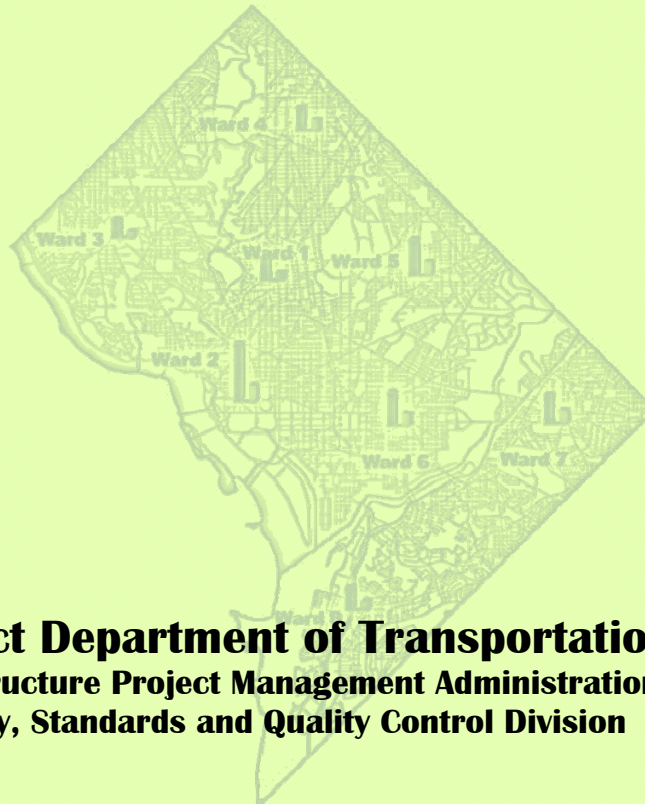


COMMERCIAL MOTOR VEHICLE TRAFFIC COLLISION FACT BOOK (2009)



Prepared for:

**District Department of Transportation
Infrastructure Project Management Administration
Safety, Standards and Quality Control Division**

September 2010

Prepared by:
Precision Systems, Inc.

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10. Abstract This report disseminates crash information involving Commercial Motor Vehicles (CMV). The 2009 traffic crash report (PD-10) collected by Washington, DC Metropolitan Police Department (MPD) are the basic of this report. The statistics of CMV-involved traffic crashes focuses on driver, location, severity type, vehicle type, collision type, time of the crashes and various external conditions in DC. The high hazard intersections and corridors with high CMV-involved crash frequencies were also identified. In addition, this report can be used to identify potential traffic accident risks associated with CMVs in DC.			
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CMV Traffic Collisions Quick Facts

Quick Facts	2007			2008			2009		
	Truck	Bus	CMV	Truck	Bus	CMV	Truck	Bus	CMV
Total Collisions	1,749	1,196	2,802	1,030	1,373	2,336	967	1,418	2,297
Fatal Collisions	1	3	4	2	2	4	1	1	2
Injury Collisions	360	166	513	183	194	366	145	200	337
PDO Collisions	1,387	1,027	2,284	845	1,177	1,966	821	1,217	1,958
Fatalities	1	3	4	2	3	5	1	1	2
Non-Fatal Injuries	575	332	870	276	370	628	210	400	592
Total Vehicle Involved	3,554	2,383	5,643	2,055	2,705	4,629	1,882	2,734	4,445
Total Trucks Involved	1,881	143	1,881	1,090	68	1,090	1,012	88	1,012
Total Buses Involved	143	1,241	1,241	67	1,446	1,446	88	1,478	1,478
Total Persons Involved	3,893	3,325	6,845	2,064	3,425	5,336	1,782	3,460	5,028
Total Pedestrians Involved	39	24	61	12	15	27	12	20	32

Definition:

Commercial Motor Vehicles (CMV) are identified by the Federal Motor Carrier Safety Administration (FMCSA) as:

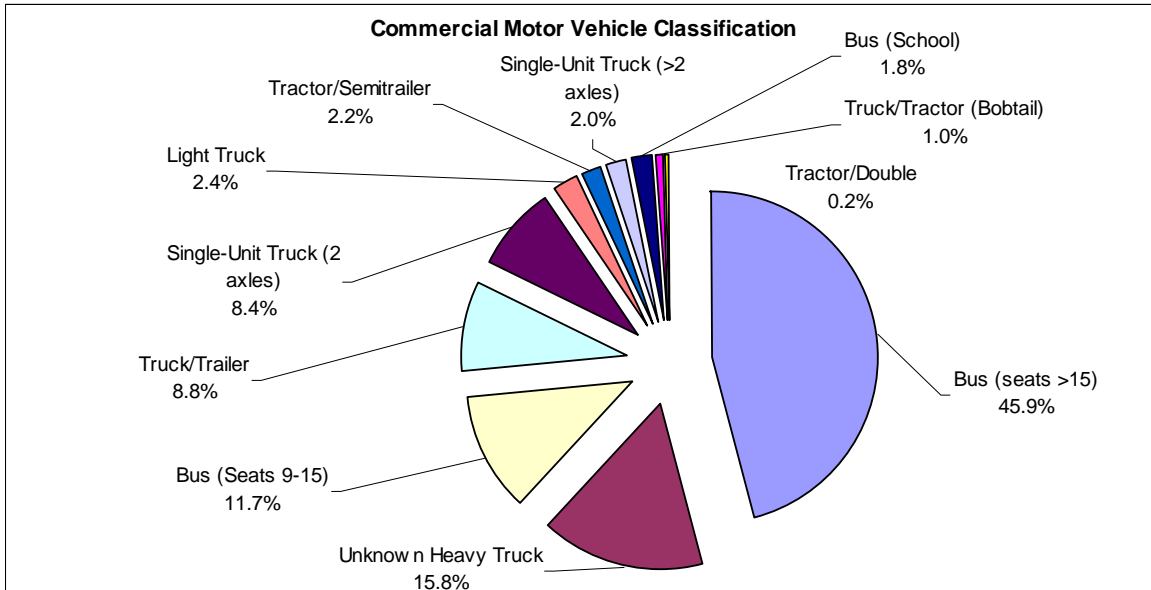
- Any truck that has a gross vehicle weight rating (GVWR) of more than 10,000 pounds or a gross combination weight rating (GCWR) of more than 10,000 pounds used on public highways
- Any motor vehicle with seating to transport nine (9) or more people, including the driver's seat
- Any motor vehicle displaying a hazardous materials placard (regardless of weight)

Additionally, motor vehicle collisions involving CMVs, which resulted in a fatality, an injury or a tow-away are classified as reportable crashes to FMCSA.

Note:

- A new traffic crash report (PD-10) was adopted by the Metropolitan Police Department in May 2008 to obtain crucial crash information.
- Prior to May 2008, the CMV-related crashes were not classified distinctively based on the FMCSA standards. For examples:
 - No information about GVWR or GCWR for trucks
 - No information about displaying a hazardous materials placard for all vehicles
 - No information about number of seats for a bus, a van or other vehicles

- Following the PD-10 form update, all CMV-related crashes were recorded and classified based on the FMCSA standards. Police officers need to identify the CMVs and fill in the CMV type field in the new PD-10 form. The summary of all 2490 CMV types involved in traffic crashes in 2009 is presented in the following chart and table.



Bus (seats >15)	Unknown Heavy Truck	Bus (Seats 9-15)	Truck/Trailer	Single-Unit Truck (2 axles)	Light Truck	Tractor/Tractor (Bobtail)	Single-Unit Truck (>2 axles)	Bus (School)	Truck/Tractor (Bobtail)	Tractor/Double
1143	393	291	220	208	59	54	49	44	25	4

- Computations indicated that in the year 2009 there was only one “Passenger Auto” displayed the hazardous materials placard. For display purposes, this record was not included in this report.
- Due to the above changes, the CMV collisions trend from 2007 through 2009 were not analyzed in this report except for the chapter of general information.
- Prior to the new PD-10 format, all trucks regardless of their weight were recorded as CMVs in this report. This has contributed to the decrease of truck collisions in 2008 and 2009, as shown in the quick facts section.
- With the newly improved PD-10 form, all motor vehicles with seats for nine (9) or more people were recorded as CMVs in this report. This has contributed to the increase of bus collisions in 2008 and 2009, as shown in the quick facts section.

CHAPTER 1 INTRODUCTION

This report is published by the District of Columbia Department of Transportation (DDOT) to provide traffic crash statistics information and the high frequency crash locations for CMVs in the year 2009. This report contains information that provides for a comprehensive look at CMV-related crash issues in the District of Columbia (DC). On average, trucks comprise approximately 5% of the traffic in DC, based on a prior study: District of Columbia, Motor Carrier Management and Threat Assessment Study, 2003.

All crash statistics included in this report were developed based on the data obtained through the Traffic Crash Report (PD-10) from the DC Metropolitan Police Departments. The crash data were recorded and maintained through the Traffic Accident Reporting and Analysis System (TARAS).

In an effort to improve traffic safety in DC, a new traffic crash report form (PD-10) was adopted in May 2008. The new PD-10 form consists of more data fields than the previous form. These new data fields were designed to identify major causes of motor vehicle crashes in DC.

While the identification of motor vehicle crashes is important, understanding of CMV crashes such as trucks and buses is also critical. The most significant effect of CMV collisions is the crash severity. In order to mitigate CMV crashes, it is important to understand the underlying reasons for these CMV crash occurrences. The focus of this report is to disseminate CMV-involved crash information and to provide related agencies with important CMV collision data.

In addition, the results of the analysis can be used to identify potential traffic accident risks of a CMV in DC. For instance, mitigation strategies such as dedicated truck or bus routes and truck restrictions can be implemented to further improve the existing traffic circulation conditions. Furthermore, truck congestion issues can be alleviated by enhancing the level of safety and mobility utilizing the results of this report.

CHAPTER 2 GENERAL INFORMATION

2.1 CMV Traffic Collision Trend

Figure 2.1 presents a summary of crash statistics for CMVs and non-CMV. As shown in this figure, the overall crash frequency for all vehicle types fluctuates from year to year, however, the total number of collisions showed a general downward trend. In contrast, the total number of bus collisions from 2005 to 2009 showed an increase.

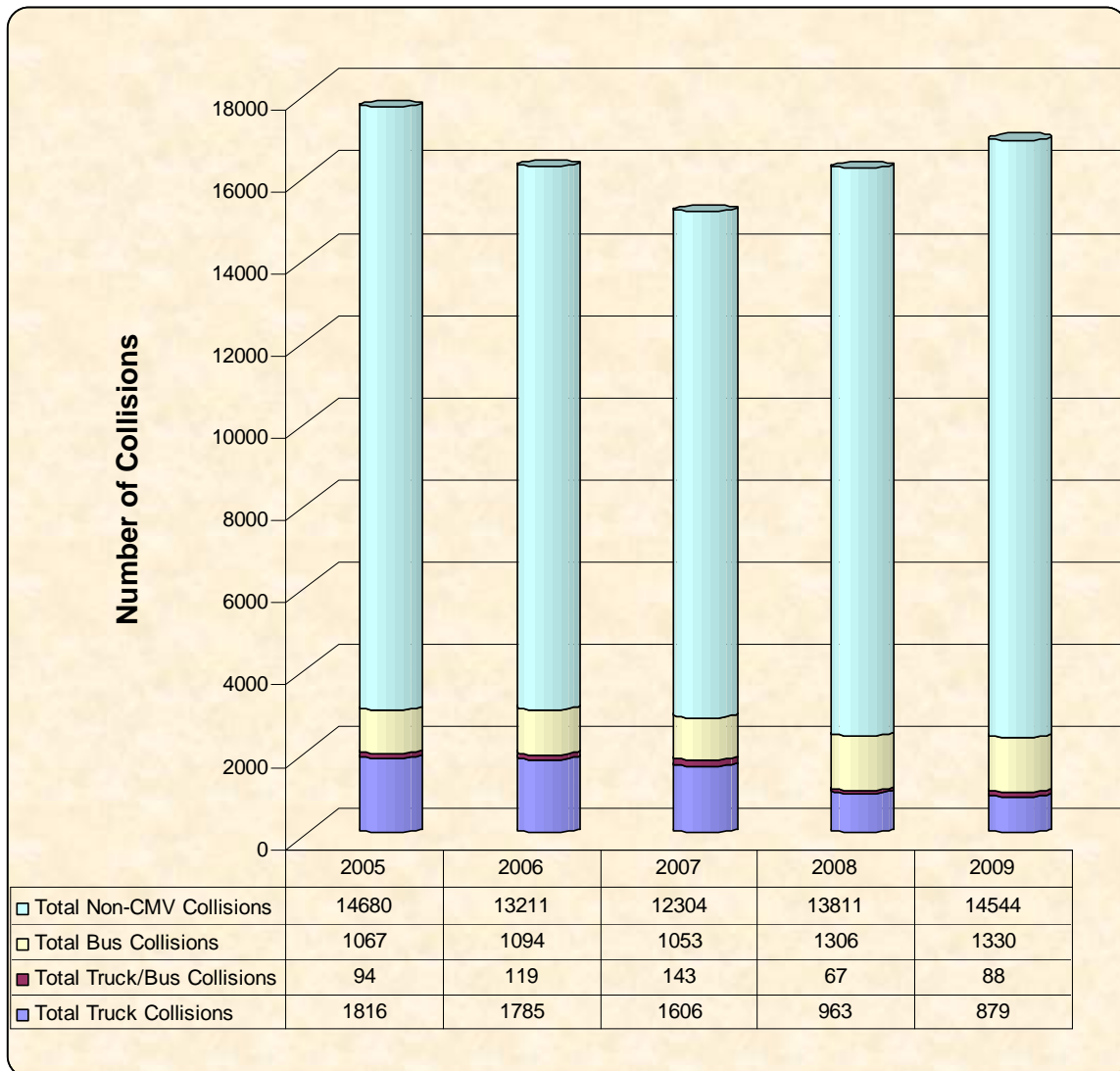


Figure 2.1 CMV Traffic Collision Trend from 2005 through 2009

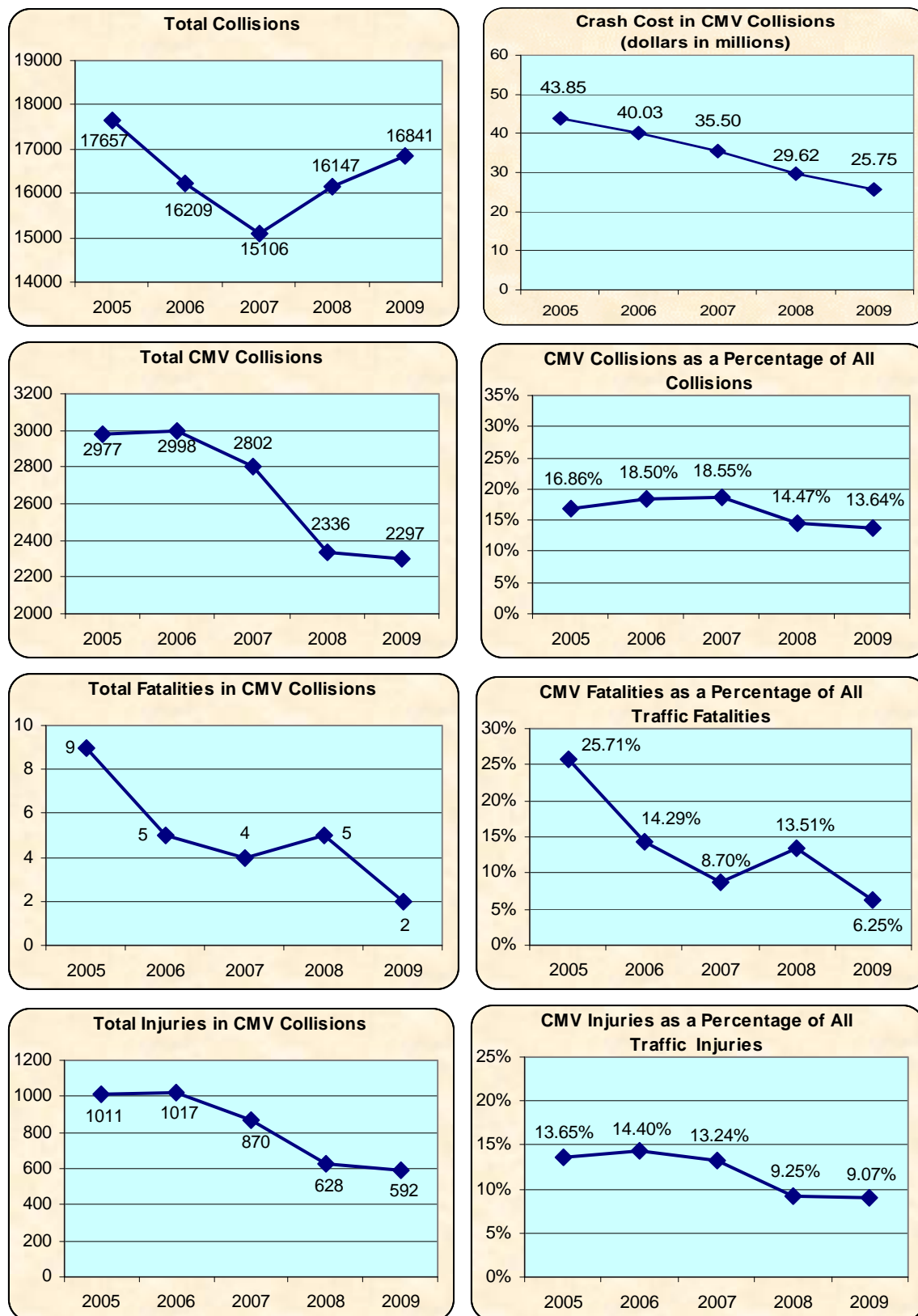


Figure 2.2 Trend of CMV Collisions from 2005 through 2009

2.2 Top Primary Contributing Factors

Commercial motor vehicle crashes are generally more severe than other motor vehicles. It is therefore very important to understand the underlying reasons and factors that contributed to this type of collision. In this report, ten primary contributing factors for all CMV crashes in 2009 were analyzed to provide an overview of the most significant causes of CMV crashes, which is presented in Figure 2.3. As the figure shown, driver inattention, changing lane(s) without caution and following too closely are the top three primary contributing factors for all CMV crashes in DC in 2009. A similar list of top contributing factors was observed for 2009 overall crashes in DC.

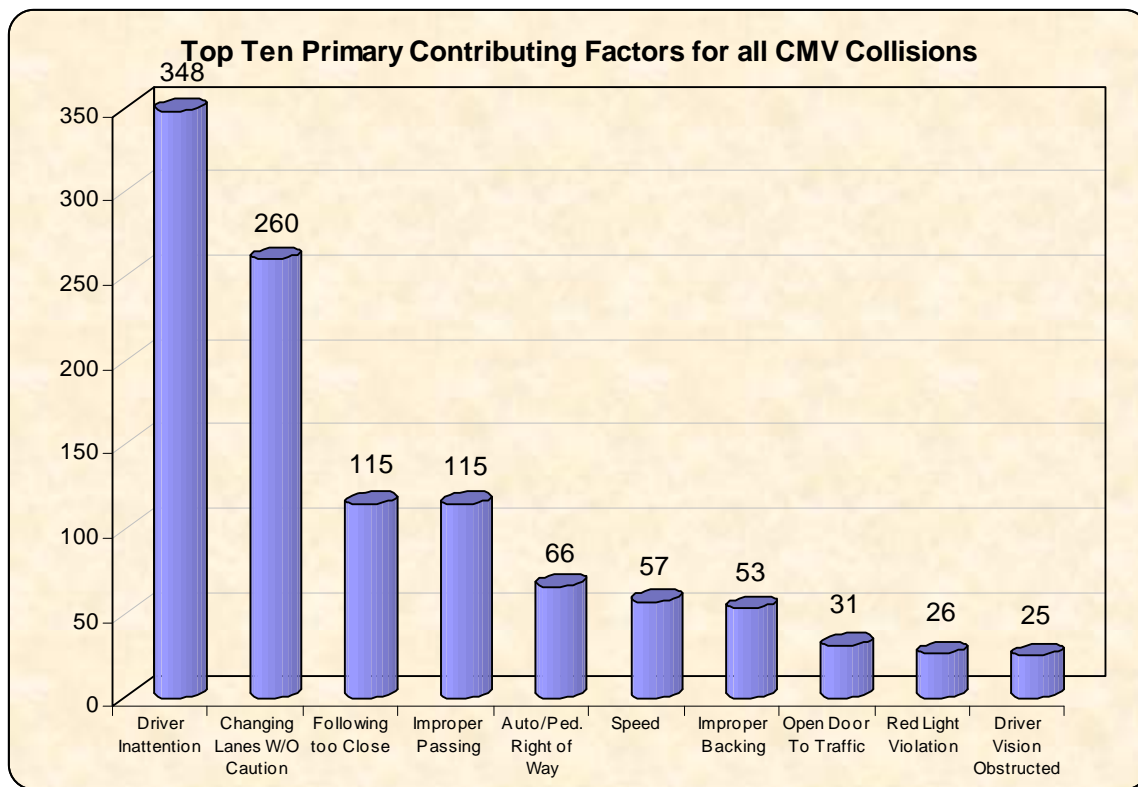


Figure 2.3 Top Ten Primary Contributing Factors for CMV Collisions

CHAPTER 3 CMV COLLISION CHARACTERISTICS

3.1 The driver

3.1.1 Age and Sex of CMV Drivers Involved in CMV Traffic Collisions

As shown in Table 3.1 below, the age group of 36 to 45 was recorded as the highest age group for both male and female drivers in overall CMV drivers, while for injuries of CMV drivers, the age group of 46 to 55 was observed to be the highest. The summaries are also presented graphically in Figures 3.1, 3.2, and 3.3.

Table 3.1 Overall and Injuries of CMV Drivers by Age Group and Gender

Total CMV Drivers					Injuries of CMV Driver				
Age	Female	Male	Unknown	Total	Age	Female	Male	Unknown	Total
16 to 25	18	49	0	67	16 to 25	3	2	0	5
26 to 35	101	251	1	353	26 to 35	5	7	0	12
36 to 45	118	375	2	495	36 to 45	9	12	0	21
46 to 55	77	325	1	403	46 to 55	5	15	0	20
56 to 65	22	131	1	154	56 to 65	2	7	0	9
66 to 75	2	47	1	50	66 to 75	0	1	0	1
76 to 85	1	3	0	4	76 to 85	0	0	0	0
86 & older	1	0	0	1	86 & older	0	0	0	0
Unknown	17	60	886	963	Unknown	1	2	0	3
Total	357	1,241	892	2,490	Total	25	46	0	71

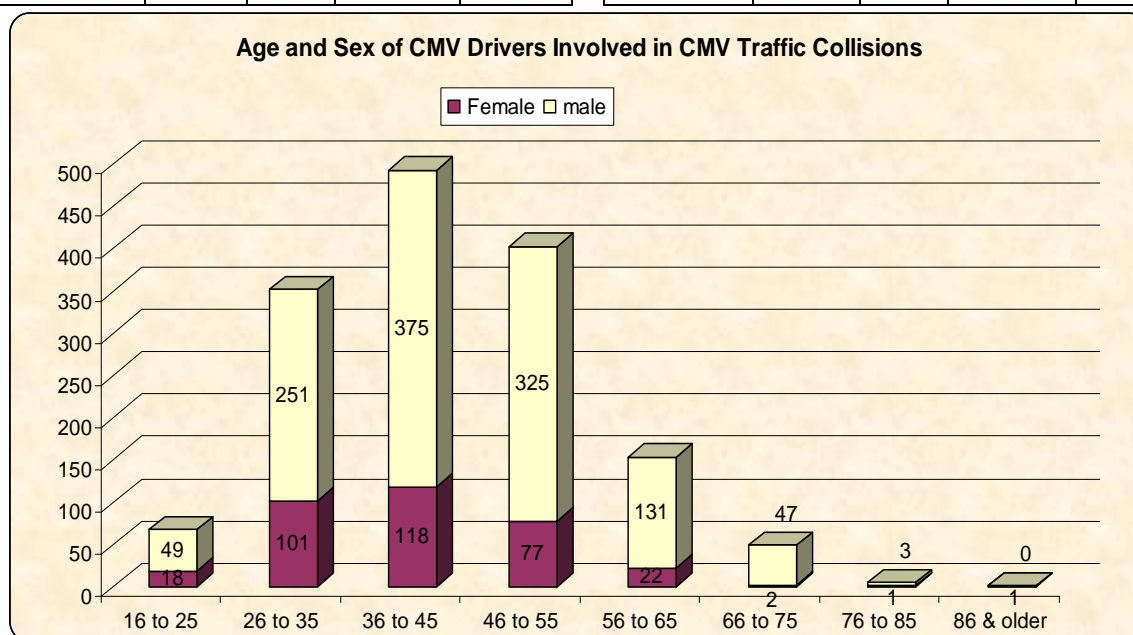


Figure 3.1 Age and Sex of CMV Drivers in CMV Traffic Collisions

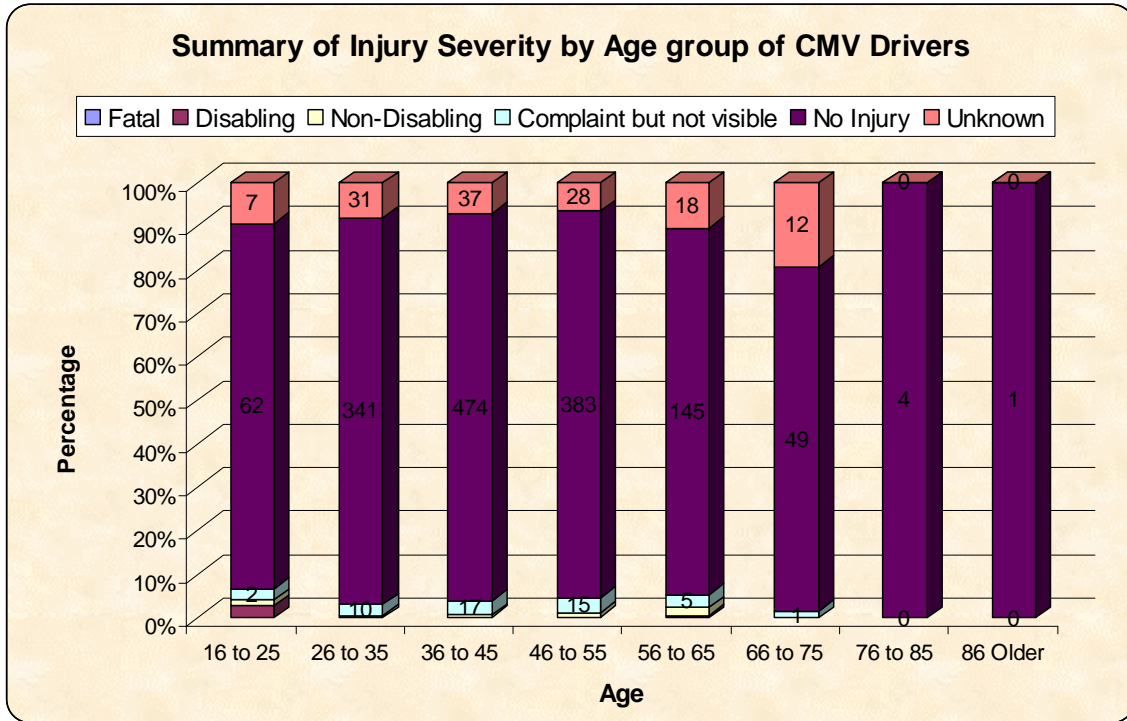


Figure 3.2 Summary of Injury Severity by Age Group of CMV Drivers

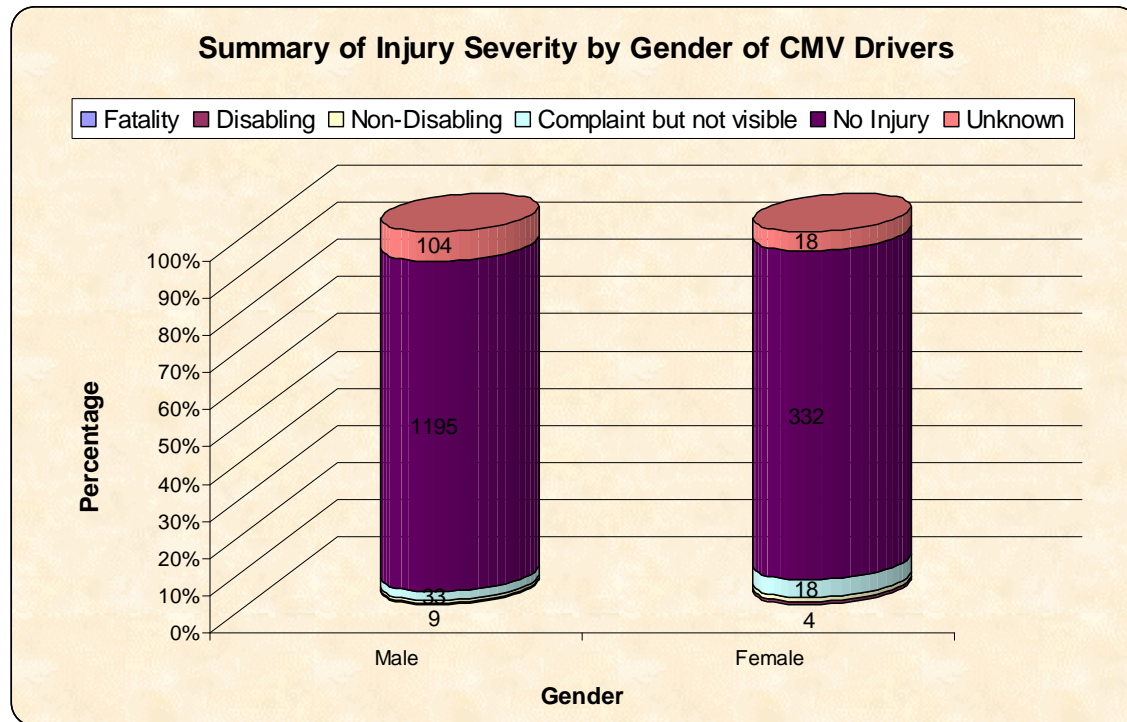


Figure 3.3 Summary of Injury Severity by Gender of CMV Drivers

3.1.2 Age and Sex of Non-CMV Drivers in CMV Traffic Collisions

For the non-CMV drivers involved CMV collisions, a similar trend was observed. For the injuries of non-CMV drivers, however, the age groups of 26 to 35 male drivers and 36 to 45 female drivers were found to be the highest among all age groups presented.

Table 3.2 Overall and Injuries of Non-CMV Drivers by Age Group and Gender

Total Non-CMV Driver					Injuries of Non-CMV Driver				
Age	Female	Male	Unknown	Total	Age	Female	Male	Unknown	Total
16 to 25	92	89	1	182	16 to 25	17	11	0	28
26 to 35	125	161	0	286	26 to 35	19	21	0	40
36 to 45	131	161	0	292	36 to 45	20	16	0	36
46 to 55	86	145	0	231	46 to 55	15	17	0	32
56 to 65	50	86	0	136	56 to 65	4	6	0	10
66 to 75	21	30	0	51	66 to 75	1	4	0	5
76 to 85	9	10	0	19	76 to 85	2	1	0	3
86 & older	2	9	0	11	86 & older	0	1	0	1
Unknown	23	47	677	747	Unknown	1	7	3	11
Total	539	738	678	1,955	Total	79	84	3	166

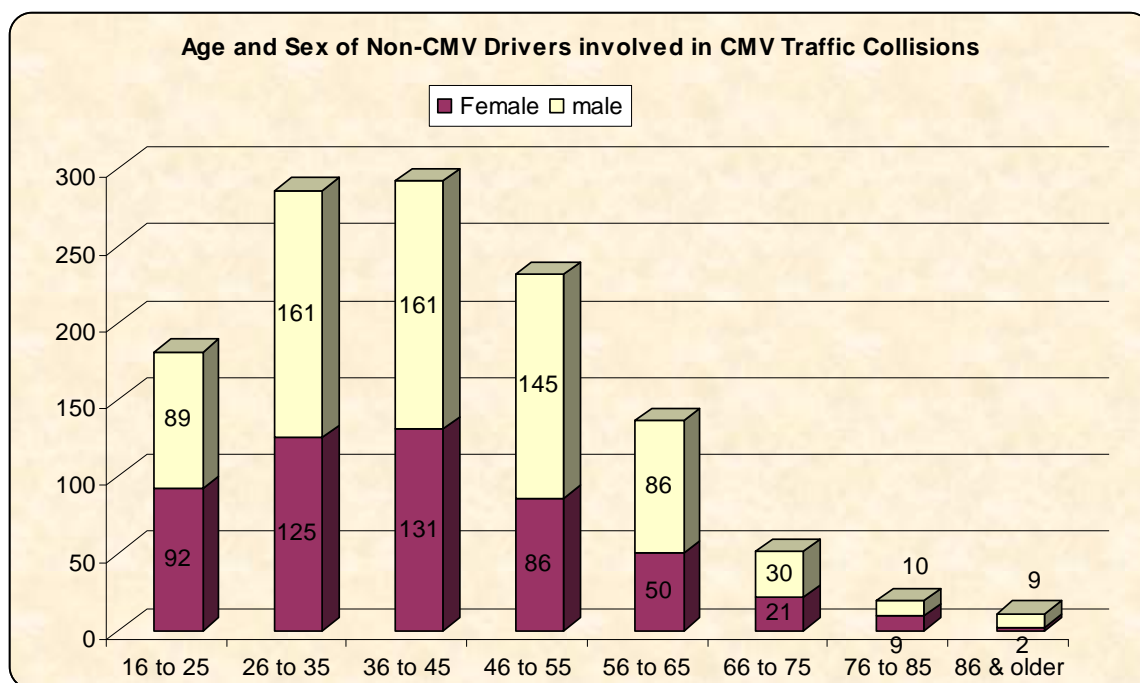


Figure 3.4 Age and Sex of Non-CMV Drivers in CMV Traffic Collisions

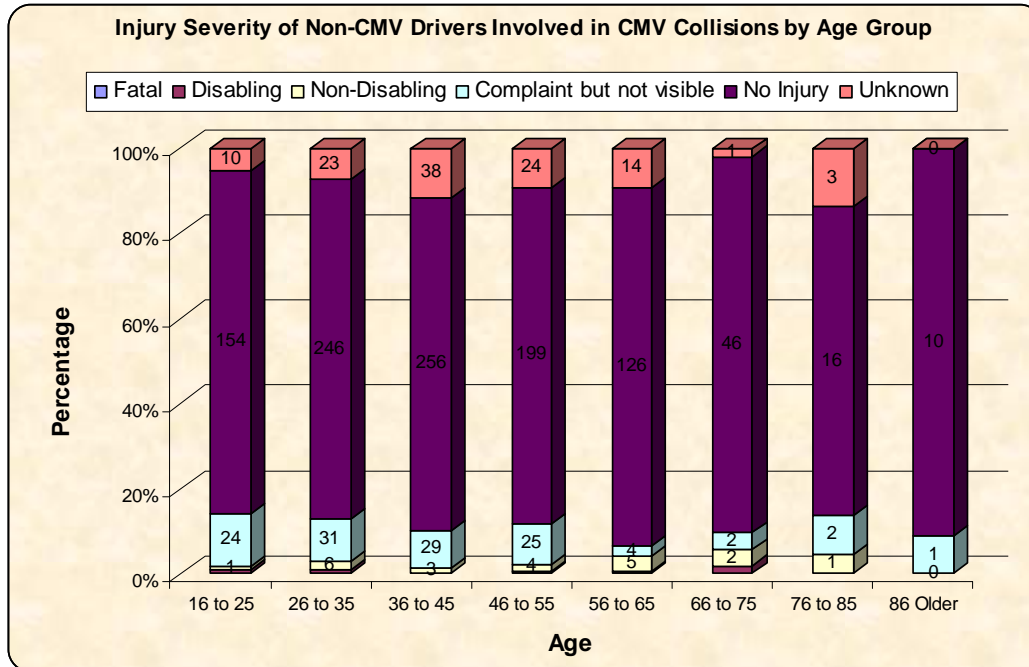


Figure 3.5 Injury Severity for Non-CMV Drivers in CMV Collisions by Age Group

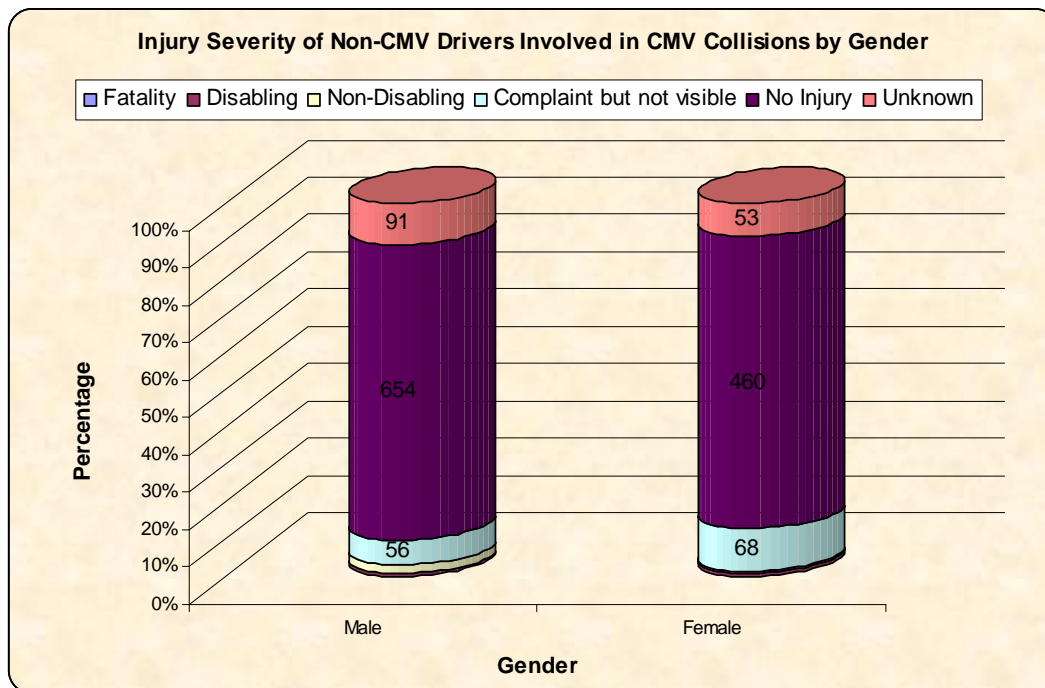


Figure 3.6 Injury Severity for Non-CMV Drivers in CMV Collisions by Gender

3.1.3 Registration of CMVs and Drivers in CMV Traffic Collisions

Figure 3.7 presents the summary of commercial vehicle registration and driver permit state in CMV collisions. The results show that the majority of CMVs and drivers involved in CMV crashes in the District were registered to Washington, DC and Maryland in 2009.

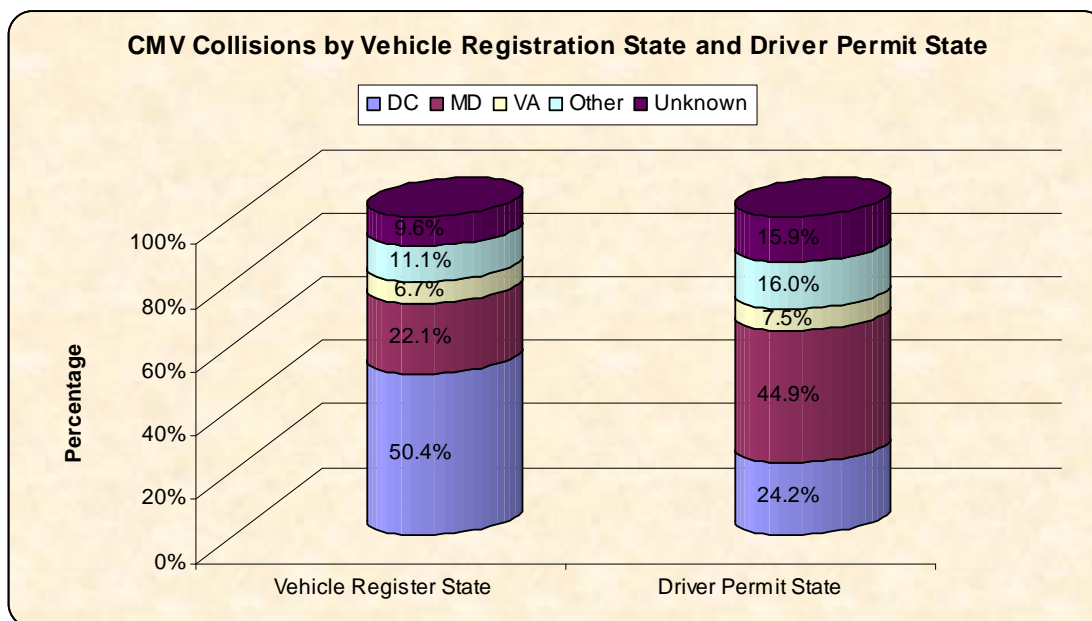


Figure 3.7 CMV Collisions by Vehicle Registration State and Driver Permit State

3.2 Time

3.2.1 CMV Collisions by Time of Day

As shown in Table 3.3, a greater number of CMV crashes were reported between the hours of 12PM and 6PM, and approximately 46% of the CMV crashes resulting in injuries occurred during this 7-hour period. The results are also presented in Figures 3.8 and 3.9.

Table 3.3 Overall CMV Collisions by Hour and Injury Severity

Hour	Crashes	Fatalities	Injuries
0	34	0	9
1	20	0	6
2	18	0	6
3	13	0	2
4	9	0	4
5	26	0	9
6	55	0	12
7	144	0	50
8	222	0	54
9	174	0	32
10	147	0	25
11	150	0	55
12	122	0	28
13	141	1	94
14	142	0	35
15	168	0	28
16	218	0	48
17	140	0	22

18	116	1	19
19	74	0	13
20	46	0	5
21	42	0	6
22	40	0	13
23	36	0	17
Total	2,297	2	592

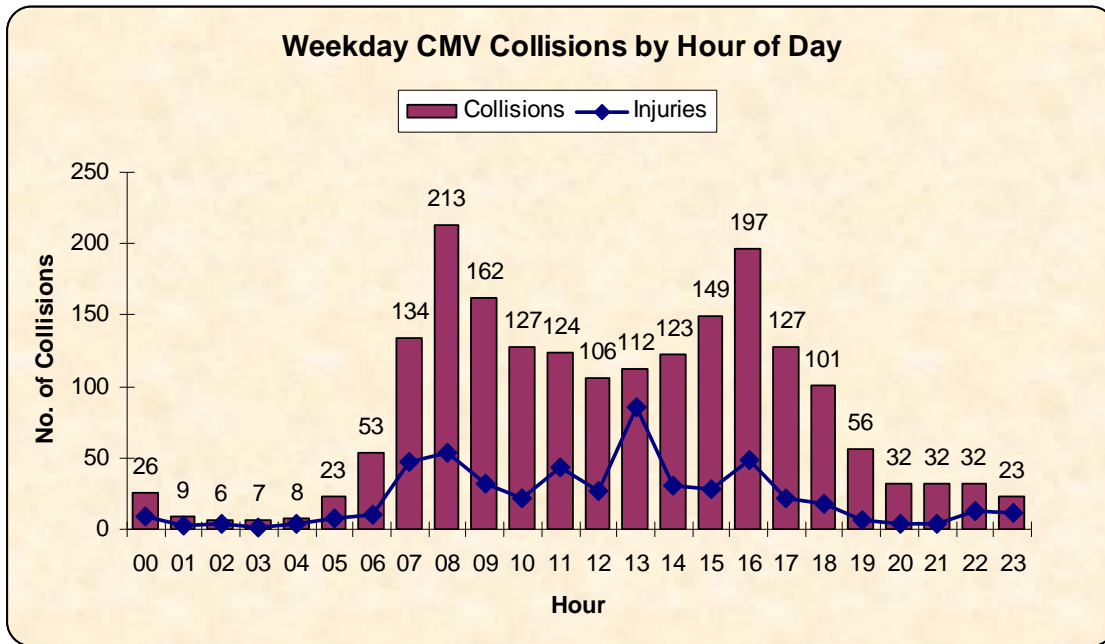


Figure 3.8 Weekday CMV Collisions by Hour of Day

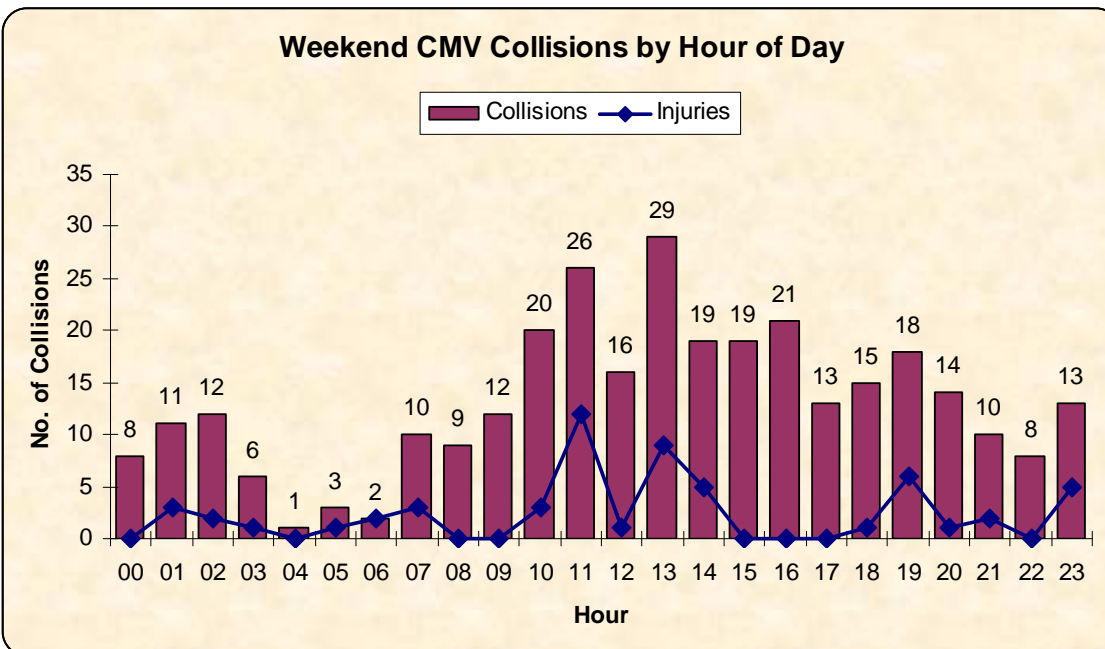


Figure 3.9 Weekend CMV Collisions by Hour of Day

As shown in Figure 3.10, during weekdays, the higher frequency of bus collisions was observed during the peak hours at around 7AM to 9AM and 3PM to 6PM, while the higher frequency of truck collisions was at around 9AM to 4PM. During weekends, the higher frequency of both truck and bus collisions was observed during daytime.

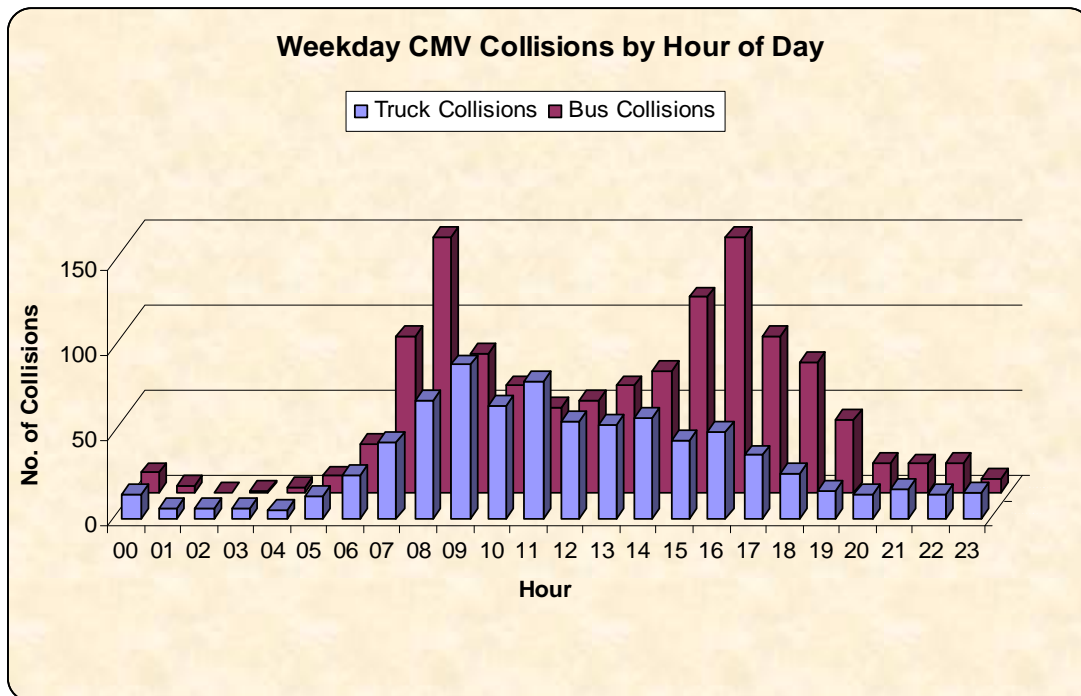


Figure 3.10 Weekday CMV Collisions by Hour of Day

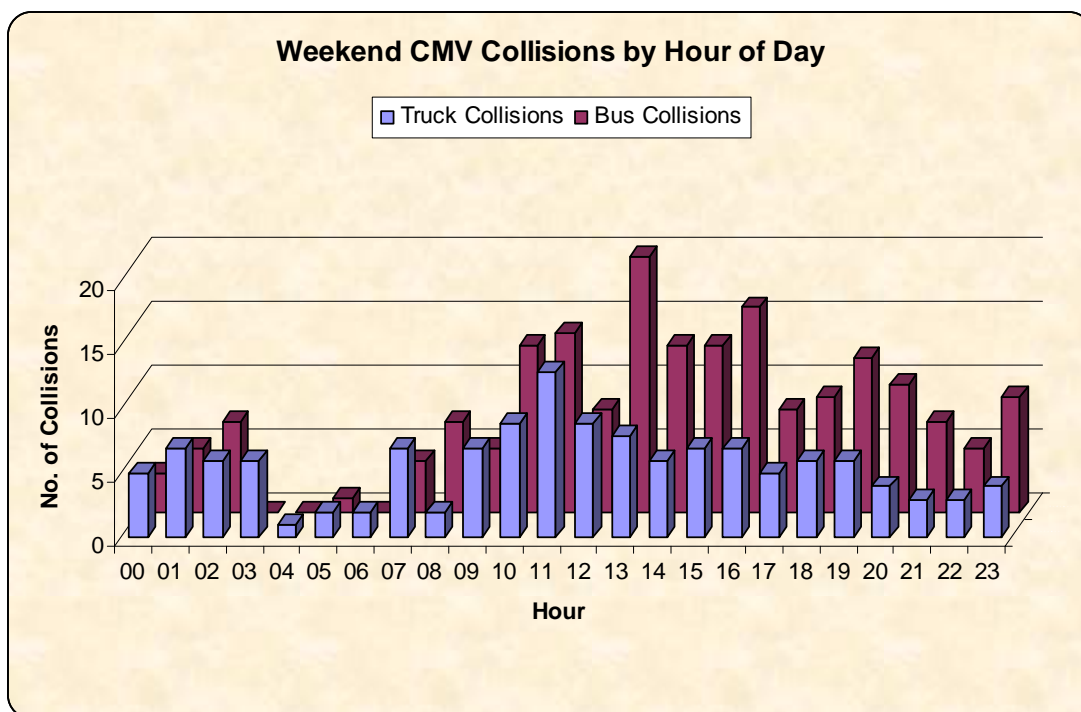


Figure 3.11 Weekend CMV Collisions by Hour of Day

3.2.2 CMV Collisions by Day of Week

As shown in Table 3.4 and Figure 3.12 below, the frequency of collisions which occurred over weekends were found to be considerably lower than those occurring on weekdays.

Table 3.4 CMV Collisions by Day of Week

Weekday	Collisions	Fatalities	Injuries
Sunday	133	0	18
Monday	370	1	114
Tuesday	432	1	143
Wednesday	395	0	91
Thursday	381	0	86
Friday	404	0	101
Saturday	182	0	39
Total	2,297	2	592

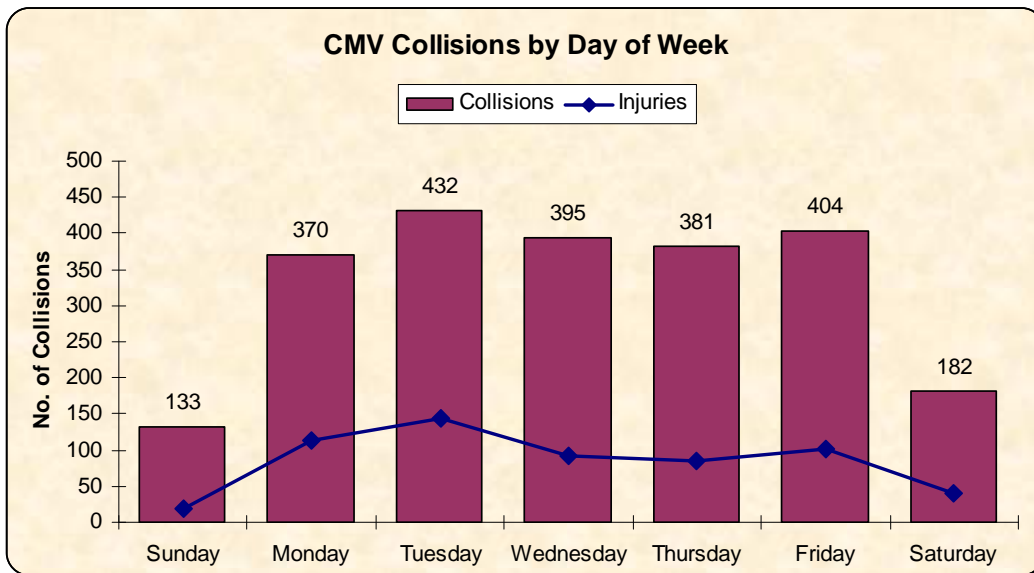


Figure 3.12 CMV Collisions by Day of Week

3.2.3 CMV Collisions by Month of Year

Table 3.5 and Figure 3.13 show the frequency of CMV crashes by the month of year.

Table 3.5 CMV Collisions by Month of Year

Month	Collisions	Fatalities	Injuries
1	193	0	56
2	175	0	32
3	204	0	46
4	200	0	87
5	177	0	30
6	170	0	34
7	178	0	42
8	171	0	52
9	181	0	56

10	219	1	63
11	208	0	41
12	221	1	53
Total	2,297	2	592

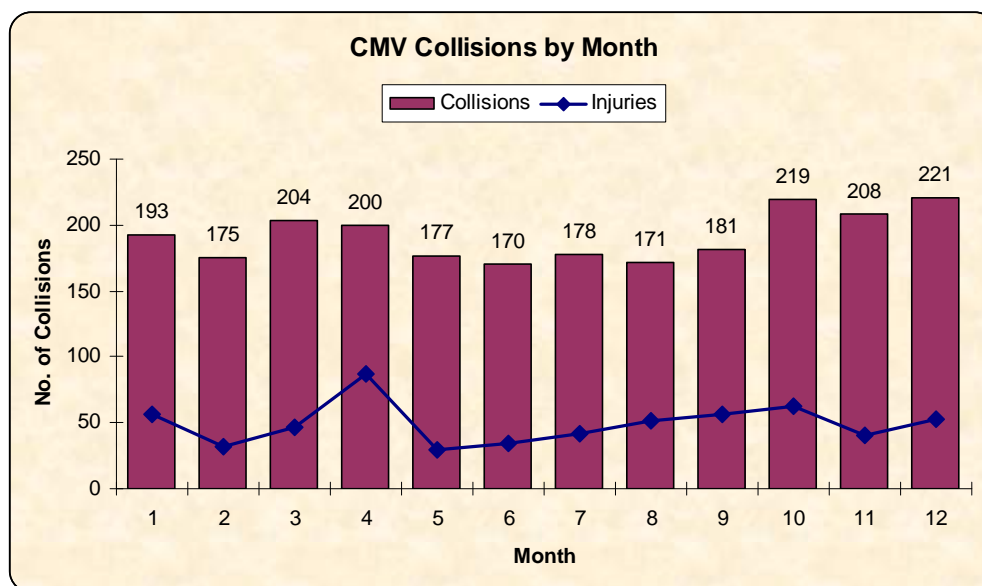


Figure 3.13 CMV Collisions by Month

3.3 Location

3.3.1 CMV Collisions by Quadrant

Based on the results presented in Table 3.6, it can be observed that the Northwest (NW) quadrant recorded the highest number of reported CMV collisions and associated injuries. This is due to the fact that the NW quadrant occupies 42.65% of DC area and the Central Business District is located in this quadrant with a considerable volume of CMV traffic. Also, a substantial percentage of the on-going construction is occurring in the NW quadrant, which contributes to heavy truck volumes.

Table 3.6 CMV Collisions by Quadrant

Quadrant	Collisions	Fatalities	Injuries
NW	1,183	1	229
NE	465	1	140
SE	351	0	100
SW	93	0	31
Border	193	0	90
Unknown	12	0	2
Total	2,297	2	592

Note: NW=Northwest, NE=Northeast, SE=Southeast, SW=Southwest

3.3.2 CMV Collisions by Ward

Washington, DC is divided into eight (8) wards and each ward consists of various designated neighborhoods. The results of the CMV collisions by Ward presented in Figure 3.14 and Table 3.7 show that Ward 2 recorded the highest number of collisions in 2009.

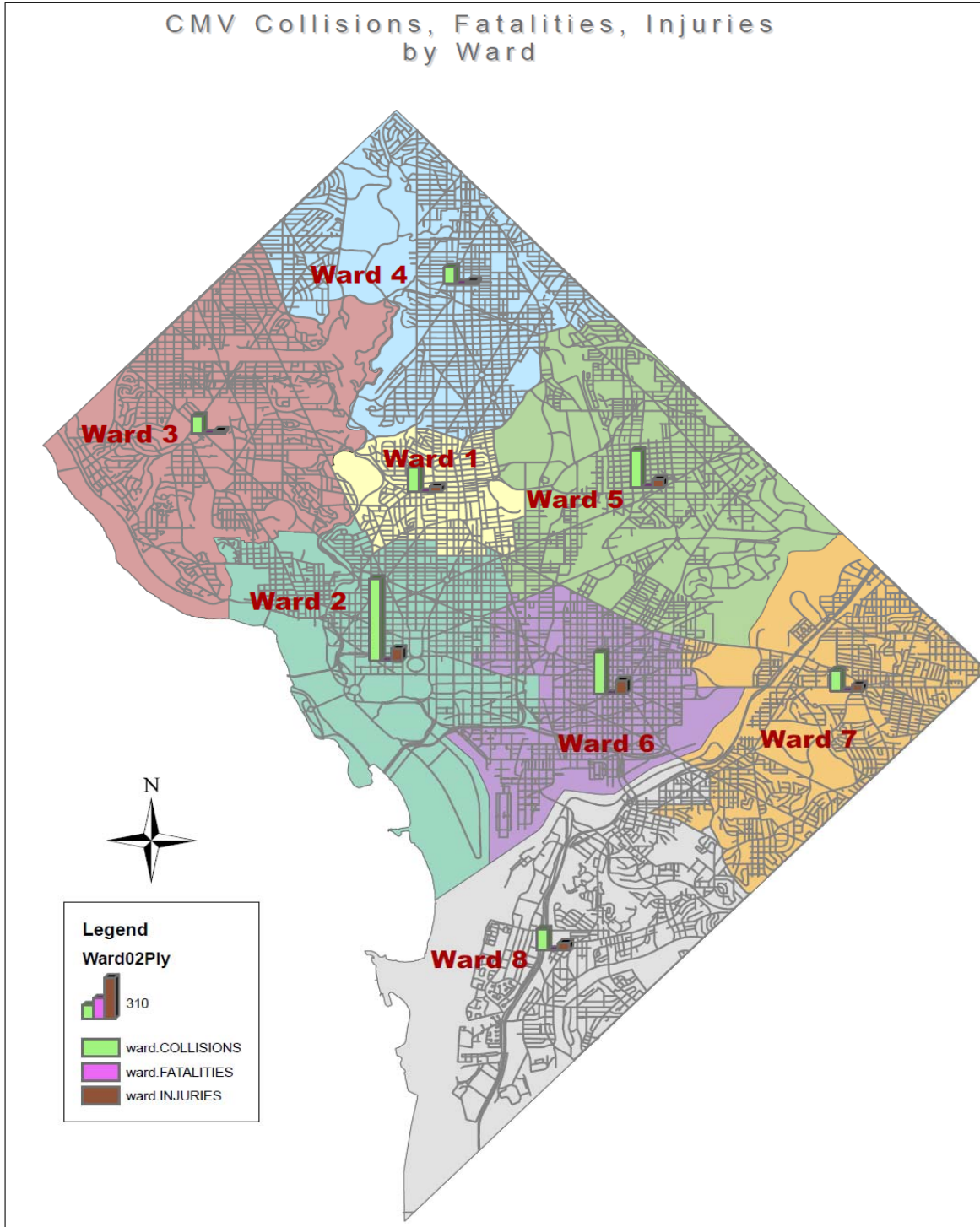


Figure 3.14 CMV Collisions, Fatalities and Injuries by Ward

Table 3.7 CMV Collisions by Ward

Ward	Collisions	Fatalities	Injuries
1	185	0	45
2	627	0	92
3	133	0	22
4	125	0	21
5	275	1	59
6	314	1	102
7	156	0	49
8	155	0	52
Border	230	0	116
Unknown	97	0	34
Total	2,297	2	592

3.3.3 CMV Collisions by Advisory Neighborhood Commission

Washington, DC consists of 37 Advisory Neighborhood Commissions (ANC). The summary of the data presented in Table 3.8 shows that the ANC borders, 2B (Dupont Circle), 5B (Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad) and 6C (Near Northeast, Penn Quarter, Union Station) were the areas with the highest reported CMV crashes in 2009. This is also illustrated in Figure 3.15.

Table 3.8 Overall CMV Collisions by ANC, Fatality and Injury

ANC	Description	Total Collision	Fatality	Injury
1A	Columbia Heights, Pleasant Plains	52	0	12
1B	Cardozo, Howard University, LeDroit Park, Shaw	65	0	13
1C	Adams Morgan, Kalorama Heights, Lanier Heights, Western U Street	33	0	2
1D	Mount Pleasant	10	0	4
2A	Foggy Bottom, West End	102	0	10
2B	Dupont Circle	135	0	19
2C	Blagden Alley, Chinatown, Logan Circle, Mount Vernon Square, Shaw	60	0	18
2D	Kalorama, Sheridan	4	0	1
2E	Burleith, Georgetown, Hilandale	102	0	9
2F	Logan Circle	104	0	17
3B	Cathedral Heights, Glover Park	5	0	0
3C	Cathedral Heights, Cleveland Park, Massachusetts Heights, McLean Gardens, Woodley Park	52	0	5
3D	American University, Foxhall, Kent, The Palisades, Spring Valley, Wesley Heights	22	0	5
3E	American University Park, Friendship Heights, Tenleytown	19	0	1
3F	Forest Hills, North Cleveland Park, Tenleytown	13	0	7
3G	Chevy Chase	18	0	3
4A	Brightwood, Colonial Village, Crestwood, Shepherd Park, Sixteenth Street Heights	13	0	0
4B	Brightwood, Lamond-Riggs, Manor Park, Riggs Park, South Manor Park, Takoma	26	0	4
4C	Columbia Heights, Crestwood, Petworth, Sixteenth Street Heights	35	0	7

4D	Petworth	8	0	0
5A	Brookland, Fort Lincoln, Michigan Park, North Michigan Park, University Heights, Woodridge	54	0	10
5B	Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad	133	1	23
5C	Bloomingdale, Eckington, Edgewood	71	0	22
6A	North Lincoln Park, Rosedale, Stanton Park	32	0	21
6B	Barney Circle, Capitol Hill, Eastern Market	87	0	16
6C	Near Northeast, Penn Quarter, Union Station	125	1	38
6D	Carrollburg, Fort McNair, Navy Yard, Near Southwest/Southeast, Waterfront	73	0	23
7A	Fort Dupont, Greenway, River Terrace	29	0	15
7B	Fairfax Village, Hillcrest, Penn Branch, Randle Highlands	27	0	5
7C	Burrville, Deanwood, Grant Park, Lincoln Heights	16	0	3
7D	Eastland Gardens, Kenilworth, Kingman Park, Mayfair	40	0	15
7E	Benning Heights, Capitol View, Fort Davis, Marshall Heights	12	0	4
8A	Anacostia, Fairlawn, Fort Stanton, Hillsdale	38	0	7
8B	Garfield Heights, Knox Hill, Shipley Terrace	24	0	25
8C	Barry Farms, Bolling Air Force Base, Congress Heights, St. Elizabeths Hospital	46	0	10
8D	Bellevue, Far Southwest	21	0	14
8E	Congress Heights, Valley Green, Washington Highlands	22	0	17
Brd.	Border between ANC's	472	0	153
Unk.	Unknown	97	0	34
Total		2,297	2	592

3.3.4 CMV Collisions by Police District

The traffic crash reports (PD-10 forms) were provided by the DC Metropolitan Police Departments which comprises of 7 Districts. Each crash that occurred within the Police District (PD) was managed and distributed by that district, the summary of which is presented in Table 3.11. As shown in Table 3.9, District 1 (636) recorded the highest number of CMV crashes in 2009 followed by District 2 (538).

Table 3.9 CMV Collisions by Police District

PD	Collisions	Fatalities	Injuries
1	636	1	212
2	538	0	69
3	265	0	56
4	171	0	31
5	298	1	62
6	210	0	93
7	178	0	68
Unknown	1	0	1
Total	2,297	2	592

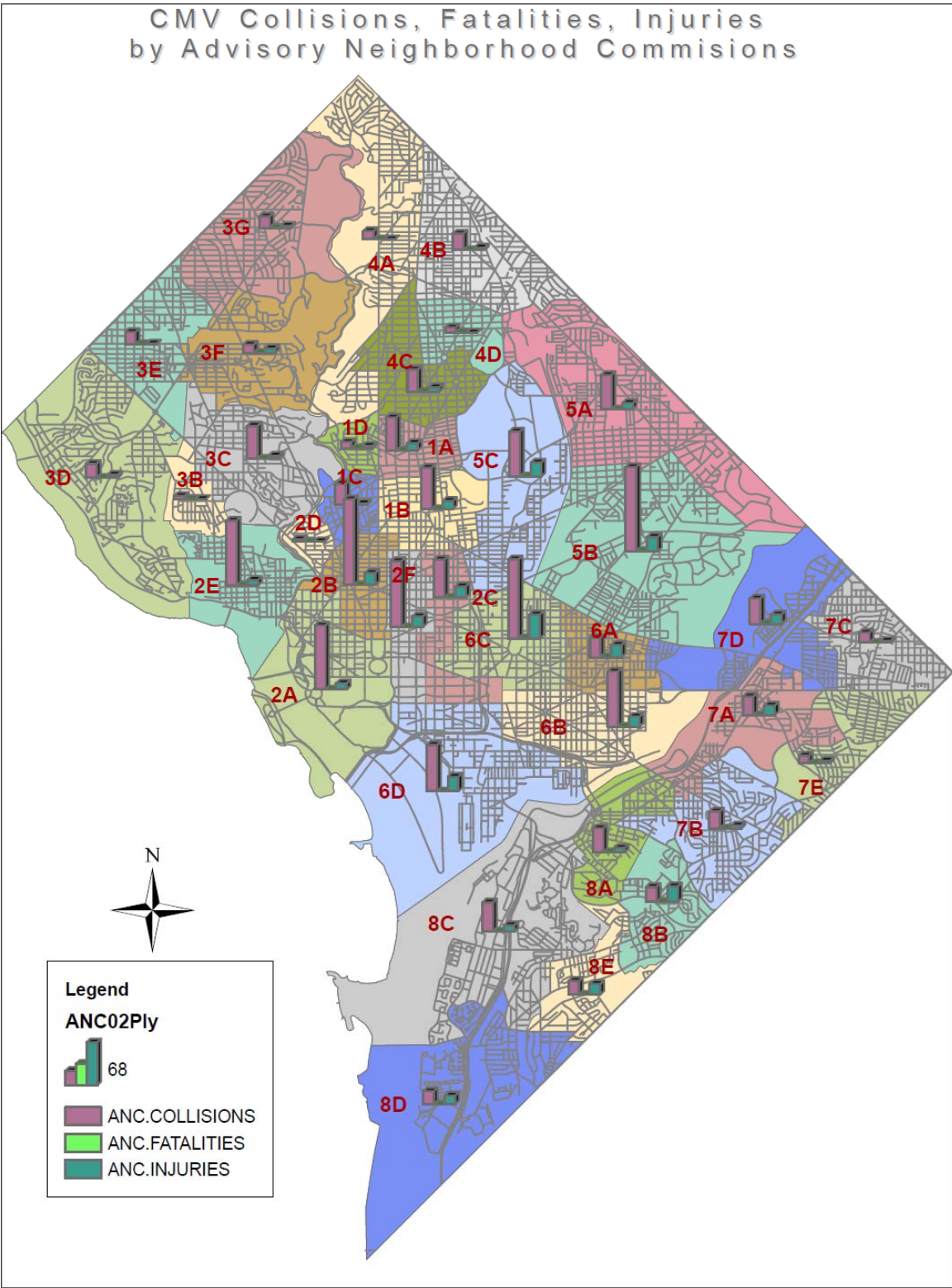


Figure 3.15 CMV Collisions, Fatalities, and Injuries by ANC

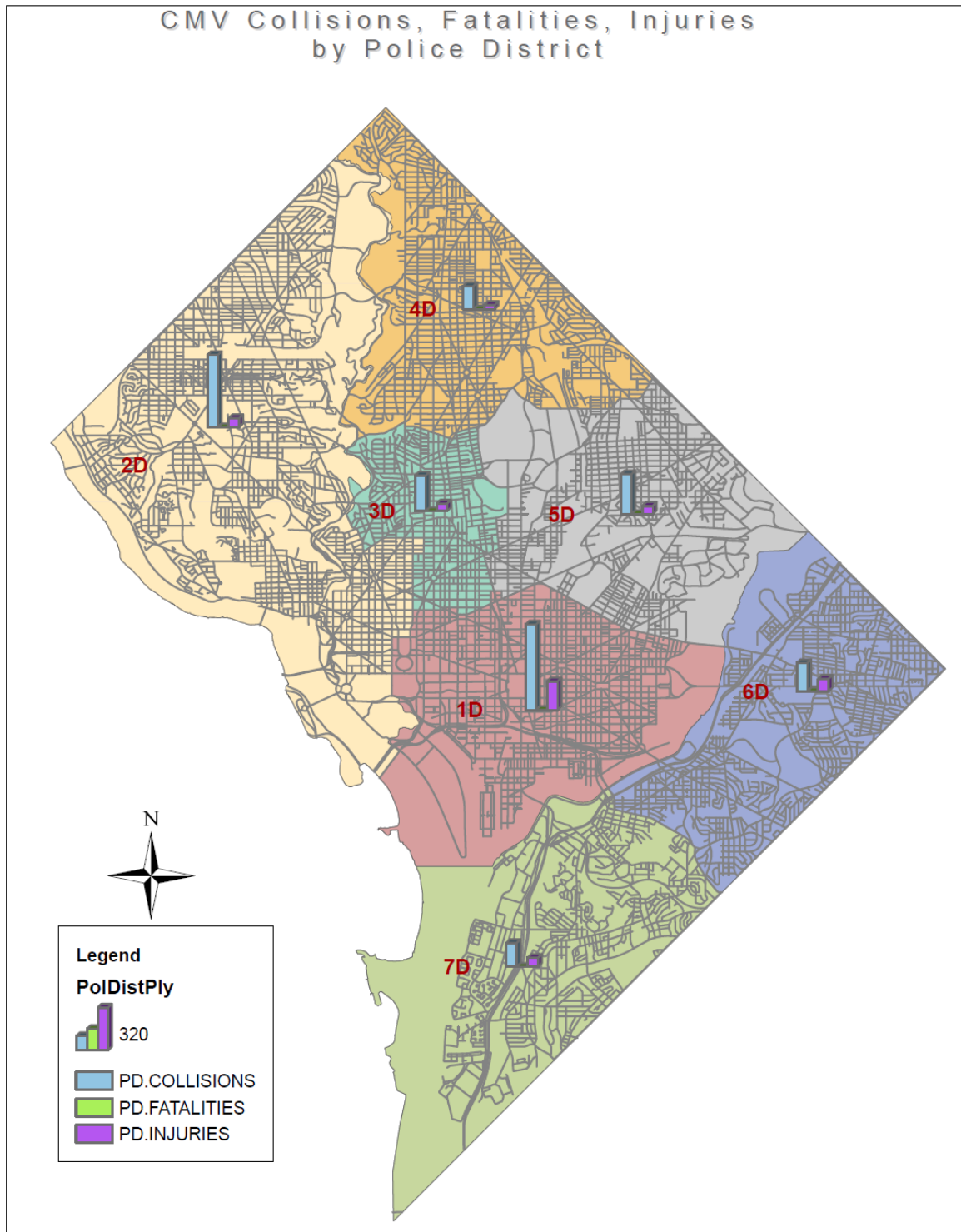


Figure 3.16 CMV Collisions, Fatalities, and Injuries by Police District

3.3.5 CMV Collisions by Construction Zone

Crashes in construction zones have been noted to be on the rise in recent years. Table 3.10 and Figure 3.17 show that the frequency and proportions of construction versus non-construction zone crashes described. As observed in the illustration, a total of 153 construction zone crashes were observed in 2009, that is, approximately 7% of the total CMV crashes. For overall crashes in 2009, about 4% of them occurred at construction zones.

Table 3.10 CMV Collisions by Construction Zone

Construction Zone	Total collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Construction Zone	153	0	20	133	0	49
Not construction Zone	2,144	2	317	1,825	2	543
Total	2,297	2	337	1,958	2	592

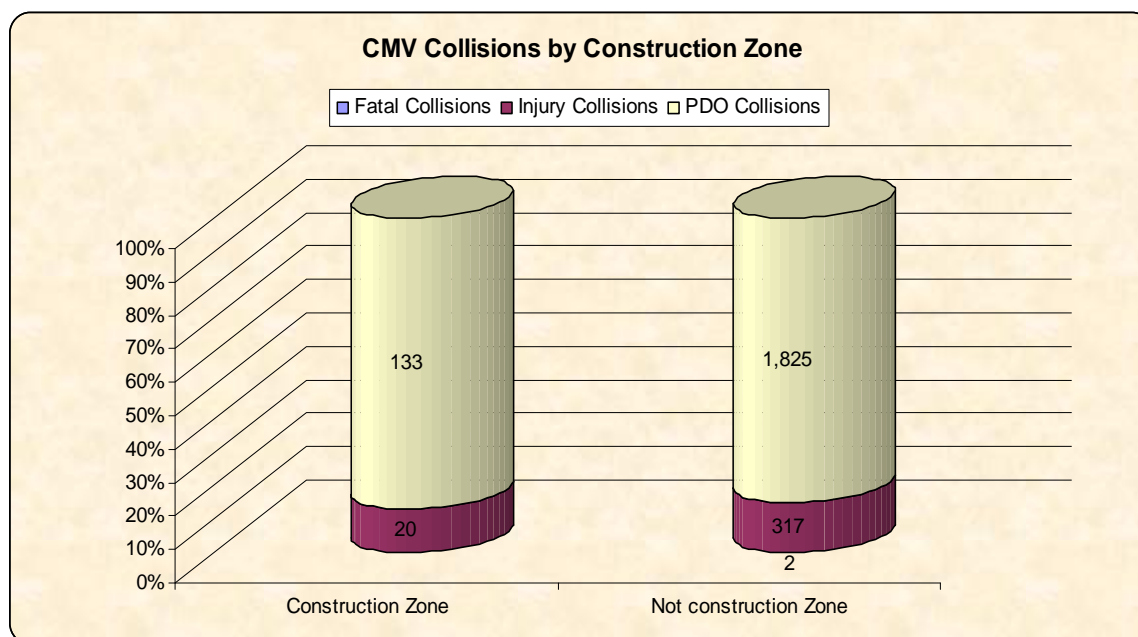


Figure 3.17 CMV Collisions by Construction Zone

3.3.6 CMV Collisions by On-Street Location

In order to mitigate the severity of a crash, it is crucial to identify and compare the intersection and non-intersection related crashes. Based on the results presented in Table 3.11 and Figure 3.18, it was found that approximately 74% of the CMV collisions typically occurred at or within 100 feet of intersections.

Table 3.11 CMV Collisions by Location Type

On Street	Total collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
At Intersection	632	0	145	487	0	241
Within 100' of Intersection	1,071	0	117	954	0	197
Not at Intersection	520	2	65	453	2	142
Private Property	19	0	3	16	0	3
Other	16	0	3	13	0	4
Unknown	39	0	4	35	0	5
Total	2,297	2	337	1,958	2	592

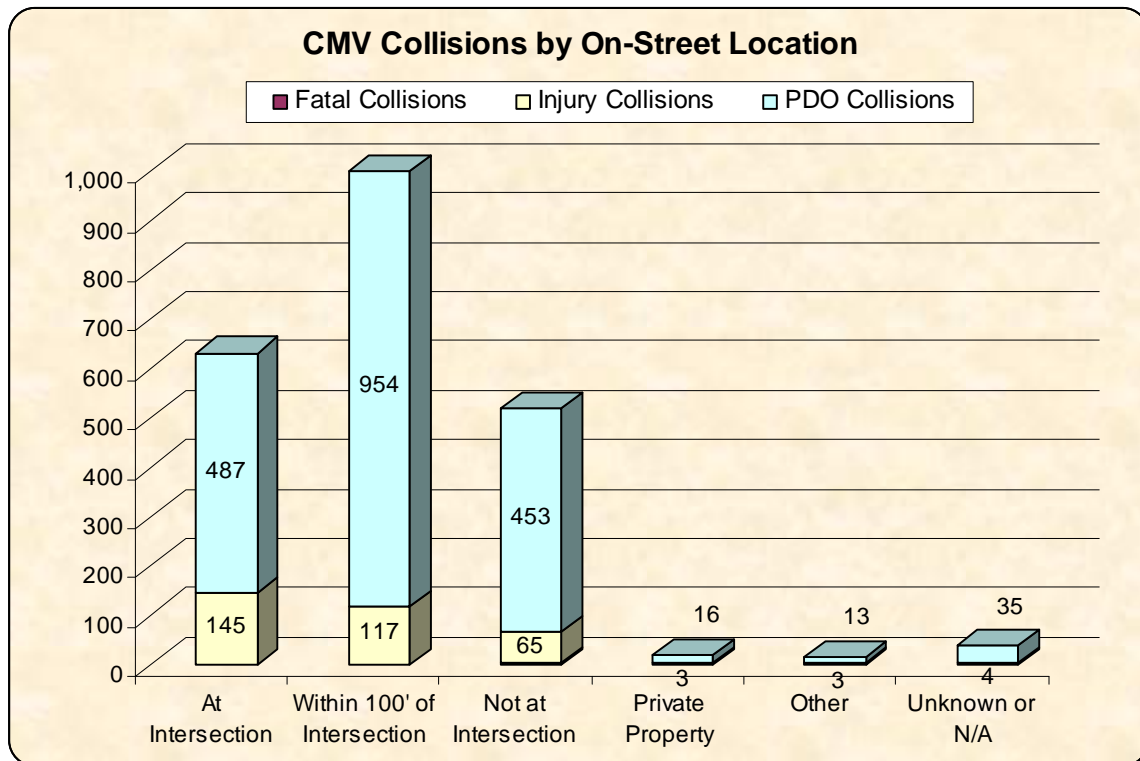


Figure 3.18 CMV Collisions by On-Street Location

3.4 Crash Classification

3.4.1 Crash Severity Type

Crash classification continues to be an important severity indicator that helps government agencies and local authorities to examine the traffic safety issues at particular intersections or corridors. The summary of CMV crash severity by type from 2005 through 2009 is presented in Table 3.12. From the results, fatal, injury, and PDO CMV collisions comprise

of approximately 0.09%, 14.67% and 85.24%, respectively, in 2009. The overall collision of CMVs in year 2009 is presented graphically in Figure 3.20.

Table 3.12 Overall CMV Collisions by Injury Severity (2005 ~ 2009)

Year	2005	2006	2007	2008	2009
Fatal Collisions	13	8	5	4	2
Injury Collisions	634	561	513	366	337
PDO Collisions	2,330	2,429	2,284	1,966	1,958
Total	2,977	2,998	2,802	2,336	2,297

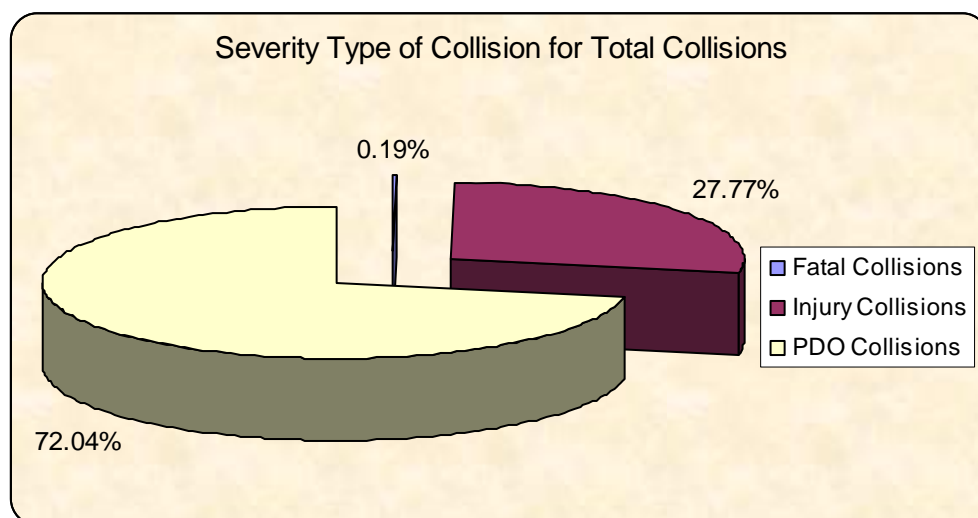


Figure 3.19 Total Motor Vehicle Crashes in 2009 by Severity Type

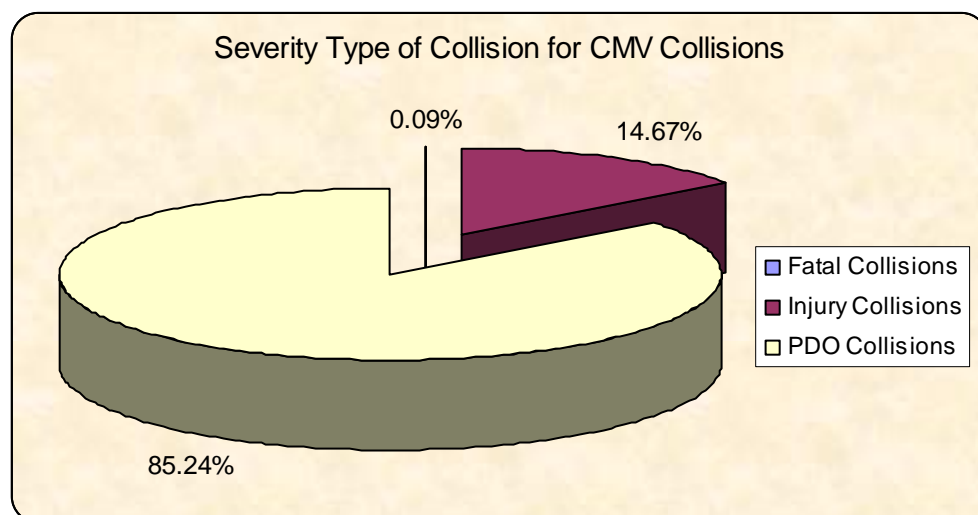


Figure 3.20 Overall CMV Collisions in 2009 by Severity Type

Figure 3.21 showed the total number of CMV collisions for fatal, injury, and PDO crashes from 2005 to 2009. The crash frequency for all three CMV severity type showed a general downward trend.

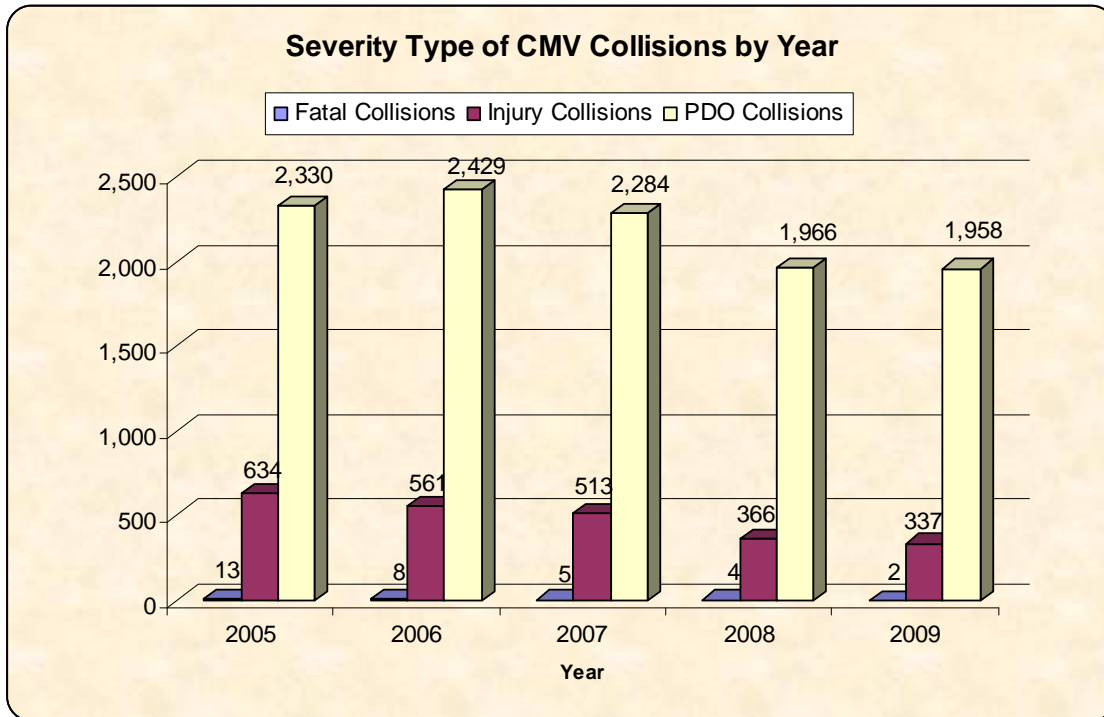


Figure 3.21 Overall CMV Collisions by Injury Severity

3.4.2 Type of Crash

In Table 3.13 and Figure 3.22, the summary of CMV crashes in 2009 shows that side swiped (45.6%), rear end (11.1%), and right turn hit vehicle (8.7%) were the three most frequently reported collision types. For overall crashes in 2009, the top three most frequently reported collisions types were the same list, while the side swiped collisions only were only reported as 23.1% of overall crashes.

Table 3.13 CMV Collision Type by Injury Severity

2008	Total collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Side Swiped	1,047	0	68	979	0	127
Rear End	254	0	85	169	0	188
Right Turn Hit Vehicle	199	0	28	171	0	39
Parked Vehicle	194	0	8	186	0	10
Left Turn Hit Vehicle	128	0	27	101	0	48
Right Angle	111	0	32	79	0	45
Other	92	0	18	74	0	23
Unknown	59	0	11	48	0	18

Backing Hit Parked Vehicle	56	0	6	50	0	7
Backing Hit Moving Vehicle	44	0	1	43	0	2
Fixed Object	43	0	5	38	0	9
Head On	20	0	11	9	0	27
Straight Hit Pedestrian	20	2	17	1	2	19
Ran Off Roadway	8	0	4	4	0	12
Left Turn Hit Pedestrian	7	0	7	0	0	7
Right Turn Hit Pedestrian	6	0	5	1	0	5
Non-Collision Accident	4	0	3	1	0	5
Backing Hit Pedestrian	3	0	1	2	0	1
Override	2	0	0	2	0	0
Total	2,297	2	337	1,958	2	592

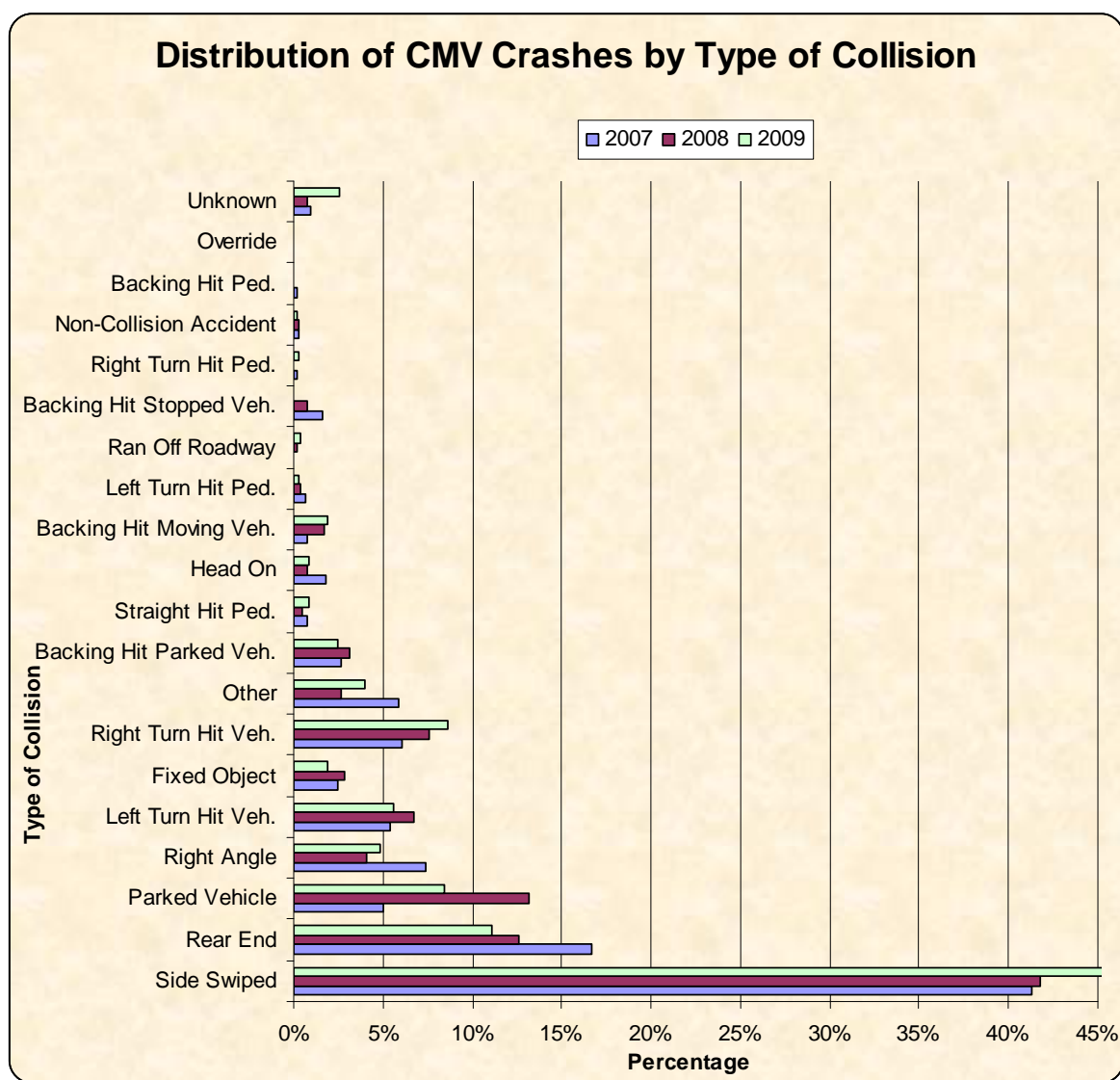


Figure 3.22 Distribution of CMV Crashes by Collision Type

3.4.3 Hit and Run Crashes

As shown in Figure 3.23, the frequency and percentage of hit and run collisions for CMVs from 2005 to 2009 showed a descending trend, with the lowest frequency observed in 2009.

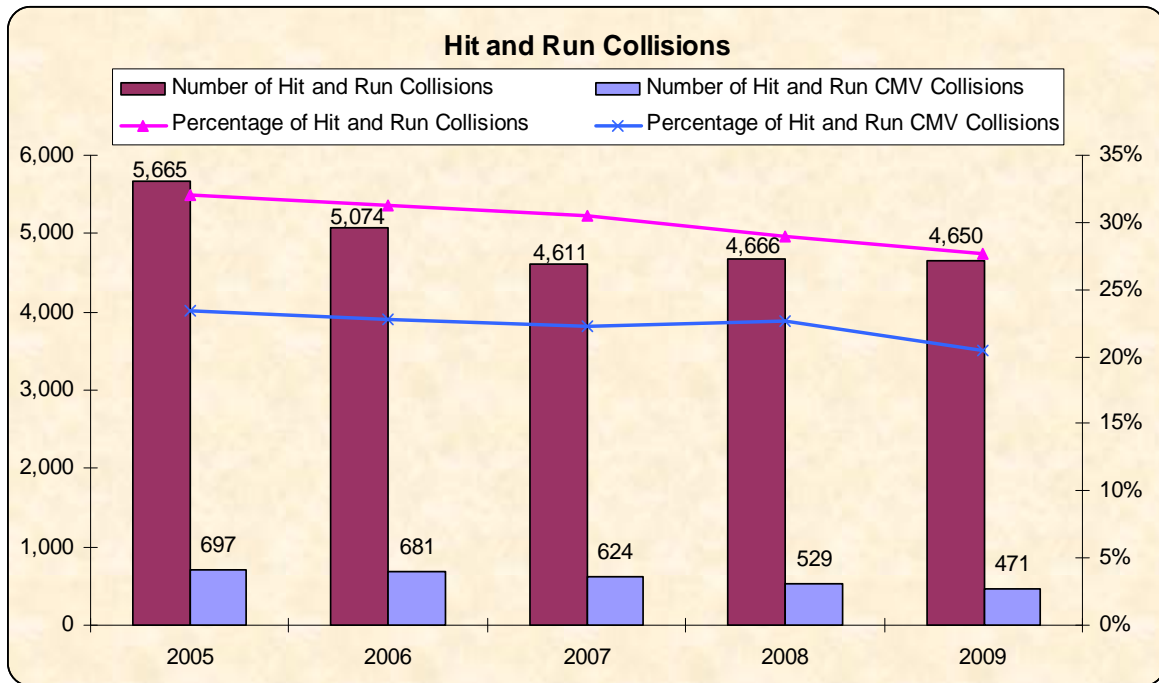


Figure 3.23 Number and Percentage of Hit and Run CMV Collisions 2005~2009

3.4.4 Crashes Involving Pedestrian

The District of Columbia is a pedestrian friendly city, and such crashes involving pedestrians are critical to safety engineers and lawmakers. With over 50% of the workers in the District either commute by public transportation or walk to work (2006 *American Community Survey*), it is crucial to understand the causes and severity of pedestrian involved crashes in DC. The summary of CMV collisions involving pedestrians is presented graphically in Figures 3.24 and 3.25. Based on the results presented in Figure 3.25, a general downward trend was observed, with the total pedestrian-involved CMV collisions in 2008 being the lowest as compared to prior years.

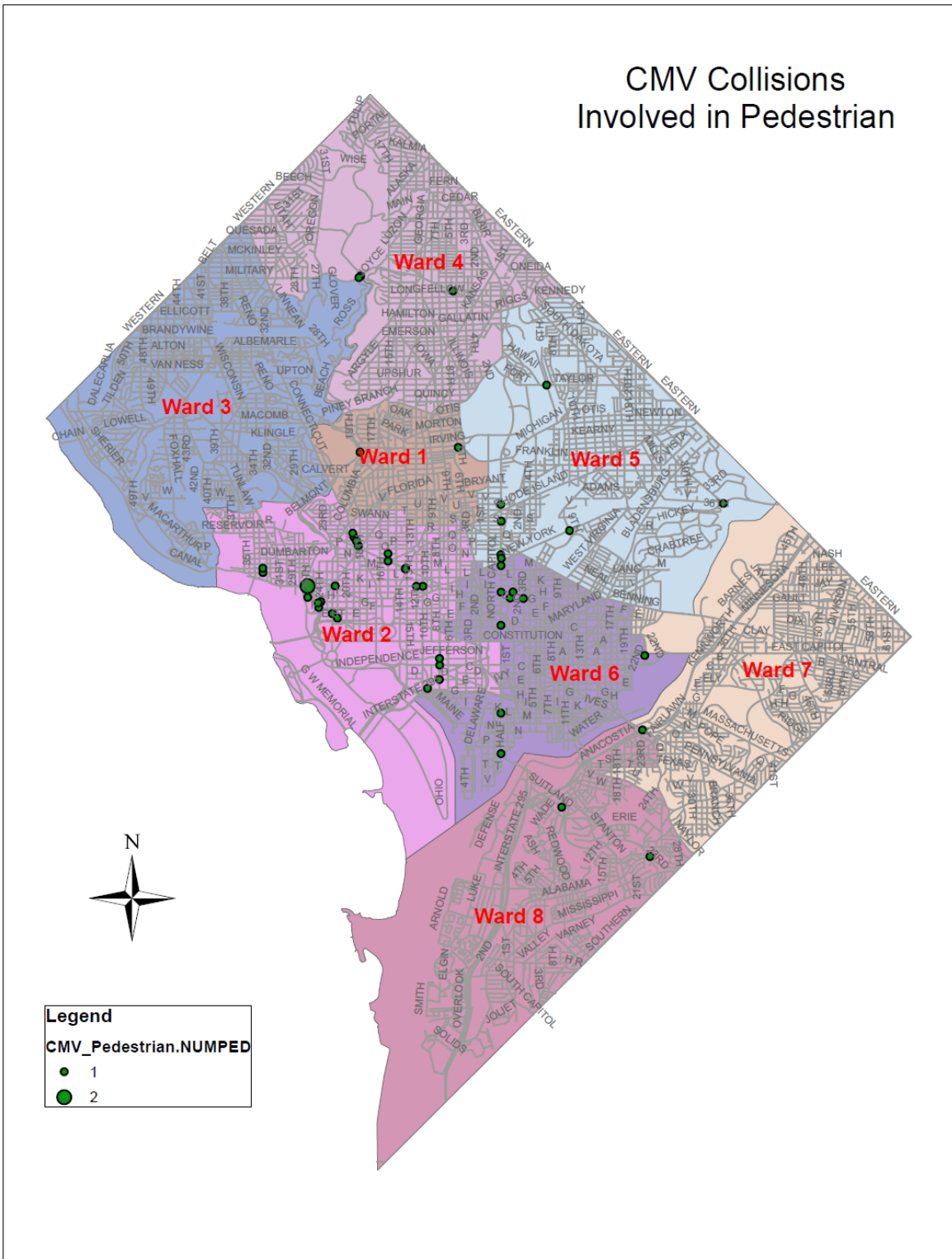


Figure 3.24 Pedestrian Involved CMV Collisions in 2009

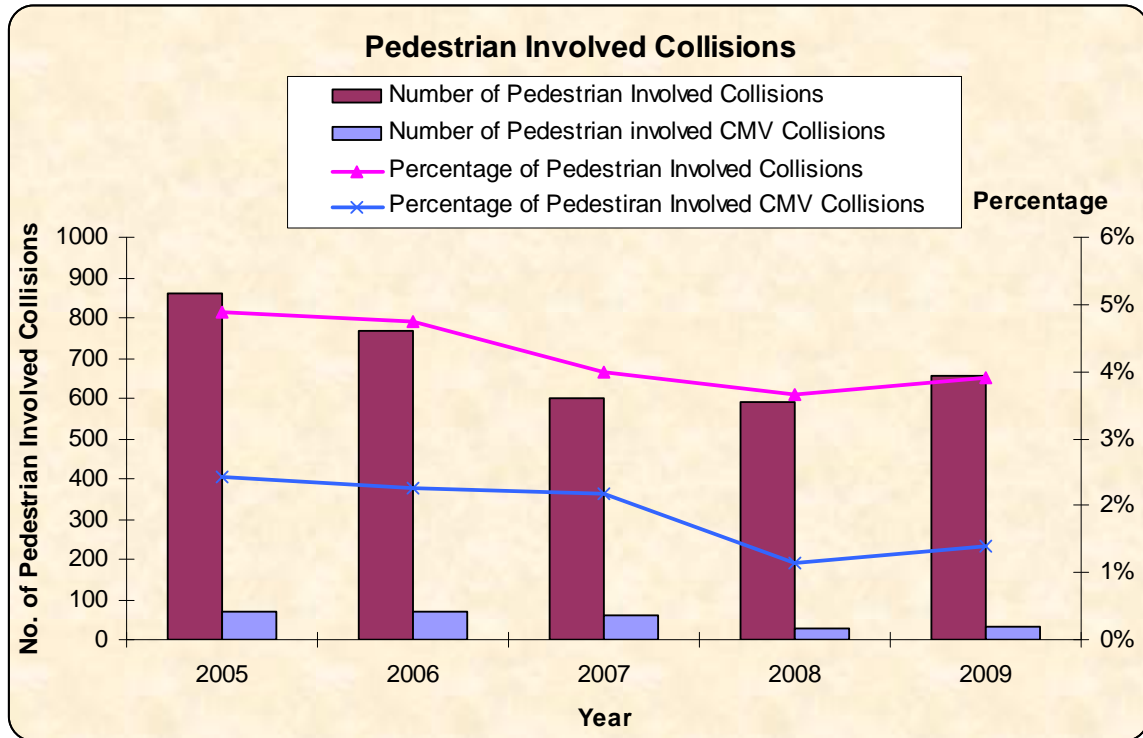


Figure 3.25 Number and Percentage of Pedestrian Involved Collisions 2005~2009

3.4.5 Crash by CMV Classifications

With the introduction of the new PD-10 form, CMV crashes were further classified into specific groups to separate major CMVs by severity of collision. As shown in Table 3.14 and Figure 3.26, buses with 15 seats or more (1,143), unknown heavy trucks (393), and buses with 9-15 seats (291) were the top three most frequently reported CMV classifications.

Table 3.14 CMV Classification by Injury Severity

CMV Classification	Fatal Collisions	Injury Collisions	PDO Collisions	Total
Bus (seats >15)	1	154	988	1,143
Unknown Heavy Truck	0	45	348	393
Bus (Seats 9-15)	0	42	249	291
Truck/Trailer	0	38	182	220
Single-Unit Truck (2 axles)	1	30	177	208
Light Truck	0	10	49	59
Tractor/Semi-trailer	0	10	44	54
Single-Unit Truck (>2 axles)	0	10	39	49
Bus (School)	0	11	33	44
Truck/Tractor (Bobtail)	0	4	21	25
Tractor/Double	0	3	1	4
Total	2	357	2,131	2,490

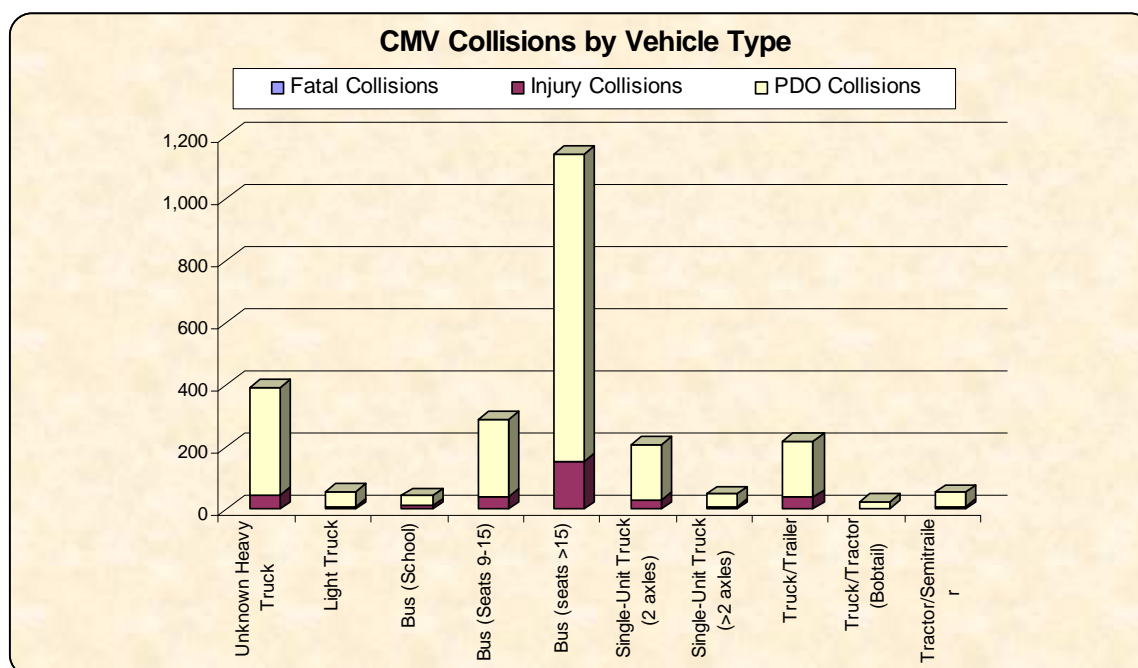


Figure 3.26 CMV Collisions by Vehicle Type

3.5 Environment

3.5.1 CMV Collisions by Roadway Type

Crashes may be influenced by the roadway type which may dictate the extent and severity of CMV crashes. The summary of CMV collisions by type of roadway is presented in Table 3.15 and graphically in Figure 3.27. From the results, it can be determined that majority of the total reported CMV collisions (1,464 or approximately 64%) occurred on straight sections of roadways.

Table 3.15 CMV Collisions by Roadway Type

Road Type	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Straight	1,464	1	224	1,239	1	403
Curve	127	0	18	109	0	29
Level	74	0	11	63	0	26
Grade	53	0	7	46	0	10
Crest	8	0	0	8	0	0
Ramp	7	0	2	5	0	2
Bridge	5	0	0	5	0	0
Underpass	3	0	0	3	0	0
Other	24	0	3	21	0	3
Unknown	532	1	72	459	1	119
Total	2,297	2	337	1,958	2	592

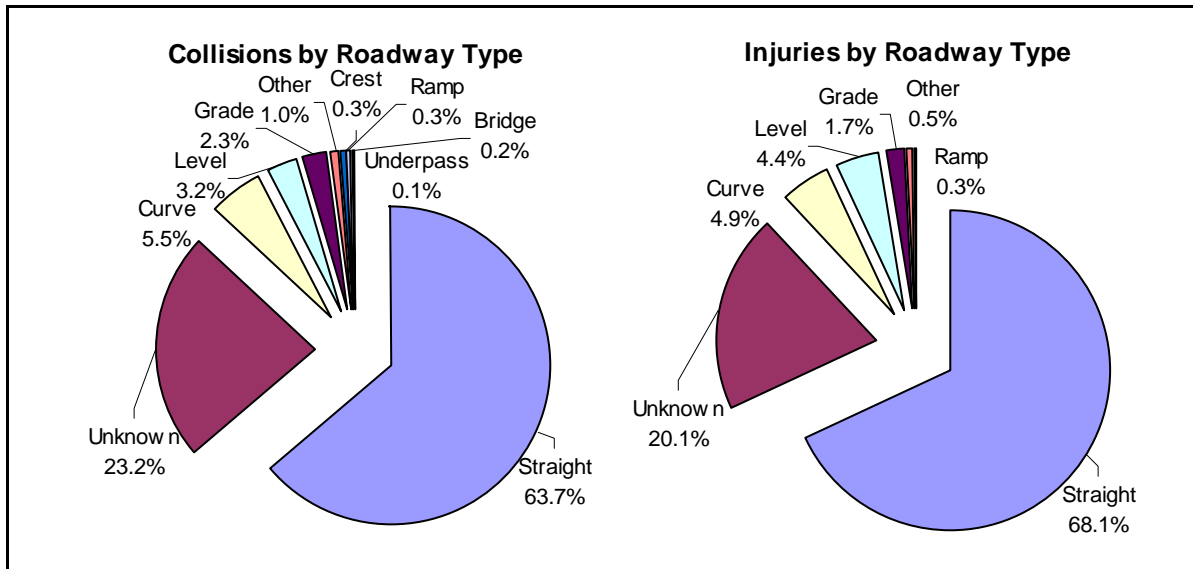


Figure 3.27 CMV Collisions and Injuries by Road Type

3.5.2 CMV Collisions by Roadway Conditions

Table 3.16 and Figure 3.28 show the distribution of road conditions related CMV crashes. From the results, it can be observed that majority of the CMV crashes occurred on roadways where the road conditions were observed to be dry. The CMV collisions on dry roadways comprise of about 79% (or 1,814) of the total CMV crashes in 2009. CMV collisions under wet pavement conditions were observed to be the second highest; with 318 (or approximately 14%) of the total reported CMV crashes.

Table 3.16 CMV Collisions by Roadway Conditions

Road Condition	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Dry	1,814	2	268	1,544	2	446
Wet	318	0	49	269	0	103
Snow	35	0	4	31	0	12
Repairing	15	0	0	15	0	0
Slush	10	0	1	9	0	1
Ice	8	0	1	7	0	1
Standing Water	3	0	2	1	0	6
Unknown	90	0	11	79	0	22
Total	2,297	2	337	1,958	2	592

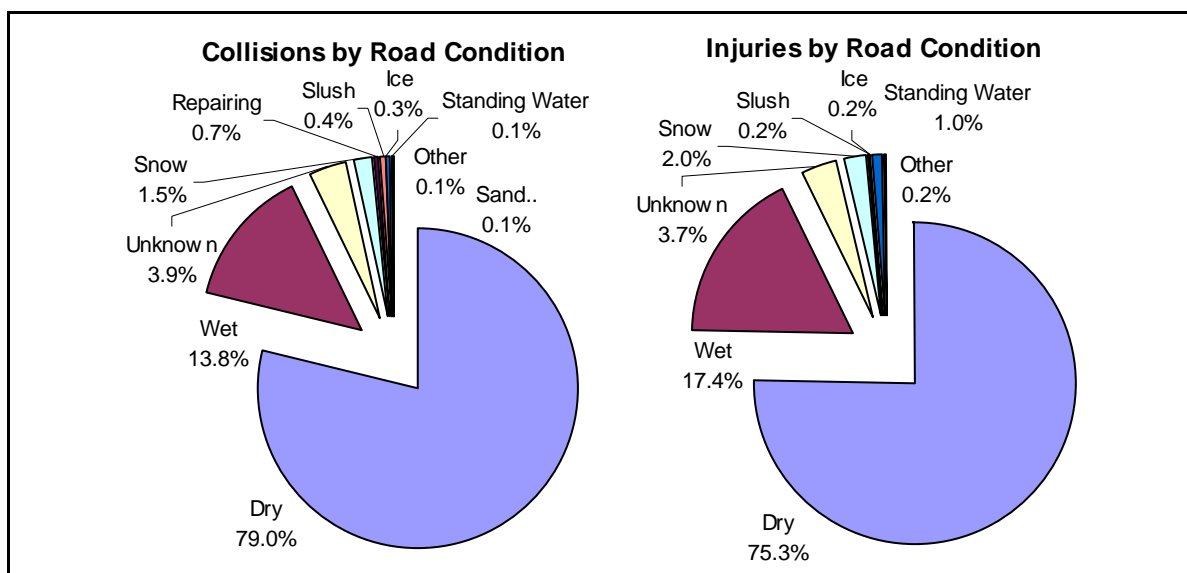


Figure 3.28 CMV Collisions and Injuries by Road Condition

3.5.3 CMV Collisions by Road Surface

Road surface is another variable, which is reported on the traffic crash report form (PD-10). A summary of the CMV collisions in 2009 by road surface type is presented in Table 3.17 and Figure 3.29. The results show that 2,052 (or approximately 89%) of the total CMV crashes occurred on asphalt roadways. This is followed by crashes on concrete surfaces, which constitutes approximately 8% (or 180) of the total reported CMV collisions. As shown in Figure 3.30, concrete surface comprised of higher number of collisions per lane-mile, while asphalt surface was found to be higher in number of injuries per lane-mile in 2009.

Table 3.17 CMV Collisions by Road Surface

Road Surface	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Asphalt	2,052	2	297	1,753	2	536
Brick	5	0	0	5	0	0
Concrete	180	0	30	150	0	38
Gravel	2	0	1	1	0	1
Other	3	0	1	2	0	1
Unknown	55	0	8	47	0	16
Total	2,297	2	337	1,958	2	592

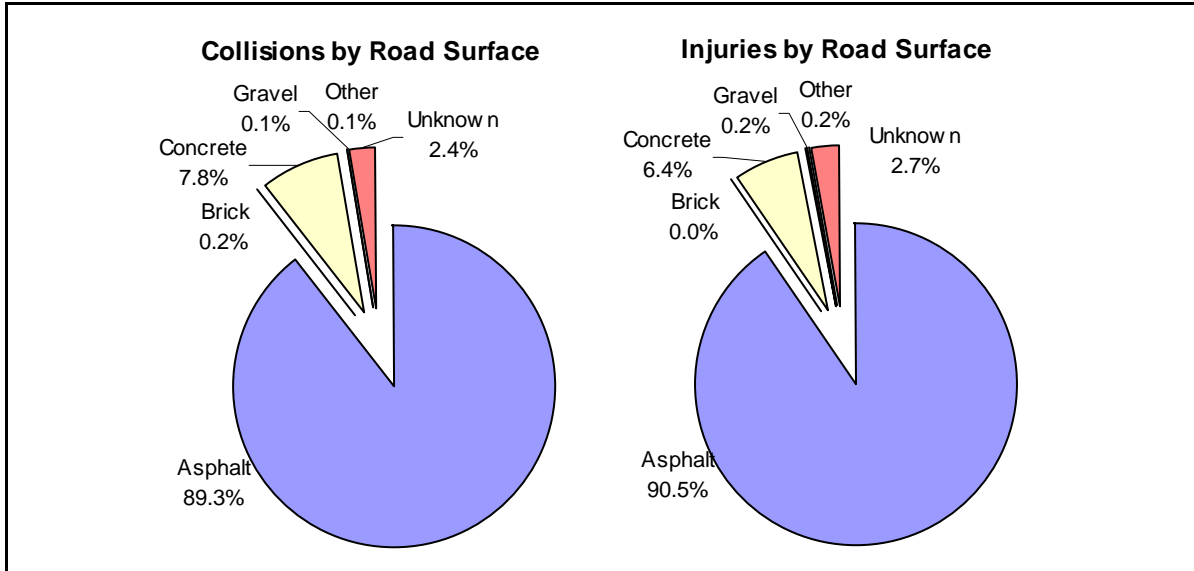


Figure 3.29 CMV Collisions and Injuries by Road Surface

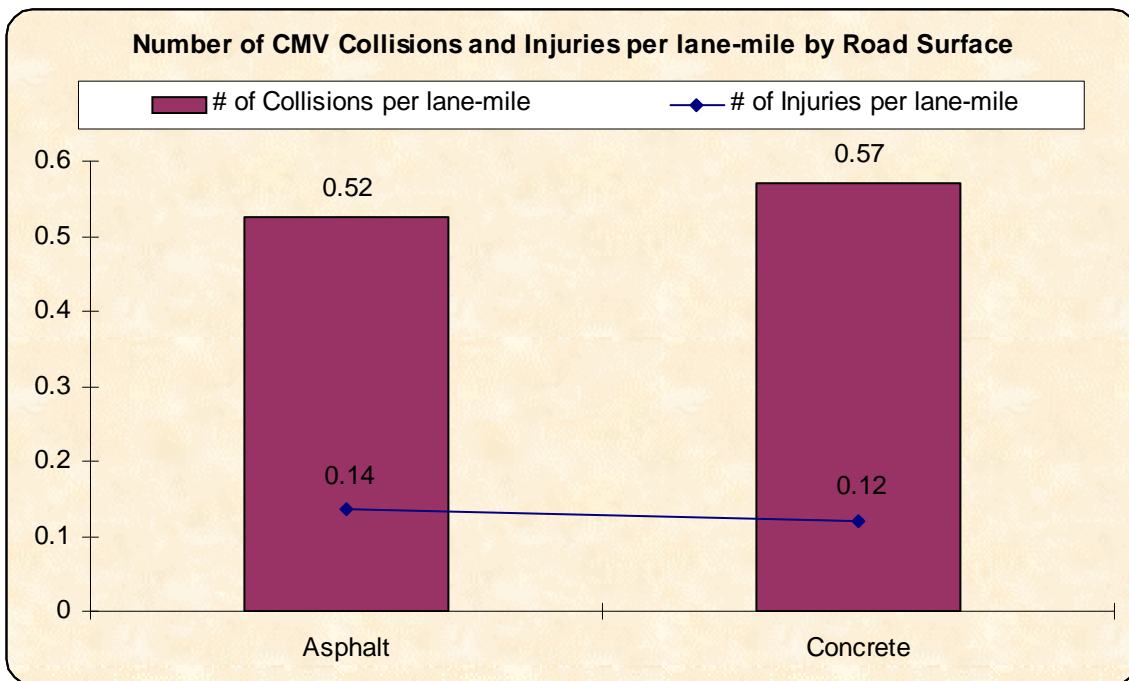


Figure 3.30 Number of CMV Collisions and Injuries per lane-mile by Road Surface

3.5.4 CMV Collisions by Road Functional Classification

It is pertinent to assess the interrelationship of roadway functional classification and commercial motor vehicle crashes. For the purpose of this report, it is of interest to examine the commercial motor vehicle crashes and injuries by roadway functional classification.

Table 3.18 CMV Collisions by Roadway Functional Classification

Road Condition	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Principal Arterial	736	1	111	624	1	206
Minor Arterial	604	1	109	494	1	195
Local	532	0	52	480	0	97
Collector	332	0	40	292	0	59
Interstate	50	0	18	32	0	25
Other Freeway and Expressway	10	0	2	8	0	3
Unknown	33	0	5	28	0	7
Total	2,297	2	337	1,958	2	592

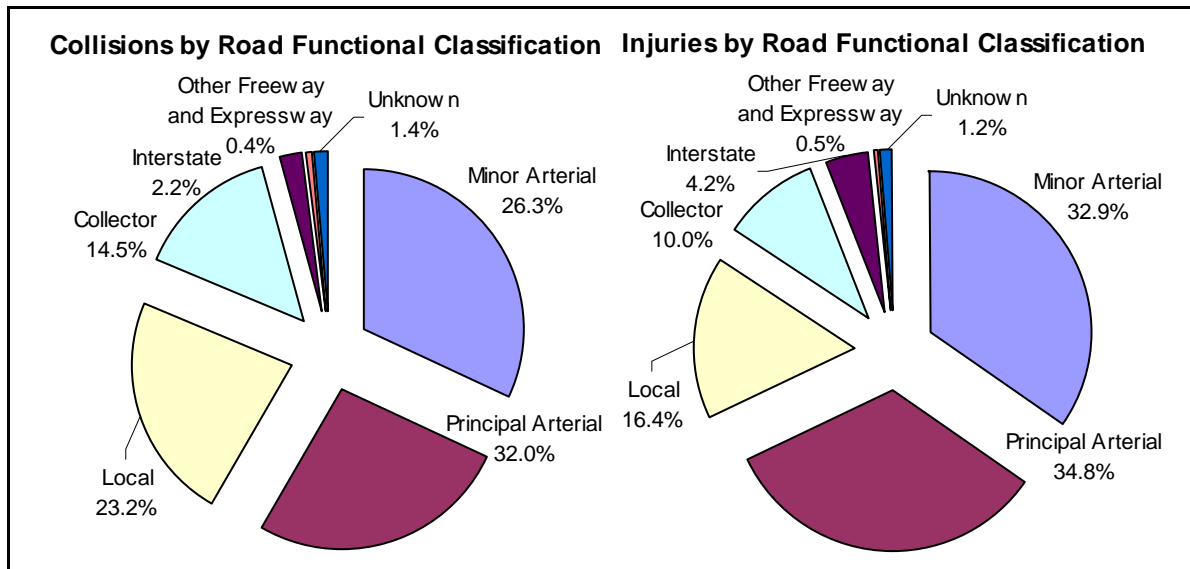


Figure 3.31 CMV Collisions and Injuries by Roadway Functional Classification

3.5.5 CMV Collisions by Weather Conditions

Adverse weather conditions are among the causes for crashes including those involved with CMVs. Table 3.19 and Figure 3.32 show the distribution of weather conditions that were attributed to CMV crashes. From the results, it can be observed that majority of the

CMV crashes occurred under clear weather conditions. These CMV collisions comprise of approximately 80% (or 1,827) of the total CMV crashes in 2009. This is followed by CMV crashes which occurred under rainy conditions, which represents approximately 11% (or 245) of the total CMV crashes.

Table 3.19 CMV Collisions by Weather Conditions

Weather	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Clear	1,827	2	275	1,550	2	461
Rain	245	0	35	210	0	78
Snow	53	0	4	49	0	14
Fog/Mist	35	0	5	30	0	8
Sleet/Hail	5	0	1	4	0	1
Severe Crosswind	4	0	0	4	0	0
Blowing Sand	2	0	1	1	0	5
Other	30	0	4	26	0	4
Unknown	96	0	12	84	0	21
Total	2,297	2	337	1,958	2	592

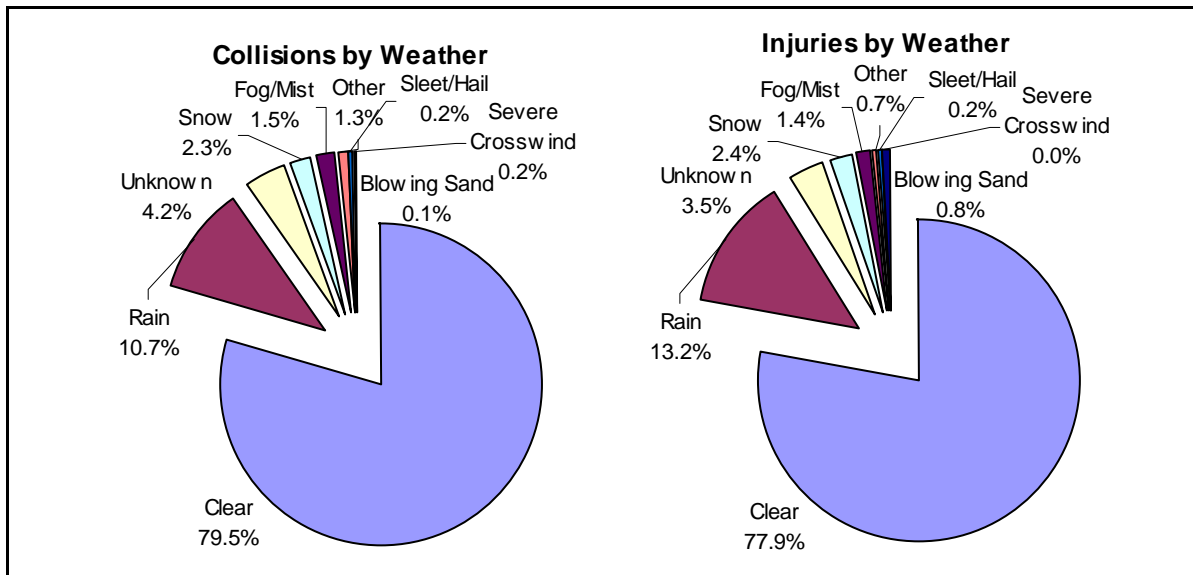


Figure 3.32 CMV Collisions and Injuries by Weather

3.5.6 CMV Collisions by Illumination Conditions

Light condition at a crash location is another important factor that may be used to determine the causes and severity of CMV crashes. A summary of crashes by street illumination is presented in Table 3.20 and graphically in Figure 3.33. The results show that the majority of the CMV crashes occurred during daylight conditions. These CMV

collisions consist of approximately 75% (or 1,734) of the total reported CMV crashes in 2009. The second most frequently reported CMV collision in this category was dark but lighted conditions, which represents approximately 16% (or 366) of the total reported CMV crashes in 2009.

Table 3.20 CMV Collisions by Light Conditions

Light Condition	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Daylight	1,734	1	254	1,479	1	455
Dark (Lighted)	366	1	62	303	1	98
Dusk	39	0	4	35	0	10
Dark (Not Lighted)	25	0	3	22	0	4
Dawn	21	0	4	17	0	4
Dark (Unknown Lighting)	9	0	2	7	0	6
Other	4	0	0	4	0	0
Unknown	99	0	8	91	0	15
Total	2,297	2	337	1,958	2	592

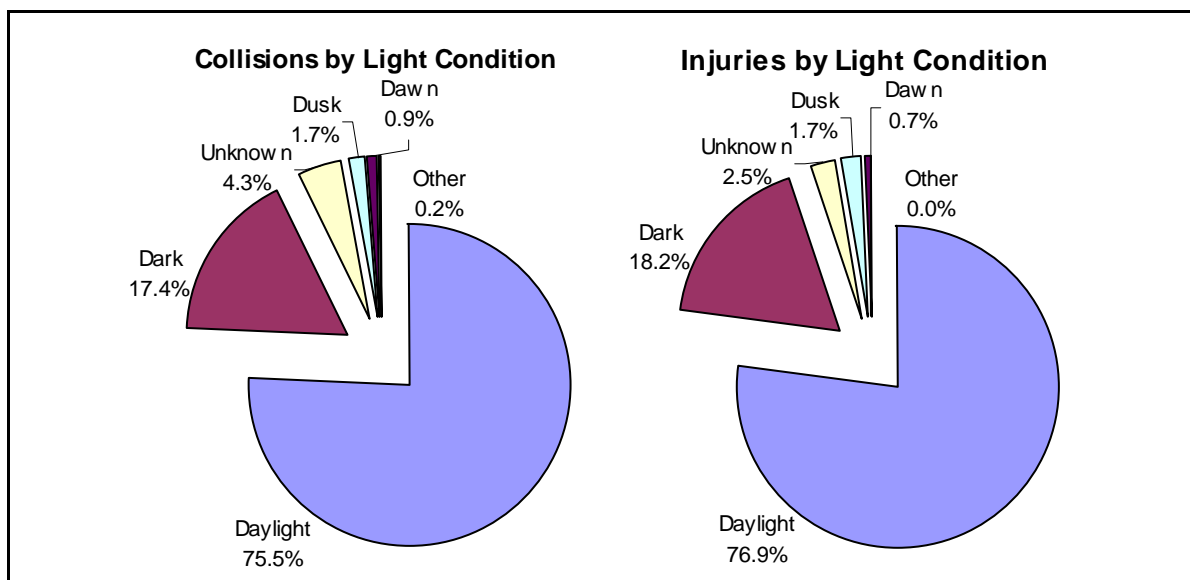


Figure 3.33 CMV Collisions and Injuries by Light Condition

3.5.7 CMV Collisions by Traffic Conditions

Traffic conditions are recorded in the traffic crash report based on police officer's observation and discretion. This is summarized in Table 3.21 and Figure 3.34. From the results, 883 (or approximately 38%) of the total CMV crashes occurred during medium

traffic conditions. About 25% of the CMV crashes (582) were recorded during heavy traffic conditions in 2009.

Table 3.21 CMV Collisions by Traffic Conditions

Traffic Condition	CMV Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Heavy	582	0	73	509	0	141
Medium	883	1	146	736	1	256
Light	491	0	74	417	0	117
Other	19	0	2	17	0	2
Unknown	322	1	42	279	1	76
Total	2,297	2	337	1,958	2	592

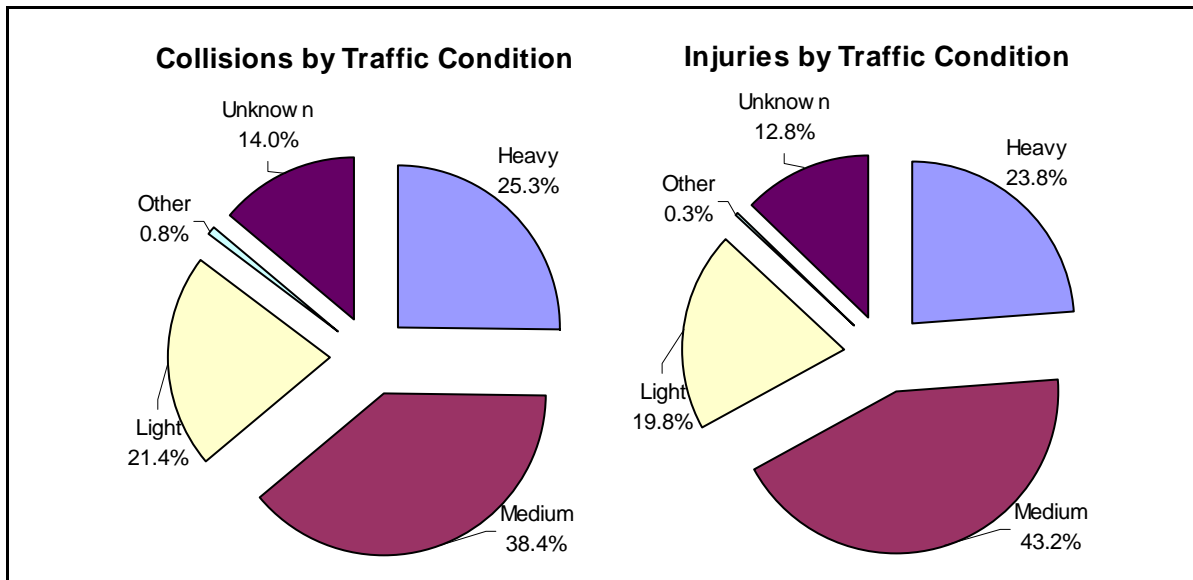


Figure 3.34 CMV Collisions and Injuries by Traffic Condition

3.6 Contributing Circumstance

3.6.1 CMV Collisions by Crash Contributing Factors

Table 3.22 shows all reported contributing factors for CMV collisions in DC in 2009. As shown in this table, driver inattention, changing lane(s) without caution, and following too closely were found to be the top three most frequently reported factors related to CMV crashes.

Table 3.22 CMV Collisions by Crash Contributing Factors

Contributing Circumstances	Collisions	Fatal Collisions	Injury Collisions
Driver Inattention	348	0	53
Changing Lane(s) without Caution	260	0	40
Following too Close	115	0	37
Improper Passing	115	0	10
Automobile/Pedestrian Right-of-Way	66	0	20
Speed	57	0	17
Improper Backing	53	0	2
Open Door To Traffic	31	0	6
Red Light Violation	26	0	13
Driver Vision Obstructed	25	0	2
Road Defects	22	0	2
Other Distraction	18	0	3
Stop Sign	17	0	7
Pedestrian Violation	11	2	9
Alcohol/Drug Influence	9	0	3
Wrong Way/Side of Street	9	0	3
Flashing/Directional Light	7	0	0
Cell Phone/Other Electronic Device	6	0	2
Defective Brakes, Lights, etc.	4	0	0
Fail to Set Parking Brake	3	0	1
Right Turn on Red	2	0	2
Yield Sign	2	0	1

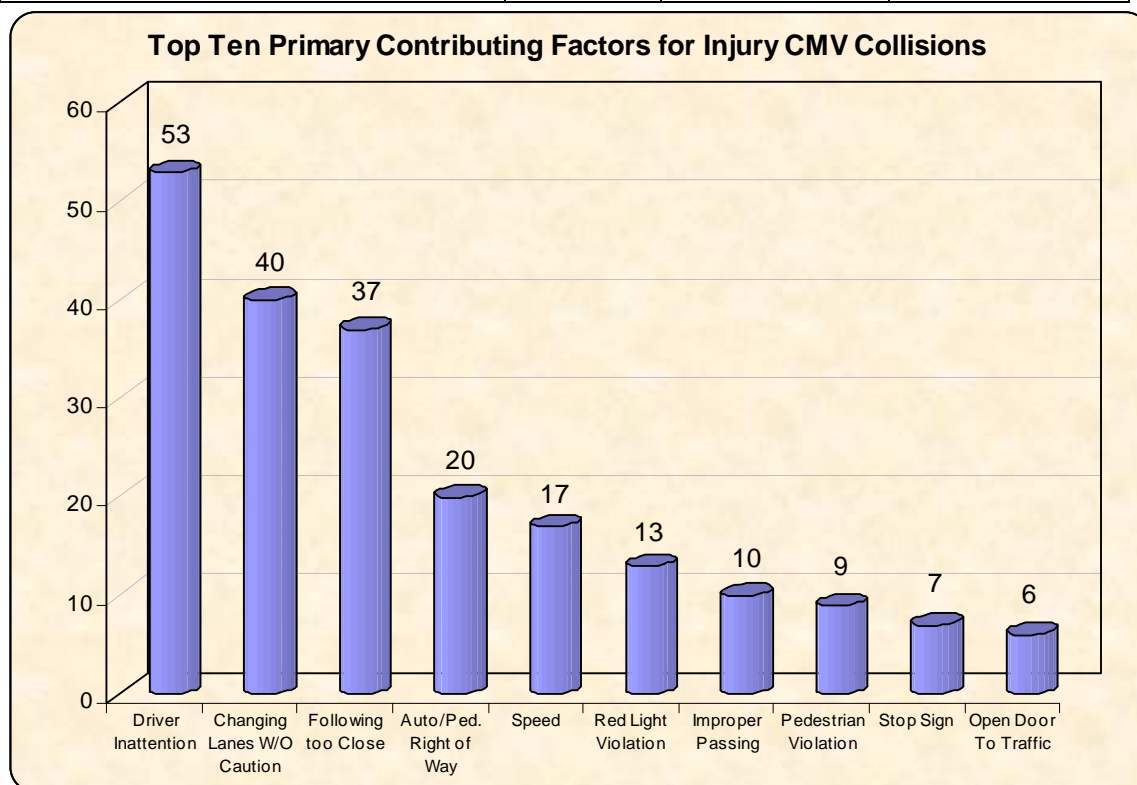


Figure 3.35 Top Ten Primary Contributing Factors for Injury CMV Collisions

3.6.2 CMV Collisions by Restraint Use (Seatbelts or Airbags)

As shown in many past research studies, restraint device usage has a significant influence on the injury severity of a crash. From the summary results presented in Table 3.23, it was found that 2,151 (or approximately 43%) of drivers or passengers involved in a CMV crash used their seat belts. Overall, only a small fraction (or approximately 6%) of drivers or passengers had seat belt not installed or not fastened. The results are also presented graphically in Figure 3.36.

Table 3.23 CMV Collisions by Seat Belt Use

Seat Belt	Fatal	Disabling	Non-Disabling	Complaint but not visible	No Injury	Other	Unknown	Total
Belt Failed	0	1	0	3	50	0	1	55
Fastened	0	7	16	168	1,859	3	98	2,151
Helmet	0	0	1	2	2	1	2	8
Not Fastened	0	1	2	21	73	0	3	100
Not Installed	0	2	4	30	135	1	25	197
Child Restraint	0	0	0	0	11	0	2	13
Other	0	0	1	1	8	1	3	14
Use Unknown	2	13	29	165	1,569	8	704	2,490
Total	2	24	53	390	3,707	14	838	5,028

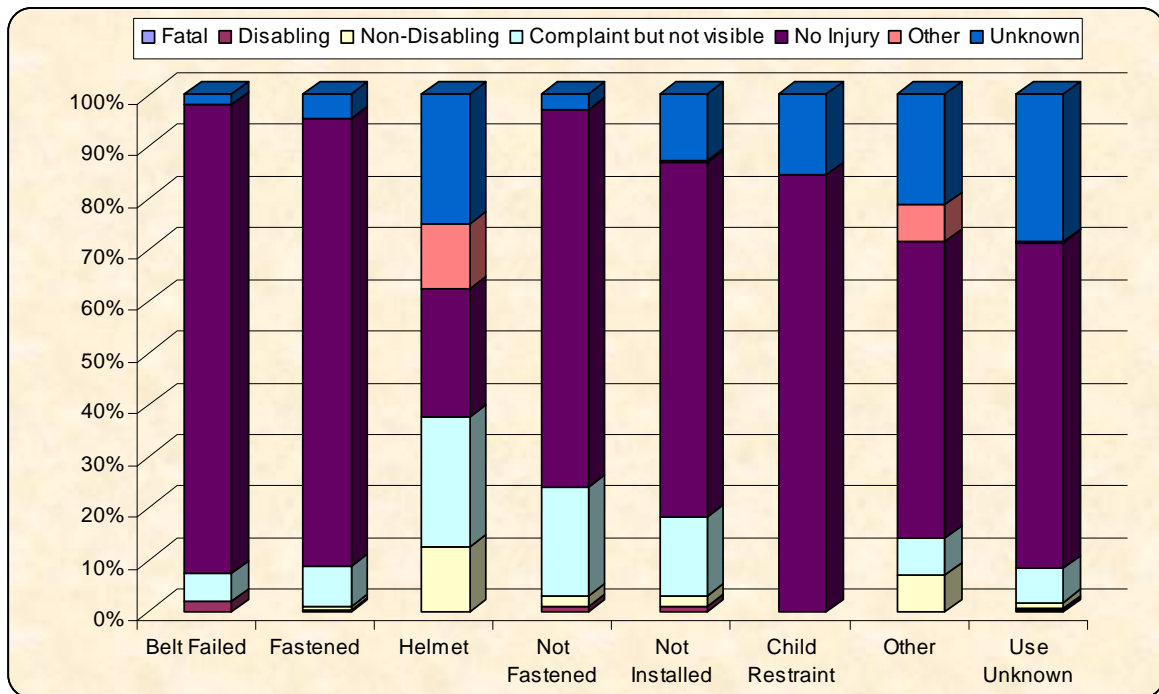


Figure 3.36 Percentage of CMV Collisions by Seat Belt Usage

Motor vehicle airbag is another important safety restraint device that can be used to examine the cause of CMV crash severity. On the basis of the results shown in Table 3.27 and Figure 3.34, it can be observed that 1,981 (or approximately 39%) of drivers or front passengers involved in CMV crashes were reported as having the airbags installed. Overall, only 85 (or approximately 2%) of CMV crashes were reported as airbag failed.

Table 3.24 CMV Collisions by Motor Vehicle Airbag Use

Driver/Passenger Front Air Bag	Fatal	Disabling	Non-Disabling	Complaint but not visible	No Injury	Other	Unknown	Total
Airbag Deployed	0	4	10	26	30	1	8	79
Airbag Failed	0	0	0	5	73	0	7	85
Airbag Installed	0	6	14	159	1,699	2	101	1,981
Side-Impact Airbags	0	0	0	1	8	0	1	10
Other	0	1	2	8	61	0	5	77
Use Unknown	2	13	27	191	1,836	11	716	2,796
Total	2	24	53	390	3,707	14	838	5,028

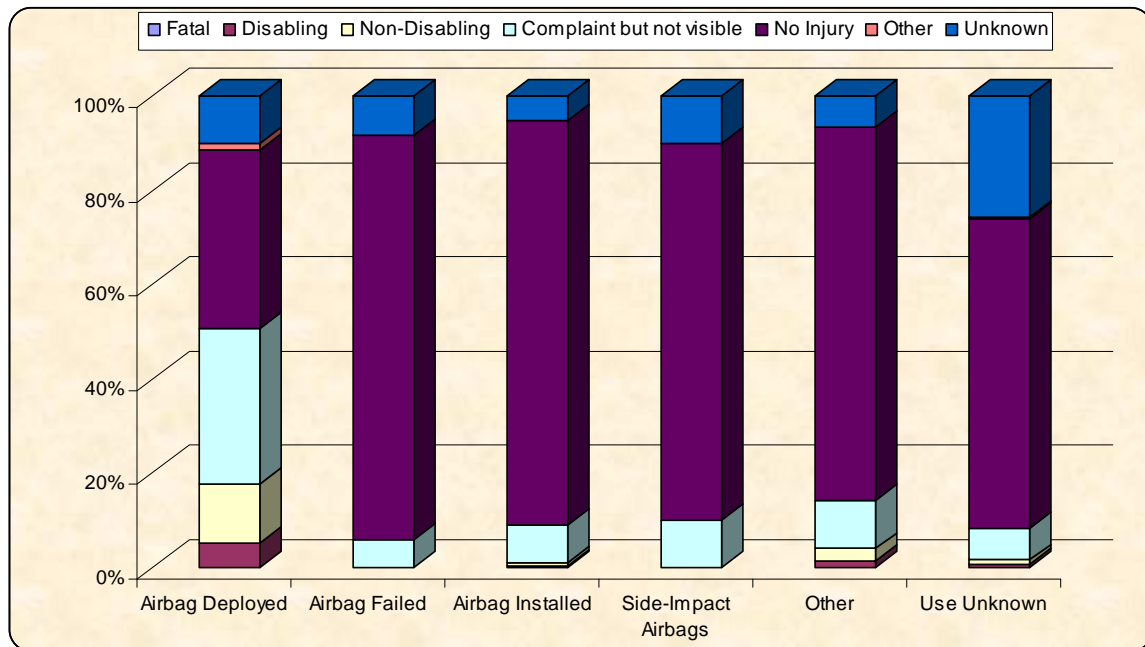


Figure 3.37 Percentage of CMV Collisions by Airbag Usage

3.6.3 Consequence of Speeding

Speeding has been noted to be highly correlated to the severity of a crash. In this report, the total CMV collisions were distributed into specific groups to identify the correlation between speed and collision type. From Figure 3.38, it can be observed that the percentage

of speed-related injury collisions were considerably higher when compared with the overall CMV collisions in 2009. In addition, Figure 3.36 reveals that the injury severity of the CMV crashes were noticeably higher when compared with the overall CMV collisions: 2.4% of CMV collisions were speed related and resulted to 10% of disabling injuries and 11% of non-disabling injuries.

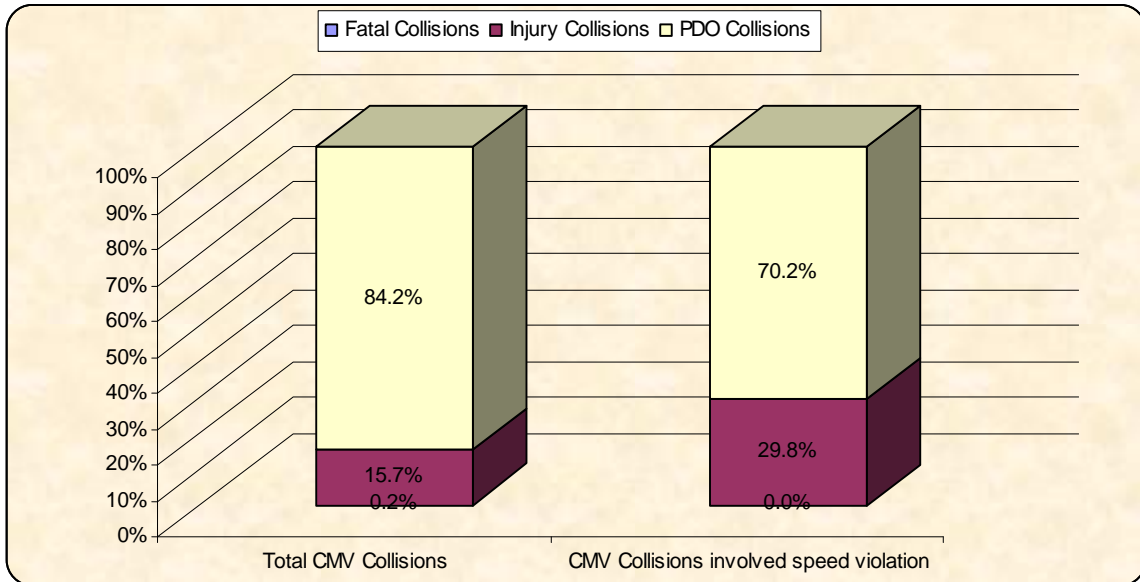


Figure 3.38 Percentage of Total and Speed Involved CMV Collisions

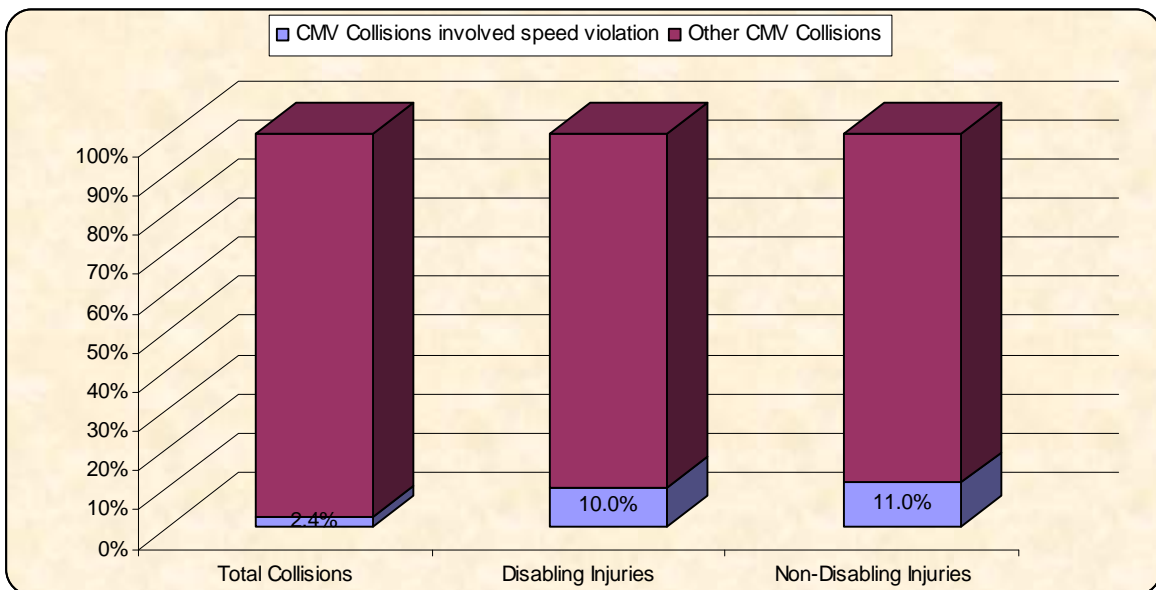


Figure 3.39 Percentage of Total and Speed Involved CMV Collisions by Injury Severity

3.6.4 CMV Collisions by Sobriety

Alcohol and drug use have been identified as one of the contributory factors leading to collisions in which result in injuries. The summary of CMV collisions by sobriety is presented in Figure 3.40. From the results, it can be observed that “had been drinking and obviously drunk” resulted in highest percentage of injuries as compared to other sobriety listings.

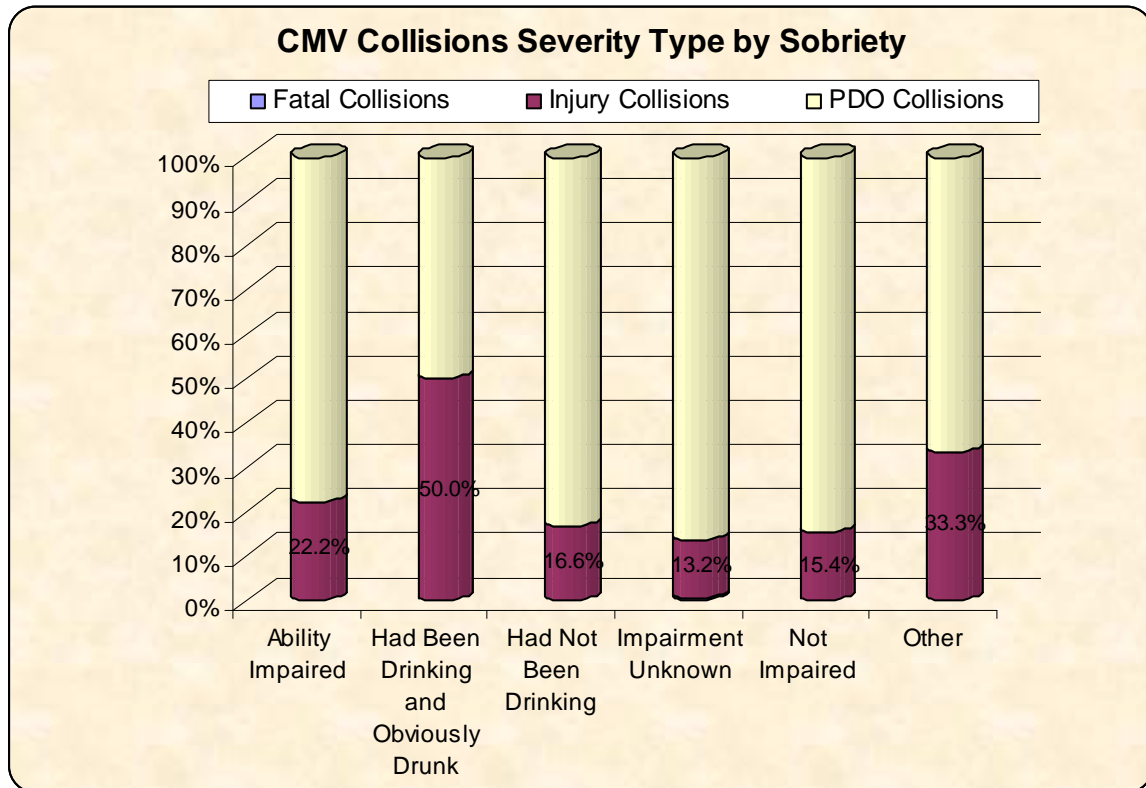


Figure 3.40 Percentage of DUI Involved CMV Collisions

3.6.5 Distractions

Driver distraction is one of the causes of CMV crashes. This section provides a summary of CMV crashes attributed to driver distraction. The summary of driver distraction-related CMV crashes is presented in Table 3.25 and Figure 3.41. The majority of the driver distraction-related CMV crashes were listed as unknown or other.

Table 3.25 CMV Collisions by Driver Distractions

Distraction	Fatal Collisions	Injury Collisions	PDO Collisions
Cell Phone (Hand Held)	0	2	18
Cell Phone (Hands-Free)	0	2	4
Distracted by Passenger(s)	0	5	13
Interacting with Pets	0	0	1
Interacting with Unsecured Cargo	0	0	3
Personal Grooming	0	0	1
Using Personal Communication Technologies	0	1	1
Other	0	39	76
Unknown	1	202	1,185

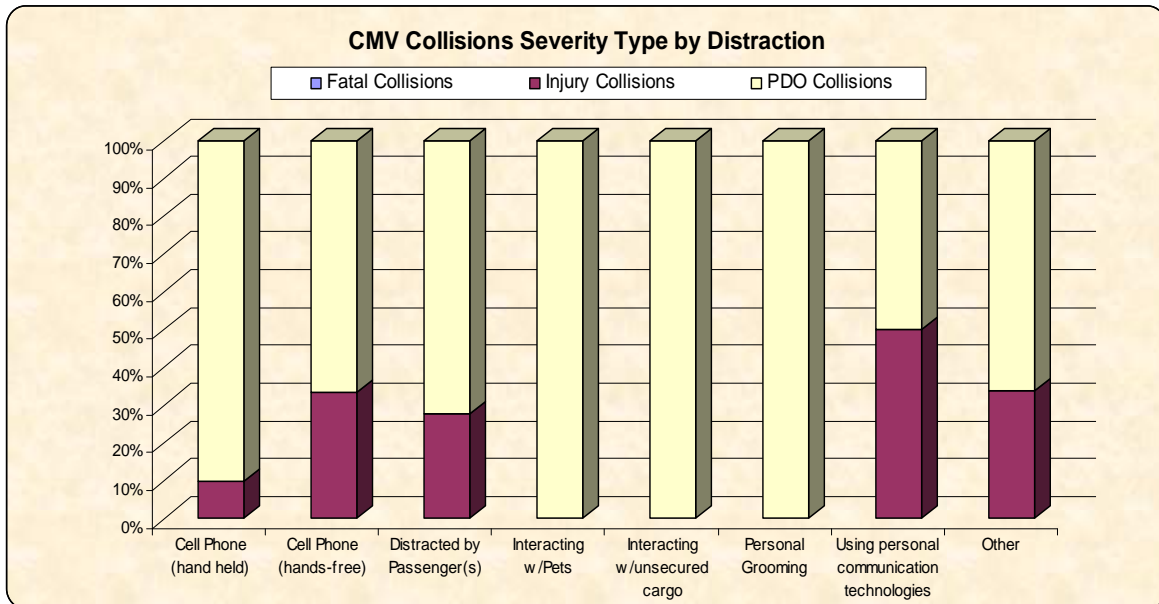


Figure 3.41 Percentage of Distraction Involved CMV Collisions by Injury Severity

CHAPTER 4 IDENTIFICATION OF HIGH FREQUENCY CMV CRASH LOCATION

4.1 Top 20 Intersections by Number of CMV Crashes in 2009

As the first step of determining the high frequency crash locations for CMVs, the crash occurrences for various intersections in 2009 were compiled and arranged to identify the high frequency crash location rankings. On the basis of the results, it can be determined that the intersection of Wisconsin Avenue and M Street was ranked the highest in 2009. Furthermore, the intersection of 31st Street and M Street was found to be the second highest among all intersections presented. Overall, the intersection of Wisconsin Avenue and M Street was found to be the most hazardous intersection in the District in 2009 on the basis of number of CMV crash occurrences. The calculations on rankings were based on the computation methods and equations in Traffic Safety Report Statistics (2007-2009).

Table 4.1 Top 20 Intersections by Number of CMV Crash in 2009

Intersection Name	Quad	CMV Collisions	Total Trucks Involved	Total Buses Involved	Rank by CMV Collisions
WISCONSIN AVE AND M ST	NW	16	5	14	1
31ST ST AND M ST	NW	12	5	9	2
NEW YORK AVE AND NORTH CAPITOL ST	BN	11	5	6	3
BENNING RD AND EAST CAPITOL ST	BN	11	4	7	3
14TH ST AND IRVING ST	NW	11	3	13	3
7TH ST AND H ST	NW	10	2	9	6
NEW YORK AVE AND BLADENSBURG RD	NE	10	5	7	6
14TH ST AND K ST	NW	10	3	9	6
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	9	4	6	9
WISCONSIN AVE AND Q ST	NW	9	3	6	9
14TH ST AND D ST	NW	9	1	8	9
23RD ST AND WASHINGTON CIR	NW	9	1	8	9
24TH ST AND CONNECTICUT AVE	NW	9	0	11	9
MINNESOTA AVE AND BENNING RD	NE	8	1	8	14
18TH ST AND ADAMS MILL RD	NW	8	2	6	14
PENNSYLVANIA AVE AND POTOMAC AVE	SE	8	3	7	14
17TH ST AND I ST	NW	8	2	6	14
DUPONT CIR AND P ST	NW	8	4	6	14
CONNECTICUT AVE AND N ST	NW	8	0	9	14
16TH ST AND I ST	NW	8	0	8	14

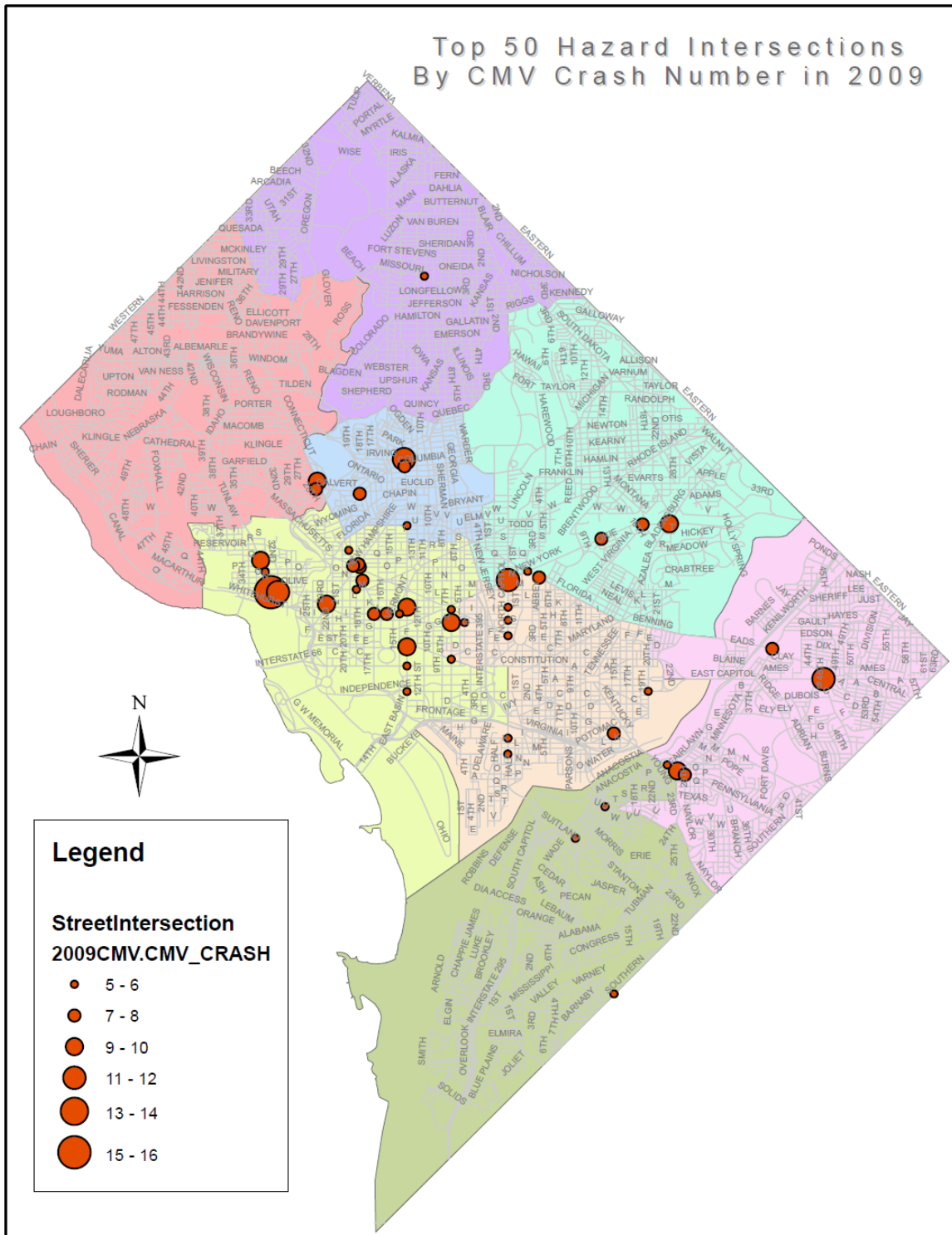


Figure 4.1 Top 50 High Hazard Intersections in 2009

4.2 Top 20 intersections by Number of CMV Crashes from 2007 through 2009

When the three-year crash frequency was compiled, the intersection of Wisconsin Avenue and M Street was again ranked the highest among all intersections presented, whereas the intersection of Minnesota Avenue and Pennsylvania Avenue was found to be the second highest as compared to other intersections in the District.

Table 4.2 Top 20 Intersections by Number of CMV Crashes (2007 ~ 2009)

Intersection Name	Quad	CMV Collisions	Total Trucks Involved	Total Buses Involved	Rank by CMV Collisions
WISCONSIN AVE AND M ST	NW	58	17	53	1
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	38	20	21	2
7TH ST AND H ST	NW	37	9	31	3
NEW YORK AVE AND NORTH CAPITOL ST	BN	36	23	17	4
NEW YORK AVE AND BLADENSBURG RD	NE	36	25	14	4
31ST ST AND M ST	NW	33	16	21	6
14TH ST AND U ST	NW	30	13	20	7
WISCONSIN AVE AND Q ST	NW	28	10	19	8
MINNESOTA AVE AND BENNING RD	NE	27	8	23	9
BENNING RD AND EAST CAPITOL ST	BN	26	13	15	10
14TH ST AND K ST	NW	25	9	18	11
MONTANA AVE AND NEW YORK AVE	NE	25	20	10	11
M ST AND S CAPITOL ST	BN	25	16	13	11
H ST AND NORTH CAPITOL ST	BN	25	16	19	11
MASSACHUSETTS AVE AND DUPONT CIR	NW	23	6	21	15
15TH ST AND I ST	NW	22	7	18	16
MARTIN LUTHER KING AVE AND HOWARD RD	SE	22	2	22	16
14TH ST AND D ST	NW	21	6	15	18
23RD ST AND WASHINGTON CIR	NW	21	3	20	18
18TH ST AND ADAMS MILL RD	NW	21	10	12	18

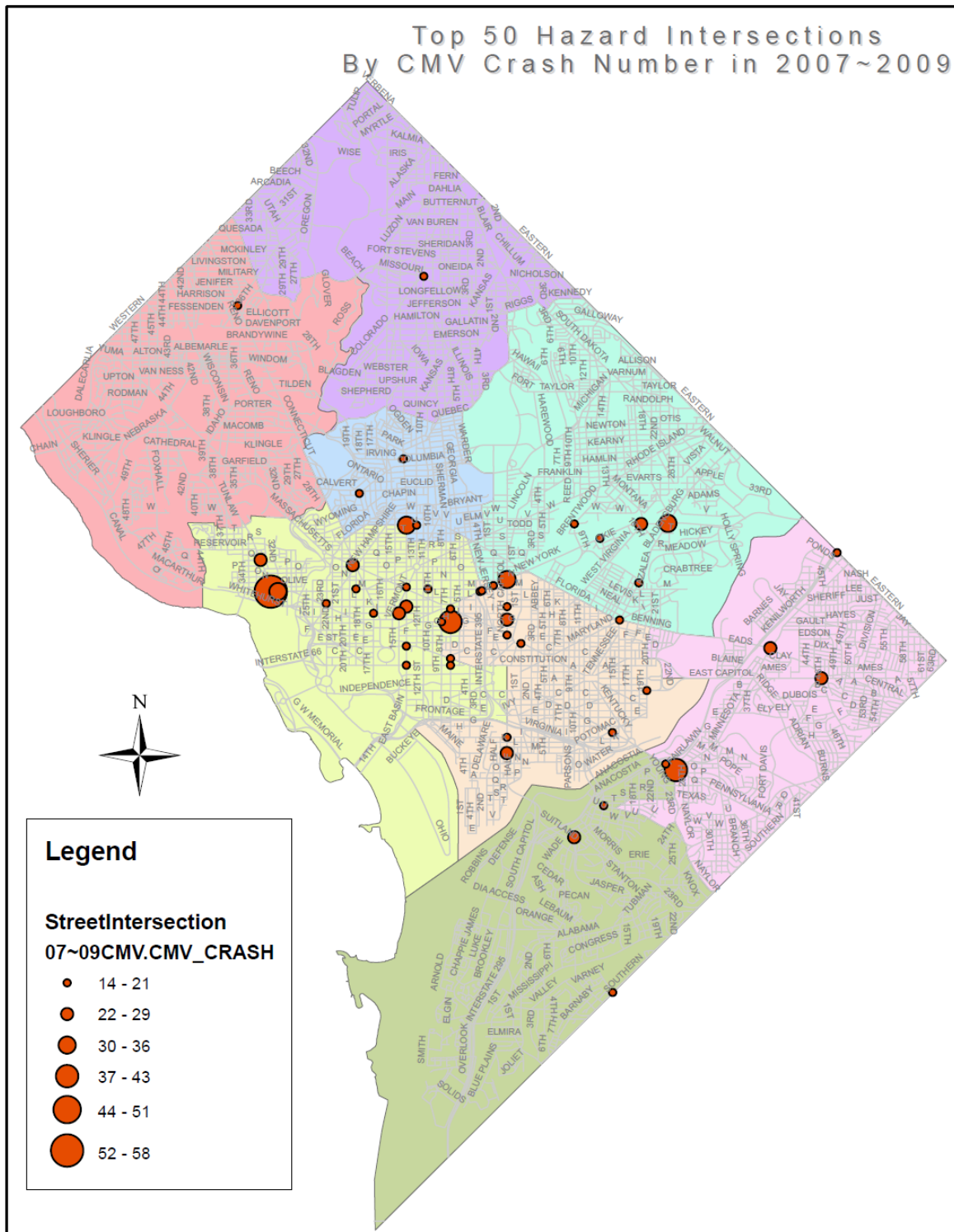


Figure 4.2 Top 50 High Hazard Intersections (2007 ~ 2009)

4.3 High Frequency Crash Intersection by Collision Type

In order to determine the crash pattern for each of the identified top 20 high frequency crash locations, the collision locations were further divided into specific groups. For the purpose of this report, these high frequency crash locations were categorized by collision type. As shown in Table 4.3, side swiped collision was the leading crash type for most of the high frequency crash locations, whereas rear end and right turn were the second and third most frequently reported commercial motor vehicle crashes for the computed top 20 high frequency crash locations.

Table 4.3 Top 20 Hazardous Intersections by Collision Type (2007~2009)

Type of Collision	Backing	Fixed Object	Head On	Left Turn	Non-Collision	Other	Parked Vehicle	Ran Off Roadway	Rear End	Right Angle	Right Turn	Side Swiped	Straight	Override	Underride	Unknown	Total Crash
WISCONSIN AVE AND M ST,NW	1	0	0	10	0	3	3	0	4	0	18	18	0	0	0	1	58
MINNESOTA AVE AND PENNSYLVANIA AVE,SE	0	1	0	5	0	2	0	0	8	3	1	18	0	0	0	0	38
7TH ST AND H ST,NW	1	0	0	0	0	3	1	0	4	4	1	22	1	0	0	0	37
NEW YORK AVE AND NORTH CAPITOL ST,BN	0	2	1	2	0	1	1	1	4	3	4	17	0	0	0	0	36
NEW YORK AVE AND BLADENSBURG RD,NE	0	0	0	2	0	0	0	0	12	0	6	15	0	0	0	1	36
31ST ST AND M ST,NW	0	0	0	1	0	2	4	0	1	0	6	18	0	0	0	1	33
14TH ST AND U ST,NW	5	0	0	0	0	1	6	0	2	1	1	14	0	0	0	0	30
WISCONSIN AVE AND Q ST,NW	0	1	0	0	0	1	1	0	2	1	1	21	0	0	0	0	28
MINNESOTA AVE AND BENNING RD,NE	0	0	1	1	0	0	0	0	6	0	1	16	1	0	0	1	27
BENNING RD AND EAST CAPITOL ST,BN	0	0	0	0	1	1	0	0	5	0	0	19	0	0	0	0	26
14TH ST AND K ST,NW	0	0	0	2	0	0	2	0	3	2	3	13	0	0	0	0	25
MONTANA AVE AND NEW YORK AVE,NE	1	1	0	2	0	1	0	0	5	0	1	13	0	0	0	1	25
M ST AND S CAPITOL ST,BN	0	0	0	4	0	0	0	0	4	5	0	12	0	0	0	0	25
H ST AND NORTH CAPITOL ST,BN	0	0	0	3	0	0	0	0	3	2	4	13	0	0	0	0	25
MASSACHUSETTS AVE AND DUPONT CIR,NW	0	0	0	0	0	0	0	0	1	0	5	17	0	0	0	0	23
15TH ST AND I ST,NW	1	0	0	7	0	0	1	0	2	0	2	9	0	0	0	0	22
MARTIN LUTHER KING AVE AND HOWARD RD,SE	0	0	0	8	0	0	1	0	2	1	1	7	2	0	0	0	22
14TH ST AND D ST,NW	0	0	0	1	0	0	2	0	0	0	1	16	1	0	0	0	21
23RD ST AND WASHINGTON CIR,NW	1	0	0	0	0	0	0	0	2	2	2	13	0	0	0	1	21
18TH ST AND ADAMS MILL RD,NW	1	0	0	0	0	1	0	0	2	1	2	13	0	0	0	1	21

4.4 High Frequency CMV Crash Corridors

On the basis of the results presented in Table 4.4 and Figure 4.3, it can be observed that Pennsylvania Avenue, New York Avenue, and Connecticut Avenue were three frequently reported corridors for commercial motor vehicle crashes in the District from 2007 to 2009.

Table 4.4 Top 10 High Frequency CMV Crash Locations (2007 ~ 2009)

Corridor	2007			2008			2009		
	No. of Collisions	Fatalities	Injuries	No. of Collisions	Fatalities	Injuries	No. of Collisions	Fatalities	Injuries
PENNSYLVANIA AVE	152	2	51	136	0	35	136	0	22
NEW YORK AVE	119	1	42	98	0	27	93	1	62
CONNECTICUT AVE	68	0	11	81	0	8	86	0	18
WISCONSIN AVE	101	0	22	91	0	10	78	0	9
GEORGIA AVE	96	0	28	82	0	27	74	0	24
NORTH CAPITOL ST	83	0	28	78	0	22	67	0	33
SIXTEENTH ST, N.W.	71	0	15	51	0	6	67	0	9
BENNING RD	66	0	31	53	0	19	59	0	15
FLORIDA AVE	65	0	24	51	0	17	59	0	21
RHODE ISLAND AVE	66	0	25	46	0	8	36	0	12
BLADENSBURG RD	46	0	10	32	0	6	28	0	2
CONSTITUTION AVE	50	0	17	32	0	2	28	0	5
SOUTHERN AVE	32	0	10	27	0	15	24	0	20
NEW JERSEY AVE	24	0	11	27	0	9	18	1	9

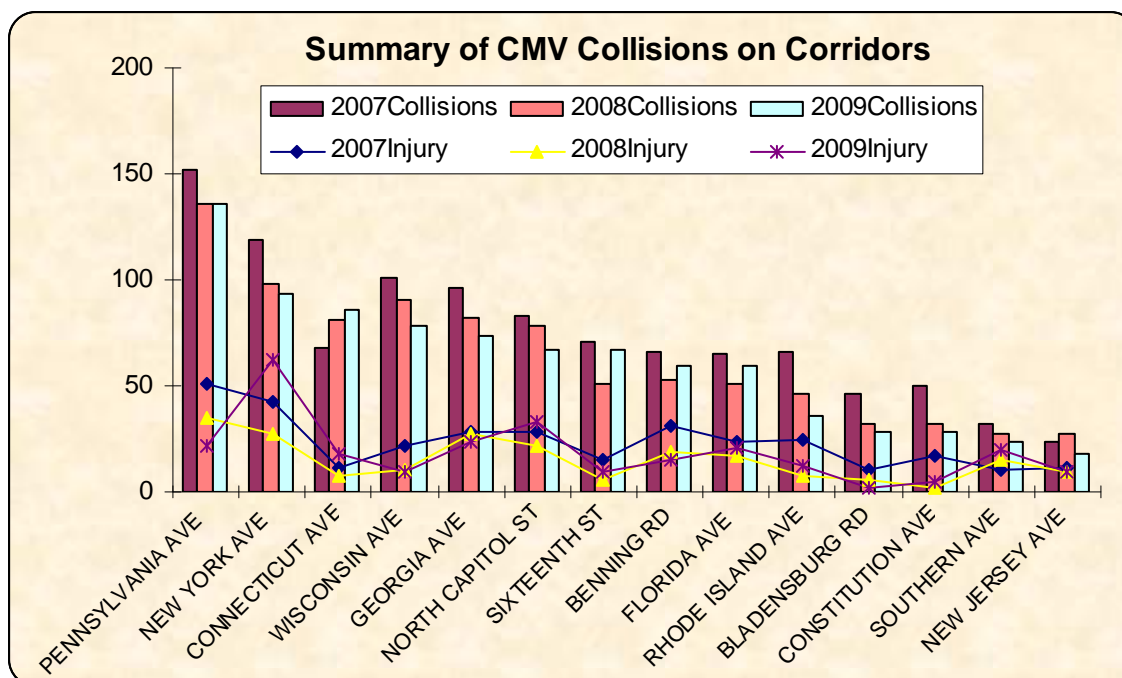


Figure 4.3 Summary of High Frequency Crash Corridors for CMV

Table 4.5 Summary of High Frequency Crash Corridors (2007~2009)

Corridor	Length(miles)	No. of Intersection	No. of CMV Crash (2006-2008)	Average CMV Crashes per Mile	Average CMV Crashes per Intersection
PENNSYLVANIA AVE	5.48	89	424	77.37	4.76
NEW YORK AVE	5.08	46	310	61.02	6.74
CONNECTICUT AVE	5.01	73	235	46.91	3.22
WISCONSIN AVE	4.87	65	270	55.44	4.15
GEORGIA AVE	4.76	65	252	52.94	3.88
NORTH CAPITOL ST	3.85	73	228	59.22	3.12
SIXTEENTH ST, NW	6.39	89	189	29.58	2.12
BENNING RD	3.39	45	178	52.51	3.96
FLORIDA AVE	5.46	80	175	32.05	2.19
RHODE ISLAND AVE	4.56	49	148	32.46	3.02
BLADENSBURG RD	2.65	45	106	40.00	2.36
CONSTITUTION AVE	3.9	52	110	28.21	2.12
SOUTHERN AVE	5.4	122	83	15.37	0.68
NEW JERSEY AVE	2.79	38	69	24.73	1.82

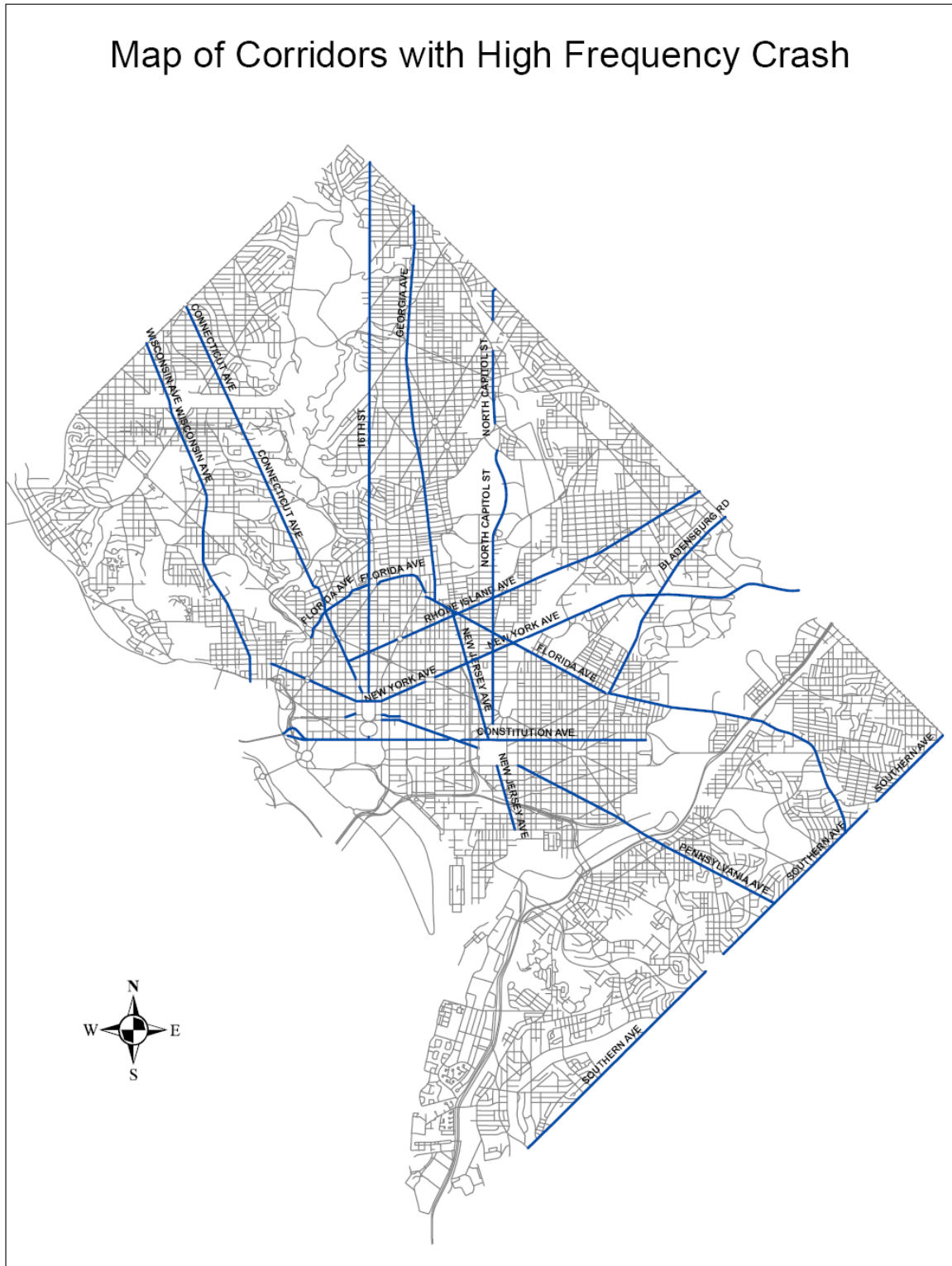


Figure 4.4 Map of Corridors with High Frequency Crash

CHAPTER 5 APPENDICES

5.1 New PD10 Form - Traffic Crash Report

PD 10 Rev. December 2008

TRAFFIC CRASH REPORT



Metropolitan Police Department, Washington, DC

189 (Type of Crash) Record N/A in any field that does not apply to this event. For yes/no questions, circle one.

All dates should be formatted as mm/dd/yyyy

☐ ☐ Explain any "other" responses in narrative.

190 (Road Surface)	1 Date of Crash	2 Time of Crash (Use military)	3 Day of Week	4 Date of Report	5 Complaint Number (CCN)	6 UCC Number
191 (Road Type)	7 Type of Crash (Check all that apply) <input type="checkbox"/> 01 Fatality <input type="checkbox"/> 02 Injury <input type="checkbox"/> 03 Property Damage Only <input type="checkbox"/> 04 Hit & Run <input type="checkbox"/> 05 Pedestrian <input type="checkbox"/> 06 D.C. Prop. <input type="checkbox"/> 07 Non-Collision <input type="checkbox"/> 08 Comm. Veh. <input type="checkbox"/> 99 Other			8 Location (Street/bridge/tunnel name & quadrant)		9 District
192 (Road Condition)	Enter the number of feet, in whatever direction, from the nearest intersection or block (0 feet if at an exact location). On freeways, enter the number of feet from the nearest mile post or PEPCO pole no., etc. Indicate if accident occurred on exit ramp, bridge, tunnel or other. Finally, circle the city quadrant.					
193 (Street Lighting)	11 Location Type and Name _____ Feet N S E W from Intersection/Block: _____ Freeway Mile Post: _____ PEPCO Pole No: _____ Exit Ramp: _____ Bridge: _____ Tunnel: _____ Other: _____ Circle Quadrant: NW SW NE SE					
194 (Light Condition)	12 Construction Zone? <input type="checkbox"/> Y <input type="checkbox"/> N	13 On-Street Location <input type="checkbox"/> 01 At Intersection <input type="checkbox"/> 02 Within 100' of Intersection <input type="checkbox"/> 03 Not at Intersection <input type="checkbox"/> 04 Private Property <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____		14 Off-Street Location <input type="checkbox"/> 01 Public Space <input type="checkbox"/> 02 Private Property <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____		15 Report taken on scene? <input type="checkbox"/> Y <input type="checkbox"/> N
195 (Weather)	16 Photos taken? <input type="checkbox"/> Y <input type="checkbox"/> N	16a If yes, # photos	17 # Vehicles Involved	18 # Injured Persons	19a-d # Occupants (Incl. driver) Vehicle # 1 _____ 2 _____ 3 _____ 4 _____	
196 (Traffic Condition)	21 OBJECT TYPE (Describe fixed object and damage in narrative) <input type="checkbox"/> 01 Driver <input type="checkbox"/> 02 Pedestrian <input type="checkbox"/> 03 Bicyclist <input type="checkbox"/> 04 Parked Car <input type="checkbox"/> 05 Animal <input type="checkbox"/> 06 Other Fixed Object <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____			50 OBJECT TYPE (Describe fixed object and damage in narrative) <input type="checkbox"/> 01 Driver <input type="checkbox"/> 02 Pedestrian <input type="checkbox"/> 03 Bicyclist <input type="checkbox"/> 04 Parked Car <input type="checkbox"/> 05 Animal <input type="checkbox"/> 06 Other Fixed Object <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____		
197 (Roadway Type)	22 Last Name First Middle		23 Sex	24 DOB		
198 (Traffic Controls)	25 Street Address		26 City, State, Zip			
199 (Pedestrian Action)	27 Home/Cell Number		28 Work Number			
200a-h (Sequence)	29 License Number		30 State	31 Class	32 Ins Exp Date	
	33 Driver's Insurance Co. Name		34 Policy #			
	35 Make	36 Model	37 Year	38 Body	39 Color	
	40 Vehicle ID Number (VIN)					
	41 Tag Number		42 State	43 Year		
	44 Owner's Last Name First Middle		45 Owner Notified? <input type="checkbox"/> Y <input type="checkbox"/> N			
	46 Owner's Street Address		47 City, State, Zip			
	48 Owner's Telephone #		49 Veh. Insurance Co. (if different from #33)			
	51 Last Name First Middle		52 Sex	53 DOB		
	54 Street Address		55 City, State, Zip			
	56 Home/Cell Number		57 Work Number			
	58 License Number		59 State	60 Class	61 Ins Exp Date	
	62 Insurance Co. Name		63 Policy #			
	64 Make	65 Model	66 Year	67 Body	68 Color	
	69 Vehicle ID Number (VIN)					
	70 Tag Number		71 State	72 Year		
	73 Owner's Last Name First Middle		74 Owner Notified? <input type="checkbox"/> Y <input type="checkbox"/> N			
	75 Owner's Street Address		76 City, State, Zip			
	77 Owner's Telephone #		78 Veh. Insurance Co. (if different from #62)			

PD 10 Rev. December 2008		TRAFFIC CRASH REPORT		Metropolitan Police Department, Washington, DC						
200h-p (Sequence)	201a-c (Seat Location Code)	79 OBJECT TYPE <i>(Describe fixed object and damage in narrative)</i>		108 OBJECT TYPE <i>(Describe fixed object and damage in narrative)</i>						
		<input type="checkbox"/> 01 Driver <input type="checkbox"/> 02 Pedestrian <input type="checkbox"/> 03 Bicyclist <input type="checkbox"/> 04 Parked Car <input type="checkbox"/> 05 Animal <input type="checkbox"/> 06 Other Fixed Object <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____		<input type="checkbox"/> 01 Driver <input type="checkbox"/> 02 Pedestrian <input type="checkbox"/> 03 Bicyclist <input type="checkbox"/> 04 Parked Car <input type="checkbox"/> 05 Animal <input type="checkbox"/> 06 Other Fixed Object <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other: _____						
		80 Last Name First Middle 81 Sex 82 DOB		109 Last Name First Middle 110 Sex 111 DOB						
		83 Street Address		112 Street Address						
		84 City, State, Zip		113 City, State, Zip						
		85 Home/Cell Number		114 Home/Cell Number						
		86 Work Number		115 Work Number						
		87 License Number		116 License Number						
		88 State 89 Class 90 Ins Exp Date		117 State 118 Class 119 Ins Exp Date						
		91 Driver's Insurance Co. Name		120 Insurance Co. Name						
92 Policy #		121 Policy #								
93 Make 94 Model 95 Year 96 Body 97 Color		122 Make 123 Model 124 Year 125 Body 126 Color								
98 Vehicle ID Number (VIN)		127 Vehicle ID Number (VIN)								
99 Tag Number		128 Tag Number								
100 State 101 Year		129 State 130 Year								
102 Owner's Last Name First Middle 103 Owner Notified?		131 Owner's Last Name First Middle 132 Owner Notified?								
<input type="checkbox"/> Same as Operator Info <i>(skip to next section)</i>		<input type="checkbox"/> Same as Operator Info <i>(skip to next section)</i>								
104 Owner's Street Address		133 Owner's Street Address								
105 City, State, Zip		134 City, State, Zip								
106 Owner's Telephone #		135 Owner's Telephone #								
107 Veh. Insurance Co. (if different from #33)		136 Veh. Insurance Co. (if different from #62)								
INVOLVED PERSONS: <i>In the next section, include all operators, passengers and pedestrians involved even if not injured.</i>										
204a-c (Ejection Code)	205a-c (Injury Code)	137a-c Assoc. w/vehicle #	138a-c Last Name, First Name	139a-c Street Address, City, State, Zip	140a-c Home/Cell/Work #	141a-c Sex	142a-c Age	143a-c Empl. by DC Govt?	144a-c Taken to Hosp?	
		1								
		2								
		3								
INJURED PERSONS										
205a-c (Injury Code)	205a-c (Injury Code)	145a-c Last Name, First Name	146a-c Where Taken (Hospital)	147a-c By Whom (Last Name, First Name)	148a-c Major Crash Notified?	149a-c Teletype Notified?	150a-c Relative Notified? (If Yes, Last & First Name & Relationship)	151a-c Status (Admitted, Released, Unknown)		
		1								
		2								
		3								
Non-Involved Witnesses	152a-c Last Name First Middle 153a-c Street Address, City, State, Zip 154a-c Telephone #									
	1									
	2									
	3									

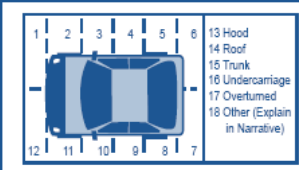
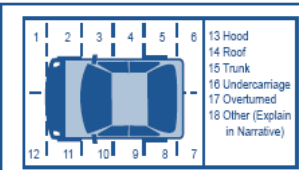
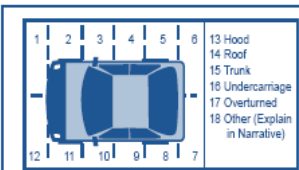
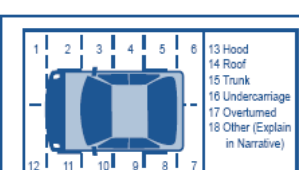
PD 10 Rev. December 2008

TRAFFIC CRASH REPORT



Metropolitan Police Department, Washington, DC

POLICE ACTION RELATING TO DRIVERS & PEDESTRIANS			
	155a-c Arrest/NOI#	156a-c Primary and Secondary Charges (Report must support charges)	157a-c What Traffic Signs Were Present?
1			
2			
3			

VEHICLE CONDITION	158 STRIKING OBJECT/VEHICLE #1: Direction of Travel and Street Before Crash (must match narrative and diagram) <input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B <input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other _____ 159 Vehicle Disabled? <div style="display: flex; justify-content: space-around;"><input type="checkbox"/> Y<input type="checkbox"/> N</div>	160 Skid Marks To Impact: _____ After Impact: _____ <input type="checkbox"/> N/A	161 Circle All Areas With Damage: 	162 Vehicle Was . . . <input type="checkbox"/> 01 Left on Scene <input type="checkbox"/> 02 Towed By: _____ Towed to: _____ Towing Control #: _____ <input type="checkbox"/> 03 Driven Away By: _____ <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other
	163 VEHICLE #2: Direction of Travel and Street Before Crash (must match narrative and diagram) <input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B <input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other _____ 164 Vehicle Disabled? <div style="display: flex; justify-content: space-around;"><input type="checkbox"/> Y<input type="checkbox"/> N</div>	165 Skid Marks To Impact: _____ After Impact: _____ <input type="checkbox"/> N/A	166 Circle All Areas With Damage: 	167 Vehicle Was . . . <input type="checkbox"/> 01 Left on Scene <input type="checkbox"/> 02 Towed By: _____ Towed to: _____ Towing Control #: _____ <input type="checkbox"/> 03 Driven Away By: _____ <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other
	168 VEHICLE #3: Direction of Travel and Street Before Crash (must match narrative and diagram) <input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B <input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other _____ 169 Vehicle Disabled? <div style="display: flex; justify-content: space-around;"><input type="checkbox"/> Y<input type="checkbox"/> N</div>	170 Skid Marks To Impact: _____ After Impact: _____ <input type="checkbox"/> N/A	171 Circle All Areas With Damage: 	172 Vehicle Was . . . <input type="checkbox"/> 01 Left on Scene <input type="checkbox"/> 02 Towed By: _____ Towed to: _____ Towing Control #: _____ <input type="checkbox"/> 03 Driven Away By: _____ <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other
	173 VEHICLE #4: Direction of Travel and Street Before Crash (must match narrative and diagram) <input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B <input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other _____ 174 Vehicle Disabled? <div style="display: flex; justify-content: space-around;"><input type="checkbox"/> Y<input type="checkbox"/> N</div>	175 Skid Marks To Impact: _____ After Impact: _____ <input type="checkbox"/> N/A	176 Circle All Areas With Damage: 	177 Vehicle Was . . . <input type="checkbox"/> 01 Left on Scene <input type="checkbox"/> 02 Towed By: _____ Towed to: _____ Towing Control #: _____ <input type="checkbox"/> 03 Driven Away By: _____ <input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other

	206a-c Driver/ Pedestrian Condition	207a-c Impairment	208a-c Type of Test Conducted	209a-c Blood/ Alcohol Content		210a-d Cell Phone/Other Electronic Device Present (Y/N)?	211a-d Driver/ Pedestrian Distraction	212a-d Primary Contributing Circumstances	213a-d Driver Action	214a-d Vehicle Type: Private	215a-d Vehicle Type: Govt	216a-d Vehicle Type: Comm
Involved Person #1					Vehicle #1							
Involved Person #1					Vehicle #2							
Involved Person #1					Vehicle #3							
Involved Person #3					Vehicle #4							

3 of 4

TRAFFIC CRASH REPORT



Metropolitan Police Department, Washington, DC

178 Crash Diagram (Not to Scale) (The diagram must correspond to the narrative. If the report is being taken by an officer after the fact, the diagram shall be completed to show the general area in which the crash occurred. Please indicate freeway access ramps, exit ramps and bridges. Indicate type of fixed object(s), direction, posted speed and vehicles by number indicated in spaces above.)



179 Detailed Narrative (Give a concise statement, in your own words, of the facts that are not covered in this report, or to clarify any items that are not satisfactorily explained ("other" answers). If statements are taken, use PD 118 (Defendant/Suspect Statement) or PD 119 (Complainant/Witness Statement). If accident occurred in a construction zone, describe type of construction zone. Wherever possible, list the item number of the corresponding section.

[illegible]

Narrative Continued on PD 10B Supplemental

This report is used for statistical analysis of vehicular crashes and the prevention thereof. The data given represents the opinion and conclusions of the reporting officer, based on his/her judgement after considering all the facts disclosed through his/her investigation of this crash.

[illegible]

Use PD 10B Supplemental for Motor Carrier Vehicle Information and additional space.

5.2 New PD10B – Traffic Crash Report Supplemental

PD 10B Rev. June 2007

TRAFFIC CRASH REPORT SUPPLEMENTAL

 Metropolitan Police Department, Washington, DC

Complaint Number (CCN)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Record N/A in any field that does not apply to this event. Field numbers mirror those from the PD 10. Explain any "other" responses in narrative.
Record one code for each vehicle.

Private, Government & Commercial Vehicle Information	Vehicle #1	Vehicle #2	Vehicle #3	Vehicle #4
217a-d Bus Type 00 Unknown 01 School 02 Transit 03 Intercity 04 Charter 97 N/A, Not a Bus 99 Other				
218a-d Cargo Body Type 00 Unknown 01 Bus (Seats 9-15, including driver) 02 Bus (seats more than 15, including driver) 03 Van/Enclosed Box 04 Cargo Tank 05 Flatbed 06 Dump 07 Concrete Mixer 08 Auto Transporter 09 Garbage/Refuse 10 Grain, Chlps, Gravel 11 Pole 12 Log 13 Intermodal Chassis 14 Vehicle-Towing Another Motor Vehicle 97 N/A 99 Other				
219a-d US DOT #				
220a-d MC #/MX #				
221a-d State #				
222a-d Issuing State				
223a-d Gross Vehicle/Combination Weight Rating 00 Unknown 01 10,000 lbs or less 02 10,001-26,000 lbs 03 Greater than 26,000 lbs 97 N/A				
224a-d Interstate Vehicle Type 00 Unknown 01 Interstate Carrier 02 Intrastate Carrier 03 Not in Commerce: Government (Trucks and Buses) 04 Not in Commerce: Other Truck (over 10,000 lbs) 97 N/A 99 Other				
225a-d Carrier Name				
226a-d Carrier Address (Street # and Name, Quadrant, Apt. #, City, State & Zip)				
227a-d Haz Mat Placard? (yes/no)				
228a-d If Yes, 4-digit Placard Number				
229a-d Haz Mat Class Number 01 Explosives 02 Gases (Compressed, Dissolved or Refrigerated) 03 Flammable Liquid 04 Flammable Solids (Combustible, Water Reactive) 05 Oxidizing Substances (Organic Peroxides) 06 Poisonous (Toxic) and Infectious Substances 07 Radioactive Material 08 Corrosives 09 Miscellaneous Dangerous Goods 97 N/A 99 Other				
230a-d Hazardous Cargo Materials Released? (yes/no)				

TRAFFIC CRASH REPORT SUPPLEMENTAL

Metropolitan Police Department, Washington, DC

1 Date of Crash		2 Time of Crash		3 Day of Week		4 Date of Report		5 Complaint Number (CCN)					
								<div><div></div><div></div></div>		<div><div></div><div></div><div></div><div></div><div></div><div></div></div>			
179 Detailed Narrative (cont.) (Give a concise statement, in your own words, of the facts that are not covered in this report, or to clarify any items that are not satisfactorily explained ("other answers"). If statements are taken, use PD 118 (Defendant/Suspect Statement) or PD 119 (Complainant/Witness Statement). If accident occurred in a construction zone, describe type of construction zone. Wherever possible, list the item number of the corresponding section.													
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SUPPLEMENTAL: p.1													
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<p>This report is used for statistical analysis of vehicular crashes and the prevention thereof. The data given represents the opinion and conclusions of the reporting officer, based on his/her judgement after considering all the facts disclosed through his/her investigation of this crash.</p>													
180 Reporting Member's Name/CAD #			181 Unit		182 Signature			183 Official's Name/CAD #			184 Official's Unit#		
185 Official's Signature			186 Reviewer		187 Distribution			188 Date		Complaint Number (CCN) <div><div></div><div></div><div></div><div></div><div></div><div></div></div>			

5.3 Coding Sheet

METROPOLITAN POLICE DEPARTMENT OF THE DISTRICT OF COLUMBIA PD 10 Coding Sheet (December 2008)

189 Type of Crash		
00 Unknown	05 Side Swiped	10 Left Turn Hit Pedestrian
01 Right Angle	06 Head On	11 Right Turn Hit Pedestrian
02 Left Turn Hit Vehicle	07 Parked Vehicle	12 Straight Hit Pedestrian
03 Right Turn Hit Vehicle	08 Fixed Object	13 Backing Hit Moving Vehicle
04 Rear End	09 Ran Off Roadway	14 Backing Hit Parked Vehicle
15 Backing Hit Pedestrian		16 Non-Collision Accident
17 Underride		18 Override
99 Other		
190 Road Surface		
00 Unknown	02 Asphalt	04 Gravel
01 Concrete	03 Brick	05 Dirt
99 Other		
191 Road Type (Select all that apply)		
01 Straight	04 Grade	07 Ramp
02 Curve	05 Crest	08 Bridge
03 Level	06 Underpass	99 Other
192 Road Condition		
00 Unknown	03 Wet	06 Snow
01 Repairing	04 Standing Water	07 Ice
02 Dry	05 Slush	08 Sand, Mud, Dirt, Oil or Gravel
99 Other		
193 Street Lighting		
00 Unknown	02 Street Lights On	98 None
01 Defective	03 Street Lights Off	99 Other
194 Light Condition		
00 Unknown	03 Dark (Lighted)	05 Dawn
01 Daylight	04 Dark (Unknown Roadway Lighting)	06 Dusk
02 Dark (Not Lighted)		99 Other
195 Weather		
00 Unknown	03 Snow	05 Blowing Sand, Soil, Dirt or Snow
01 Fog/Mist	04 Sleet/Hail	98 Clear/No adverse conditions
02 Rain		99 Other
		06 Severe Crosswind

196 Traffic Condition

00 Unknown	02 Medium	99 Other
01 Heavy	03 Light	

197 Roadway Type

00 Unknown	02 Two-Way, Divided Unprotected Median	99 Other
01 Two-Way, Not Divided	03 Two way, Divided Positive Median Barrier	
	04 One-Way, Not Divided	

198 Traffic Controls

00 Unknown	03 Yield	06 Officer
01 None	04 Stop Sign	07 Restricted Turn
02 Flashing	05 Signal	99 Other

199 Pedestrian Action

00 Unknown	03 In Crosswalk: No Signal	06 In Unmarked Crosswalk
01 With Signal In Crosswalk	04 From Between Parked Cars	97 N/A
02 Against Signal in Crosswalk	05 Not in Crosswalk	99 Other

200a-p Sequence of Vehicle Events (Record no more than 4 per vehicle and describe each in narrative)

00 Unknown	07 Non-Collision: Separation of Units	14 Collision Involving Parked Motor Vehicle	21 Collision Involving Unknown Movable Object
01 Non-Collision: Ran Off Road	08 Non-Collision: Cross Median/Centerline	15 Collision Involving Train	22 Collision: Hit & Run
02 Non-Collision: Jackknife	09 Non-Collision: Equipment Failure (tire, etc.)	16 Collision Involving Pedalcycle	23 Collision Involving Moving Motor Vehicle
03 Non-Collision: Overtake (Rollover)	10 Non-Collision: Other	17 Collision Involving Animal	97 Not applicable, no more vehicles or event sequences for this vehicle
04 Non-Collision: Downhill Runaway	11 Non-Collision: Unknown	18 Collision Involving Fixed Object	99 Other
05 Non-Collision: Cargo Loss or Shift	12 Collision Involving Pedestrian	19 Collision Involving Work Zone Maintenance Equip.	
06 Non-Collision: Explosion or Fire	13 Collision Involving Motor Vehicle in Transport	20 Collision Involving Other Movable Object	

201a-c Seat Location Code (Record 1 per person and describe in narrative)

01 Driver	06 Rear Right Seat	11 Bicycle Rider
02 Front Center Seat	07 SUV/Caravan	97 N/A
03 Front Passenger Seat	08 Motorcycle/Moped Passenger	99 Other: Skateboard, Tricycle, etc.
04 Rear Left Seat (behind driver)	09 Bus occupant	
05 Rear Center Seat	10 Pedestrian	

01	02	03
04	05	06

202a-c Seat Belt/Safety Code (Record 1 per person and describe in narrative)

00 Use Unknown	03 Belt Failed	06 Improperly Worn	99 Other
01 Not Installed	04 Fastened	07 Helmet	
02 Not Fastened	05 Child Restraint	97 N/A	

203a-c Air Bag Code (Record 1 per person and describe in narrative)

00 Unknown	02 Air Bag Deployed	04 Side-Impact Airbags	99 Other
01 Air Bag Installed	03 Air Bag Failed	97 N/A	

204a-c Ejection Code (Record 1 per person and describe in narrative)

00 Unknown	02 Total	97 N/A	
01 Partial	03 None	99 Other	

205a-c Injury Code (Record 1 per person and describe in narrative)

00 Unknown	03 Disabling Injury	05 Complaint of Pain, But No Visible Injury	99 Other
01 No Injury	04 Non-Disabling Injury		
02 Fatal		97 N/A	

206a-c Driver/Pedestrian Condition (Record 1 per person and describe in narrative)

00 Unknown	02 Ill	04 Asleep	99 Other
01 Fatigued	03 Physical Defect	05 Normal	

207a-c Impairment (Record 1 per person and describe in narrative)

00 Impairment Unknown	Had been drinking and...	03... Ability Impaired	99 ... Other
01 Had not been drinking	02 ... Obviously drunk	04 ... Ability not impaired	

208a-c Type of Test Conducted (Record 1 per person and describe in narrative)

00 No test Conducted	02 Blood	97 N/A	
01 Urine	03 Breath	99 Other	

211a-d Driver/Pedestrian Distraction (Record 1 per vehicle and describe in narrative)

00 Unknown	04 Writing	08 Using personal communication technologies	97 N/A
01 Cell phone (hand held)	05 Personal Grooming	09 Eating	99 Other
02 Cell phone (hands-free)	06 Interacting w/Pets	10 Distracted by passenger(s)	
03 Reading	07 Interacting w/unsecured cargo		

212a-d Primary Contributing Circumstance (Record 1 per vehicle and describe in narrative)

00 Unknown	07 Right Turn on Red	14 Defective Brakes, Lights, etc.	21 Cell Phone/Other Electronic Device
01 No Violation	08 Stop Sign	15 Fail to Set Parking Brake	22 Other Distraction
02 Speed	09 Yield Sign	16 Open Door to Traffic	22 Road Defects
03 Driver Inattention	10 Red Light Violation	17 Improper Backing	99 Other
04 Following Too Close	11 Flashing/Directional Light	18 Drug/Alcohol Influence	
05 Improper Passing	12 Automobile/Pedestrian Right of Way	19 Pedestrian Violation	
06 Changing Lanes Without Cautioning	13 Wrong Way/Side of Street	20 Driver Vision Obstructed	

213a-d Driver Action (Record 1 per vehicle and describe in narrative)

00 Unknown	05 Parked	09 Ran Off Road	14 Avoiding
01 Backing	06 Entering/Leaving Parked Position	10 Changing Lanes	97 N/A
02 Turning Right		11 Going Straight	99 Other
03 Turning Left	07 Making "U" Turn	12 Overtaking	
04 Stopped/Standing: Traffic Lane	08 Merging	13 Slowing/Stopping	

214a-d Vehicle Type: Private (Record 1 per vehicle and describe in narrative)

00 Unknown	04 Bicycle	08 Pick-up Truck	99 Other
01 Passenger Auto	05 Segway	09 Recreational Vehicle	
02 Motorcycle	06 SUV	11 Scooter	
03 Moped	07 Minivan	97 N/A	

215a-d Vehicle Type: Government (Record 1 per vehicle and describe in narrative)

00 Unknown	06 SUV	11 Bus (Seats 9-15 people, incl. driver)	15 Unmarked Police Car
01 Passenger Auto	07 Minivan		16 Fire Truck
02 Motorcycle	08 Pick-up Truck	12 (Bus (seats more than 15 people, incl. driver)	17 Other Emergency Vehicle
03 Moped	09 Recreational Vehicle		97 N/A
04 Bicycle	10 Scooter	13 Truck	99 Other
05 Segway		14 Marked Police Car	

216a-d Vehicle Type: Commercial (Record 1 per vehicle and describe in narrative)

00 Unknown Heavy Truck, Unclassified, > 10,000 lb.	03 Bus (Seats 9-15 people, including driver)	06 Single-Unit Truck (3 or more axles)	11 Taxi Cab
01 Passenger Auto (only if vehicle has HM Placard)	04 Bus (seats more than 15 people)	07 Truck/Trailer	15 people, including driver)
02 Light Truck (only if vehicle has HM Placard)	05 Single-Unit Truck (2 axles, 6 tires)	08 Truck/Tractor (Bobtail)	97 N/A
		09 Tractor/Semitrailer	99 Other
		10 Tractor/Double	

212a-d Primary Contributing Circumstance (Record 1 per vehicle and describe in narrative)

00 Unknown	07 Right Turn on Red	14 Defective Brakes, Lights, etc.	21 Cell Phone/Other Electronic Device
01 No Violation	08 Stop Sign	15 Fail to Set Parking Brake	22 Other Distraction
02 Speed	09 Yield Sign	16 Open Door to Traffic	22 Road Defects
03 Driver Inattention	10 Red Light Violation	17 Improper Backing	99 Other
04 Following Too Close	11 Flashing/Directional Light	18 Drug/Alcohol Influence	
05 Improper Passing	12 Automobile/Pedestrian Right of Way	19 Pedestrian Violation	
06 Changing Lanes Without Cautioning	13 Wrong Way/Side of Street	20 Driver Vision Obstructed	

213a-d Driver Action (Record 1 per vehicle and describe in narrative)

00 Unknown	05 Parked	09 Ran Off Road	14 Avoiding
01 Backing	06 Entering/Leaving Parked Position	10 Changing Lanes	97 N/A
02 Turning Right	07 Making "U" Turn	11 Going Straight	99 Other
03 Turning Left	08 Merging	12 Overtaking	
04 Stopped/Stopping: Traffic Lane		13 Slowing/Stopping	

214a-d Vehicle Type: Private (Record 1 per vehicle and describe in narrative)

00 Unknown	04 Bicycle	08 Pick-up Truck	99 Other
01 Passenger Auto	05 Segway	09 Recreational Vehicle	
02 Motorcycle	06 SUV	11 Scooter	
03 Moped	07 Minivan	97 N/A	

215a-d Vehicle Type: Government (Record 1 per vehicle and describe in narrative)

00 Unknown	06 SUV	11 Bus (Seats 9-15 people, incl. driver)	15 Unmarked Police Car
01 Passenger Auto	07 Minivan	12 (Bus (seats more than 15 people, incl. driver)	16 Fire Truck
02 Motorcycle	08 Pick-up Truck	13 Truck	17 Other Emergency Vehicle
03 Moped	09 Recreational Vehicle	14 Marked Police Car	97 N/A
04 Bicycle	10 Scooter		99 Other
05 Segway			

216a-d Vehicle Type: Commercial (Record 1 per vehicle and describe in narrative)

00 Unknown Heavy Truck, Unclassified, > 10,000 lb.	03 Bus (Seats 9-15 people, including driver)	06 Single-Unit Truck (3 or more axles)	11 Taxi Cab
01 Passenger Auto (only if vehicle has HM Placard)	04 Bus (seats more than 15 people, incl. driver)	07 Truck/Trailer	15 people, including driver
02 Light Truck (only if vehicle has HM Placard)	05 Single-Unit Truck (2 axles, 6 tires)	08 Truck/Tractor (Bobtail)	97 N/A
		09 Tractor/Semitrailer	99 Other
		10 Tractor/Double	