E 125th Street and Lexington Avenue had the highest frequency with an average of 42 accidents per year over the three years. The location with the second most frequent accident was Amsterdam Avenue and W 125th Street with an average of 38 accidents per year. The study area data showed one location in the category with an average between 41 to 50 accidents per year, six locations with between 31 to 40 accidents, and six locations that averaged between 20 to 30 accidents per year.

Over the three year period (1998-2000) a total of 1161 accidents occurred at the 13 locations. The total accidents include both reportable (490) and non-reportable (671). Of the total reportable accidents, 614 were injuries and one fatality. There were 128 pedestrians and 28 bicyclists involved in the accidents during the three year period. The highest number of accidents involving pedestrians was observed at Amsterdam Avenue and W 125th Street and Lexington Avenue and E 125th street with 20 and 19 accidents respectively. Both intersections represented approximately 32% of the total accidents. Table 8-2 summaries the accident history by years for the study area.

Table 8-2: Summary of the Accident History by Year

Year	Total Acc	Reportable	Non-Reportable	Fatalities	Injuries	Pedestrian	Bicyclist
1998	394	141	253	0	188	44	11
1999	383	183	200	1	212	47	12
2000	384	166	218	0	214	37	5
Total	**1161**	**490**	**671**	**1**	**614**	**128**	**28**

8.2 Cost Analysis of Accidents

Accidents are classified as either reportable or non-reportable. According to New York State Vehicle and Traffic Law, all accidents involving death, injury or resulting in property damage in excess of $1,000 must be report to the NYS Department of Motor Vehicle (DMV) by police agencies, hence they are reportable accidents.

Non-Reportable accidents are defined as any accident that costs under $1,000 in property damage.

There is a cost associated with all accidents, reportable and non-reportable. For reportable accidents, a cost is assigned based on the severity of personal injury and the amount of property damage sustained in the accident. There are three classifications for personal injury, Type A, Type B, and Type C; Type C being the least severe and Type A being the most severe form of injury.

Property damage is considered only when public or private properties such as buildings, houses, business stores or other assets are damaged due the accident but do not include damage or injuries to the cars, pedestrians or bicyclists involved in the accident. Table 8-3 shows average cost of accidents by class.

Table 8-3: Average Cost of Accidents by Class

Accidents Class	Average Cost	Relative Weight
Non-Reportable (NR)	$1,000	1
Property Damage (PD)	$3,800	4
Injury-Class C (IC)	$96,000	96
Injury-Class B (IB)	$385,000	385
Injury-Class A (IA)	$1,548,000	1,548
Fatal Accidents (FA)	$3,468,000	3,468

Table 8-4 shows the total cost for accidents occurring at Adam Clayton Blvd@W 125th Street for the year 1998.

Table 8-4: Total Cost of Accidents at Adam Clayton Blvd / W 125th Street (1998)

No. of Accidents	Accidents Class	Average Cost	Total Cost
30	Non-Reportable	$1,000	$30,000
0	Property Damage	$3,800	$0
10	Injury-Class C	$96,000	$960,000
2	Injury-Class B	$385,000	$770,000
2	Injury-Class A	$1,548,000	$3,096,000
0	Fatal Accident	$3,468,000	$0
		Total Cost:	$4,856,000

The analysis shows that the total cost for the 42 accidents that occurred at this intersection in 1998 was approximately $4.8 million with the highest cumulative cost resulting from two Class A injuries.

8.3 Frequency and Severity of Accidents

Frequency and severity are two critical factors in the analysis of accidents. These two factors allow for a better understanding of the problems at the study locations. The NYCDOT Safety Division developed a set of equations to help determine the severity and frequency of accidents at a location.

Severity Factor

The severity factor (SF) indicates whether or not a location tends to have accident with significant levels of damage. A value can be assigned between 0 and 10, ten being the highest level of severity and zero the lowest level. Various levels of severity can be determined from the relative weight assigned to each accident class based on the accident cost. Table 8-5 shows the severity factor calculation for Adam Clayton Boulevard @ West 125th street intersection for year 1998.

Table 8-5: Severity Factor at Adam Clayton Blvd@W 125th Street (1998)

Accidents Class	Relative Weight	Frequency (1998)	Total Relative Weight
Non-Reportable (NR)	1	30	30
Property Damage (PD)	4	0	0
Injury-Class C (IC)	96	10	960
Injury-Class B (IB)	385	2	770
Injury-Class A (IA)	1,548	2	3,096
Fatal accidents (FA)	3,468	0	0
		Total	4,856
		SF=Ln (Total)	**8.49**

The severity factor of 8.49 indicates that this location tends to have accident with significant levels of damage with the likelihood of accidents resulting in Class C injuries.

Frequency Factor

The frequency at which accidents occur at a location (frequency factor (FF)) is an additional tool to help understand accidents at a location. The frequency factor is based in part on the accident records supplied by NYSDMV and NYSDOT Centralized Local Accident Surveillance System (CLASS). This value assigned ranges from 0 to 10, representing 10 the highest level of frequency accidents for the intersection.

The critical factors (frequency and severity), based on Index Equations developed by the NYCDOT Safety Division, is helpful for determining the frequency or likelihood, and severity of traffic accidents.

Composite Index

The composite index represents the ratio of the severity factor to the frequency factor *CI=SF/FF*. If the complexity index is greater than 1.0 then the location's accidents will be skewed toward severity; if the factor is less than 1.0 then accidents will be skewed toward frequency. With a severity factor greater than 7.0, a frequency factor greater than 6.0, and a composite index greater than 1.0, accidents with a fatality or Type A injuries are likely to happen at that location. Table 8-6 shows an interpretation summary of the severity factors, frequency factors, and composite index values that correspond to the type of injury and damage that is sustained in an accident.

Table 8-6: Interpretation of the Critical Factors in Accidents

Severity Factor	Frequency Factor	Composite Index
7-10	7-10	>1.0
This scenario indicates the likelihood of fatal accidents or Type A injuries, or random accidents.		
Severity Factor	Frequency Factor	Composite Index
7-10	7-10	<1.0
This scenario indicates Type A and B injuries, no fatalities, but significant damages.		
Severity Factor	Frequency Factor	Composite Index
7-10	7-10	=1.0
This scenario illustrates fatal accidents or Type A or B injuries, there is both frequency and severity.		
Severity Factor	Frequency Factor	Composite Index
4-7	4-7	<1.0
This scenario illustrates Type C injuries and non-reportable accidents.		
Severity Factor	Frequency Factor	Composite Index
4-7	4-7	>1.0
This scenario illustrates Type C injuries and non-reportable accidents.		

8.4 Annual Accident Analysis

Year 1998

During 1998 there were a total of 394 accidents, of which 253 were non-reportable and 141 reportable. Of the 141 reportable accidents, 17 resulted in Class A injuries, 18 Class B injuries and 135 Class C injuries. No fatalities were reported for this year. Table 8-7 shows the total number of accidents by location, fatalities and class with corresponding frequency and severity factors and composite index. Table 8-8 shows the break down of accidents by collision types with pedestrians and bicyclist involved.

The *7th Avenue/Adam Clayton Blvd and W 125th Street* intersection had 42 accidents, the highest number for that year. There were 12 reportable accidents and 30 non-reportable. From the 12 reportable accidents two were class A injury, two class B and ten class C injury. Eleven percent of the total annual accidents in the study area occurred at this intersection. This intersection also had the highest frequency factor (FF) of 7.48 for the year.

The intersections of *E 125th Street/Lexington Avenue and W 125th Street/Broadway* were tied for second in the frequency of accidents each accounting for approximately 10% of the annual accidents. The intersection with the highest number of injuries (30) and severity factor (SF) of 9.14 was *Lenox Avenue/W 116th Street* with a total of 17 reportable accidents. From the 17 reportable accidents five were class A injury, five resulted in class B and twenty-three resulted in class C injury.

Table 8-7
1998 Traffic Accident Analysis

Node #	Main St	Cross St	Fatal	Injury A	Injury B	Injury C	Property Damage	Non-Reportable	Total Accident	Severity Factor	Frecuency Factor	Composite Index
9345	7TH AV/Adam Clayton	W 125TH ST	0	2	2	10	0	30	42	8.25	7.48	1.10
10047	LEXINGTON AV	E 125TH ST	0	0	0	14	2	21	39	7.00	7.33	0.95
1149	BROADWAY NB	W 125TH ST	0	0	0	16	2	31	39	7.13	7.33	0.97
9266	MANHATTAN AV/ST	W 125TH ST	0	3	1	8	1	25	36	8.43	7.17	1.18
9368	LENOX AV	W 125TH ST	0	2	2	13	0	21	36	8.30	7.17	1.16
1187	AMSTERDAM AV	W 125TH ST	0	1	3	7	0	19	32	7.89	6.93	1.14
10086	3RD AV	E 125TH ST	0	2	2	7	0	22	32	8.19	6.93	1.18
9377	LENOX AV	W 116TH ST	0	5	5	23	0	13	30	9.14	6.80	1.34
9391	5TH AV	125TH ST	0	0	3	6	0	19	28	7.23	6.66	1.09
9354	7TH AV/Adam Clayton	W 116TH ST	0	0	0	12	1	13	22	6.83	6.18	1.11
10129	2ND AV	E 116TH ST	0	1	0	8	0	13	21	7.51	6.09	1.23
1369	LENOX AV	W 135TH ST	0	0	0	5	0	15	20	5.98	5.99	1.00
9943	MADISON AV	E 125TH ST	0	1	0	6	1	11	17	7.43	5.67	1.31

Note: Calculation for Severity Factor, Frequency Factor, and Composite index is based on safety index equations developed by NYCDOT Safety Division utilizing NYC accident records supplied by NYS-DMV, NYSDOT Class System and accident cost research.

Table 8-8
1998 Traffic Accident History

Node #	Main St	Cross St	Total Acc	Reportable	Non-Reportable	Fatal	Injury	Pedestrian	Bicyclist	Fixed Object	Wet Road	Night	Left Turn	Rear End	Overtaking	Right Angle	Rigth Turn	Head On	Sideswipe	Other
9345	7TH AV/Adam Clayton	W 125TH ST	42	12	30	0	20	4	1	0	2	5	1	2	0	1	0	0	0	8
10047	LEXINGTON AV	E 125TH ST	39	18	21	0	17	6	3	0	2	4	3	2	0	1	0	0	1	11
1149	BROADWAY NB	W 125TH ST	39	8	31	0	16	1	0	0	1	5	1	1	1	0	1	0	0	4
9266	MANHATTAN AV/ST	W 125TH ST	36	11	25	0	14	4	0	0	3	6	2	1	1	1	0	0	0	6
9368	LENOX AV	W 125TH ST	36	15	21	0	18	5	2	0	3	8	2	5	1	0	0	0	0	7
1187	AMSTERDAM AV	W 125TH ST	32	13	19	0	12	5	1	0	4	6	2	1	2	0	0	0	0	8
10086	3RD AV	E 125TH ST	32	10	22	0	12	3	1	0	2	6	1	1	1	2	0	0	0	5
9377	LENOX AV	W 116TH ST	30	17	13	0	33	4	0	0	1	5	0	0	2	10	0	0	0	5
9391	5TH AV	125TH ST	28	9	19	0	9	3	0	0	4	3	3	1	0	0	0	0	0	5
9354	7TH AV/Adam Clayton	W 116TH ST	22	9	13	0	14	0	1	0	1	6	3	1	0	2	0	0	0	3
10129	2ND AV	E 116TH ST	21	8	13	0	10	5	0	0	0	3	0	0	0	1	1	0	0	6
1369	LENOX AV	W 135TH ST	20	5	15	0	5	3	1	0	0	4	0	0	0	1	0	0	0	4
9943	MADISON AV	E 125TH ST	17	6	11	0	8	1	1	0	1	2	0	2	0	1	0	0	0	3

Accidents Involving Pedestrians and Bicyclists

In 1998 there were 44 accidents involving pedestrians at various locations throughout the study area. The highest pedestrian accident location was *Lexington Avenue/E 125th Street* where six occurred. The locations of *Amsterdam Avenue/W 125th Street, Lenox Avenue/W 125th Street and 2nd Avenue/E 116th Street* followed with five pedestrian accidents each. There were 11 accidents involving bicyclists in the study area. The location with the highest number of accidents involving bicyclists was *Lexington Avenue/ E 125th Street* with three accidents.

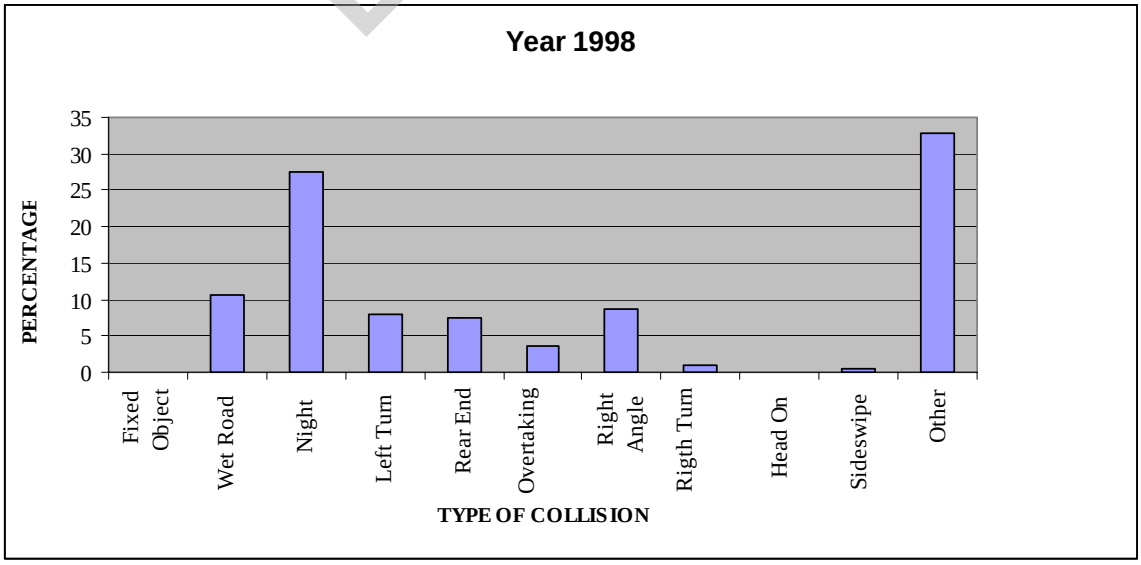
Accidents by Collision Type and driving Conditions

As shown in Exhibit 8-2, during 1998, 28% of the accidents occurred during night time and 11% occurred under wet roadway conditions. The distribution of accidents by collision type showed that 9% were right angle, 8% left turn, and 7% rear end. The location with the highest frequency of accident with right angle collision type was *Lenox Avenue/W 116th Street* representing with 50% of the total.

The highest frequency of rear end collision was observed at *Lenox Avenue/ W 125th Street* with 30% of the total. Left turn collision type was relatively low and evenly distribute throughout the study area.

Exhibit 8-2 shows the distribution of reportable accidents in 1998 and driving conditions.

Exhibit 8-2: 1998 Accidents by Collision Type and Driving Conditions



Severity and Frequency of Accidents

During 1998 of the 13 locations studied 11 intersections had a severity factor greater than 7.0, and 11 with frequency factor greater than 6.0. The composite index for 11 of the 13 intersections was greater than 1.0. This indicates that the majority of the accidents that occurred at these locations were skewed toward severity. Table 8-7 shows the severity factor, frequency factor and the composite index for all analyzed intersections in year 1998.

Year 1999

During 1999 there were a total of 383 accidents, of which 200 were non-reportable and 183 were reportable. Of the 183 reportable accidents, 14 resulted in Class A injuries, 24 resulted in Class B injuries and 167 resulted in Class C injuries. One fatality was reported for this year at *Lenox Avenue/W 125th Street*. Table 8-9 shows the total number of accidents by location, fatalities and injury class with corresponding frequency factor, severity factor and composite index. Table 8-10 shows the break down of accidents by collision types with pedestrians and bicyclist involved.

The intersection of *Lexington Avenue/E 125th Street* had the highest number of accidents with 47. There were 24 reportable accidents and 23 non-reportable. From the 24 reportable accidents, four resulted in class A injury, five in class B and twenty-five in class C injury. Twelve percent of the total annual accidents occurred at this intersection, with the highest frequency factor (FF) of 7.70 and the highest severity factor (SF) of 9.02 from all the locations in the study area.

The intersection of *W 125th Street/Lenox Avenue* was ranked second in frequency with 35 accidents, being approximately 9% of the total. Of the 35 accidents, 13 were reportable with one class A injury, sixteen class C injury and one fatality.

Table 8-9
1999 Traffic Accident Analysis

Node #	Main St	Cross St	Fatal	Injury A	Injury B	Injury C	Property Damage	Non-Reportable	Total Accident	Severity Factor	Frecuency Factor	Composite Index
10047	LEXINGTON AV	E 125TH ST	0	4	5	25	0	23	47	9.02	7.70	1.17
9368	LENOX AV	W 125TH ST	1	1	0	16	0	22	35	8.55	7.11	1.20
1187	AMSTERDAM AV	W 125TH ST	0	1	0	10	0	17	31	7.60	6.87	1.11
9266	MANHATTAN AV/ST	W 125TH ST	0	0	4	14	0	13	31	7.74	6.87	1.13
1149	BROADWAY NB	W 125TH ST	0	0	1	10	0	18	30	6.99	6.80	1.03
9354	7TH AV/Adam Clayton	W 116TH ST	0	3	4	13	0	12	29	8.67	6.73	1.29
9345	7TH AV/Adam Clayton	W 125TH ST	0	0	1	18	0	11	28	7.43	6.66	1.12
9943	MADISON AV	E 125TH ST	0	1	4	3	0	19	28	7.89	6.66	1.18
9391	5TH AV	125TH ST	0	0	0	11	0	16	27	6.75	6.59	1.02
1369	LENOX AV	W 135TH ST	0	0	2	17	0	15	26	7.55	6.52	1.16
10086	3RD AV	E 125TH ST	0	1	0	10	0	13	25	7.59	6.44	1.18
9377	LENOX AV	W 116TH ST	0	2	1	13	2	9	25	8.23	6.44	1.28
10129	2ND AV	E 116TH ST	0	1	2	7	0	12	21	7.77	6.09	1.28

Note: Calculation for Severity Factor, Frequency Factor, and Composite index is based on safety index equations developed by NYCDOT Safety Division utilizing NYC accident records supplied by NYS-DMV, NYSDOT Class System and accident cost research.

Table 8-10
1999 Traffic Accident History

Node #	Main St	Cross St	Total Acc	Reportable	Non-Reportable	Fatal	Injury	Pedestrian	Bicyclist	Fixed Object	Wet Road	Night	Left Turn	Rear End	Overtaking	Right Angle	Rigth Turn	Head On	Sideswipe	Other
10047	LEXINGTON AV	E 125TH ST	47	24	23	0	35	8	2	0	8	12	1	6	2	1	1	0	1	12
9368	LENOX AV	W 125TH ST	35	13	22	1	17	3	0	0	3	6	3	3	1	2	0	0	0	4
1187	AMSTERDAM AV	W 125TH ST	31	14	17	0	11	6	0	0	3	5	0	4	0	0	1	0	0	9
9266	MANHATTAN AV/ST	W 125TH ST	31	18	13	0	19	5	1	0	3	10	3	2	1	1	2	0	1	8
1149	BROADWAY NB	W 125TH ST	30	12	18	0	11	1	1	0	2	5	2	1	3	0	3	0	0	3
9354	7TH AV/Adam Clayton	W 116TH ST	29	17	12	0	20	5	3	0	1	5	0	4	2	2	0	0	0	9
9345	7TH AV/Adam Clayton	W 125TH ST	28	17	11	0	19	3	0	0	2	6	1	9	2	0	0	1	0	4
9943	MADISON AV	E 125TH ST	28	9	19	0	9	4	2	0	3	1	0	2	1	0	0	0	0	6
9391	5TH AV	125TH ST	27	11	16	0	11	5	0	0	1	5	2	1	3	0	0	0	0	5
1369	LENOX AV	W 135TH ST	26	11	15	0	21	1	2	0	1	6	0	1	1	4	0	0	0	5
10086	3RD AV	E 125TH ST	25	12	13	0	12	1	0	0	1	1	1	4	1	2	2	0	0	2
9377	LENOX AV	W 116TH ST	25	16	9	0	17	2	0	0	5	7	1	4	1	4	1	0	0	5
10129	2ND AV	E 116TH ST	21	9	12	0	10	3	1	0	1	2	1	1	0	2	0	0	0	5

Accidents Involving Pedestrians and Bicyclists

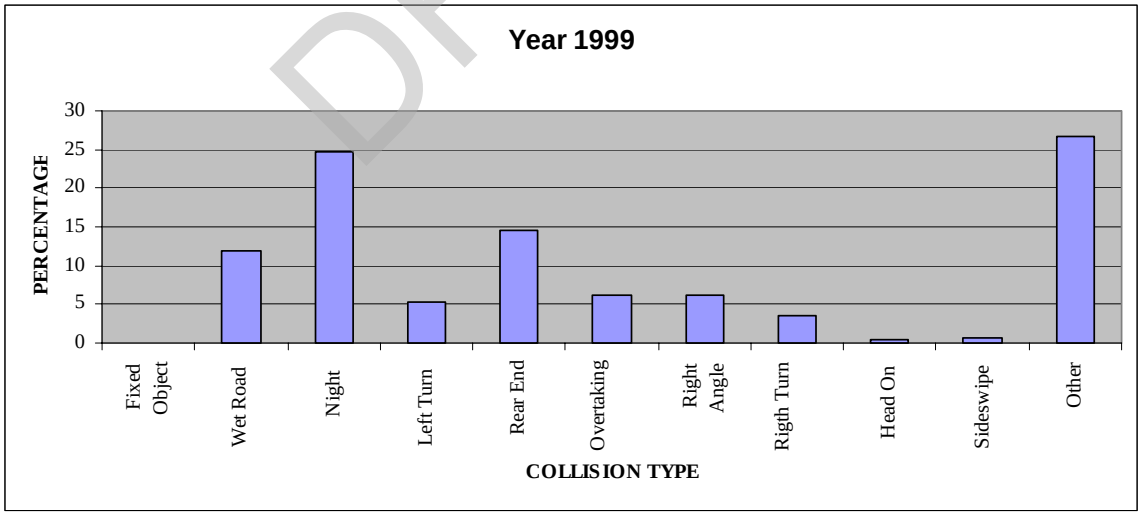
In 1999 there were 47 pedestrian accidents at various locations in the study area. The location with the highest pedestrian accident was *Lexington Avenue/E 125th Street* with eight accidents. The location of *Amsterdam Avenue/W 125th Street* followed with six pedestrian accidents. There were twelve accidents involving bicyclists in the study area. The location with the highest bicyclist accident was *Adam Clayton Blvd/ W 116th Street* with three accidents.

Accidents by Collision Type and driving Conditions

As shown in Exhibit 8-3 during 1999, 25% of the accidents occurred during night time and 12% occurred under wet roadway conditions. The distribution of accidents by collision types showed that 15% were rear end, 6% right angle, and 6% overtaking. The location with the highest frequency of rear end collision type was *Adam Clayton Blvd/W 125th Street* with nine accidents representing 22 % of the total occurred.

The distribution of right angle and overtaking collision accidents were distributed evenly throughout the area. Exhibit 8-3 shows the distribution of reportable accidents and driving conditions for 1999.

Exhibit 8-3: 1999 Accidents by Collision Type and Driving Conditions



Severity and Frequency of Accidents

During 1999 of the 13 locations studied 11 intersections had a severity factor greater than 7.0, and all the 13 intersections had a frequency factor greater than 6.0. The composite index for the 13 intersections was greater than 1.0. This indicates that the majority of the accidents that occurred at these locations were skewed toward severity. Table 8-9 shows the severity factor, frequency factor and the composite index for all analyzed intersections for the year 1999.

Year 2000

During 2000 there were a total of 384 accidents, of which 218 were non-reportable and 166 were reportable. Of the 166 reportable accidents, 15 resulted in Class A injuries, 15 resulted in Class B injuries and 175 resulted in Class C injuries. No fatalities were reported for this year. Table 8-11 shows the total number of accidents by location, fatalities and injury class with corresponding frequency factor, severity factor and composite index. Table 8-12 shows the break down of accidents by collision types with pedestrians and bicyclist involved.

The location of *Amsterdam Avenue/W 125th Street* had the highest number of accidents with 51 during the year. There were 26 reportable accidents and 25 non-reportable. From the 26 reportable accidents at this intersection, one resulted in class A injury, five resulted in class B injury and seventeen resulted in class C injury. Approximately thirteen percent of the total annual accidents occurred at this intersection. This intersection had the highest frequency factor (FF) of 7.86 for the year.

The intersection of *E 125th Street/3rd Avenue* was second in frequency with 41 accidents, which represented 11% of the annual total accidents. The intersection of *Lenox Avenue/W 116th Street* had the highest severity factor (SF) of 9.17 with six class A injuries type of accident for the year 2000.

Table 8-11
2000 Traffic Accident Analysis

Node #	Main St	Cross St	Fatal	Injury A	Injury B	Injury C	Property Damage	Non-Reportable	Total Accident	Severity Factor	Frecuency Factor	Composite Index
1187	AMSTERDAM AV	W 125TH ST	0	1	5	17	0	25	51	8.31	7.86	1.06
10086	3RD AV	E 125TH ST	0	1	0	26	0	22	41	8.07	7.43	1.09
10047	LEXINGTON AV	E 125TH ST	0	4	2	12	0	27	39	8.76	7.33	1.20
9377	LENOX AV	W 116TH ST	0	6	3	18	0	19	38	9.17	7.28	1.26
9266	MANHATTAN AV/ST	W 125TH ST	0	0	1	7	1	24	32	6.76	6.93	0.98
9345	7TH AV/Adam Clayton	W 125TH ST	0	1	0	12	0	19	27	7.67	6.59	1.16
1369	LENOX AV	W 135TH ST	0	0	0	19	0	16	27	7.28	6.59	1.10
9368	LENOX AV	W 125TH ST	0	0	0	12	0	18	26	6.83	6.52	1.05
9354	7TH AV/Adam Clayton	W 116TH ST	0	0	4	14	0	11	24	7.73	6.36	1.22
9391	5TH AV	125TH ST	0	0	0	11	0	14	22	6.74	6.18	1.09
10129	2ND AV	E 116TH ST	0	2	0	9	0	15	22	8.05	6.18	1.30
9943	MADISON AV	E 125TH ST	0	0	0	10	1	8	19	6.65	5.89	1.13
1149	BROADWAY NB	W 125TH ST	0	0	0	8	0	0	16	6.42	5.55	1.16

Note: Calculation for Severity Factor, Frequency Factor, and Composite index is based on safety index equations developed by NYCDOT Safety Division utilizing NYC accident records supplied by NYS-DMV, NYSDOT Class System and accident cost research.

Table 8-12
2000 Traffic Accident History

Node #	Main St	Cross St	Total Acc	Reportable	Non-Reportable	Fatal	Injury	Pedestrian	Bicyclist	Fixed Object	Wet Road	Night	Left Turn	Rear End	Overtaking	Right Angle	Rigth Turn	Head On	Sideswipe	Other
1187	AMSTERDAM AV	W 125TH ST	51	26	25	0	24	9	1	0	7	5	2	7	4	0	1	0	2	10
10086	3RD AV	E 125TH ST	41	19	22	0	28	2	1	0	2	7	5	0	4	4	1	1	0	4
10047	LEXINGTON AV	E 125TH ST	39	12	27	0	22	5	1	0	2	5	0	2	1	1	0	1	0	7
9377	LENOX AV	W 116TH ST	38	19	19	0	27	2	0	0	3	8	1	1	0	11	1	0	0	5
9266	MANHATTAN AV/ST	W 125TH ST	32	8	24	0	8	3	0	0	2	1	0	1	2	0	1	0	0	4
9345	7TH AV/Adam Clayton	W 125TH ST	27	8	19	0	13	1	0	0	0	2	1	1	0	3	0	0	0	3
1369	LENOX AV	W 135TH ST	27	11	16	0	19	2	2	0	2	4	2	3	2	1	0	0	0	3
9368	LENOX AV	W 125TH ST	26	8	18	0	12	4	0	0	2	2	0	3	0	1	0	0	0	4
9354	7TH AV/Adam Clayton	W 116TH ST	24	13	11	0	18	1	0	0	1	4	1	2	3	4	0	0	0	3
9391	5TH AV	125TH ST	22	8	14	0	14	2	0	0	1	2	1	2	0	1	0	0	0	4
10129	2ND AV	E 116TH ST	22	7	15	0	11	3	0	0	0	4	0	1	1	2	0	0	0	3
9943	MADISON AV	E 125TH ST	19	11	8	0	10	2	0	0	3	4	1	3	1	1	1	0	0	4
1149	BROADWAY NB	W 125TH ST	16	16	0	0	8	1	0	0	2	3	2	4	3	3	1	0	0	3

Accidents Involving Pedestrians and Bicyclists

In 2000 there were 37 pedestrian accidents at various locations throughout the study area. The highest pedestrian accident location was *Amsterdam Avenue/W 125th Street* with nine accidents. *Lexington Avenue/E 125th Street* followed with five pedestrian accidents. There were five accidents involving bicyclists in the study area with *Lenox Avenue/W 135th Street* recording two accidents.

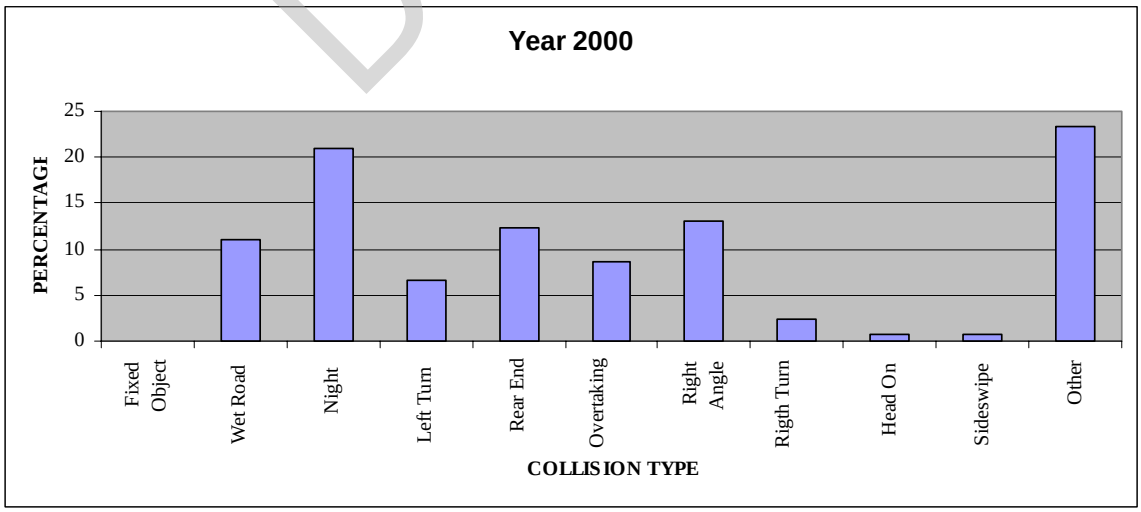
Accidents by Collision Type and driving Conditions

As shown in Exhibit 8-4 during 2000, 21% of the accidents occurred during night time and 11% occurred under wet roadway condition. The distribution of accidents by collision types showed that 13% were right angle, 12% rear end and 9% overtaking. The location with the most frequent right angle collision type was *Lenox Avenue/W 116th street* with eleven accidents or 34% of the total.

The location of *Amsterdam Avenue/W 125th Street* had the highest rear end collision type accident with nine. It was observed that overtaking collision type was distributed evenly among all the locations analyzed in the study area.

Exhibit 8-4 shows the distribution of reportable accidents and driving conditions for year 2000.

Exhibit 8-4: 2000 Accidents by Collision Type and Driving Conditions



Severity and Frequency of Accidents

During 2000, of the 13 intersections studied 8 had a severity factor greater than 7.0, and 11 intersections had a frequency factor greater than 6.0. The composite index for 12 of the 13 intersections analyzed was greater than 1.0. This indicates that the majority of the accidents that occurred at these locations were skewed toward severity. Table 8-11 shows the severity factor, frequency factor and the composite index for all analyzed intersection in year 2000.

8.5 Analysis of other factors that may cause Accidents at these locations

The causes of accidents can be many and varied. Factor that can contribute to accidents include the geometry of the intersection, traffic controls, poor signage, road surface and climate. Studies show that the main cause of most accidents is driver errors.

In analyzing the accident locations in more detail to determine possible causes of the accidents, a three year summary analysis (1998-2000) was undertaken to look for common patterns that may emerge. For this analysis factors as surface conditions, collision type, time of the accident, lighting conditions, season of the year and whether pedestrians or bicyclist were involved were considered. Table 8-13 shows this summary.

Time of Day

Using the three year accident data, the accidents were sorted by peak hours. During the morning from 7am to 10am, midday from 11am to 2pm and afternoon from 4pm to 7pm. The accident analysis shows that most of the accidents occurred outside the peak periods.

There were 490 reportable accidents in the study area and approximately 56% occurred outside the peak hour period. Of 13 locations studied 11 had less than 50% of the accidents during the peak period, except for *Lexington Avenue @ E 125th Street* and *Madison Avenue @ E 125th Street* where percentage were 56% and 58% respectively.

Light Conditions

From the accident summary the majority of the 490 reportable accidents occurred during daylight conditions accounting for 51.22% of the total reportable accidents.

Approximately 31.42 % reportable accidents occurred during dark conditions. The difference of 17.36% percent accounted for the dawn, dust and unknown light conditions.

Surface

Over 75% of the reportable accidents occurred under dry road surface conditions

Collision Type

The most frequent collision type accident was rear end which accounted for 18.16% of the total 490 reportable accidents. The intersection of *7th Avenue/Adam Clayton @ W 125th Street* had the higher number of rear end collision type with 32% of its total accidents.

Season

In general, the time of year or season does not seem to be a significant factor in the occurrence of accidents. They are more or less evenly distributed throughout the year.

Collision With

When an accident occurs, the given collision can take place between a car and a tree or between a car and other elements of the roadway such us a fire hydrant, utility pole, sign post, the median/barrier or with another vehicle. In general, the accident occurred at the studied locations were between vehicle and vehicle accounting for over 88% of the accidents.

Table 8-13: Summary of Accidents (1998-2000)

No	Node #	Main St	Cross St	Total Accident	Reportable	% During Peak hour	Light Condition	Surface	Collision type	Collision With	Season	% Ped Involved	% Bic Involved
1	10047	LEXINGTON AV	E 125TH ST	125	54	56	52% (daylight) 28% Dark lit	67% (dry)	6% LT 6% RAN 19% REND	93% Veh	31% Fall 21% Spring 22% Sum 26%Win	15	5
2	1187	AMSTERDAM AV	W 125TH ST	114	53	43	60% (daylight) 26% Dark lit	70% (dry)	8% LT 11% OVER 23% REND	100% Veh	27% Fall 18% Spring 29% Sum 26%Win	18	2
3	9266	MANHATTAN AV/ST NICOLAS	W 125TH ST	99	37	43	43% (daylight) 40% Dark lit	70% (dry)	8% LT 11% OVER 11% REND	92% Veh	30% Fall 30% Spring 15% Sum 25%Win	12	1
4	10086	3RD AV	E 125TH ST	98	41	34	61% (daylight) 29% Dark lit	83% (dry)	15% OVER 20% RAN 12% REND	100% Veh	34% Fall 23% Spring 15% Sum 28%Win	6	2
5	9345	7TH AV/Adam Clayton	W 125TH ST	97	37	43	54% (daylight) 30% Dark lit	78% (dry)	8% LT 11% RAN 32% REND	100% Veh	29% Fall 19% Spring 26% Sum 26%Win	8	1
6	9368	LENOX AV	W 125TH ST	97	36	39	47% (daylight) 36% Dark lit	72% (dry)	8% LT 8% RAN 31% REND	100% Veh	21% Fall 24% Spring 26% Sum 29%Win	12	2
7	9377	LENOX AV	W 116TH ST	93	52	48	37% (daylight) 33% Dark lit	71% (dry)	6% OVER 48% RAN 10% REND	100% Veh	21% Fall 24% Spring 26% Sum 29%Win	9	0
8	1149	BROADWAY NB	W 125TH ST	85	36	39	58% (daylight) 28% Dark lit	83% (dry)	11% RT 19% OVER 17% REND	93% Veh	19% Fall 16% Spring 34% Sum 31%Win	4	1
9	9391	5TH AV	125TH ST	77	28	43	46% (daylight) 32% Dark lit	68% (dry)	18% LT 11% OVER 14% REND	100% Veh	21% Fall 21% Spring 31% Sum 27% Win	13	0
10	9354	7TH AV/Adam Clayton	W 116TH ST	75	39	41	36% (daylight) 33% Dark lit	77% (dry)	13% OVER 21% RAN 18% REND	100% Veh	15% Fall 33% Spring 32% Sum 20%Win	8	5
11	1369	LENOX AV	W 135TH ST	73	27	41	48% (daylight) 48% Dark lit	85% (dry)	11% OVER 22% RAN 15% REND	100% Veh	30% Fall 26% Spring 26% Sum 18%Win	8	7
12	10129	2ND AV	E 116TH ST	64	24	46	63% (daylight) 25% Dark lit	88% (dry)	4% OVER 21% RAN 8% REND	100% Veh	31% Fall 16% Spring 23% Sum 30%Win	17	1
13	9943	MADISON AV	E 125TH ST	64	26	58	69% (daylight) 23% Dark lit	73% (dry)	8% OVER 8% RAN 27% REND	88% Veh	21% Fall 24% Spring 26% Sum 29%Win	11	5

LT-Left turn, RAN-Right angle, REND-Rear end, OVER-Overtaking