FINAL REPORT

TRAFFIC SAFETY STATISTICS REPORT FOR THE DISTRICT OF COLUMBIA (2010-2012)

March 13, 2014

Prepared for:
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10. Abstract

This report is a compilation crash statistics and analyses for roadways in the District of Columbia during the period 2010 through 2012. The data covers all roadway classifications and is critical for identifying safety problems and trends, as well as for determining the level of success in achieving highway safety goals of the District Department of Transportation. The crash information reported in this document is characterized by location, severity, vehicle type, crash type, time of the crashes, and various environmental conditions. The compilation is done for the City as a whole, by Wards, and Police Districts. The locations with high crash frequency and/or severity in the District of Columbia are clearly identified. The statistics and analysis presented in this report can be used for developing appropriate countermeasures and performance measures. Combined with similar three-year reports, the information in this report facilitates the analysis of the long-term impact of DDOT's highway safety programs and projects.

11. Key Words Crash, Traffic Accident, Statistics, Frequency, Rate, Fatal, Injury, High-Hazard Locations, Rank, Traffic Safety	**12. Distribution Statement** This document is available through DDOT.

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CHAPTER 1 – INTRODUCTION

1.1 Objectives

The objectives of this report are to provide traffic crash statistics of the District of Columbia for the years 2010 through 2012. The compiled information would enable the City to satisfy federal requirements on reporting traffic crashes, and provide a conveniently available resource for identifying safety trends, development of countermeasures, and evaluating the results of highway safety programs, projects, and policies. The traffic crash information recorded electronically on the PD-10 crash reporting form were provided by the Metropolitan Police Department (MPD) of the District of Columbia, and were the source of the crash data presented in this document. The crash data was downloaded through secure servers from MPD into DDOT's database and was processed with an Oracle-based application called Traffic Accident Reporting and Analysis System (TARAS).

The data fields in TARAS include crash location, date, time, crash type, crash severity, and environmental conditions. This report presents a summary of all the TARAS crash data for the years 2010, 2011 and 2012. All the tables and charts that highlight various crash summaries and attributes used in this report were extracted from TARAS. The report also provides an insight into the various contributing factors and consequences of all types of vehicle crashes. The results of the analyses presented in this report could be used to identify safety problems, develop performance measures, and support development and evaluation of highway and vehicle safety countermeasures.

This report was developed by the Howard University Transportation Data Center for the District Department of Transportation's (DDOT) Traffic Safety and Standards Division, through a project funded by the Federal Highway Administration (FHWA) of the U.S. Department of Transportation and DDOT.

1.2 Report Organization

This report consists of seven chapters. Chapter 1 provides a summary of findings presented in this report. Chapter 2 describes the methodology and analytical methods

used for this analysis. Chapter 3, Quick Crash Facts and Trends, provides a brief summary of traffic crashes in District of Columbia for the period 2010 through 2012. Chapter 4 presents general crash statistics of the District of Columbia and contains statistics on various categories of traffic crashes, including impaired driver involvement, special vehicle (e.g. truck, bus, and motorcycle), and pedestrian involvement. Chapter 5 identifies high-hazard crash locations and patterns at intersections and corridors. Chapter 6 presents the exposure information regarding vehicle miles traveled, fatality and injury rates per 100 million vehicle miles traveled, and finally Chapter 7 (Appendices) presents detailed information on the top 100 high crash locations in the District of Columbia.

CHAPTER 2 – CRASH ANALYSIS METHODOLOGY

This section of the report focuses on methodology for obtaining the general traffic crash statistics and the identification and analysis of high hazard crash locations. Descriptive statistics was used to determine the frequency of occurrence, the rates of crashes, as well as crash trends over three years (2010-2012).

2.1 Traffic Crash Statistics

Descriptive statistics were used to present the basic characteristics of traffic crashes and to identify factors that may have influenced their occurrence. The factors considered include vehicle characteristics, characteristics of involved persons (e.g., drivers, passengers, and pedestrians), physical environment (e.g., roadway type, traffic conditions, and weather conditions), and temporal crash characteristics (e.g., year, month, day, and time of day). The frequencies of crashes are summarized for each factor using descriptive statistics. The statistics of the factors that contribute to crashes in the District of Columbia are presented in tabulated and graphical forms.

2.2 High-Hazard Location Analysis

Frequency and severity of traffic crashes are two critical factors used in identifying high hazard locations. A relatively high crash frequency at a location is typically an indicator of adverse conditions that contribute to those crashes. Severity is defined as the extent of injury or damage sustained by individuals or properties involved in crashes. These two factors provide a better understanding of the level of susceptibility of the location of crashes. This report takes a macroscopic approach to determine the frequency and severity of traffic crashes, which provides a starting point for more elaborate safety studies at identified high-hazard intersections or corridors.

Several methods can be used to identify high hazard locations based on the traffic crash data, exposure and location characteristics. The methods used include crash frequency, crash rate, crash severity, and crash trend (delta change). In addition to these methods, a composite crash index is used which is a combination of the severity and frequency of traffic crashes at a specific location. Each of these methods has

advantages and disadvantages. The following subsections provide a brief description of these methods.

2.2.1 Crash Frequency

The crash frequency method is used which represents the number of crashes within a defined time period for each location. The crash frequency of a location is identified based on the total number of crashes. Crash locations are ranked in the decreasing order of frequency, from highest to the lowest. The site with the highest frequency of crashes is ranked highest on the basis of which a list of locations with their respective ranks is generated. This method for identifying high-hazard locations has some limitations, since it does not consider traffic exposure, location characteristics and contributing factors. Locations with high traffic volumes could experience a higher frequency of crashes, but represent a low to moderate risk for road users. In contrast, a low volume location with fewer crashes could present much greater risk to road users.

The Crash Frequency ranking presents a preliminary identification of locations that may be hazardous from a traffic safety perspective, and which should be further examined to determine critical contributing factors.

2.2.2 Crash Rate Method

The crash rate of an intersection is expressed as the average number of crashes per year divided by the volume of traffic entering the intersection per year. The following equation was used to calculate the intersection crash rate:

$$R = \frac{A\ x\ 1{,}000{,}000}{V\ x\ 365} \qquad [1]$$

where:

R = Crash Rate for an intersection (crashes per Million Entering Vehicles (MEV);

A = Average number of crashes at the intersection per year; and

V = annual average daily traffic volume entering the intersection (vehicles/day)

Compared to the crash frequency method of ranking hazardous locations, the crash rate method is more appropriate since it takes traffic volumes (exposure) into account. In this report the crash rate of each intersection that experienced crashes was determined. The

intersections were ranked and sorted in descending order of the crash rate. The location with the largest crash rate received the highest ranking. For locations where their traffic volumes were unavailable, their ranking was skipped. The disadvantage of the crash rate method is that comparatively high crash rates could be computed for locations with low traffic volumes, which could lead to erroneous interpretation.

2.2.3 Crash Severity Cost Method

The Traffic Crash Reports (or PD-10 forms) consist of data fields with codes that indicate the injury severity for each person involved in a crash. These codes represent police officers' observations of the level of severity experienced by persons involved in a crash, if any. In order to properly assess the severity effect, the type of crash such as fatality, injury and property damage only (PDO) were utilized as the primary source to determine the severity of a crash. This procedure is intended to avoid inaccuracies in the crash severity data. For instance, the injury conditions of persons involved in a crash may be updated based on information received after the person involved in the crash was sent to hospital.

In this report, fatality occurrences were converted to injury in order to mitigate the random chance effect. In addition, the traffic accident costs were computed for each intersection/location to identify the severity indices, with a higher value of severity index indicating significant level of incapacitation. Once the severity indices were determined, the crash locations were ranked in descending order based on the severity index.

2.2.4 Composite Crash Index

As mentioned earlier, each of the above methods provide a limited basis for identifying high-hazard locations. The composite index method utilizes crash rate, severity and frequency to characterize crash conditions at a location. The three types of rankings (rate, severity, and frequency) are combined to create a composite rank index. The crash rate, crash severity, and crash frequency rankings are combined in the following model in Equation 2 for estimating the composite index for crash locations.

$$\text{Composite Crash Index} = 0.25*RF + 0.25*RR + 0.50*RS \quad [2]$$

where:

RF = Rank of crash severity

RR = Rank of crash rate; and

RS = Rank of crash frequency

To determine the high hazard crash locations, a ranked list was prepared for each of the three factors. The three rankings of each site were entered in Equation 2 to determine the crash composite index. The three normalized rank lists are weighted using values of 0.25 for frequency, 0.25 for rate, and 0.5 for severity. The intersections are then sorted in descending order of their composite index. The intersection with the lowest composite index is ranked the highest.

2.2.5 Delta Change

The delta-change method presents the change in the number of crashes over time, derived from the slope of a linear regression model. This technique utilizes the calculation of the slope to determine the increase or decrease of crashes for a study location. In summary, the delta-change method represents the crash trend over a period of time with positive and negative slope values respectively signifying an increase and decrease in crashes. In addition, the results also project the potential of traffic crashes increasing over time, with the higher slope values indicating that the crashes are likely to increase at a higher rate, and vice versa. The following is the equation of the delta-change method:

$$\frac{n\sum xy - n\sum x\sum y}{n\sum x^2 - (\sum x)^2} \qquad [3]$$

where: n = Number of years;

x = Year of study; and

y = Number of crashes at study location in year x.

CHAPTER 3 – SUMMARY OF CRASH TRENDS AND FACTS

This Chapter presents an overview of the traffic crash trends in the District of Columbia for the years 2010 through 2012. The data presented also includes a summary of comparative crash statistics from 2010 through 2012.

3.1 2012 DC Crash Quick Facts

Presented in Table 3.1 is the summary of crashes recorded in the DC from 2010 through 2012. The pie chart in Figure 3.1 represents the percentage distribution of collisions by severity for 2012 only.

Table 3.1: DC Crash Quick Facts for 2012

Year	2010	2011	2012
Total Collisions	17,955	17,951	18,428*
Fatal Collisions	25	27	18
Injury Collisions	5,060	5,210	5,258
Property Damage Only (PDO) Collisions	12,870	12,714	13,152
Fatalities	25	32	19
Total Non-Fatal Injuries	7,068	7,335	7,268
Disabling Injuries*	303	305	336
Non-Disabling Injuries*	1,363	1,301	1,257
Total Vehicles Involved	34,705	35,095	36,446
Total Persons Involved	41,892	42,547	44,121
Total Pedestrians Involved	777	831	919
Pedestrian Fatalities	14	9	8
Fatalities/100 Million VMT	0.69	0.89	0.52
Injuries/100,000 Population	1,174.63	1,186.90	1,149.41

*Note: the increase in the number of reported crashes could be due to improved crash reporting system implemented by MPD and DDOT.

Table 3.1 shows that the total number of crashes recorded increased in 2012 while fatalities decreased compared to year 2010 and 2011. The most frequent crash severity type recorded in 2012 was Property Damage Only (PDO), which represented approximately 71% (13,152) of all crashes for that year. Injury and fatality crashes represented about 29% (5,258) and 0.1% (18) respectively of the total crashes recorded in 2012.

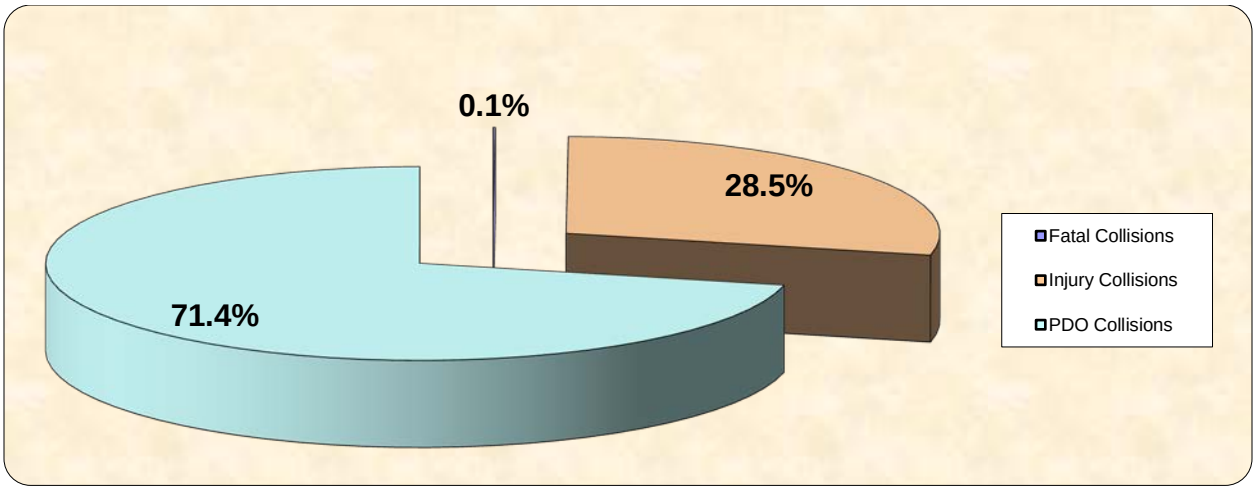

Figure 3.1: Crash Severity Types for 2012

3.2 DC Crashes Trend for 2001 through 2012

Figure 3.2 shows the trends in total crashes and those resulting in injuries by year from 2001 through 2012. The figure shows that there was an increase in crashes in 2012 compared with 2011.

Figure 3.3 presents the number of fatalities by year, while Figure 3.4 shows the number of injured persons recorded by year for the same timeframe. The summary of the number of disabling and non-disabling injuries by year are presented in Figures 3.5 and 3.6, respectively.

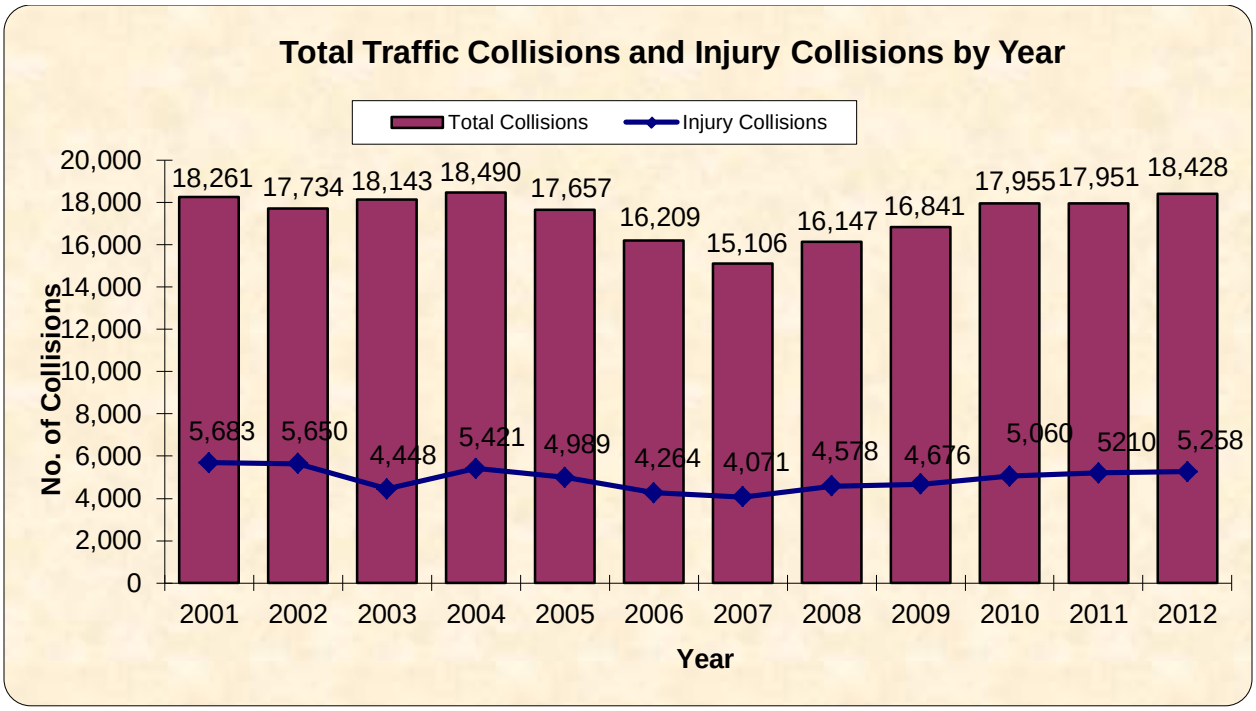

Figure 3.2: Traffic Crashes and Injury Crashes for 2001-2012

Figure 3.3: Number of Fatalities for 2001-2012

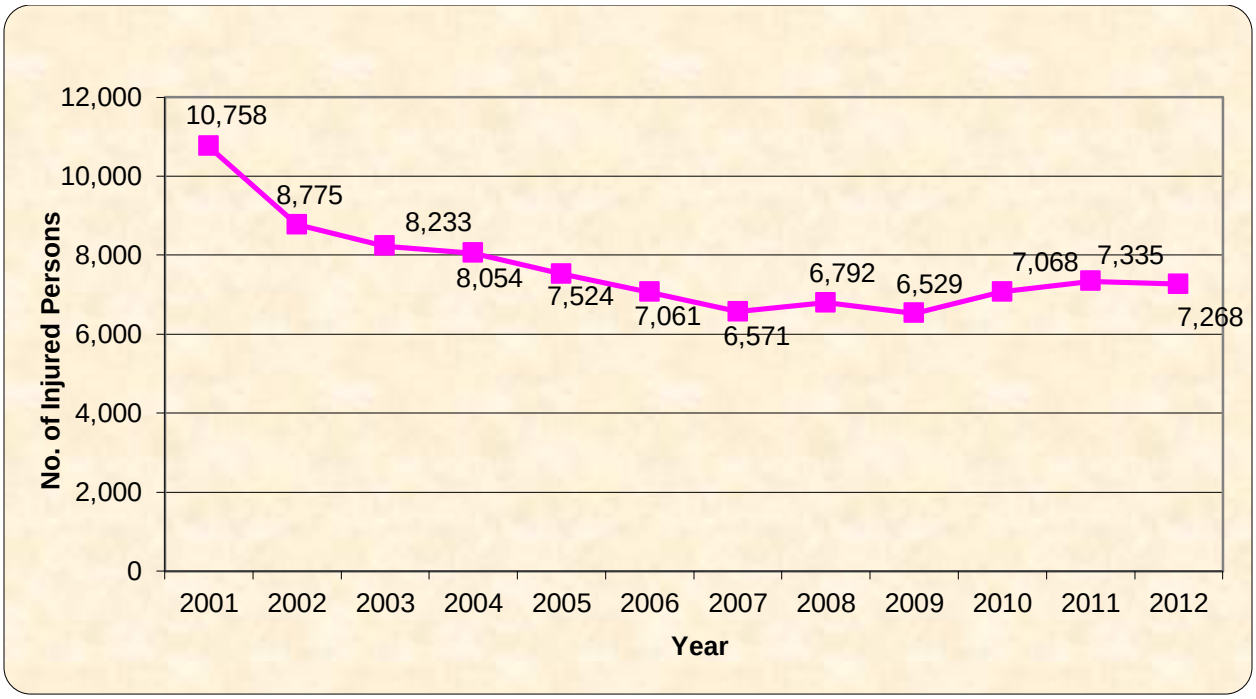

Figure 3.4: Number of Injured Persons for 2001-2012

Figure 3.5: Number of Disabling Injuries for 2001-2012

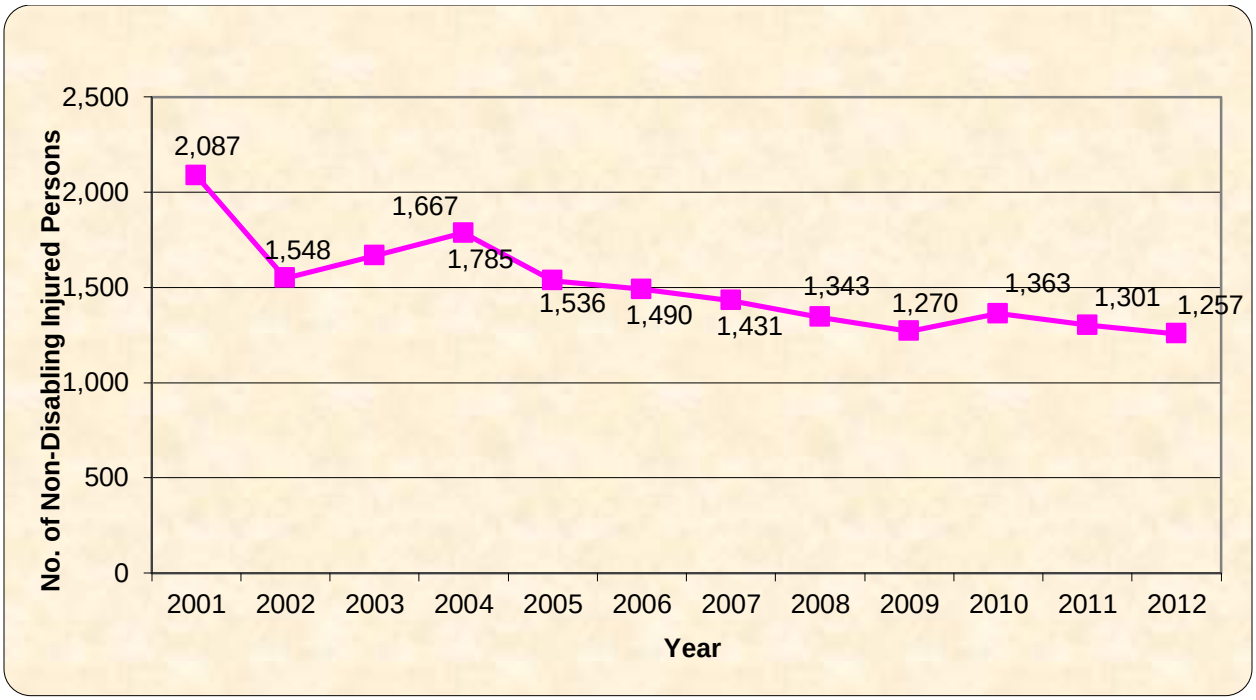

Figure 3.6: Number of Non-Disabling Injuries for 2001-2012

CHAPTER 4 – CRASH STATISTICS AND TRENDS

This chapter presents descriptive statistics for traffic crashes in the District of Columbia from 2010 to 2012. The characteristics used in this analysis include crash location, crash occurrence time, crash type, roadway user and vehicle contributing factors, road conditions and geometric characteristics. The analysis focused on following:

- Temporal: time of crash occurrence such as year, month, date, time and day of week;
- Location: crash location identified by pre-defined areas such as Ward, Quadrant, and Police District
- Crash Characteristics: involved roadway users, related vehicle types, and others
- Crash Severity: fatal crash, injury crash, or property damage only
- Environmental Factors: road condition, light condition, weather condition, etc
- Alcohol/Drug Involvement
- Hit and Run

4.1 Temporal

The tables and figures in this section present the frequencies and distributions of crashes by time of day, day of week, day of month, month and year.

4.1.1 Traffic Crashes and Injuries by Hour of the Day

Presented in Table 4.1 is the frequency of crashes for weekdays and weekends by hour of day for 2012. From the table, the majority of the crashes were reported between the hours of 3 P.M. (hour 15) and 6 P.M. (hour 18), with the highest reported injuries (528) occurring in hour 16 (4 P.M.). The total number of fatalities in 2012 recorded by the hour is presented in Figure 4.1. The maximum number of fatalities recorded by the hour was 4, which occurred in hour 19 (7 P.M.).

Table 4.1: Crashes by Hour of the Day for 2012

Hour	Collisions	Fatalities	Injuries
00	507	0	200
01	399	1	151
02	423	0	152
03	472	2	192
04	293	0	134
05	219	0	93
06	329	0	154
07	707	1	312
08	1,125	1	450
09	1,036	0	429
10	853	1	320
11	819	0	301
12	891	0	344
13	908	2	382
14	986	1	348
15	1,237	0	490
16	1,256	0	528
17	1,317	3	489
18	1,180	1	443
19	870	4	306
20	688	0	286
21	621	0	274
22	650	1	237
23	642	1	253
Total	**18,428**	**19**	**7,268**

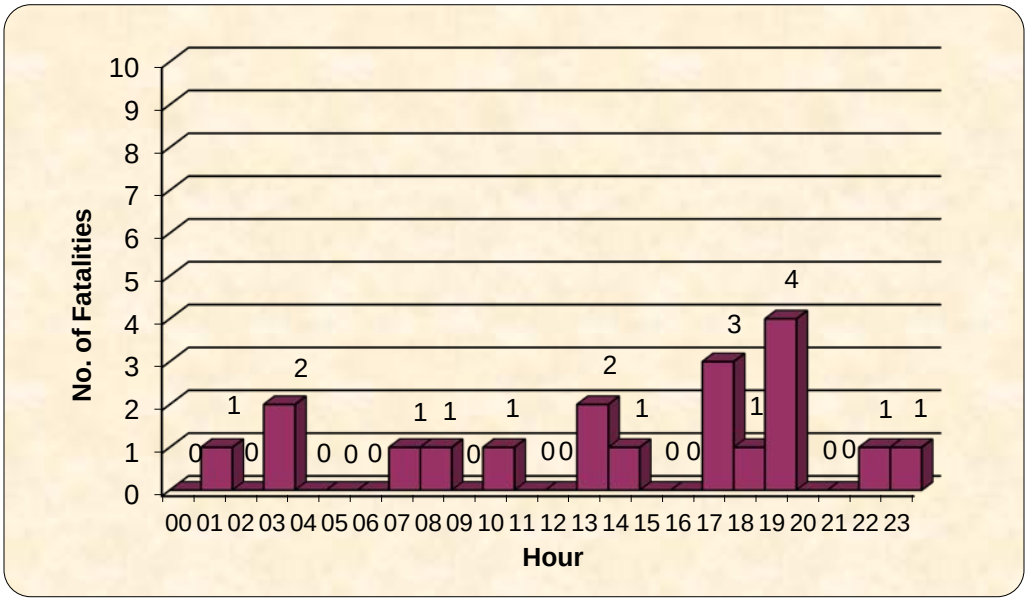

Figure 4.1: Total Fatalities by Hour for 2012

Figures 4.2 and 4.3 respectively show the crashes and injuries by the hour of day for weekdays and weekends. The figures show that the crash frequency in 2012 occurred between the 15th and 18th hour of the day during weekdays. During the weekends, the highest number of crashes occurred within the 3rd hour of the day.

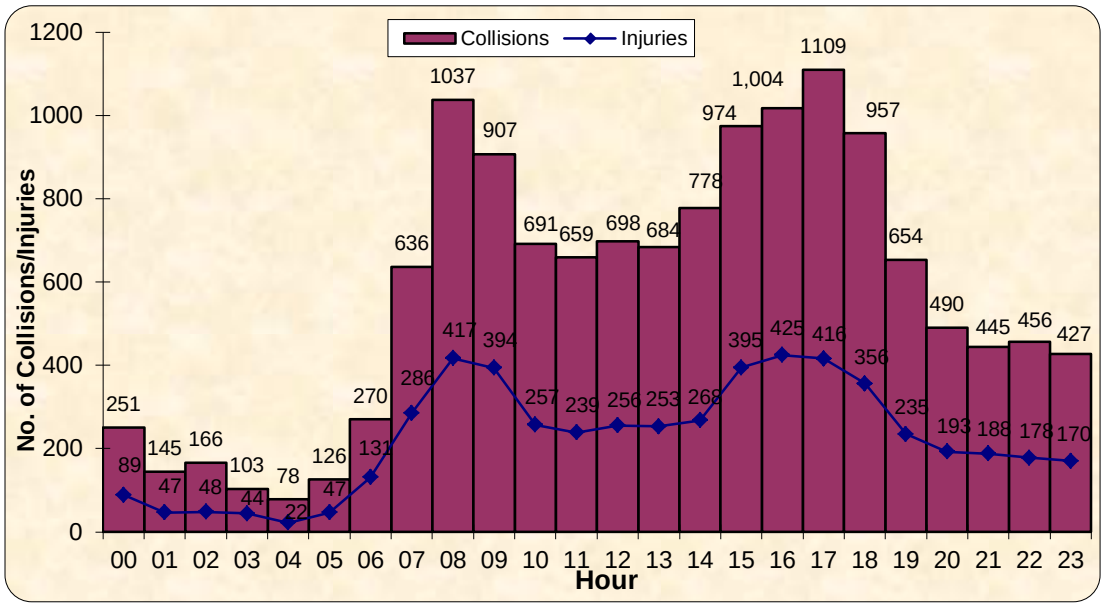

Figure 4.2: Crashes and Injuries by Hour of Day for Weekdays for 2012

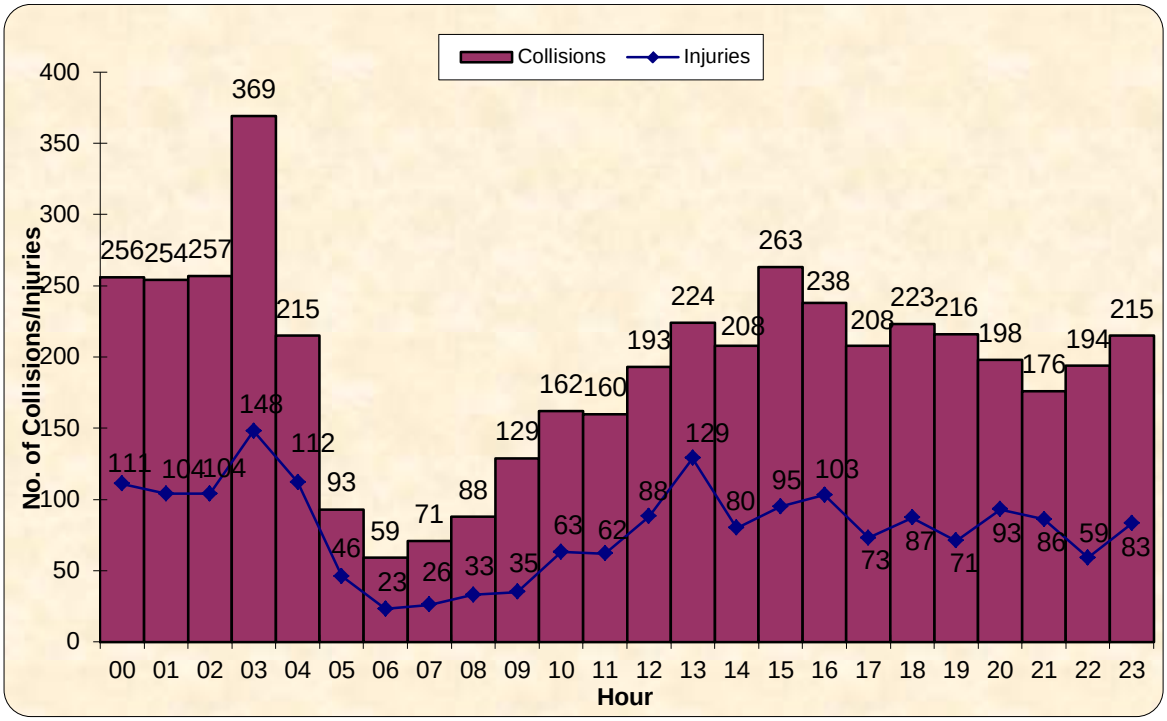

Figure 4.3: Crashes and Injuries by Hour of Day for Weekends for 2012

4.1.2 Traffic Crashes by Day of the Week

Table 4.2 shows the frequencies of crashes reported by the day of the week. This is also shown in Figure 4.4. From the table and figure, the highest total crashes occurred on Friday while the highest fatalities were observed on Monday, Thursday and Saturday.

Table 4.2: Crashes by Day of the week for 2012

2012	Collisions	Fatalities	Injuries
Sunday	2,021	3	841
Monday	2,270	4	921
Tuesday	2,720	1	1,42
Wednesday	2,671	1	1,104
Thursday	2,870	4	1,137
Friday	3,228	2	1,150
Saturday	2,648	4	1,073
Total	**18,428**	**19**	**7,268**

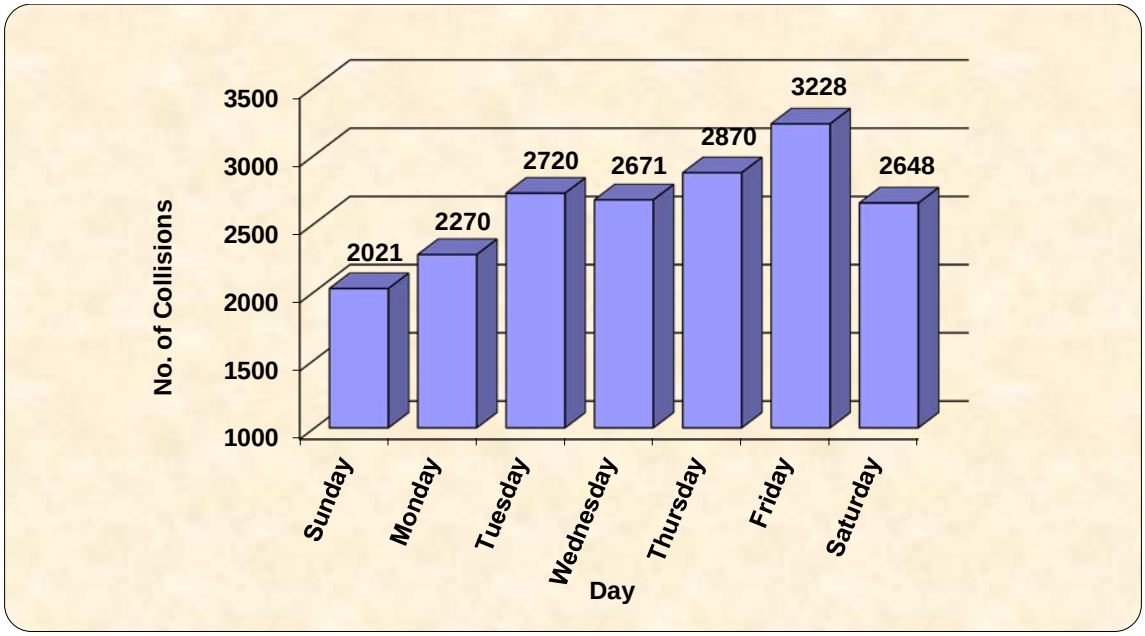

Figure 4.4: Crashes and Injuries by Day of Week for 2012

4.1.3 Traffic Crashes by Month

Table 4.3 and Figure 4.5 respectively show the overall vehicle crashes by month in 2012 and by month for 2010 through 2012. As shown in the table, the highest number of crashes occurred in March and May. Overall, the total number of crashes varied from

month to month, with the highest and lowest number of crashes being respectively 1,693 (May) and 1,646 (March).

Table 4.3: Crashes by Month for 2012

Month	Collisions	Fatalities	Injuries
1	1,410	3	528
2	1,410	0	575
3	1,646	0	646
4	1,572	1	619
5	1,693	1	681
6	1,593	1	611
7	1,472	0	535
8	1,543	1	649
9	1,604	1	683
10	1,595	2	669
11	1,431	0	530
12	1,458	0	541
Total	**18,427**	**10**	**7,267**

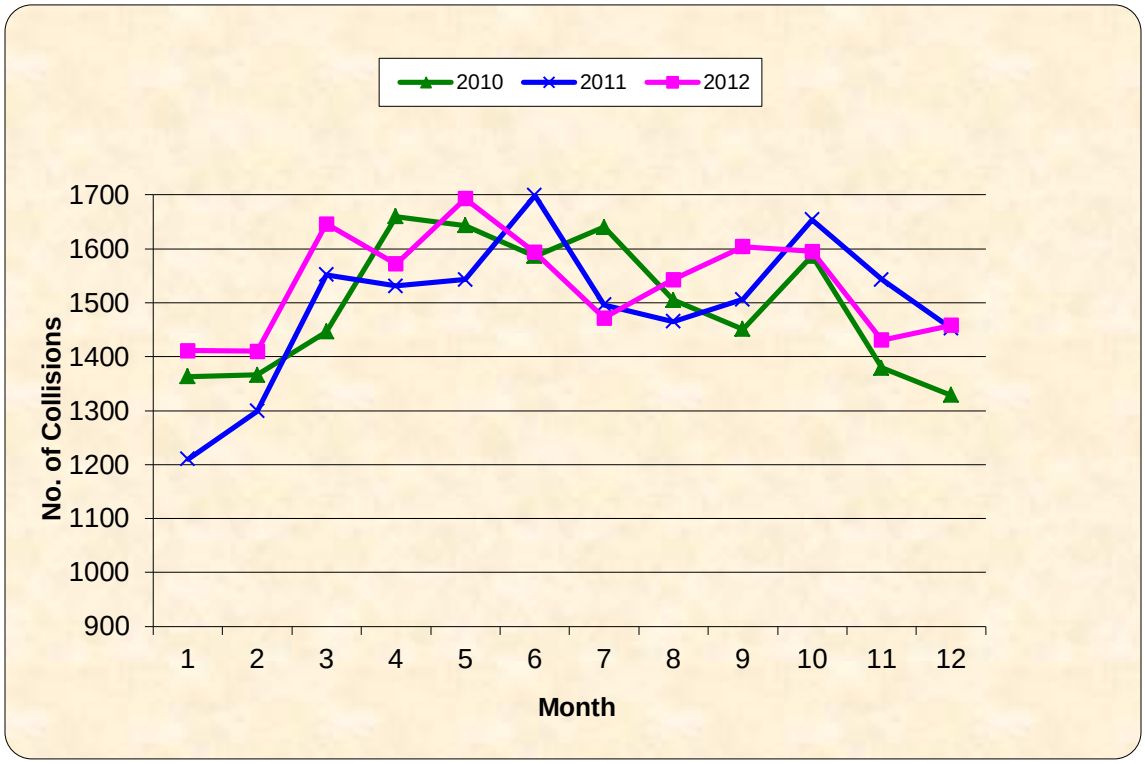

Figure 4.5: Total Crashes by Month for 2010-2012

4.2 Location

4.2.1 Crashes by Quadrant

This section presents the frequency of crashes reported in each quadrant in DC. The summary of the crashes by each quadrant is presented in Table 4.4 and shown in Figure 4.6. From the table and figure, it can be observed that the Northwest (NW) quadrant recorded the highest number of reported crashes from 2010 through 2012. Since the NW quadrant has the highest mileage and coverage area, most of the reported crashes occur in that quadrant. The GIS map for the crashes by quadrant is presented in Figure 4.7.

Table 4.4: Crashes by Quadrant for 2012

Quadrant	# of Collisions	Fatalities	Injuries
NW	9,467	7	3,118
NE	3,673	7	1,730
SE	2,927	3	1,334
SW	571	0	204
BN	1,272	1	611
Unknown	518	1	271
Total	**18,428**	**19**	**7,268**

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

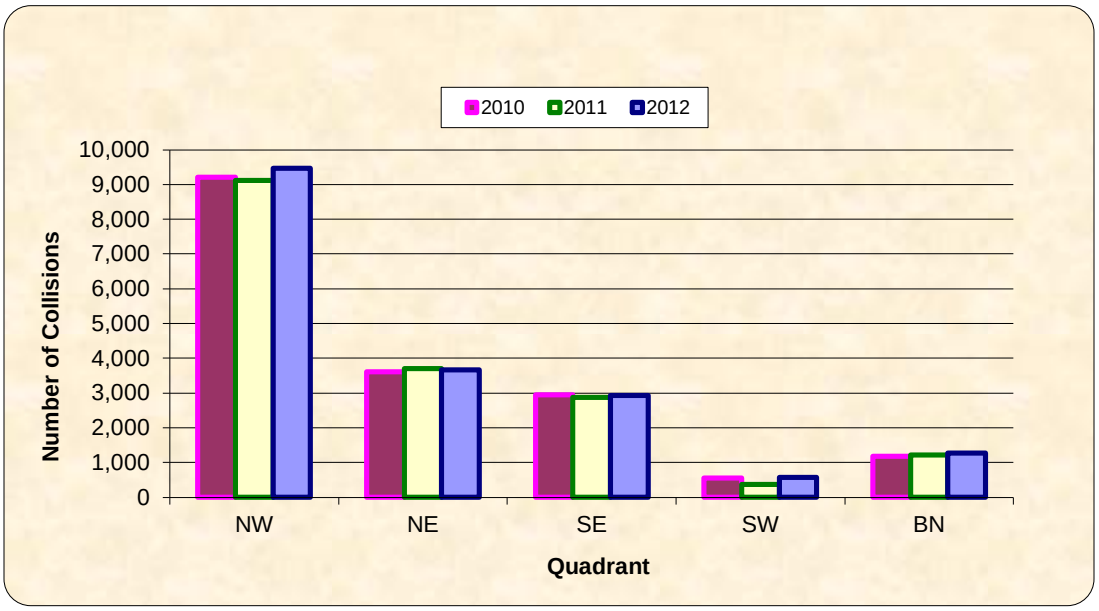

Figure 4.6: Total Crashes by Quadrant for 2010-2012

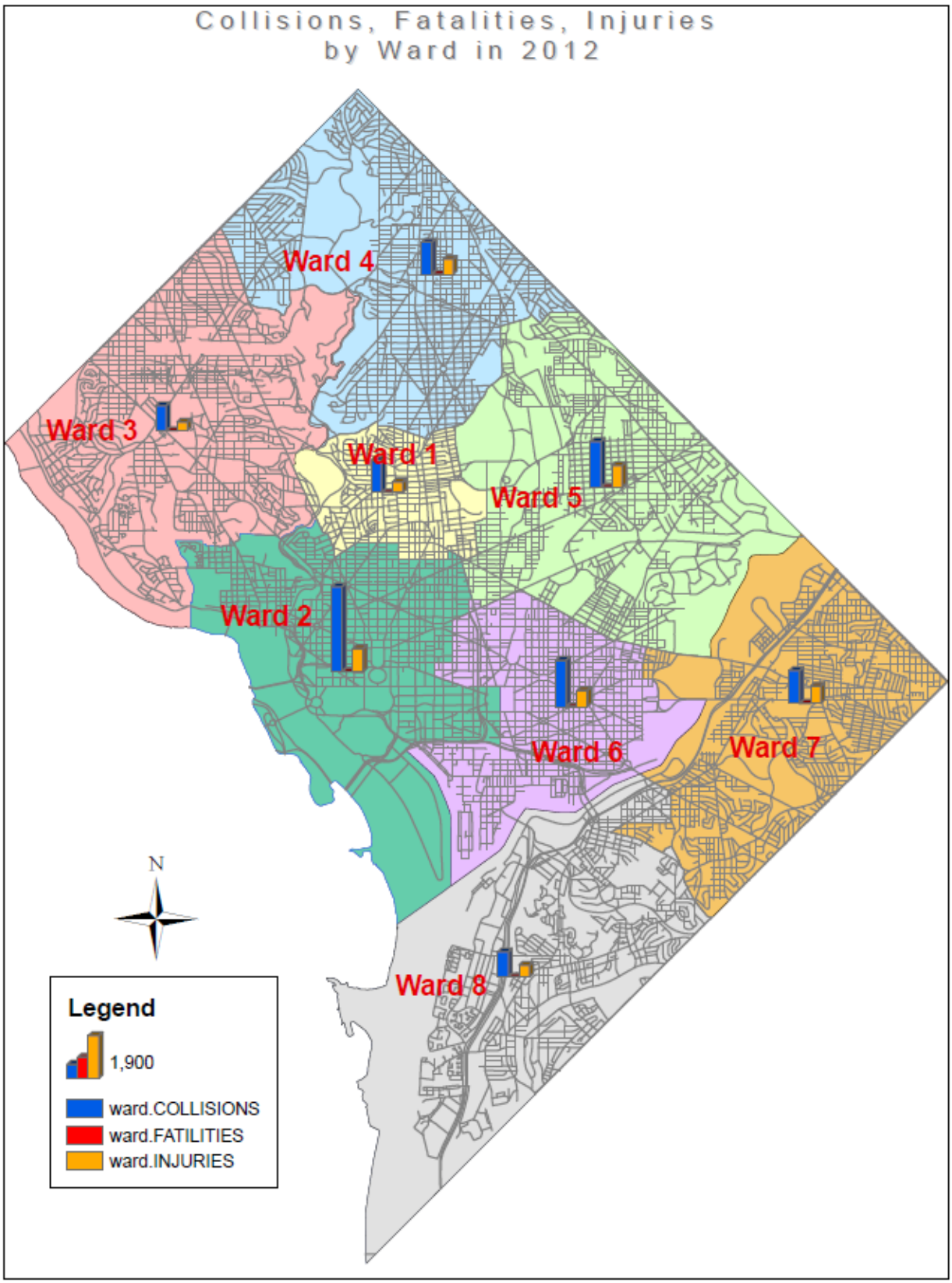

Figure 4.7: Crashes, Fatalities, Injuries by Wards for 2012

4.2.2 Crashes by Ward

The frequency and distribution of crashes by Ward are presented in Table 4.5 and Figure 4.7 for 2010 through 2012. The highest frequency of crashes occurred in Wards 2 and 5. Approximately 31% of all traffic crashes in 2012 occurred in Wards 2, 5 and 6. In the case of injuries, Wards 2 and 5 experienced the highest frequencies of injury crashes as shown in Table 4.5. The summary also shows that, with the exception of Wards 1, 3 and 7, there was an overall modest increase (~3%) in the number of crashes in all the Wards from 2011 to 2012.

Table 4.5: Crashes by Ward from 2010-2012

Ward	2010			2011			2012		
	# of Collisions	Fatalities	Injuries	# of Collisions	Fatalities	Injuries	# of Collisions	Fatalities	Injuries
1	1,309	0	419	1,461	0	496	1,456	0	479
2	3,657	7	987	3,608	1	1,000	3,807	1	1,035
3	1,142	0	391	1,125	2	398	1,119	0	376
4	1,466	0	663	1,426	1	568	1,429	0	658
5	1,979	4	886	2,022	3	1,047	2,061	5	981
6	1,815	1	696	1,776	3	694	2,079	2	730
7	1,557	1	814	1,493	5	802	1,469	3	779
8	1,202	3	550	1,115	5	569	1,122	1	521
Border	1,560	3	671	1,561	2	671	1,655	3	693
Unknown	2,268	6	991	2,364	10	1,090	2,231	4	1,016
Total	**17,955**	**25**	**7,068**	**17,951**	**32**	**7,335**	**18,428**	**19**	**7,268**

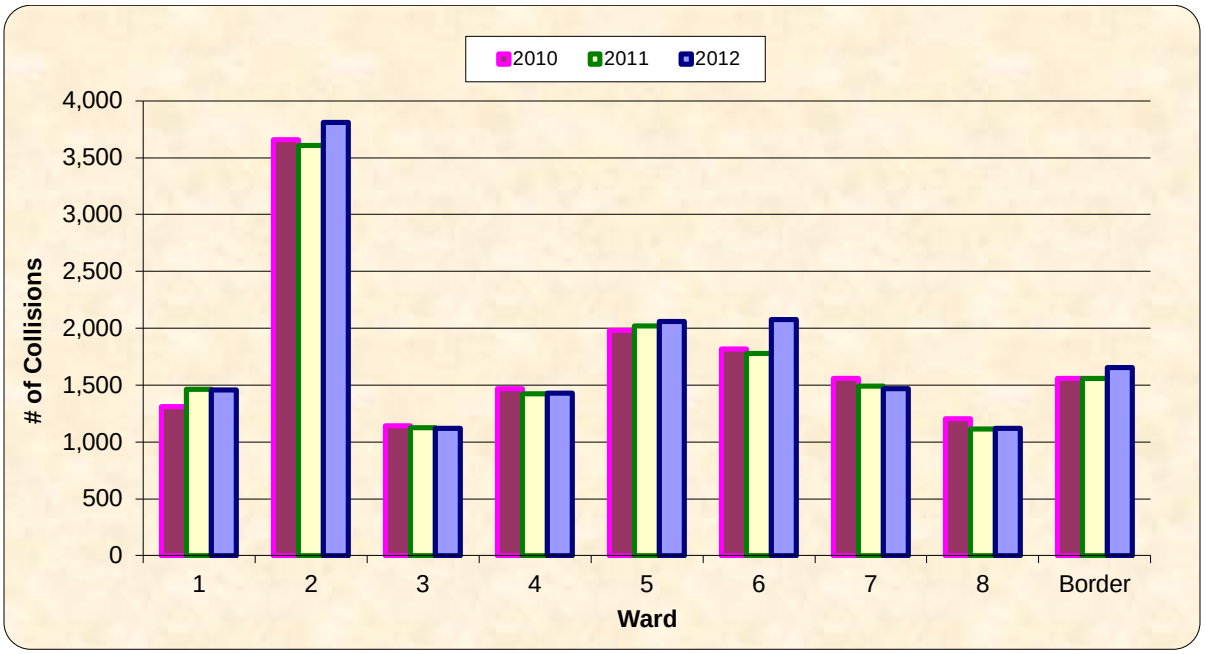

Figure 4.8: Total Crashes by Ward for 2010-2012

4.2.3 Crashes by Police Districts

Crash distributions by Police Districts from 2010 through 2012 are shown in Table 4.6 and Figure 4.9. From the table and figure, Police District 1 experienced the highest frequency of crashes; an average of 23%, during the three year period. There were modest increments in the distribution of crashes in some of the Police Districts over the 3-year period. Also, district 1 and 2 experienced approximately 43% of the total crashes in 2010 through 2012. The GIS map for the crashes by Police District in 2012 is presented in Figure 4.10.

Table 4.6: Crashes by Police District for 2010-2012

Police District	2010			2011			2012		
	# of Crashes	Fatalities	Injuries	# of Crashes	Fatalities	Injuries	# of Crashes	Fatalities	Injuries
1	4,135	5	1,555	4,067	5	1,553	4,143	4	1,441
2	3,684	6	1,038	3,664	4	1,072	3,709	1	1,080
3	2,215	0	763	2,302	1	810	2,252	1	763
4	1,860	2	834	1,855	1	789	2,257	3	1,038
5	2,245	4	1,010	2,296	2	1,182	2,363	4	1,090
6	2,061	3	1,062	2,043	4	1,083	1,962	4	1,048
7	1,584	5	787	1,540	7	823	1,576	1	775
Un-known	171	0	19	184	0	23	166	1	33
Total	**17,955**	**25**	**7,068**	**17,951**	**24**	**7,335**	**18,428**	**19**	**7,268**

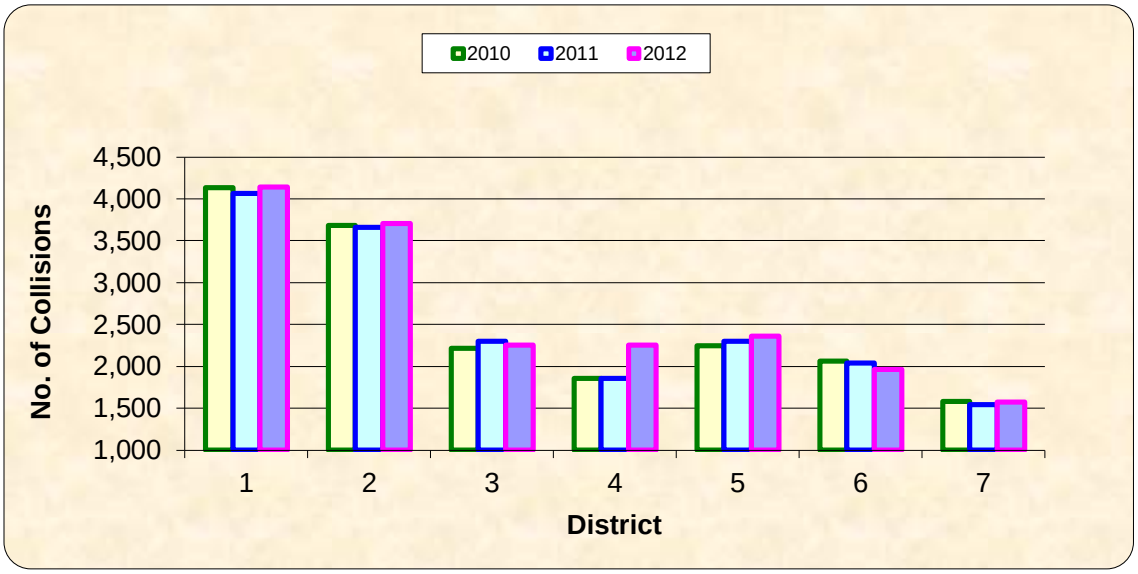

Figure 4.9: Total Crashes by Police District for 2010-2012

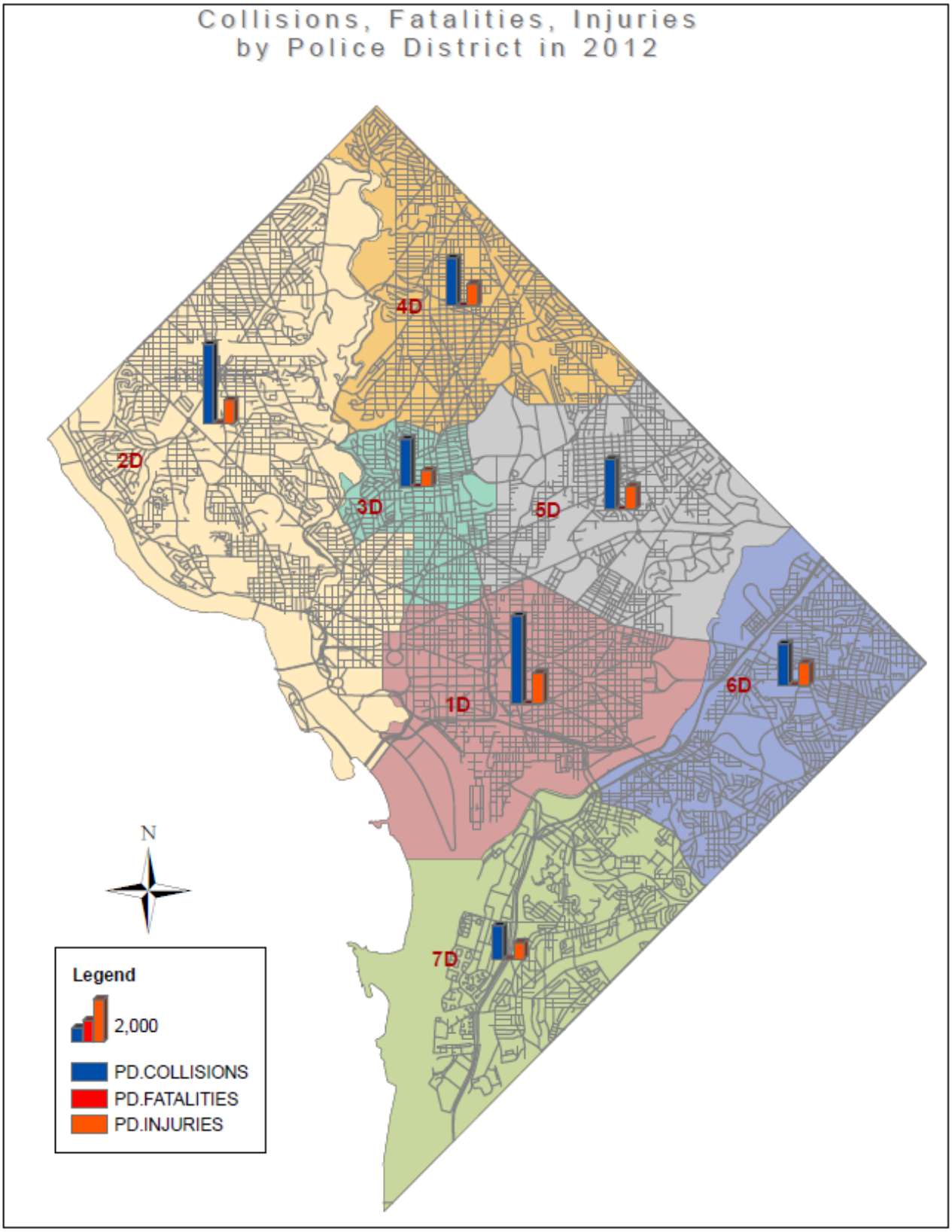

Figure 4.10: Crashes, Fatalities, Injuries by Police District for 2012

4.2.4 Crashes by Advisory Neighborhood Commissions (ANCs)

Washington DC is comprised of 37 Advisory Neighborhood Commissions (ANCs). The summary of the crash statistics for each ANC is presented in Table 4.7.

Table 4.7: Crashes by ANCs in 2012

ANC	Description	Crashes	Fatalities	Injury
Unknown	Unknown	2,231	4	1,016
1A	Columbia Heights, Pleasant Plains	375	0	112
1B	Cardozo, Howard University, LeDroit Park, Shaw	631	0	229
1C	Adams Morgan, Kalorama Heights, Lanier Heights, Western U Street	227	0	49
1D	Mount Pleasant	38	0	6
2A	Foggy Bottom, West End	491	1	126
2B	DuPont Circle	791	0	207
2C	Blagden Alley, Chinatown, Logan Circle, Mount Vernon Square, Shaw	452	0	122
2D	Kalorama, Sheridan	57	0	7
2E	Burleith, Georgetown, Hilandale	488	0	112
2F	Logan Circle	816	0	245
3B	Cathedral Heights, Glover Park	74	0	7
3C	Cathedral Heights, Cleveland Park, Massachusetts Heights, McLean Gardens, Woodley Park	313	1	99
3D	American University, Foxhall, Kent, The Palisades, Spring Valley, Wesley Heights	142	0	56
3E	American University Park, Friendship Heights, Tenleytown	141	0	52
3F	Forest Hills, North Cleveland Park, Tenleytown	235	0	89
3G	Chevy Chase	135	0	45
4A	Brightwood, Colonial Village, Crestwood, Shepherd Park, Sixteenth Street Heights	212	0	96
4B	Brightwood, Lamond-Riggs, Manor Park, Riggs Park, South Manor Park, Takoma	387	0	192
4C	Columbia Heights, Crestwood, Petworth, Sixteenth Street Heights	304	0	141
4D	Petworth	140	0	74
5A	Brookland, Fort Lincoln, Michigan Park, North Michigan Park, University Heights, Woodridge	439	1	205
5B	Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad	893	1	433
5C	Bloomingdale, Eckington, Edgewood	565	2	245
6A	North Lincoln Park, Rosedale, Stanton Park	265	1	110
6B	Barney Circle, Capitol Hill, Eastern Market	482	0	130
6C	Near Northeast, Penn Quarter, Union Station	914	2	344
6D	Carrollsburg, Fort McNair, Navy Yard, Near Southwest/Southeast, Waterfront	395	0	140
7A	Fort DuPont, Greenway, River Terrace	227	0	99
7B	Fairfax Village, Hillcrest, Penn Branch, Randle Highlands	222	0	101
7C	Burrville, Deanwood, Grant Park, Lincoln Heights	169	2	96
7D	Eastland Gardens, Kenilworth, Kingman Park, Mayfair	323	0	177
7E	Benning Heights, Capitol View, Fort Davis, Marshall Heights	197	1	120
8A	Anacostia, Fairlawn, Fort Stanton, Hillsdale	243	1	94

Table 4.7: Crashes by ANCs in 2012 (Cont'd)

ANC	Description	Crashes	Fatalities	Injury
8B	Garfield Heights, Knox Hill, Shipley Terrace	238	0	89
8C	Barry Farms, Bolling Air Force Base, Congress Heights, St. Elizabeth's Hospital	265	0	153
8D	Bellevue, Far Southwest	175	0	71
8E	Congress Heights, Valley Green, Washington Highlands	107	0	56
Border	Border between ANCs	3,629	2	1,523
Total		**18,428**	**19**	**7,268**

From the summary presented in Table 4.7, ANC 5B (Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad) and 6C (Near Northeast, Penn Quarter, Union Station) were the top two ANCs that most frequently reported motor vehicle crashes in 2012. The borders between the various ANC borders recorded the highest crash frequencies. Presented in Figure 4.11 is a GIS map for the distribution of 2012 crashes by Advisory Neighborhood Commissions.

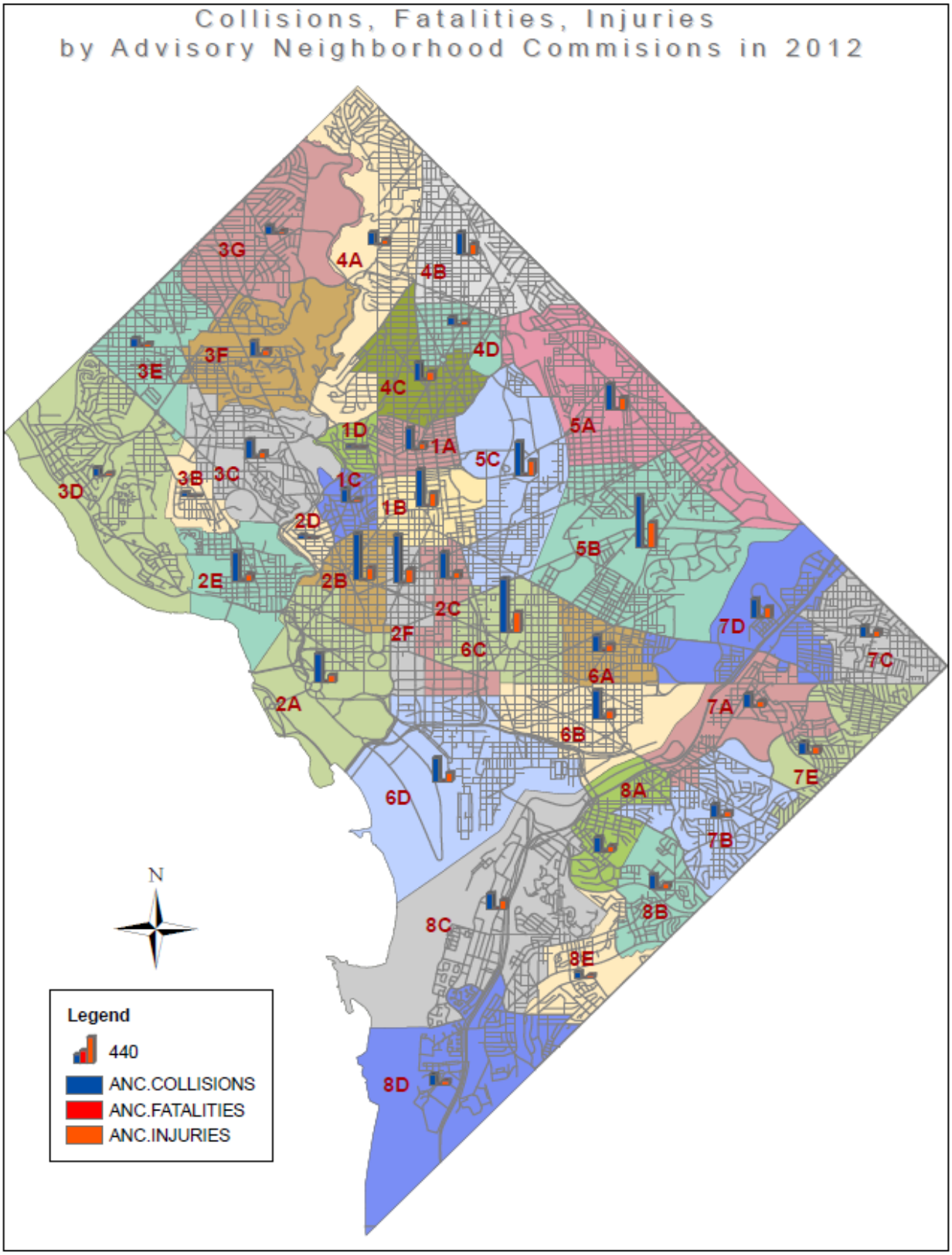

Figure 4.11: Crashes, Fatalities, Injuries by Advisory Neighborhood Commissions for 2012

4.2.5 Crashes by On-Street Location

In order to identify contributory factors of a crash, it is necessary to determine crashes that occur at intersections, within close proximity to intersections and elsewhere. The summary of the crashes by on-street location is presented in Table 4.8 and Figure 4.12. From the results, the majority of the crashes (6,557 or approximately 36% of the total crashes) occurred within 100 feet of intersections in 2012. This is followed by crashes that occurred at intersection, representing approximately 32% (5,811) of the total crashes.

Table 4.8: Crashes by On-Street Location for 2012

On Street	Total collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
At Intersection	5,811	8	2,236	3,567	8	3,113
N/A	630	0	133	497	0	192
Not at Intersection	4,880	6	1,238	3,636	7	1,722
Other	227	0	60	167	0	82
Private Property	322	0	64	258	0	83
Within 100ft of Intersection	6,557	3	1,527	5,027	3	2,075
Unknown	1	1	0	0	1	1
Total	**18,428**	**18**	**5,258**	**13,152**	**19**	**7,268**

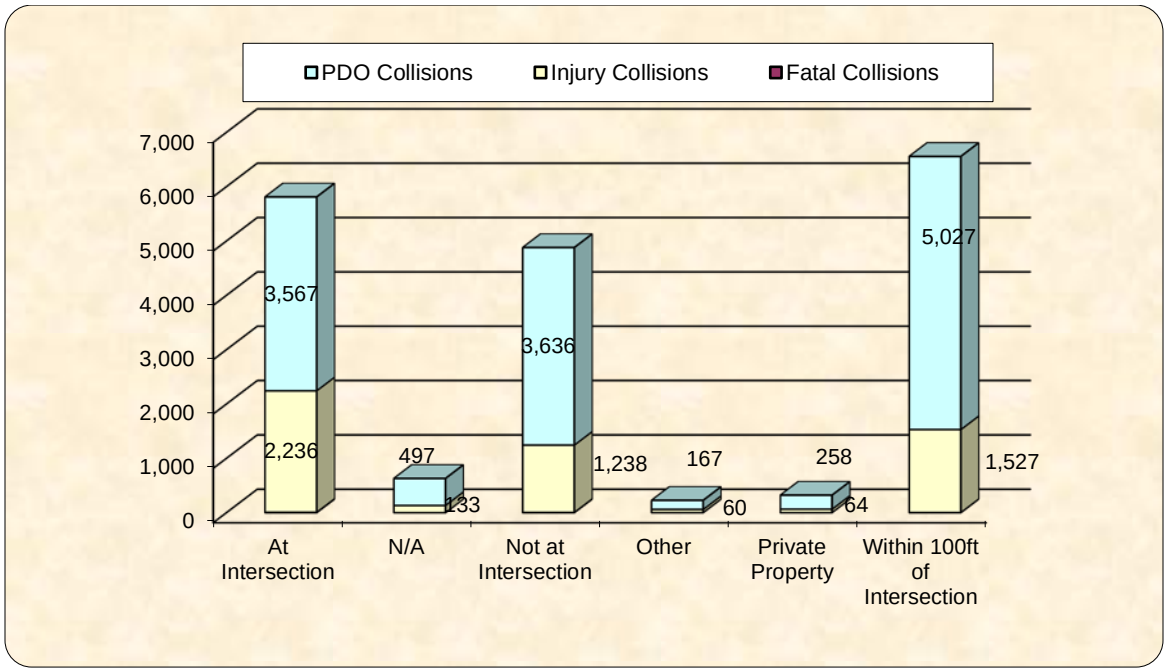

Figure 4.12: Crashes by On-Street Location for 2012

4.2.6 Crashes by Construction Zone

Construction zone safety continues to be a high priority issue for traffic engineering professionals and highway agencies. Thus, there is the need to assess crashes in such zones in order to identify mitigation strategies to reduce those. Table 4.9 shows the 3-year summary of crashes recorded in construction zones while Table 4.10 compares crashes in construction zones with those in non-construction zones in 2012. From Table 4.9, there has been a steady increase in crashes in construction zones from 2009 to 2011 with a decline from 2011 to 2012. In Table 4.10, there were a total of 715 crashes (~4% of the total crashes) which occurred in construction zones resulting in 283 injuries in 2012.

Table 4.9: Crashes in Construction Zones for 2009-2012

Year	2009	2010	2011	2012
Number of Collisions in Construction Zone	702	833	854	715
Percentage of Collisions in Construction Zone	4.17%	4.64%	4.76%	3.88%

Table 4.10: Crash Details in Construction Zones in 2012

Construction Zone	Total Collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Construction Zone	715	0	206	509	0	283
Not In Construction Zone	17,713	18	5,052	12,643	19	6,985
Total	**18,428**	**18**	**5,258**	**13,152**	**19**	**7,268**

4.3 Crash Classification

This section presents crash statistics by vehicle type, road-user characteristics, and factors related to the roadway environment.

4.3.1 Crash Severity Type

Presented in Figure 4.13 is the summary of crashes recorded in the DC in 2012 by crash severity. The classifications are: fatalities, injury and PDOs.

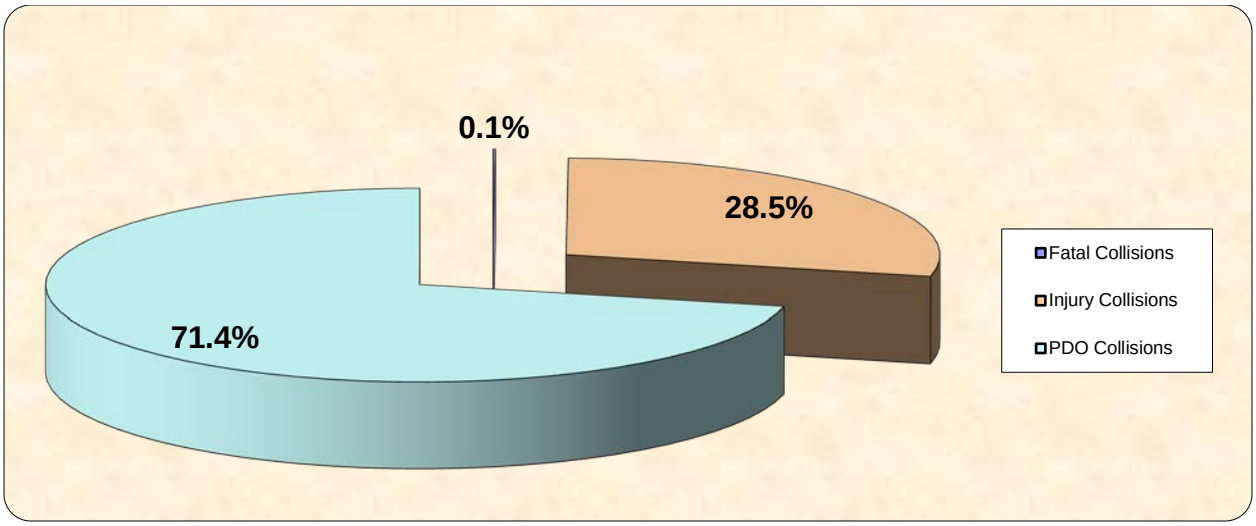

Figure 4.13: Crashes Severity Type in 2012

From Figure 4.13, the most crash severity type recorded in 2012 was Property Damage Only (PDO), which represented approximately 71% of all crashes in 2012. Crashes resulting in injury represented about 29% of the crashes recorded while fatalities were 0.1% of the total crashes.

4.3.2 Crash Type

Table 4.11 presents the total crashes distributed by crash type, and Figure 4.14 shows the crash type from 2010 to 2012. Crash frequencies for the four most frequent types of crashes show a downward trend from 2010 to 2012 in Figure 4.14. From the figure, side swipe, rear end, right-angle, and left-turn crashes were the most common crashes during the 3-year period. Together, they accounted for approximately 61% of the total crashes. In 2012, approximately 28% of the crashes were side swipe crashes, 23% rear-end crashes, and 8% right angle crashes. Approximately 7% of the crashes were left turn crashes.

Table 4.11: Summary of Crashes by Type in 2012

Type of Collision	Total collisions	Fatal Collisions	Injury Collisions	PDO Collisions	Fatalities	Injuries
Backing Hit Moving Veh.	307	0	39	268	0	58
Backing Hit Parked Veh.	534	0	19	515	0	22
Backing Hit Ped.	58	1	48	9	1	50
Fixed Object	720	2	199	519	2	250
Head On	463	3	225	235	3	362
Left Turn Hit Ped.	238	1	218	19	1	230
Left Turn Hit Veh.	1,256	1	409	846	1	615
Non-Collision Accident	79	0	44	35	0	62
Other	638	1	228	409	1	311
Override	16	0	4	12	0	5
Parked Vehicle	1,077	1	86	990	1	104
Ran Off Roadway	197	2	87	108	3	118
Rear End	4,175	0	1,594	2,581	0	2,324
Right Angle	1,561	1	659	901	1	1,006
Right Turn Hit Ped.	105	0	88	17	0	90
Right Turn Hit Veh.	669	0	121	548	0	164
Side Swiped	5,183	0	515	4,668	0	728
Straight Hit Ped.	404	4	359	41	4	380
Underride	4	0	1	3	0	1
Unknown	744	1	315	428	1	388
Total	**18,428**	**18**	**5258**	**13,152**	**19**	**7,268**

Key:

Ped. = Pedestrian

Veh. = Vehicle

4.3.3 Hit-and-Run Crashes

The summary of reported hit-and-run crashes is presented in Figure 4.15. The number of hit and run crashes from 2011 to 2012 showed a 1.5% increase in 2012 from 2011. Comparing those crashes in 2010 to 2012, the percentage of hit and run crashes showed an increase of nearly 2.6%. Figure 4.16 shows the resulting severity of hit and run crashes in 2012. There were 2 fatalities as a result of hit-and-run crashes in 2012.

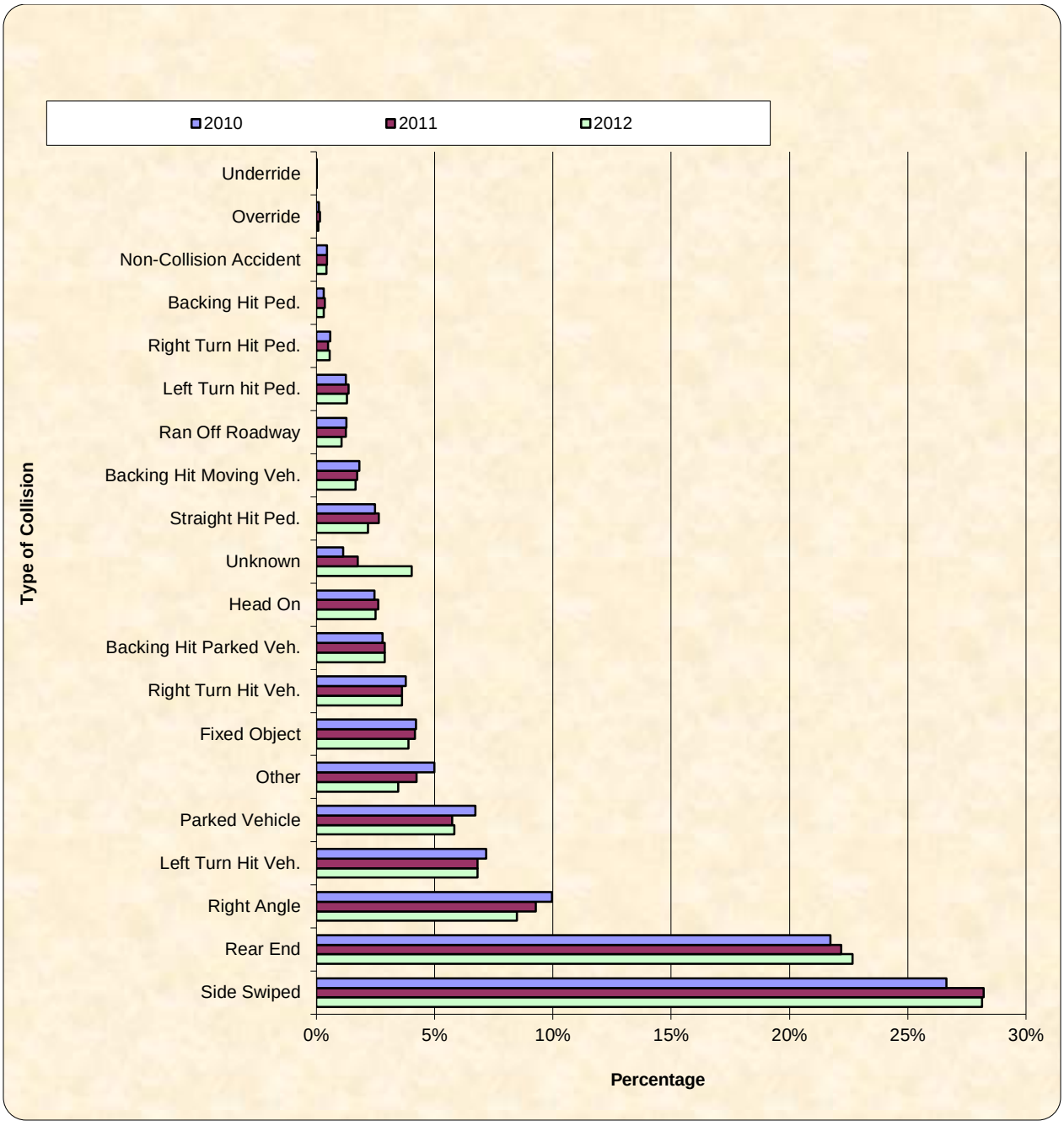

Figure 4.14: Crashes by Type in 2010-2012

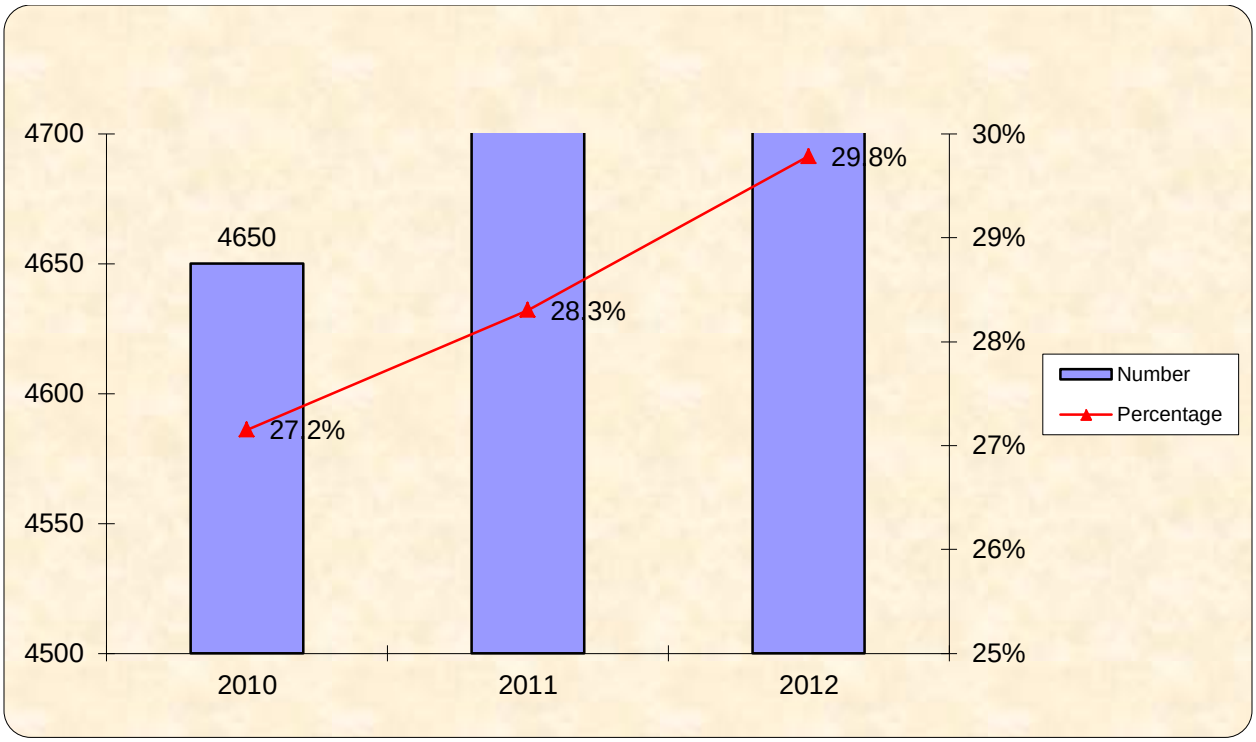

Figure 4.15: Hit and Run Crashes in 2012

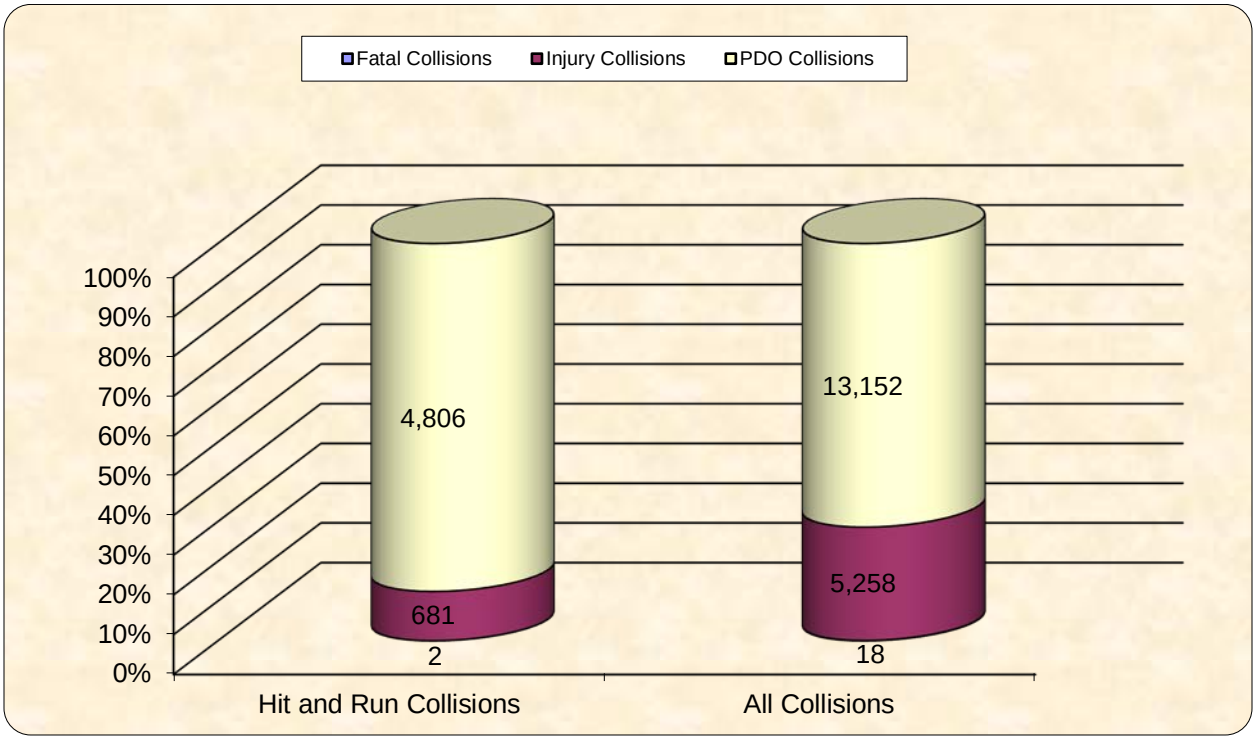

Figure 4.16: Severity of Hit and Run Crashes in 2012

4.3.4 Crashes by Vehicle Classification

Crash involvement for buses, trucks, motorcycles, and bicycles are of special interest in this section. Crashes involving these special vehicles often pose increased risk of serious or fatal injuries. The summary of crash frequencies by vehicle type in 2012 is presented in Table 4.12.

Table 4.12: Summary of Crash in 2012 by Vehicle Classification

Vehicle Involved	Crashes	Fatalities	Injuries
Passenger Auto	24,372	34	11,320
Bus	1,811	1	529
Taxi Cab	2,185	2	540
Motorcycle	221	4	164
Bicycle	538	2	419
Truck/Trailer	2,346	5	804

From the table, passenger automobiles were the most involved in crashes followed by trucks and/or trailers. Crashes which resulted in fatalities and injuries were predominantly those involved with passenger cars as well. Overall, crashes involving bicycles and motorcycles represented approximately 2% of the classification of crashes in 2012. Presented in Figures 4.17 through 4.19 are the 3-year crash trends by vehicle type and outcomes (injuries and fatalities).

Overall, the trend in reported crashes involving trucks, buses and taxi cabs showed a modest decline from 2010 to 2011, with an increase from 2011 to 2012. The trend in the reported crashed involving bicycles and motorcycles showed a continuous increase during the 3-year period. The trend in reported crashes resulting in fatalities involving motorcycles, buses and bicycles showed an increase in 2012. Trucks and taxis showed a modest decrease in 2012.

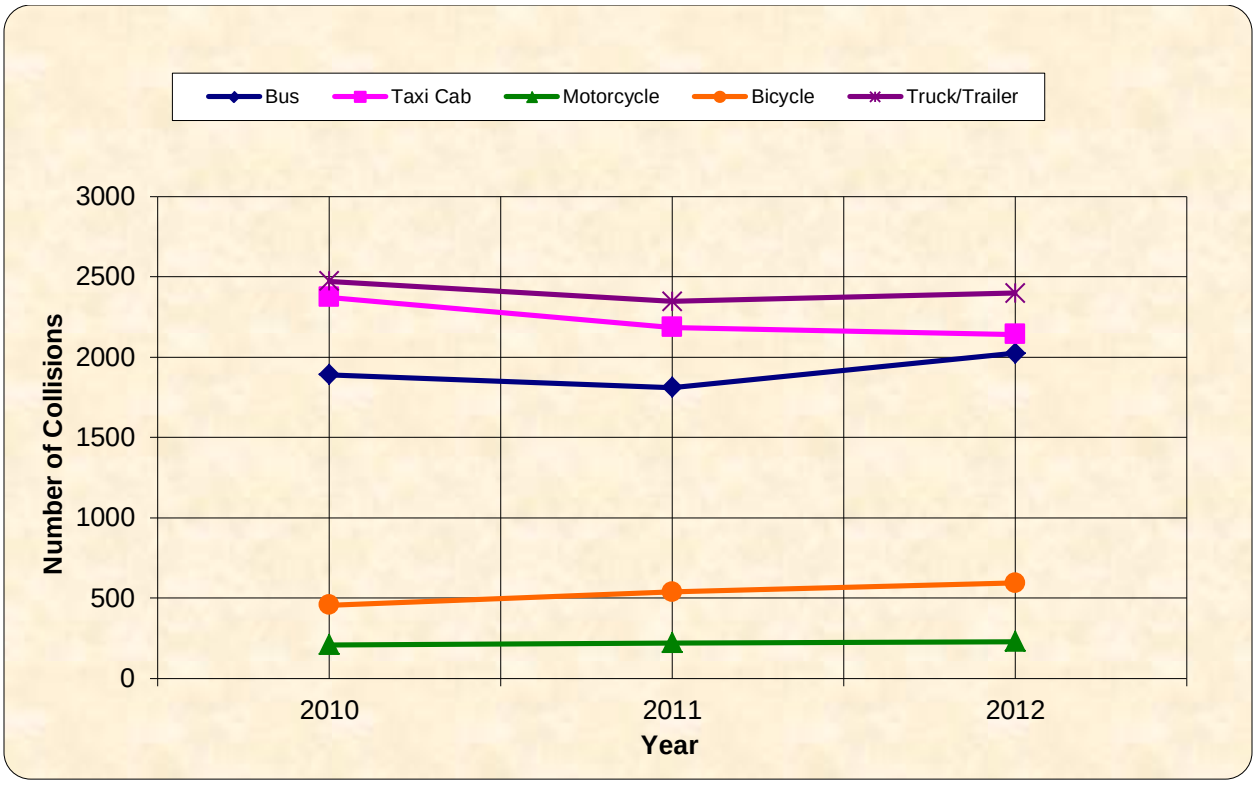

Figure 4.17: Three-year Trend of Crashes by Vehicle Type

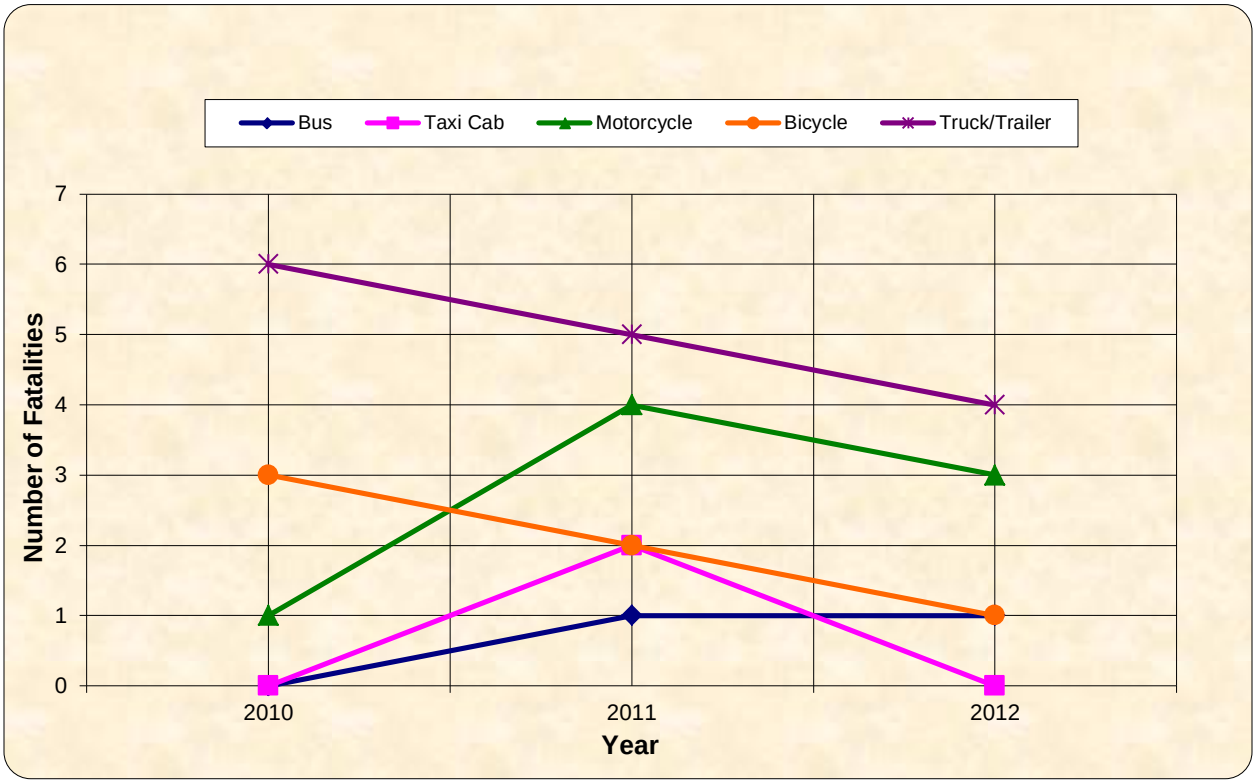

Figure 4.18: Three-year Trend of Fatalities by Vehicle Type

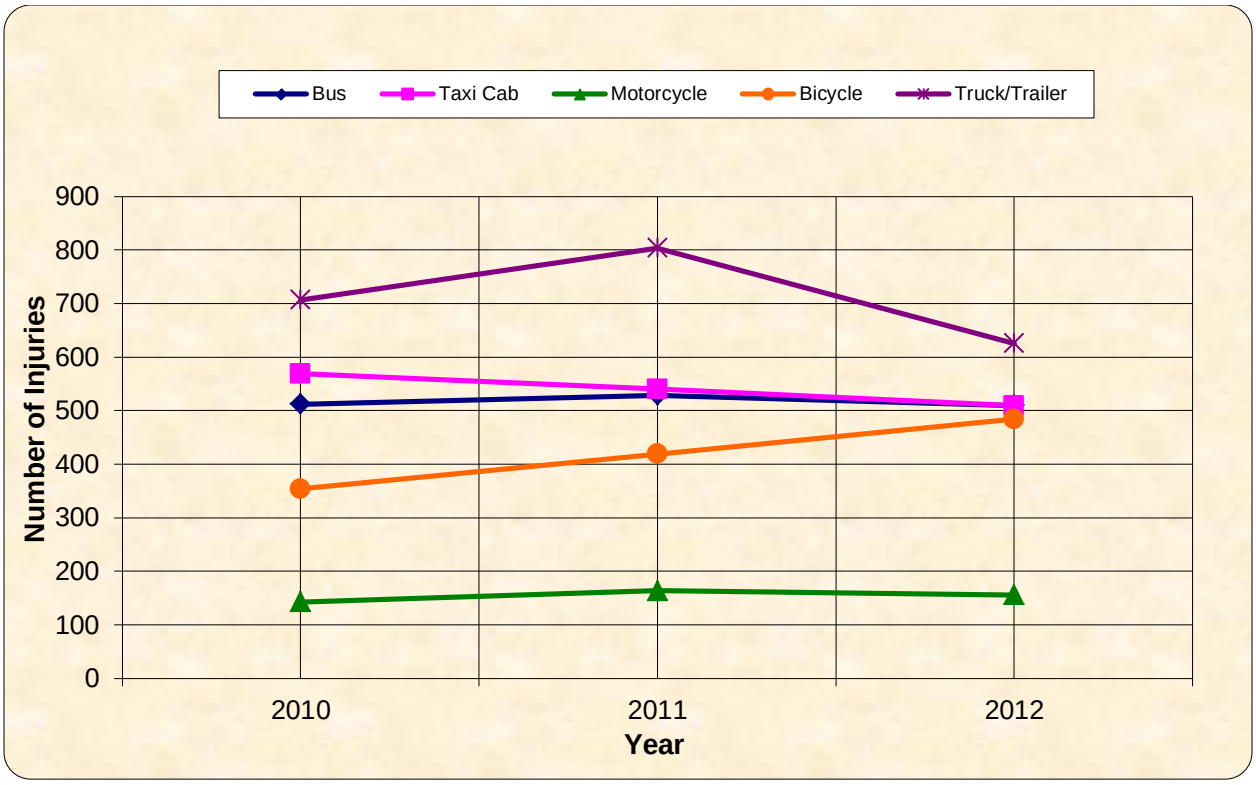

Figure 4.19: Three-year Trend of Injuries by Vehicle Type

4.3.5 Crashes involving Pedestrians

With approximately 50% of workers in the District either commuting by public transportation or walking to work, it is necessary to understand the causes and severity of crashes involving pedestrians. Figures 4.21 through 4.23 present the summaries of crashes involving pedestrians with the following details for pedestrians from 2010 through 2012: total crashes, by age and by gender. From the figures, there was an increase in the total number of pedestrian crashes in 2012 compared with those in 2010 and 2011. In addition, the distribution also shows that pedestrians in the age group of 21-30 were the most involved in crashes. The percentage of crashes involving males and females remained the same in 2010 and 2012. However, comparing crashes in 2012 to 2011, there was an increase in crashes involving males and a decrease in crashes involving female pedestrians. Presented in Table 4.13 is a summary of injury codes reported by pedestrians in 2012 after being involved in a crash. Approximately 9% (2,787 reports) of the pedestrians complained but did not have any visible injuries. Presented in Figure 4.20 is Pedestrian Involved Collisions at intersections in 2012.

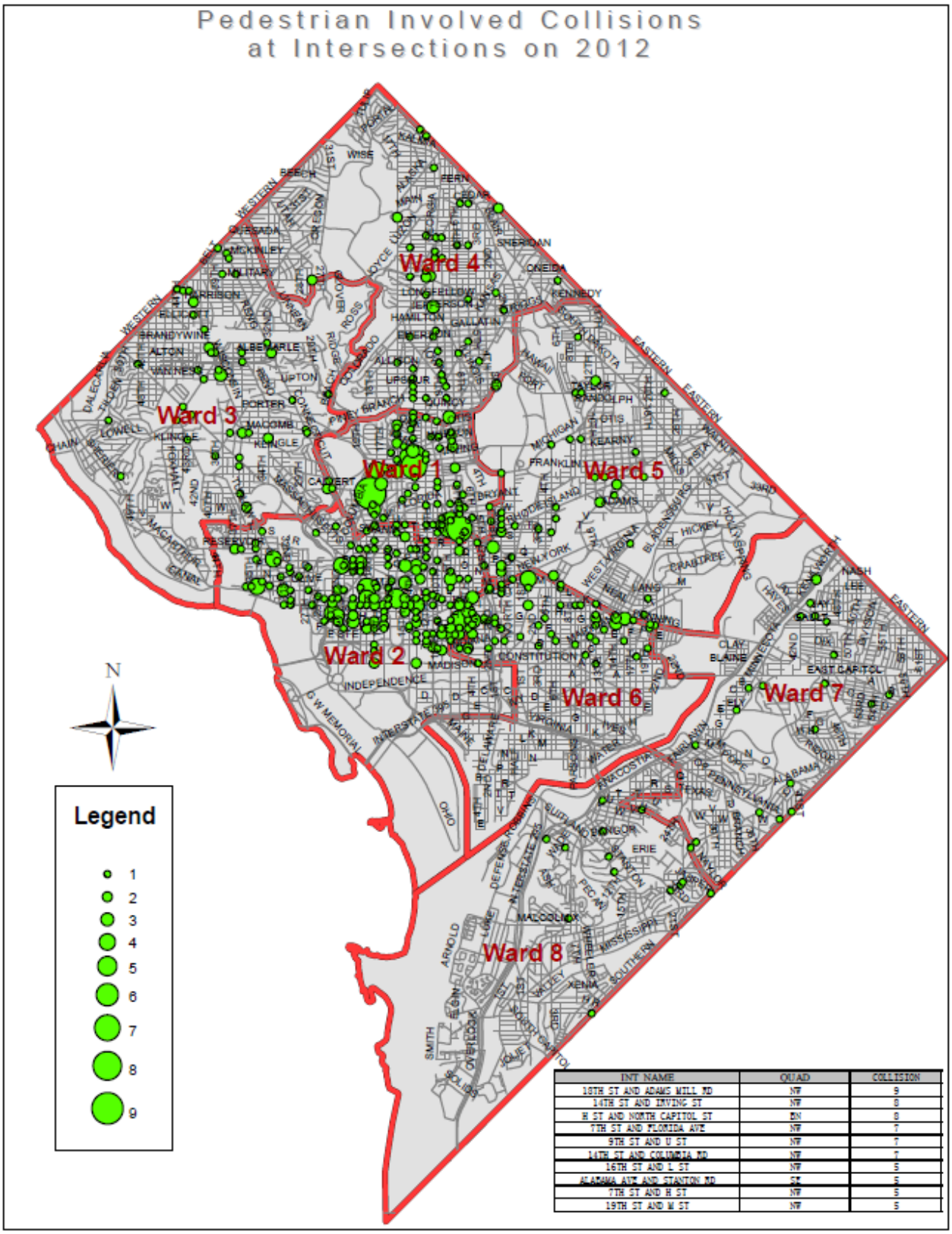

Figure 4.20: Pedestrian Involved Crashes at Intersections in 2012

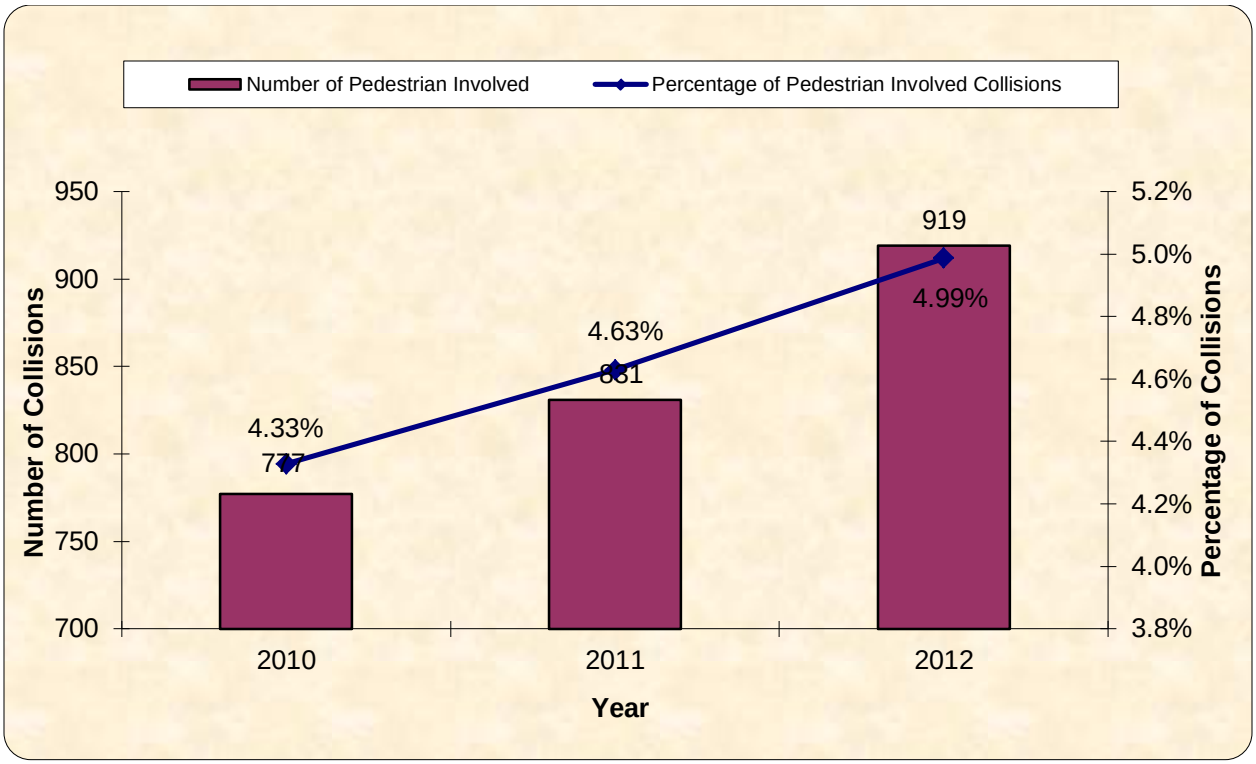

Figure 4.21: Three-year Trend of Crashes involving Pedestrians

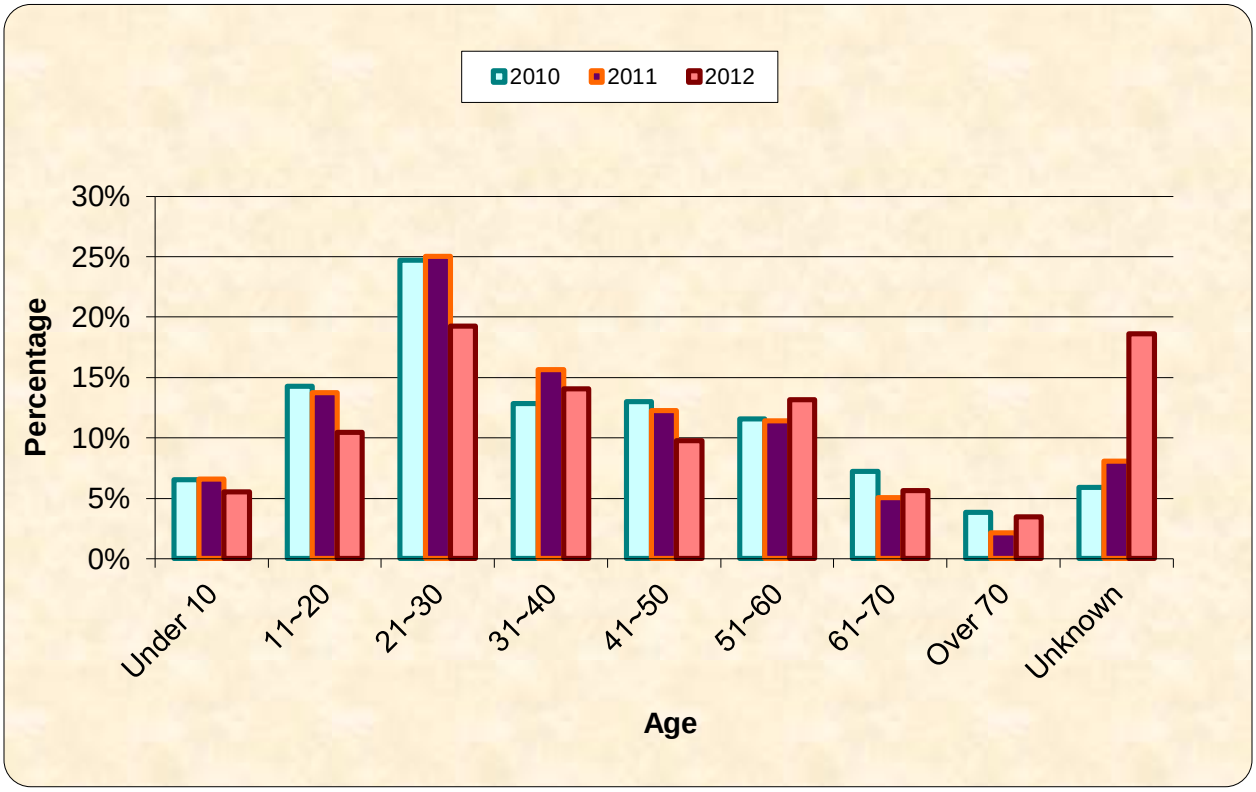

Figure 4.22: Three-year Trend of Crashes involving Pedestrians by Age

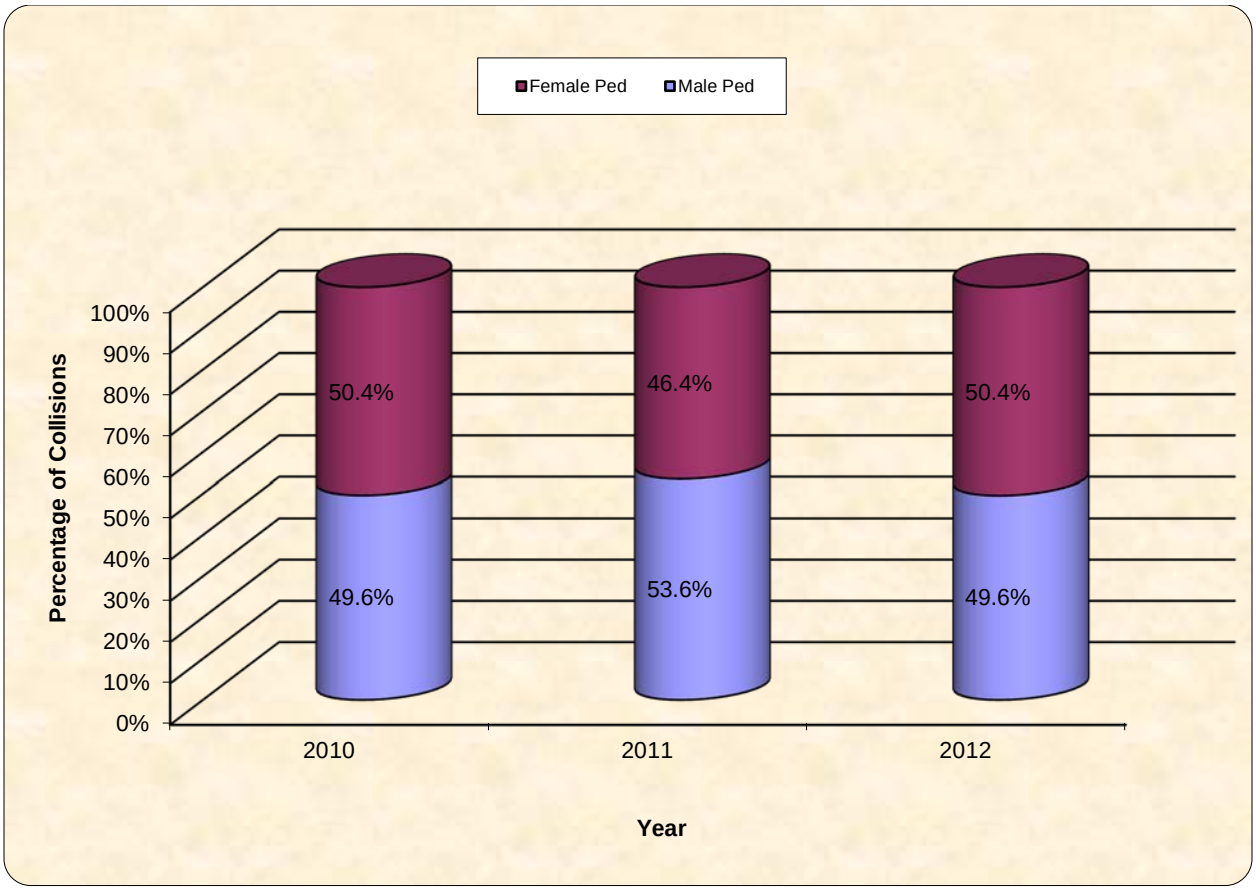

Figure 4.23: Three-year Trend of Crashes involving Pedestrians by Gender

Table 4.13: Pedestrian Involved Crashes by Injury Type in 2012

Injury Code	Frequency
Complaint but not visible	352
Disabling	83
Fatalities	8
Non-Disabling	221
No Injury	86
Unknown	118
Other	51
Total	919

4.3.6 Crashes involving Bicyclists

With the increasing use of bicycles in the District, it is pertinent to determine crashes involving bicyclists. Figures 4.24 through 4.27 present the summaries of crashes involving bicyclists from 2010 through 2012: total crashes, by age and by gender. Crashes involving bicyclists ranged from 494 to 642 during the 3-year period. From the

figures, there was a significant increase in the total number of crashes in 2012 compared with those in 2010 and 2011. In addition, the distribution also shows that bicyclists in the age group of 21-30 were the most involved in crashes. Compared with 2011 crashes, there was a modest decline in crashes involving females while an increase in crashes involving male bicyclists was reported in 2012. Figure 4.24 shows the GIS map for bicycle crashes at intersections in 2012.

Presented in Table 4.14 is a summary of injury codes reported by bicyclists in 2012 after being involved in a crash. The majority of the pedestrians complained as a result of the accident but did not have disabling nor visible injuries.

Table 4.14: Bicycle Crashes by Injury Code in 2012

Injury Code	Number
Complaint but not visible	168
Disabling	45
Fatal	0
Non-Disabling	215
None	121
Other	33
Unknown	60
Total	642

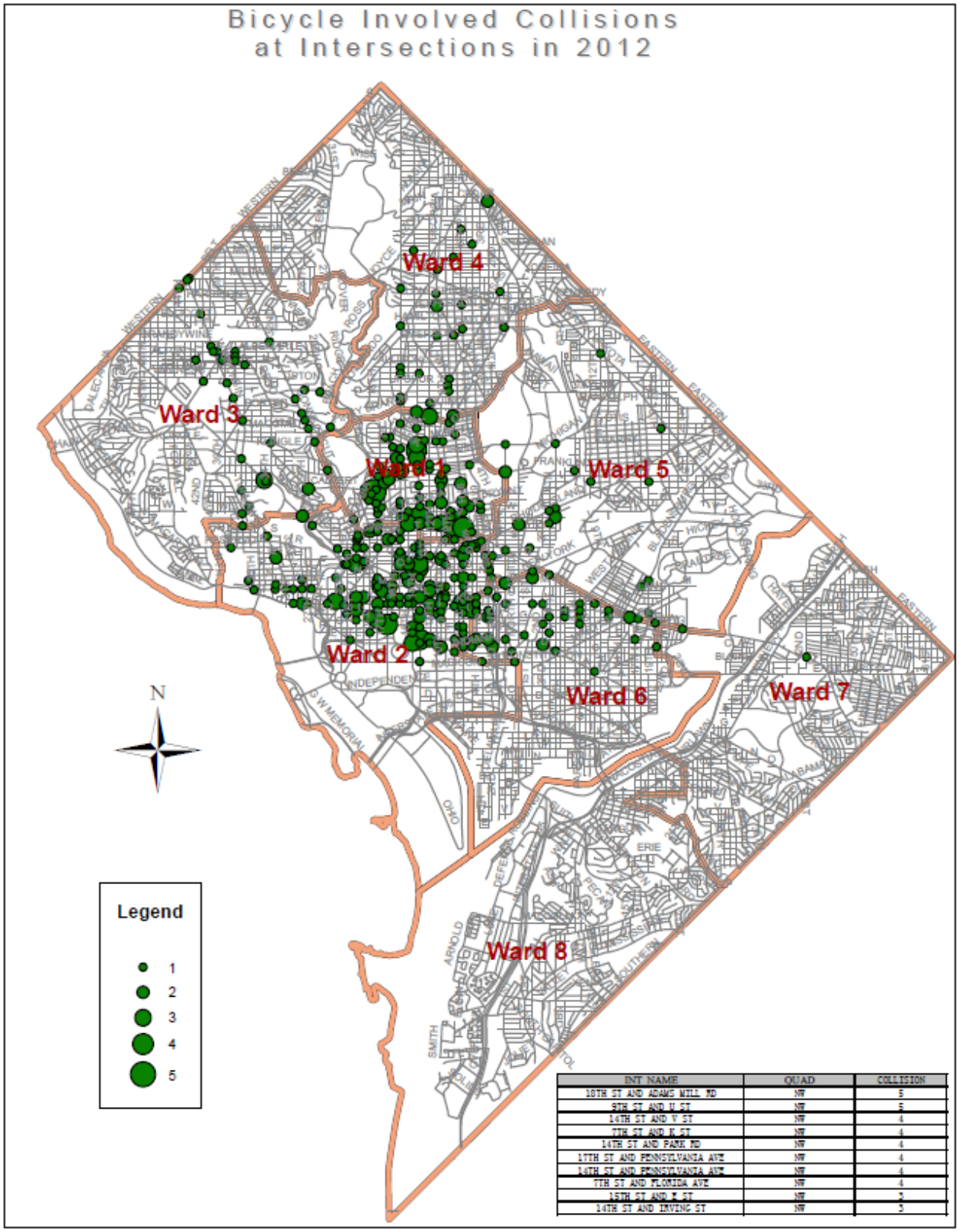

Figure 4.24: Crashes Involving Bicycles at Intersections in 2012

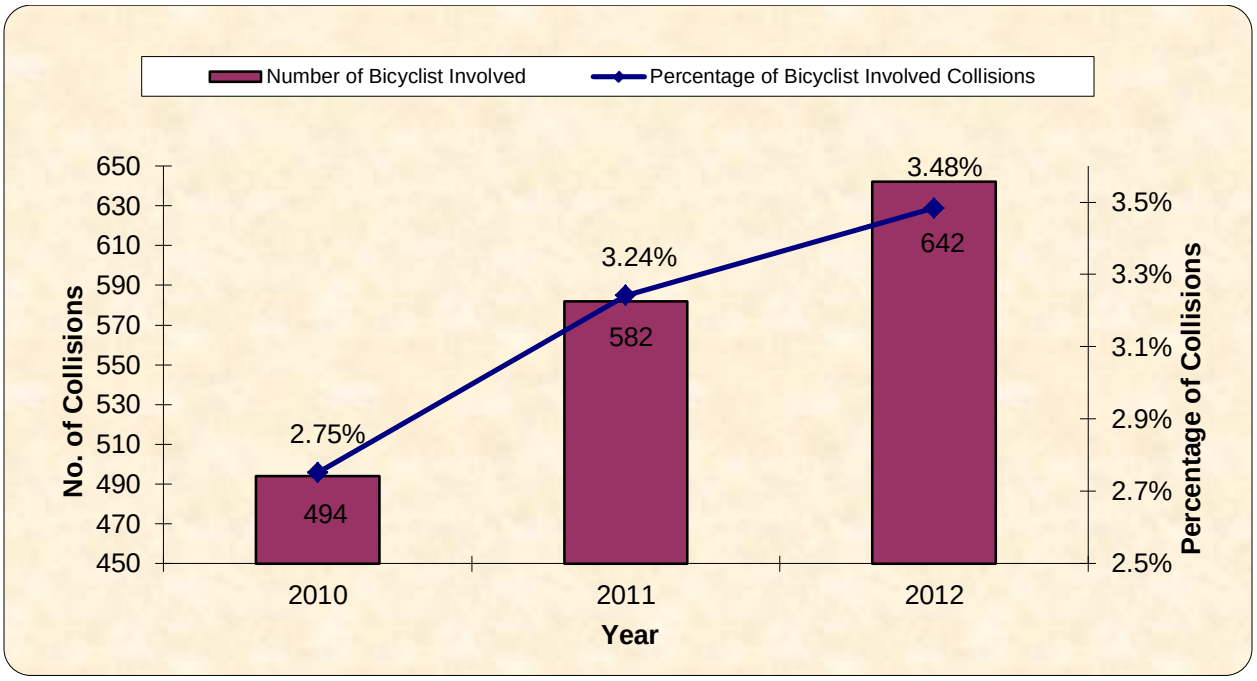

Figure 4.25: Three-year Trend of Crashes involving Bicyclists

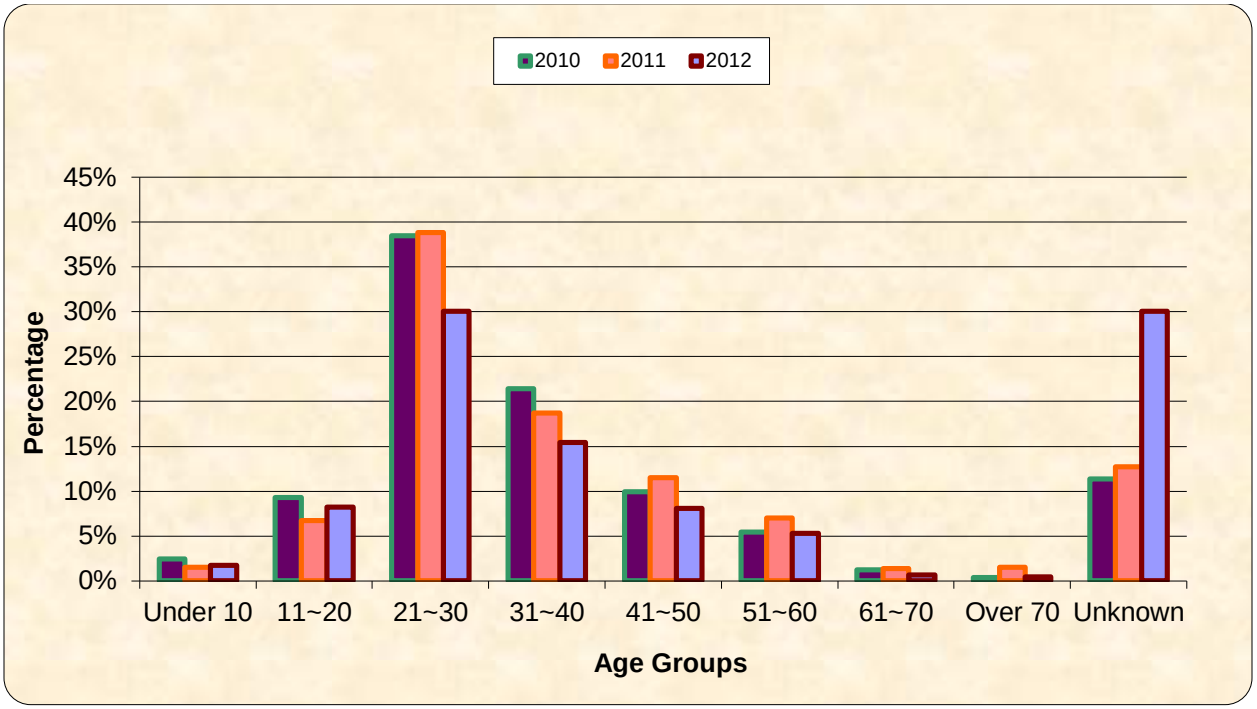

Figure 4.26: Three-year Trend of Crashes involving Bicyclists by Age

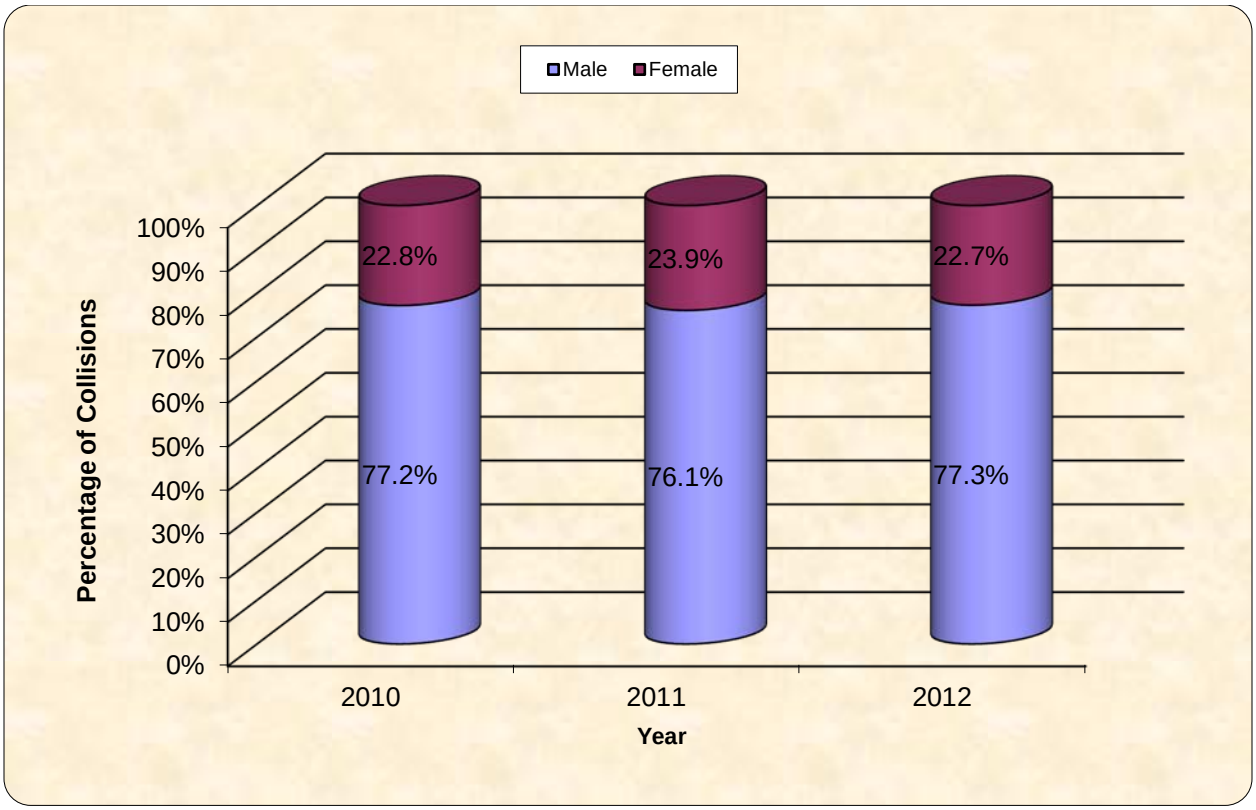

Figure 4.27: Three-year Trend of Crashes involving Bicyclists by Gender

4.3.6 Crashes involving Motorcycles

Figures 4.29 through 4.31 present the summaries of crashes involving motorcycles from 2010 through 2012. The summaries are presented in terms of total number of crashes, crashes by age and crashes by gender. From the figures, there was an increase in the total number of crashes in 2012 compared with those in 2010 and 2011. In addition, the distribution also shows that motorcyclists in the age group of 21-30 and 31-40 were the most involved in crashes. Compared with 2011 crashes, there was an increase in crashes involving females while a decline in the percentage of crashes involving male motorcyclists was reported in 2012.

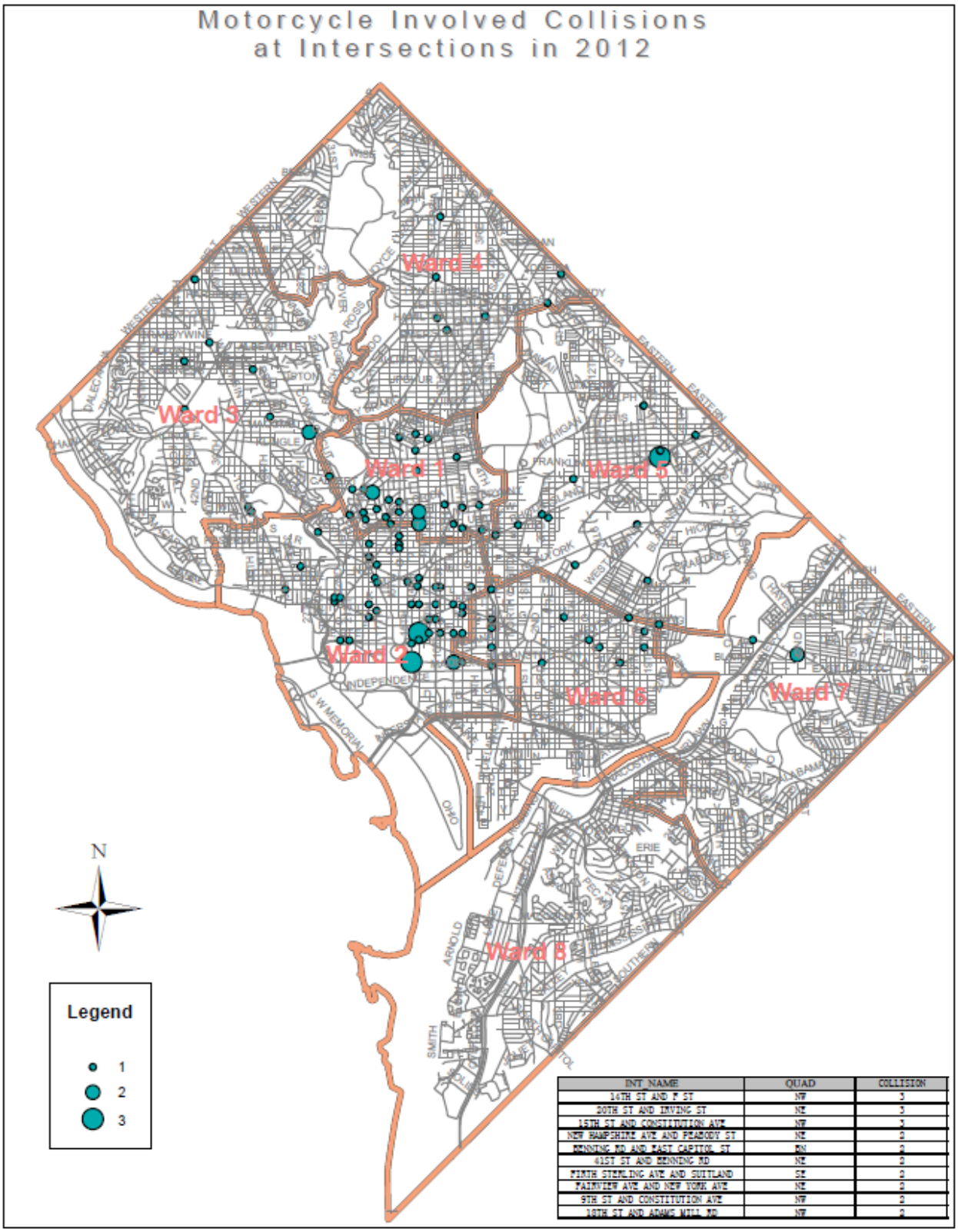

Figure 4.28: Motorcycle Involved Crashes at Intersections in 2012

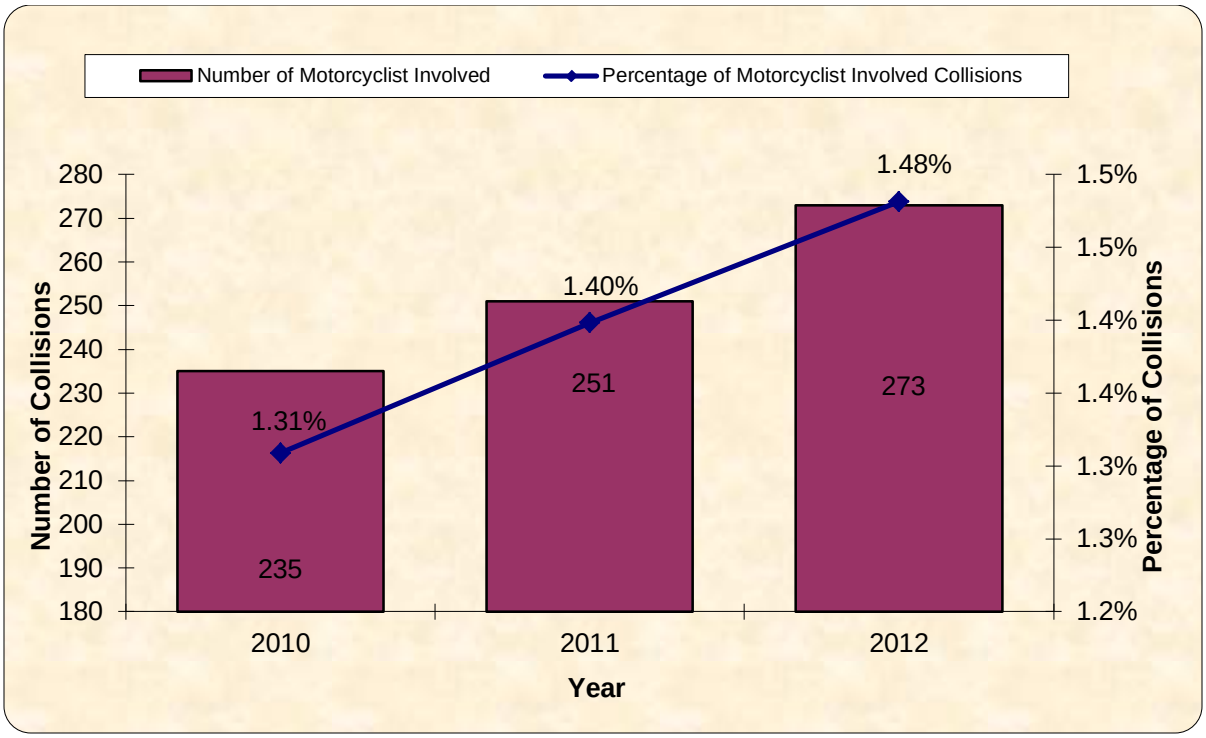

Figure 4.29: Three-year Trend of Crashes involving Motorcyclists

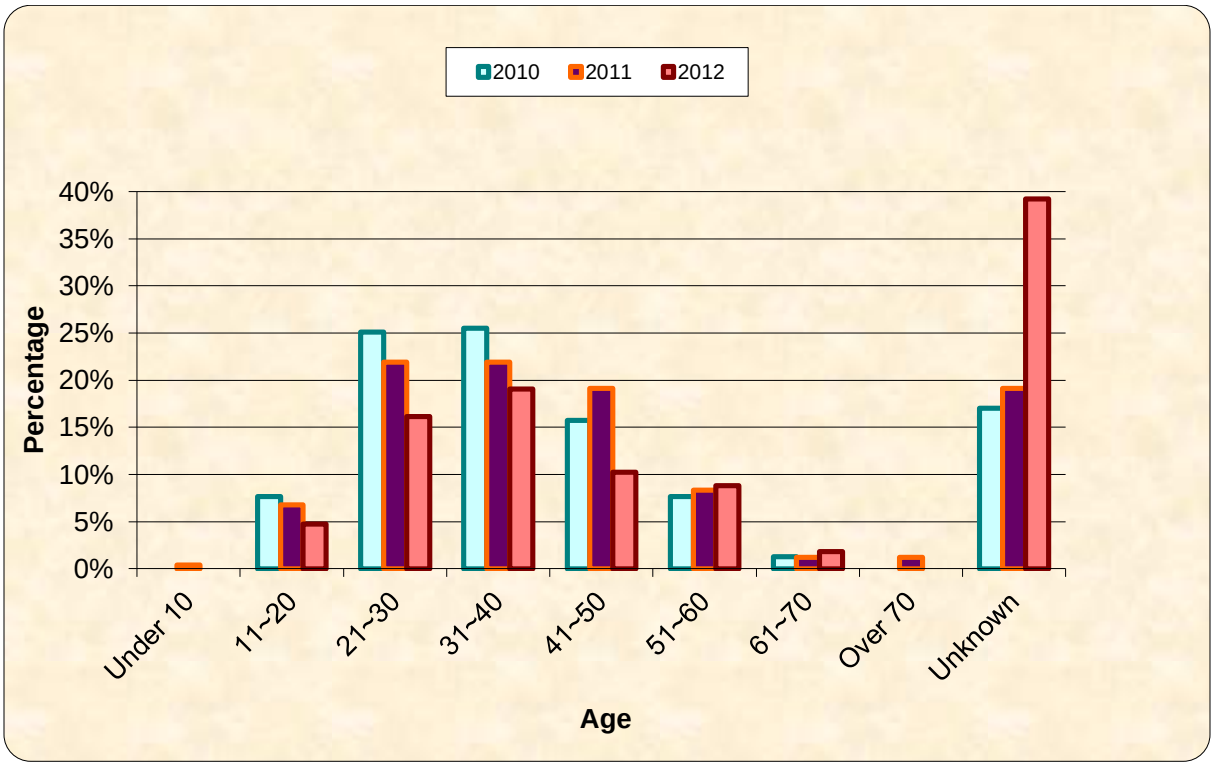

Figure 4.30: Three-year Trend of Crashes involving Motorcyclists by Age

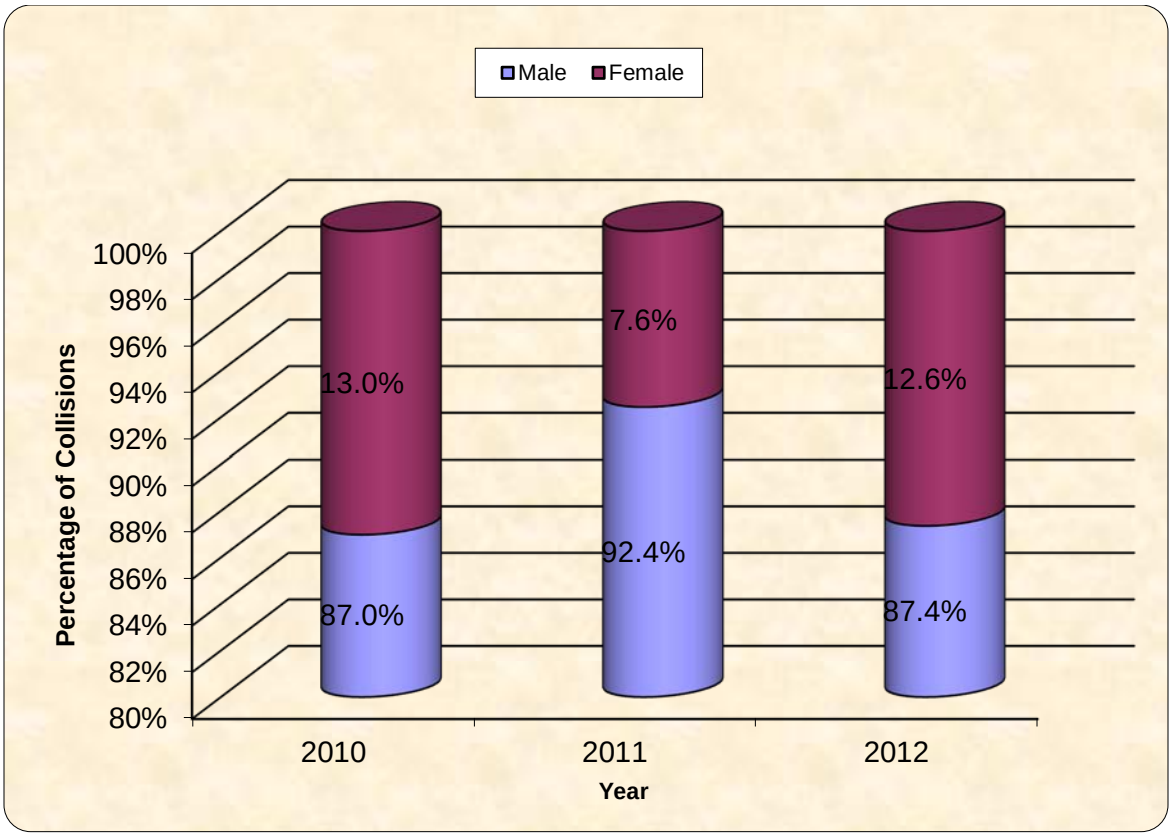

Figure 4.31: Three-year Trend of Crashes involving Motorcyclists by Gender

Presented in Table 4.15 is a summary of injury codes reported by motorcyclists in 2012 after being involved in a crash. The majority of the motorcyclists (73) sustained non-disabling injuries.

Table 4.15: Motorcyclists Crashes by Injury Code in 2012

Injury Code	Frequency
Complaint but not visible	53
Disabling	32
Fatal	5
Non-Disabling	73
None	59
Other	20
Unknown	31
Total	273

4.3.7 Crashes involving DC Properties

Figures 4.32 and 4.33 respectively present the summaries of crashes involving DC properties for 2010 through 2012 and the severity of those crashes. From the figures, there was an increase in the percentage of crashes in 2012 compared with the crashes involving DC properties in 2010 and 2011. In addition, the distribution in Figure 4.33 shows that crashes involving DC properties resulted in less than 1% of the PDO crashes in 2012.

Figure 4.32: Three-year Trend of Crashes involving DC Properties

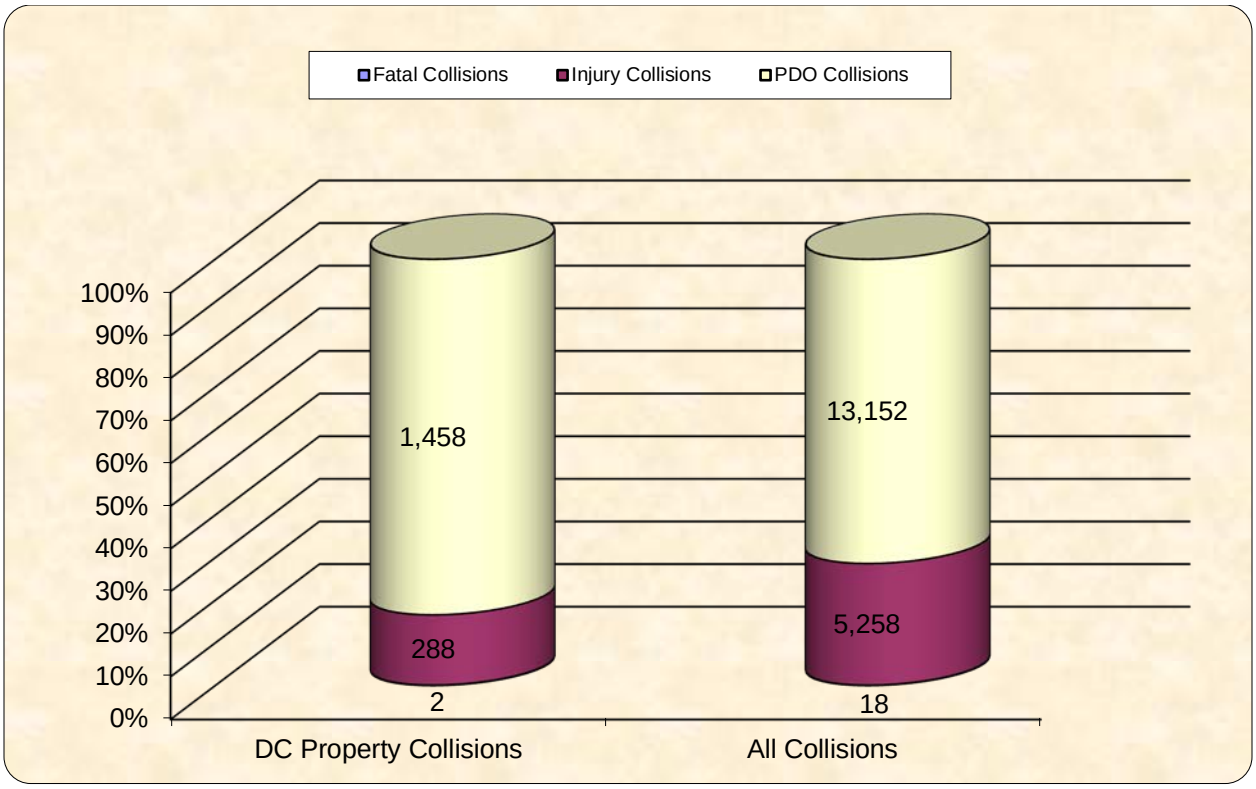

Figure 4.33: Crashes involving DC Properties in 2012

4.4 Drivers

4.4.1 Drivers by Age

The age groups of drivers' involved in crashes continue to be important information for government agencies and local authorities to determine the appropriate crash prevention mitigation strategies. Based on the summaries presented in Table 4.16 and Figure 4.34, it can be observed that crashes involving the age group of 26-30 were the most predominant in 2012 followed by the age group 31-35. The data showed that the age group of approximately 43% of those involved in crashes in 2012 was not recorded or were unknown.

Figure 4.35 presents the types of injuries sustained by the age of the drivers in 2012. The majority of the drivers did not report any type of injury after a crash.

Table 4.16: Number Crashes by Age and Year of Drivers for 2010-2012

Age Group	No. of Collisions			Percentage		
	2010	2011	2012	2010	2011	2012
16~20	761	715	448	2.6%	2.4%	1.5%
21~25	2,683	2,629	1842	9.2%	9.0%	6.2%
26~30	3,236	2,993	2329	11.1%	10.2%	7.8%
31~35	2,859	2,759	2158	9.8%	9.4%	7.3%
36~40	2,728	2,540	1909	9.3%	8.7%	6.4%
41~45	2,617	2,406	1909	9.0%	8.2%	6.4%
46~50	2,580	2,347	1751	8.8%	8.0%	5.9%
51~55	2,168	2,016	1513	7.4%	6.9%	5.1%
56~60	1,628	1,503	1221	5.6%	5.1%	4.1%
61~65	1,093	1,036	834	3.7%	3.5%	2.8%
66~70	623	559	489	2.1%	1.9%	1.6%
71~75	339	317	248	1.2%	1.1%	0.8%
Over 75	1,075	841	302	3.7%	2.9%	1.0%
Unknown	4,787	6,600	12,772	16.4%	22.6%	43.0%
Total	**29,177**	**29,261**	**29,725**	**100%**	**100%**	**100%**

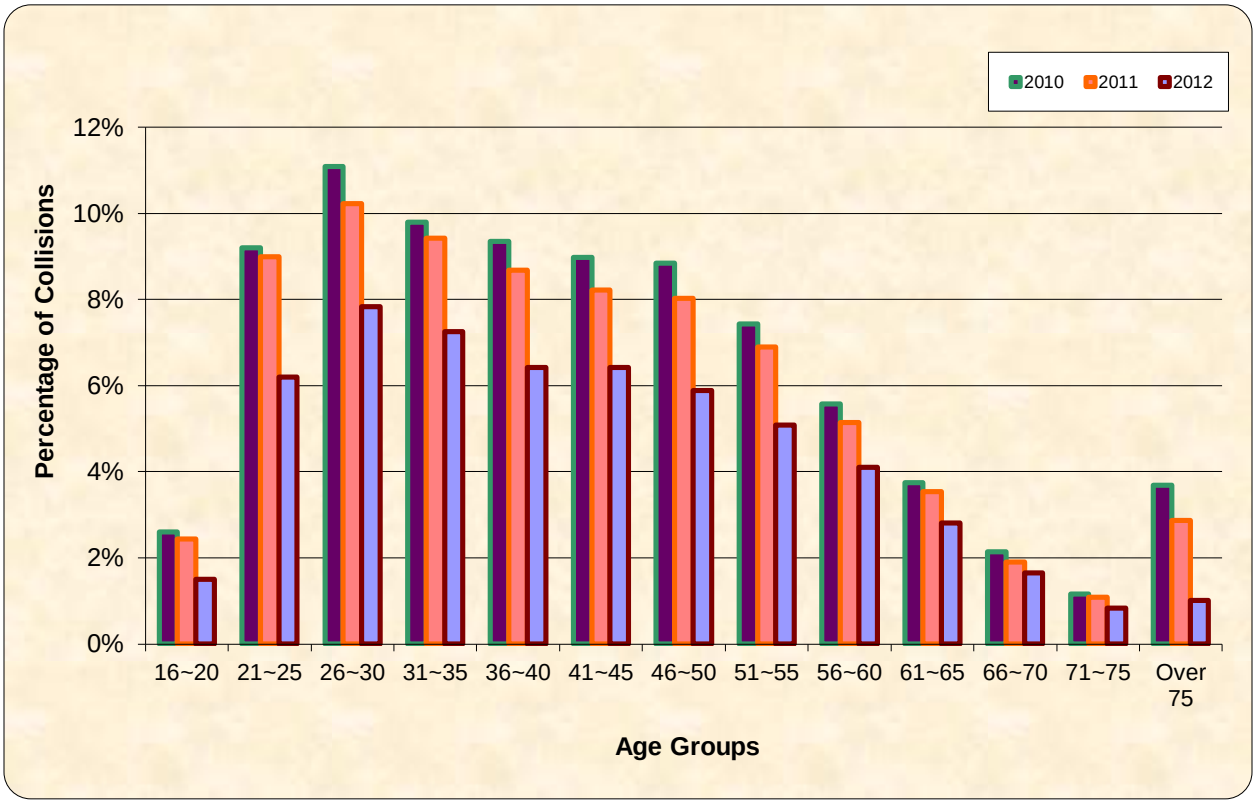

Figure 4.34: Crashes Drivers by Age for 2010-2012

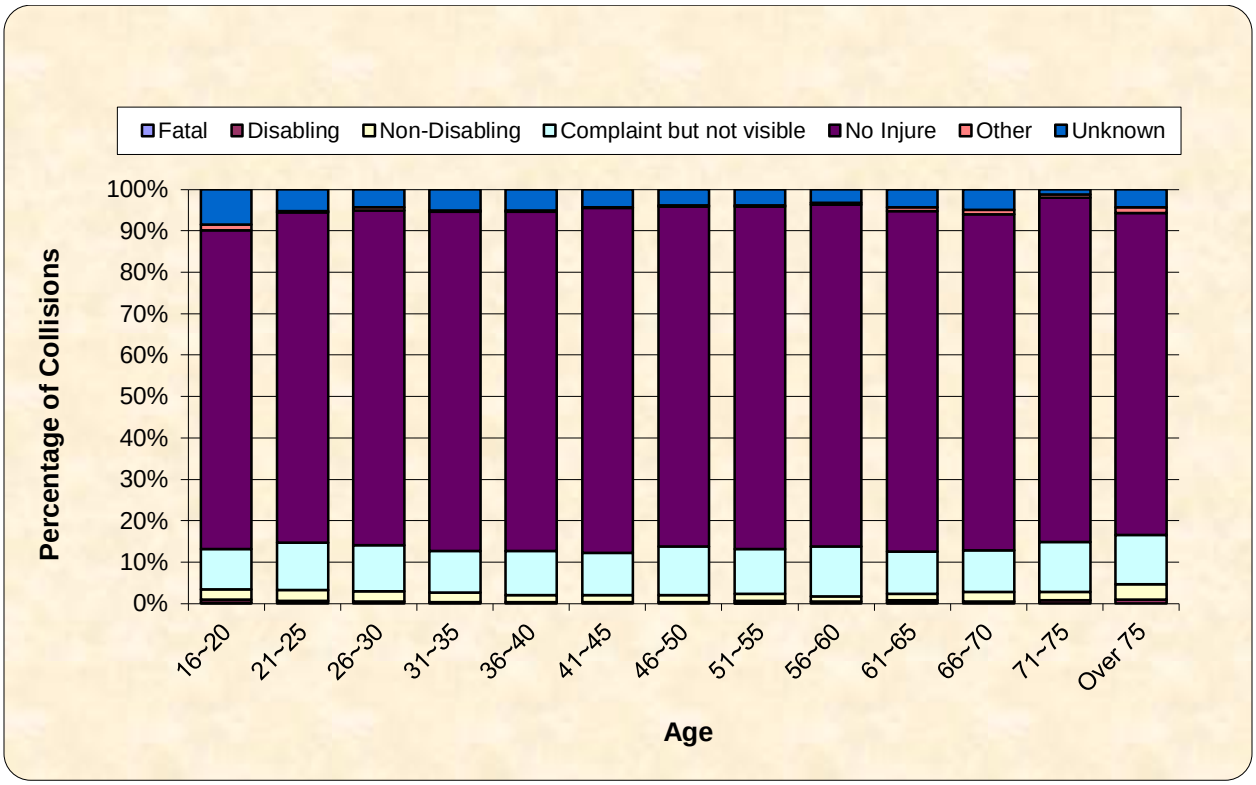

Figure 4.35: Injury Type Drivers by Age for 2012

4.4.2 Drivers by Gender

Figure 4.36 presents the summary of crashes recorded by the gender of drivers involved. The figure shows that there was a modest increase (0.3%) in the percentage of crashes for male drivers, while a modest decrease (0.3%) was also recorded for female drivers in from 2011 to 2012.

4.4.3 Drivers by State Issued Driver's License

As most commuters to DC live in Washington's outer suburbs or neighboring states such as Maryland and Virginia, it is pertinent to determine the distribution of motor vehicle crashes based on drivers' state-issued licenses. The summary of the statistics for drivers' licenses are presented in Table 4.17 and Figure 4.37. From the table and figure, the majority of crashes (~37%) involved DC drivers in 2012, followed by 33.1% from Maryland and 13.8% from Virginia. The remainder was from other states or unknown.

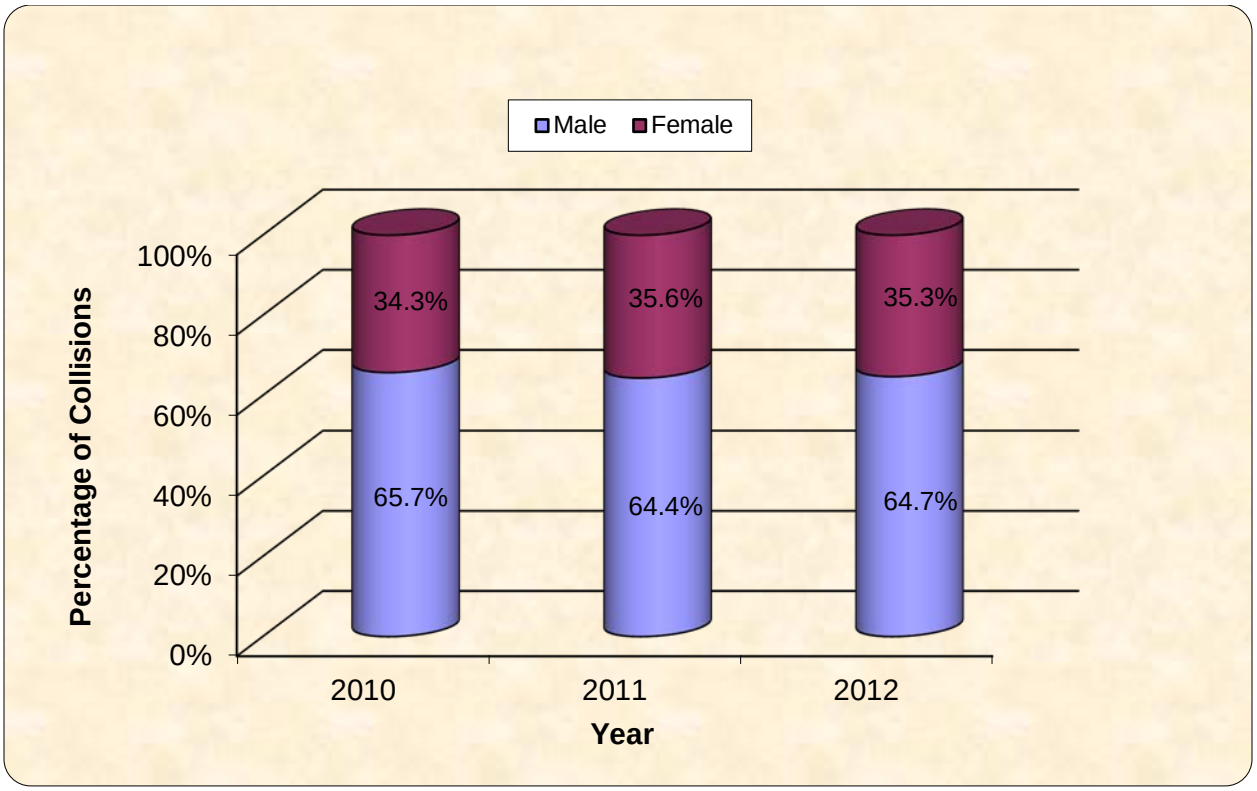

Figure 4.36: Crashes by Gender of Drivers for 2010-2012

Table 4.17: Driver Involvement by State of Permit for 2010-2012

State	No. of Collisions			Percentage		
	2010	2011	2012	2010	2011	2012
DC	9,556	10,423	11,007	32.8%	35.6%	37.0%
MD	10,853	10,923	9,838	37.2%	37.3%	33.1%
VA	4,024	4,129	4,106	13.8%	14.1%	13.8%
Other	2,386	2,598	2,545	8.2%	8.9%	8.6%
Unknown	2,358	1,188	2,229	8.1%	4.1%	7.5%
Total	**29,177**	**29,261**	**29,725**	**100.0%**	**100.0%**	**100.0%**

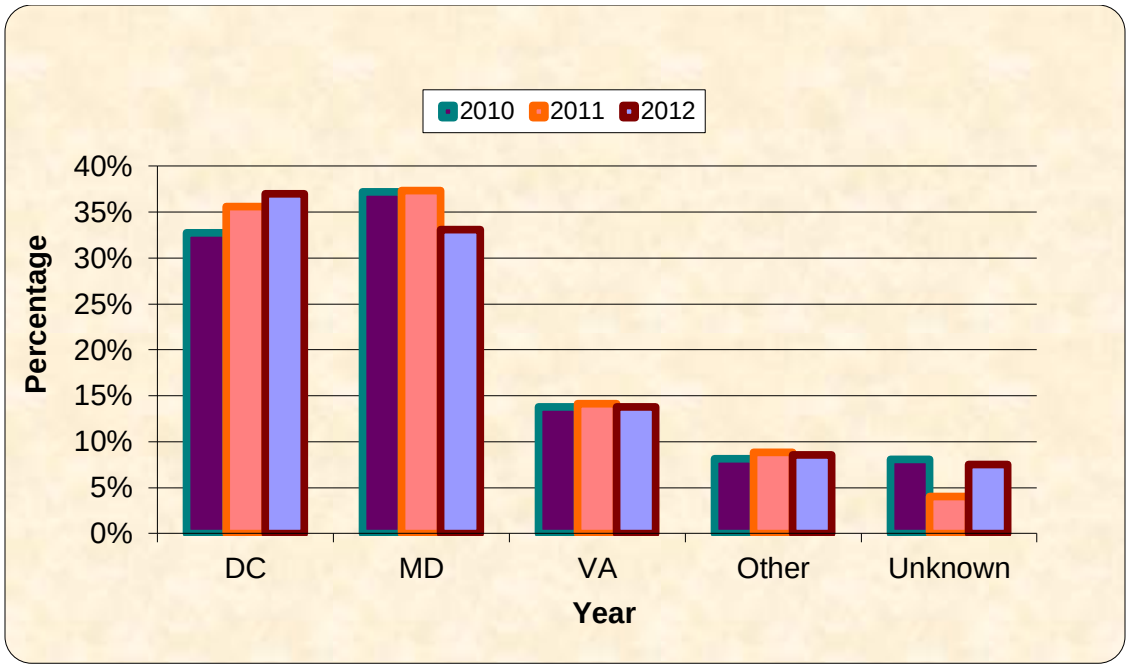

Figure 4.37: Drivers Involved in Crashes by State Issued License for 2010-2012

4.4.4 Crashes by Drivers Action

The top three drivers' actions that are responsible for crashes in 2012 were: going straight, turning left and changing which represent respectively (approximately) 49%, 12% and 8% of the total crashes as presented in Table 4.18. This is consistent with the reported actions by drivers in 2010 and 2011.

Table 4.18: Driver Involvement by Driver Action and Year for 2010-2012

Drivers Action	2010	2011	2012
Going Straight	6,156	6,467	6,546
Turning Left	1,483	1,608	1,610
Changing Lanes	1,050	1,084	1,115
Turning Right	820	818	991
Backing	718	754	793
Entering/Leaving Parked Position	364	379	466
Slowing/Stopping	372	367	308
Merging	265	210	295
Making U-turn	227	255	233
Parked	247	271	290
Overtaking	212	202	158
Stop/Stand Traffic Lane	217	233	279
Ran Off Road	150	149	131
Avoiding	126	117	91
Total	**12,407**	**12,914**	**13,306**

4.5 Environmental Conditions

4.5.1 Crashes by Roadway Conditions

Crashes by roadway conditions are presented in Table 4.19 and Figure 4.38. The highest crashes occurred on roads with dry conditions from 2010 through 2012. The results also show that approximately 83% of the total motor vehicle crashes in 2012 occurred on roadways where the road surface was dry. These crashes resulted in 16 fatalities and 6,007 injuries in 2012.

Crashes occurring under wet roadway conditions were observed to be second highest; with 2,113 (or approximately 12%) being reported in 2012. There were 2 fatalities and 924 injuries as a result of crashes under wet conditions.

Table 4.19: Summary of Crashes by Roadway Conditions for 2010-2012

Road Condition	2010			2011			2012		
	Collisions	Fatality	Injury	Collisions	Fatality	Injury	Collisions	Fatality	Injury
Unknown	179	1	53	312	1	101	499	1	203
Dry	14,607	20	5,945	14,463	17	6,030	15,127	16	6,007
Ice	107	1	33	67	2	30	31	0	5
Ice/Snow	0	0	0	0	0	0	0	0	0
Other	55	0	22	26	0	7	24	0	5
Repairing	71	0	20	85	0	39	75	0	24
Sand..	22	0	6	13	0	3	11	0	8
Slush	102	0	38	52	0	24	15	0	4
Snow	418	0	85	82	0	27	56	0	15
Standing Water	22	0	16	20	0	3	8	0	2
Unknown	372	0	44	391	0	56	469	0	71
Wet	2,000	3	806	2,440	4	1,015	2,113	2	924

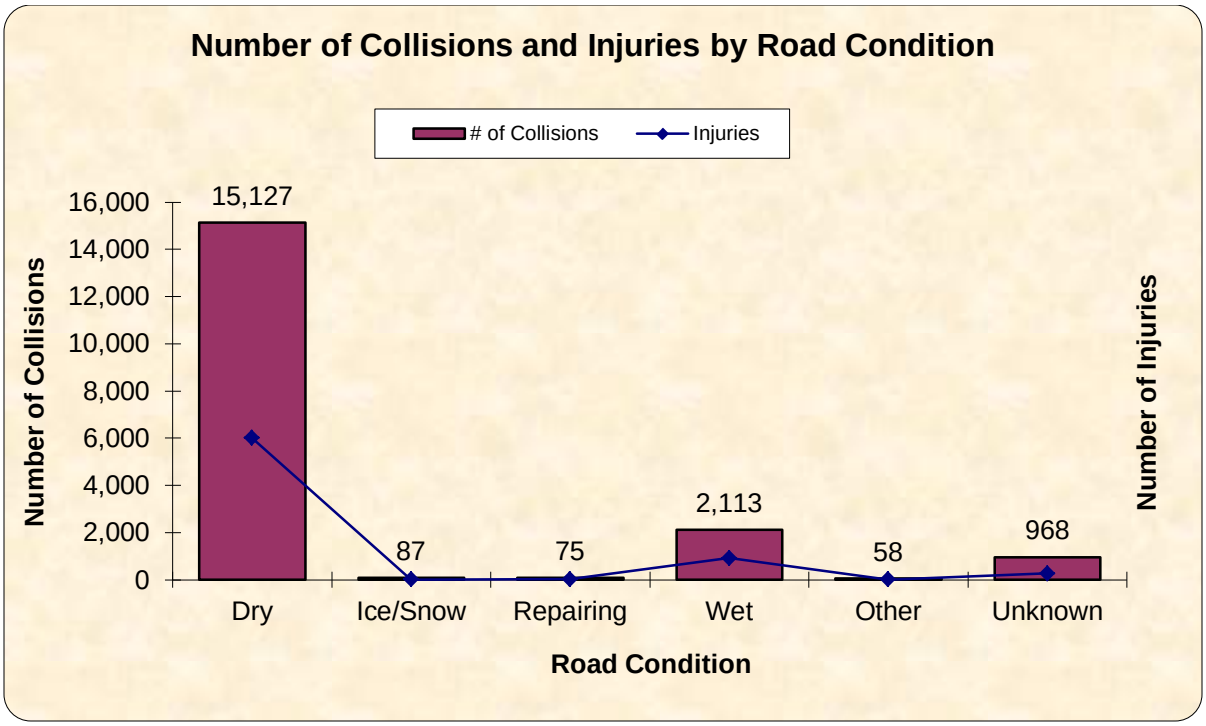

Figure 4.38: Number of Crashes and Injuries by Road Condition

4.5.2 Crashes by Road Surface

From the summaries presented in Table 4.20 and Figure 4.39, crashes occurred most frequently on asphalt and concrete roadways from 2010 through 2012. The results also show that approximately 87% (16,118) of the total crashes occurred on asphalt roadways in 2012. This is followed by crashes on concrete surface, which constitute approximately 8% (or 1,425) of the total reported motor vehicle crashes in 2012.

Table 4.20: Summary of Crashes by Roadway Surface for 2010-2012

Road Surface	2010			2011			2012		
	Collisions	Fatality	Injury	Collisions	Fatality	Injury	Collisions	Fatality	Injury
Asphalt	16,246	22	6,492	16,013	18	6,570	16,118	16	6,356
Brick	41	0	12	48	1	12	25	0	6
Concrete	1,398	1	494	1,463	5	612	1,425	2	548
Dirt	14	0	2	10	0	1	8	0	3
Gravel	28	1	7	27	0	11	13	0	5
Other	43	0	13	38	0	19	13	0	4
Unknown	185	1	48	352	0	110	826	1	346
Total	**17,955**	**25**	**7,068**	**17,951**	**24**	**7,335**	**18,428**	**19**	**7,268**

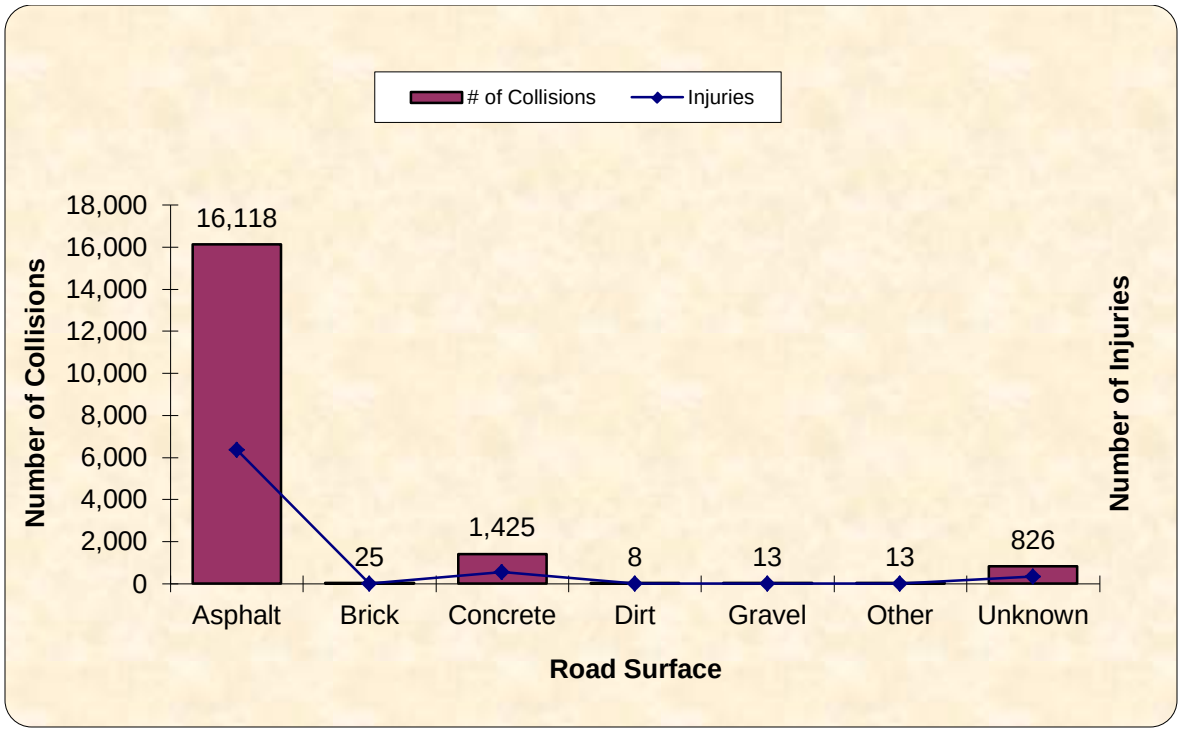

Figure 4.39: Number of Crashes and Injuries by Road Surface in 2012

4.5.3 Crashes by Weather Conditions

Adverse weather conditions may contribute to motor vehicle crashes. Table 4.21 and Figure 4.40 show the summary of crashes which are weather-related by severity type.

Table 4.21: Summary of Crashes by Weather Condition for 2010-2012

Weather	2010			2011			2012		
	Collisions	Fatality	Injury	Collisions	Fatality	Injury	Collisions	Fatality	Injury
Clear	14,971	21	6,053	14,576	20	6,063	14,963	16	5,927
Fog/Mist	104	0	41	159	0	66	200	0	91
Rain	1,561	3	652	2,015	4	827	1,697	1	740
Sleet	7	0	1	41	0	11	14	0	3
Snow	480	0	120	159	0	60	107	0	36
Other	340	0	120	291	0	136	272	0	113
Unknown	492	1	81	710	0	172	1,175	2	358
Total	17,955	25	7,068	17,951	24	7,335	18,428	19	7,268
Clear	14,971	21	6,053	14,576	20	6,063	14,963	16	5,927
Fog/Mist	104	0	41	159	0	66	200	0	91

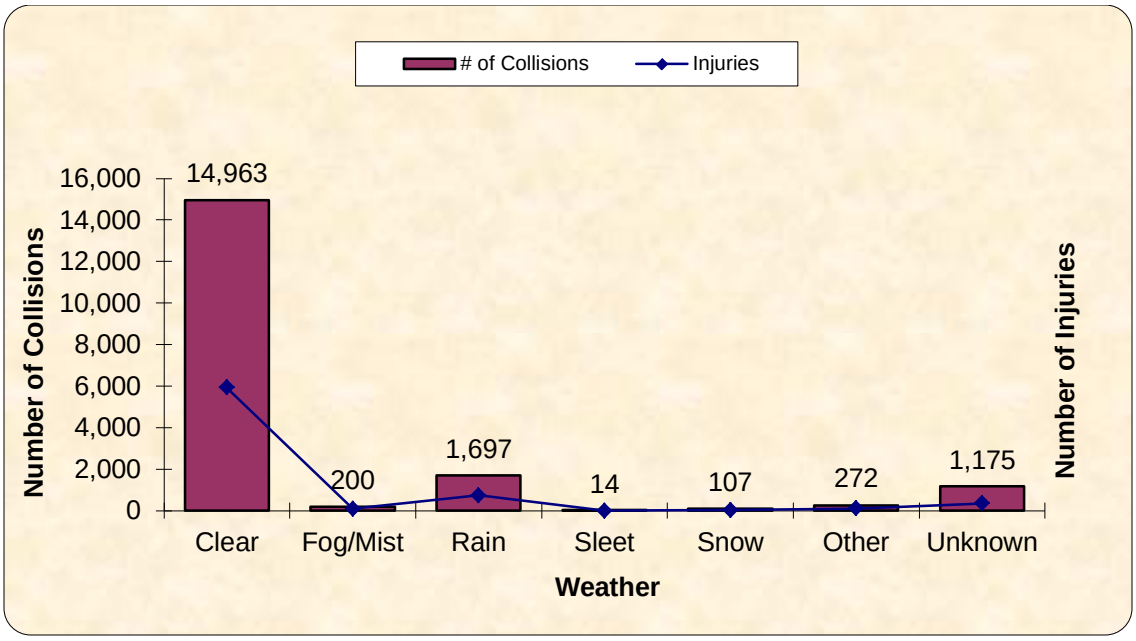

Figure 4.40: Number of Crashes and Injuries by Weather

From the results, it can be observed that the majority of the crashes occurred under clear weather conditions which represent approximately 81% (or 14,963) of the total crashes in 2012. This is followed by crashes occurring during rainy conditions, representing approximately 9% (or 1,697) of the total crashes in 2012.

4.5.4 Crashes by Light Conditions

Street illumination is another crash contributing factor, especially at night. As shown in the summaries in Table 4.22 and Figure 4.41, the majority of the reported crashes occurred on roadways where the streetlights were noted to be off. These crashes occurred under such conditions in approximately 55% (10,099) of the total reported crashes in 2012. Approximately 33% (6,053) of the total reported motor vehicle crashes in 2012 occurred on roadways when street illumination was present. Furthermore, as shown in Table 4.23 and Figure 4.42, the majority of the crashes occurred during daylight conditions. This consisted of approximately 61% (11,209) of the total reported motor vehicle crashes in 2012. About 29% (5,420) of the total reported crashes occurred in the dark which resulted in 7 fatalities and 2,182 injuries in 2012.

Table 4.22: Summary of Crashes by Street Lighting for 2010-2012

Street Lighting	2010			2011			2012		
	Collisions	Fatality	Injuries	Collisions	Fatality	Injuries	Collisions	Fatality	Injuries
Street Lights On	5,792	12	2,266	6,028	19	2,433	6,053	8	2,408
Street Lights Off	10,572	11	4,332	10,199	3	4,374	10,099	9	4,128
Defective	21	0	6	11	0	1	16	0	5
Unknown	827	1	133	972	2	212	1,397	1	371
None	743	1	331	741	0	315	863	1	356
Total	**17,955**	**25**	**7,068**	**17,951**	**24**	**7,335**	**18,428**	**19**	**7,268**

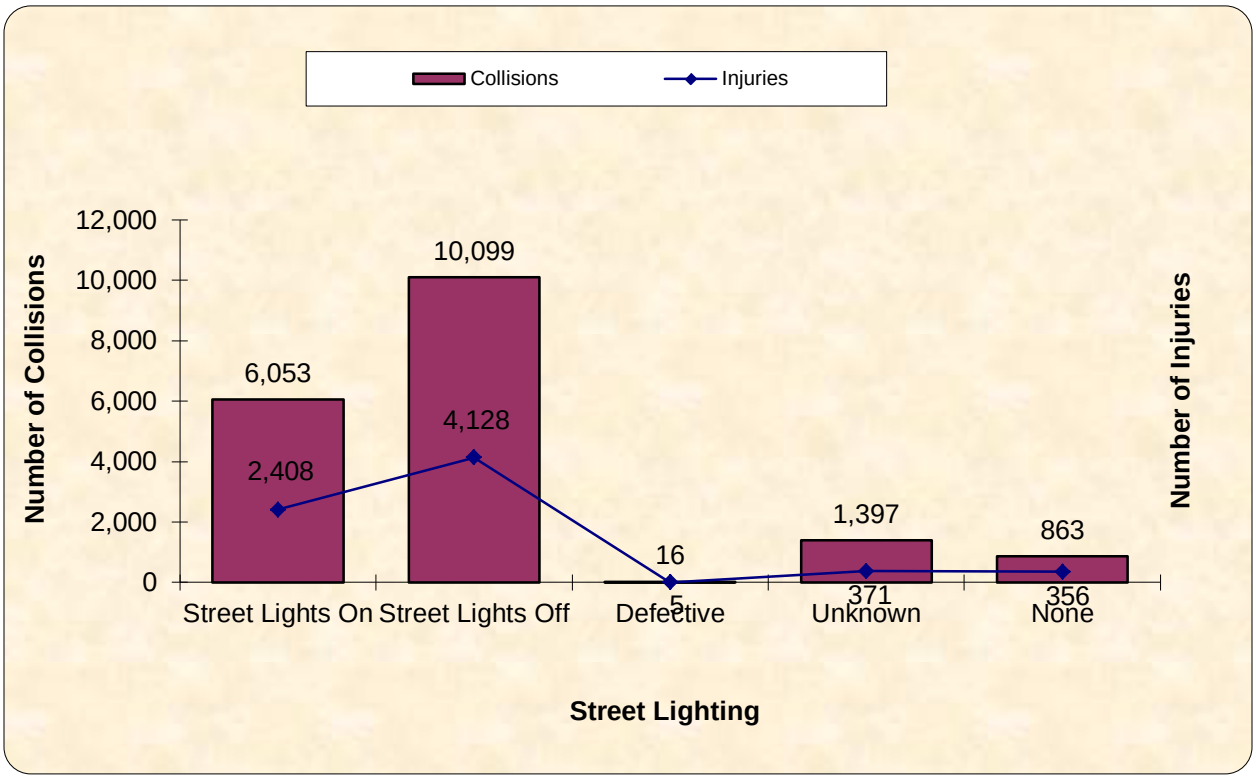

Figure 4.41: Number of Crashes and Injuries by Street Lighting

Table 4.23 Summary of Crashes by Light Condition for 2010-2012

Light Condition	2010			2011			2012		
	Collisions	Fatality	Injury	Collisions	Fatality	Injury	Collisions	Fatality	Injury
Dark	5,415	13	2,064	5,636	18	2,214	5,730	7	2,310
Dawn/Dusk	490	2	221	446	3	223	424	1	170
Daylight	11,483	9	4,710	11,151	3	4,772	11,209	10	4,500
Unknown	567	1	73	718	0	126	1,065	1	288
Total	17,955	39	6,792	17,951	24	7,335	18,428	19	7,268

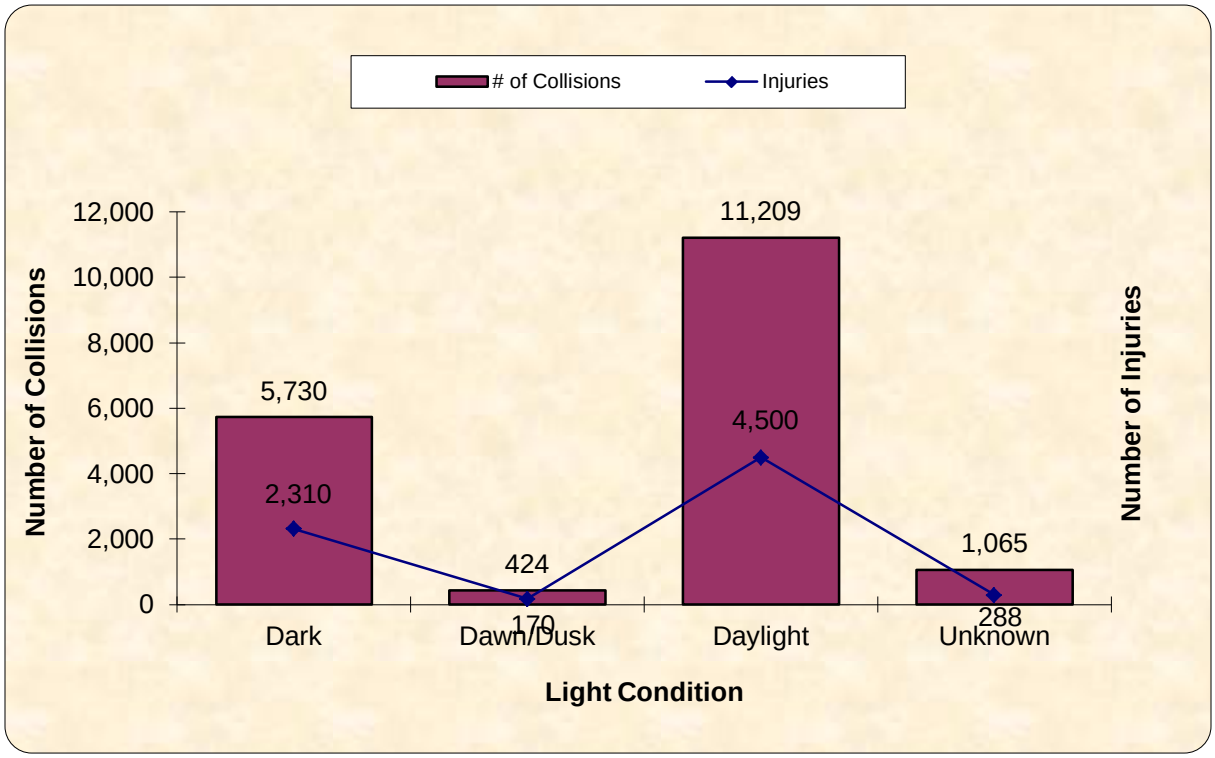

Figure 4.42: Number of Crashes and Injuries by Light Condition

4.5.5 Crashes by Traffic Conditions

Traffic condition is another new data field that was appended on the new traffic crash reports (PD-10 forms) to obtain approximate traffic volume conditions at the time of crash. This information was based on police officer's observation of the traffic conditions. The summary of this is presented in Table 4.24 as well as in Figure 4.43. From the results, approximately 32% of the total reported crashes in 2012 occurred in medium (5,873) with approximately 30% under light (5,512) traffic conditions.

Table 4.24: Summary of Crashes by Traffic Condition in 2010-2012

Traffic Condition	2010			2011			2012		
	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries
Heavy	3,453	0	1,510	3,378	0	1,555	3,289	3	1,410
Medium	6,173	4	2,784	6,049	5	2,859	5,873	5	2,621
Light	5,833	16	2,134	5,538	17	2,042	5,512	7	2,096
Other	303	1	49	283	1	44	268	0	64
Unknown	2,193	4	591	2,703	1	835	3,486	4	1,077
Total	**17,955**	**25**	**7,068**	**17,951**	**24**	**7,335**	**18,428**	**19**	**7,268**

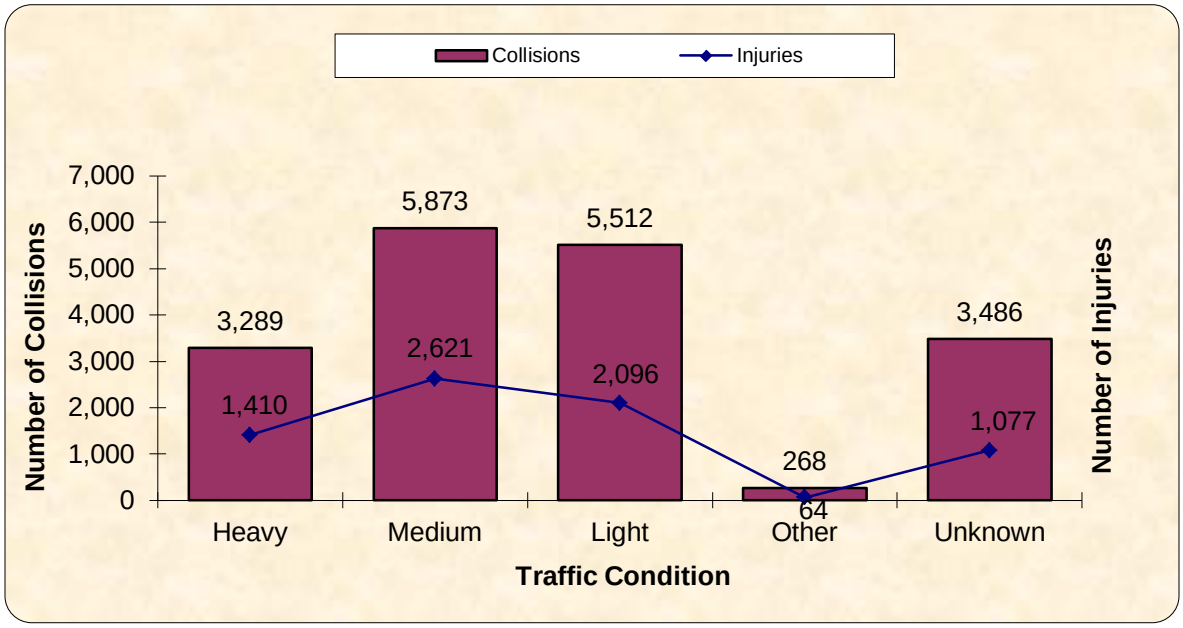

Figure 4.43: Number of Crashes and Injuries by Traffic Conditions

4.5.6 Crashes by Traffic Control

Traffic control devices serve as an important vehicular and pedestrian guidance to ensure the safety of general public. The summary of crashes by the presence and type of traffic control device is presented in Table 4.25 and graphically in Figure 4.44 for 2012. From the results, approximately 38% of crashes occurred at or close to a signalized intersection. The majority of the crashes (47%) occurred at locations where there is no traffic control.

Table 4.25: Summary of Crashes by Traffic Control in 2010-2012

Traffic Controls	2010			2011			2012		
	Collisions	Fatality	Injury	Collisions	Fatality	Injury	Collisions	Fatality	Injury
Signal	7,249	10	3,302	6,995	3	3,329	7,065	6	3,285
None	8,045	12	2,625	8,348	16	2,848	8,719	9	2,814
Stop Sign	1,685	1	822	1,493	0	735	1,382	1	680
Other	548	1	230	578	5	286	462	2	216
Unknown	428	1	89	537	0	137	800	1	273
Total	17,955	25	7,068	17,951	24	7,335	18,428	19	7,268

* "Other" includes yield, flashing, turn restricted and officer.
* "None" includes mid-block crashes.

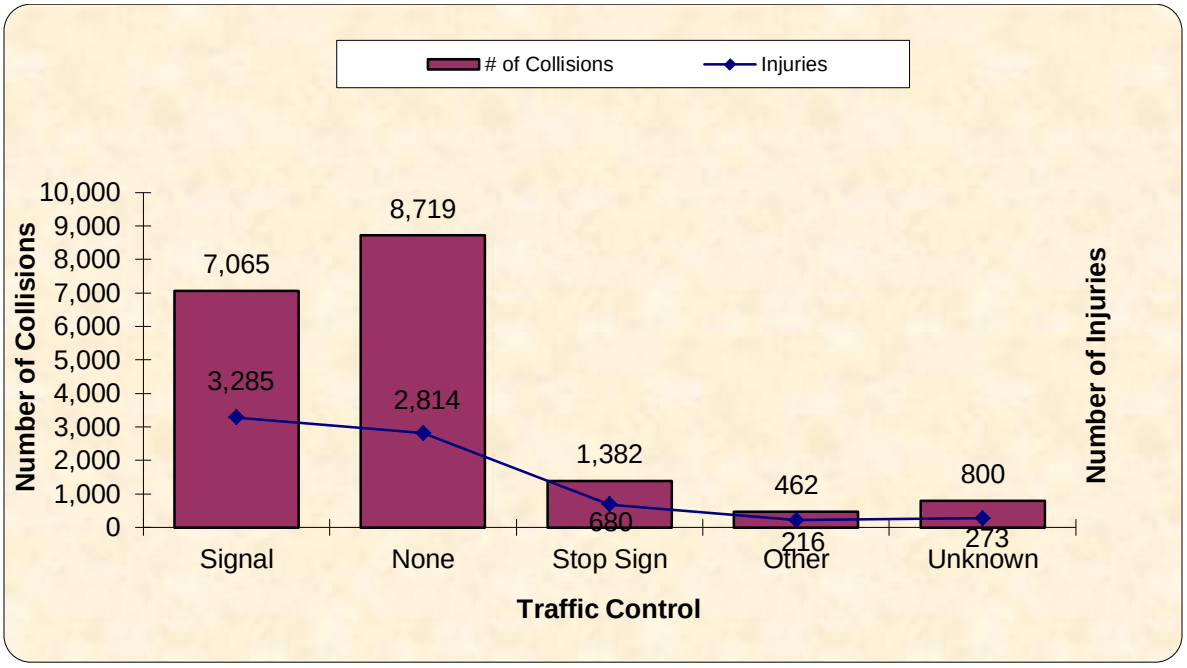

Figure 4.44: Number of Crashes and Injuries by Traffic Control

4.5.7 Crashes by Roadway Functional Classification

It is important to assess the relationship between roadway functional classifications and vehicle crashes. Speed-related injuries by roadway functional classification are also presented in this section. As shown in Table 4.26 and Figure 4.45, the number of injuries for all roadway functional systems from 2010 through 2012 showed an increasing trend, with the exception of interstates and principal arterials where decreases were reported.

Table 4.26: Summary of Crashes by Roadway Functional Classification in 2010-2012

Road Func. Classification	2010			2011			2012		
	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries
Collector	2,069	5	783	2,077	3	800	2,328	1	907
Interstate	666	3	337	279	1	161	324	0	164
Local	4,543	4	1,346	4,484	7	1,367	4,819	5	1,519
Minor Arterial	5,088	6	2,226	5,023	7	2,312	5,109	7	2,269
Other Freeway & Expressway	79	0	67	85	0	53	87	0	61
Principal Arterial	5,145	7	2,142	4,962	7	2,141	4,945	4	1,932
Unknown	365	0	167	1,041	7	501	816	2	416
Total	**17,955**	**25**	**7,068**	**17,951**	**32**	**7,335**	**18,428**	**19**	**7,268**

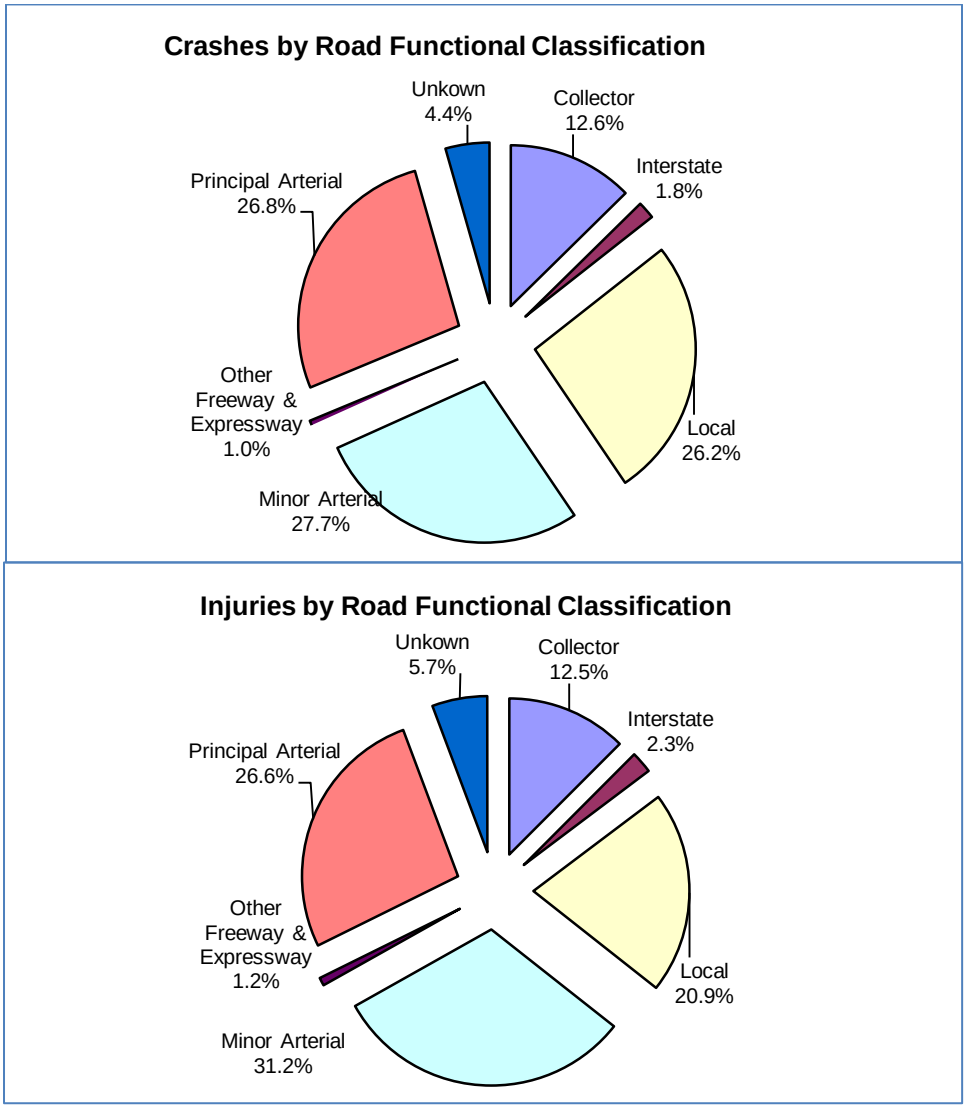

Figure 4.45: Crashes and Injuries by Functional Classification

Figures 4.46 and 4.47 respectively present the frequency of speed-related crashes and injuries on all functional classifications from 2010 through 2012. The general trend shows a reduction in speed-related crashes on all reported functional classifications.

Figure 4.48 shows a number of crashes and injuries per Lane-Mile by roadway functional classifications in 2012. The highest number of crashes and injuries per lane-mile was reported on the group of principal arterials.

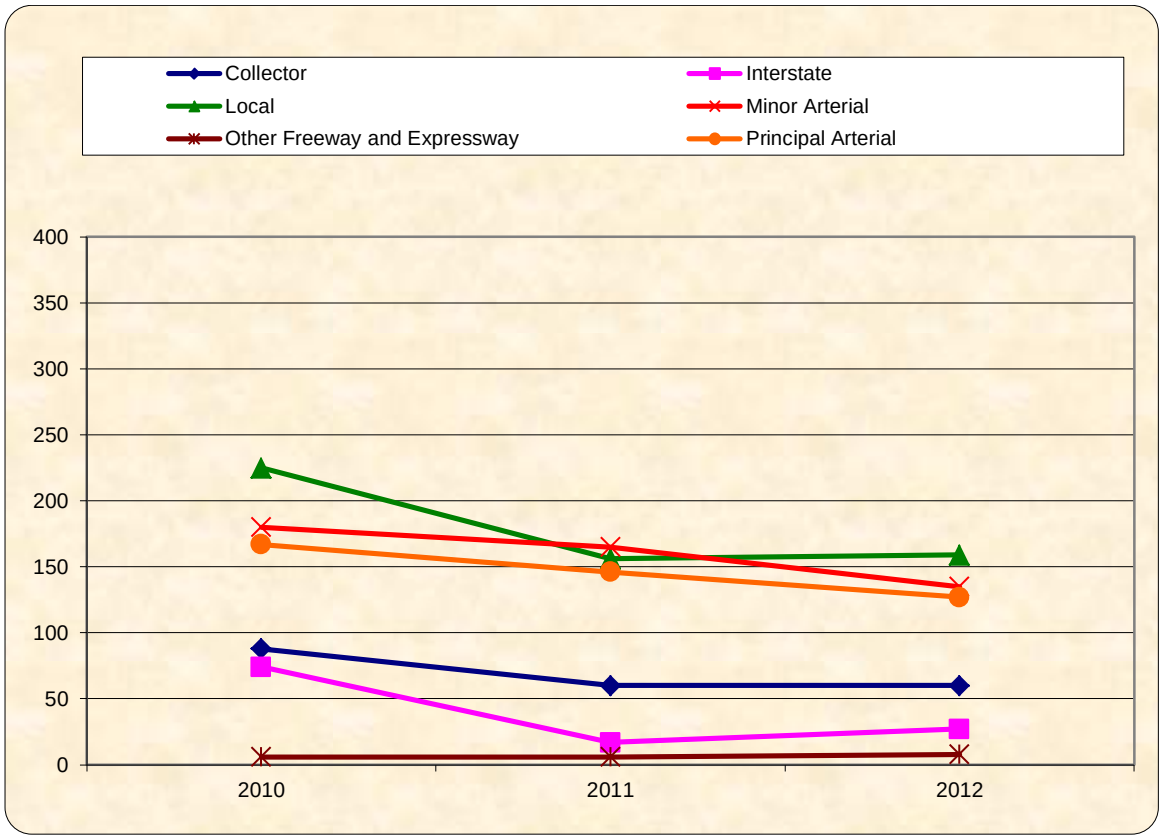

Figure 4.46: Number of Speed-Related Crashed by Roadway Functional Classification in 2012

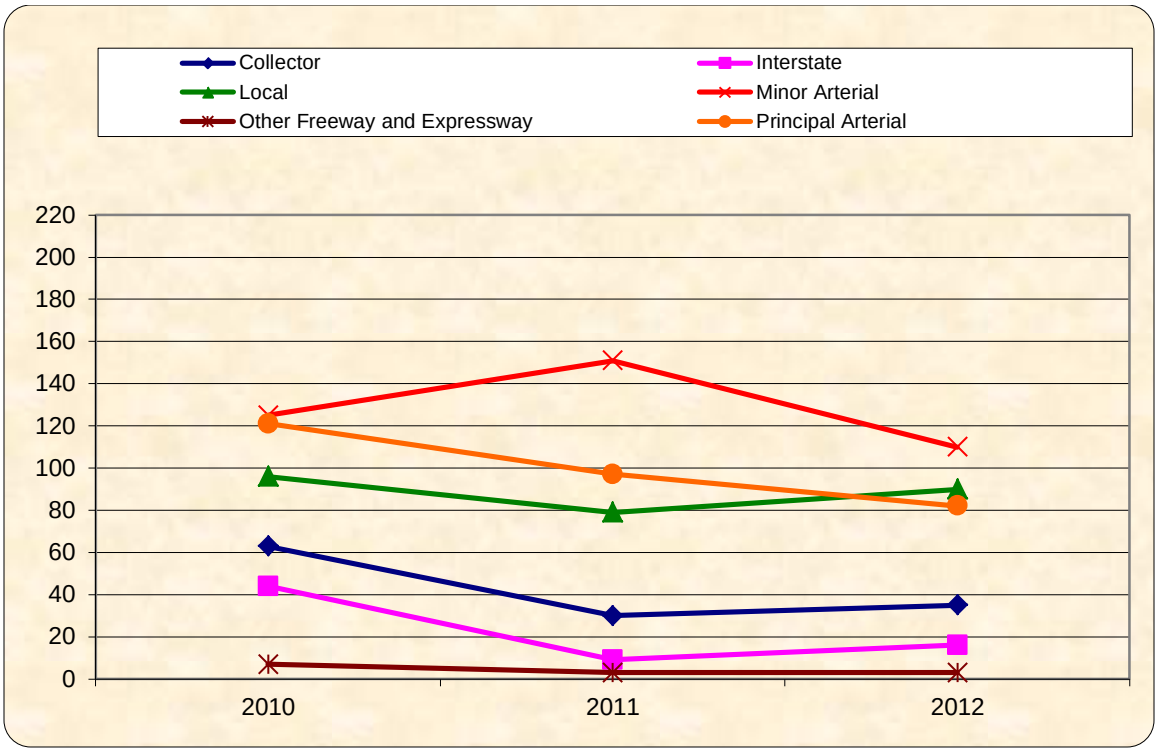

Figure 4.47: Number of Speed-Related Injuries by Roadway Functional Classification

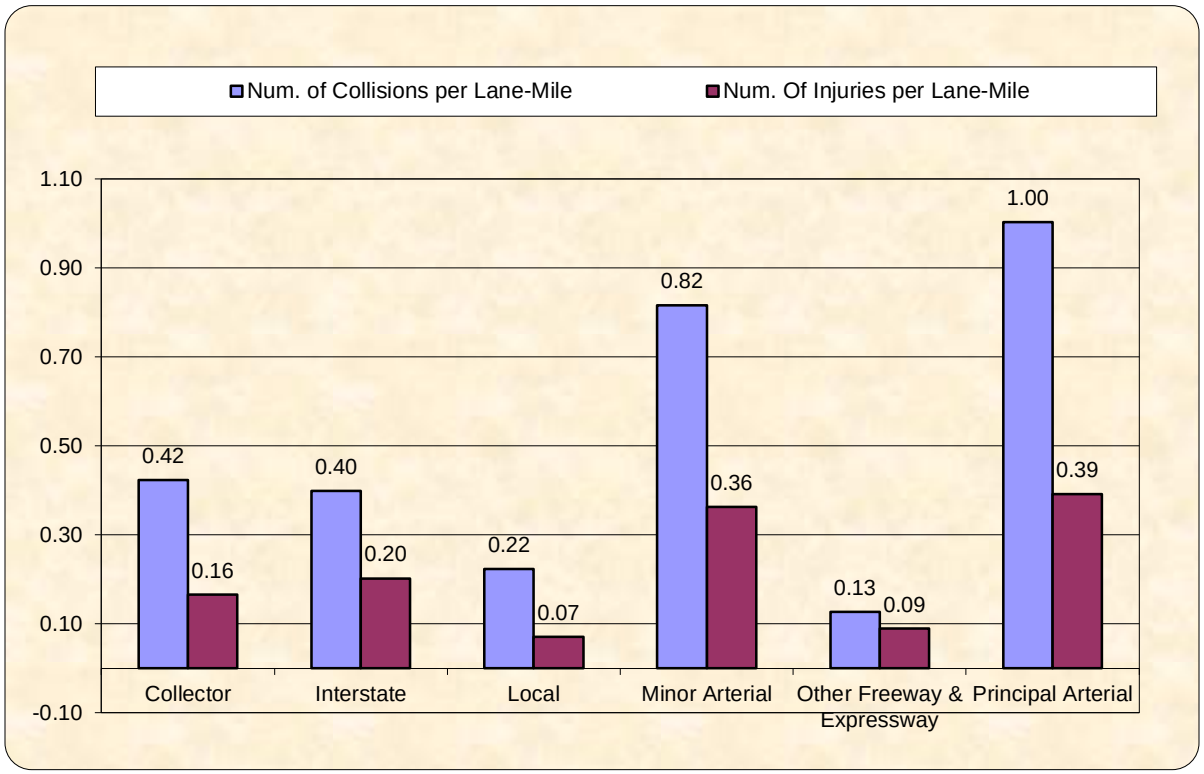

Figure 4.48: Number of Crashes and Injuries per Lane-Mile by Functional Classification

4.6 Contributing Factors

4.6.1 Crashes by Primary Crash Contributing Factors

Table 4.27 presents the summary of all reported contributing factors of crashes in DC from 2010 through 2012. With the exception of "No violation" and "Other", the prominent contributing factors of crashes reported in 2012 included driver inattention, followed closely by changing lanes without caution.

Table 4.27: Number of Crashes by Contributing Factors in 2010-2012

Contributing Factor	2010	2011	2012
No Violation	16,893	16,864	17,287
Other	3,882	3,794	3,469
Driver Inattention	2,579	2,686	2,999
Following too Close	1,303	1,283	1,324
Changing Lanes W/O Caution	1,251	1,222	1,277
Auto/Ped. Right of Way	1,044	1,026	951
Speed	786	637	582
Red Light Violation	491	405	378
Improper Backing	472	509	490
Improper Passing	404	397	381
Alcohol/Drug Influence	362	379	351
Pedestrian Violation	240	213	167
Open Door to Traffic	208	186	184
Other Distraction	185	200	242
Stop Sign	166	160	135
Driver Vision Obstructed	133	94	79
Road Defects	123	67	49
Wrong Way/Side of Street	109	136	152
Defective Brakes, Lights, etc.	77	69	70
Cell Phone/Other Electronic Device	61	54	44
Yield Sign	32	29	18
Fail to Set Parking Brake	20	15	21
Flashing/Directional Light	17	6	5
Right Turn on Red	11	13	15
Total	**30,849**	**30,444**	**30,670**

4.6.2 Crashes by Speed Violation

Speeding is known to contribute to the severity of a crash. The summary of crashes related to speeding is presented in Figure 4.49. From the results, approximately

3.1% of the crashes were speed-related, which resulted in 21.1% of the total fatalities and 9.2% disabling injuries in 2012.

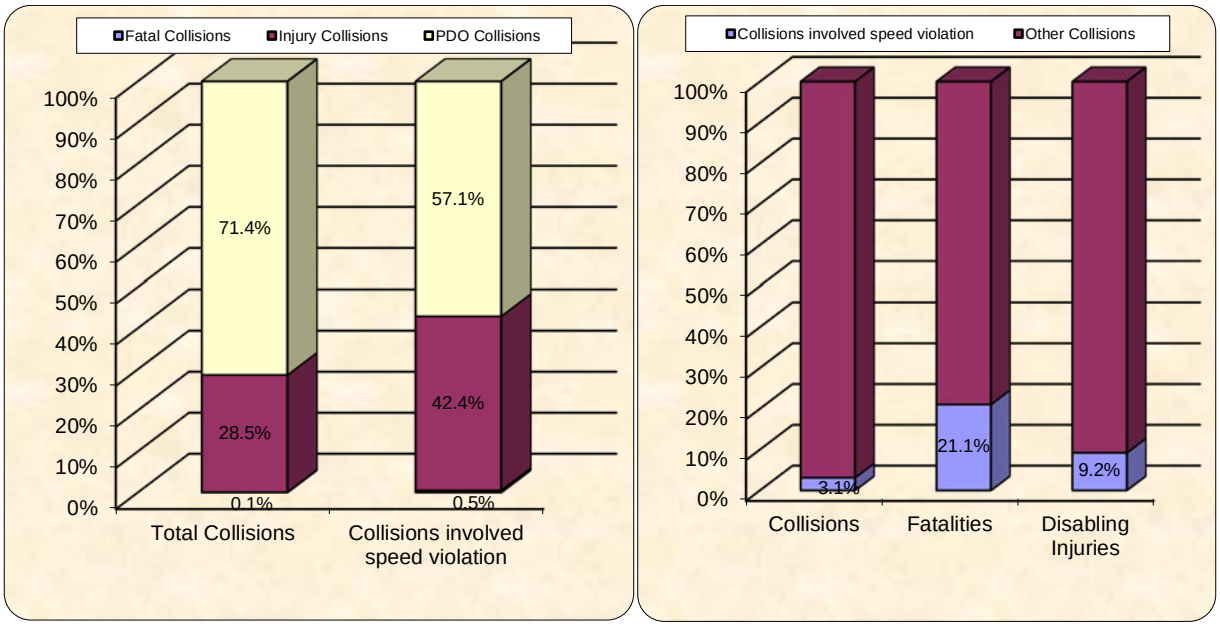

Figure 4.49: Speed-Related Crashes in 2012

Presented in Table 4.28 and Figure 4.50 are the speed-related crashes by age and gender. From the table and figure, young male drivers were reported as highest group of drivers involved in speed-related crashes.

Table 4.28: Speed-Related Crashes by Age and Gender for 2012

Age Group	Female	Male	Unknown	Total
16-20	3	3	0	6
21-25	20	31	0	51
26-30	17	41	0	58
31-35	13	51	0	64
36-40	11	34	0	45
41-45	3	24	0	27
46-50	5	17	0	22
51-55	5	32	0	37
56-60	3	10	0	13
61-65	1	4	0	5
66-70	0	7	0	7
71-75	1	2	0	3
Over 75	0	0	0	0
unknown	2	7	4	13
Total	**84**	**263**	**4**	**351**

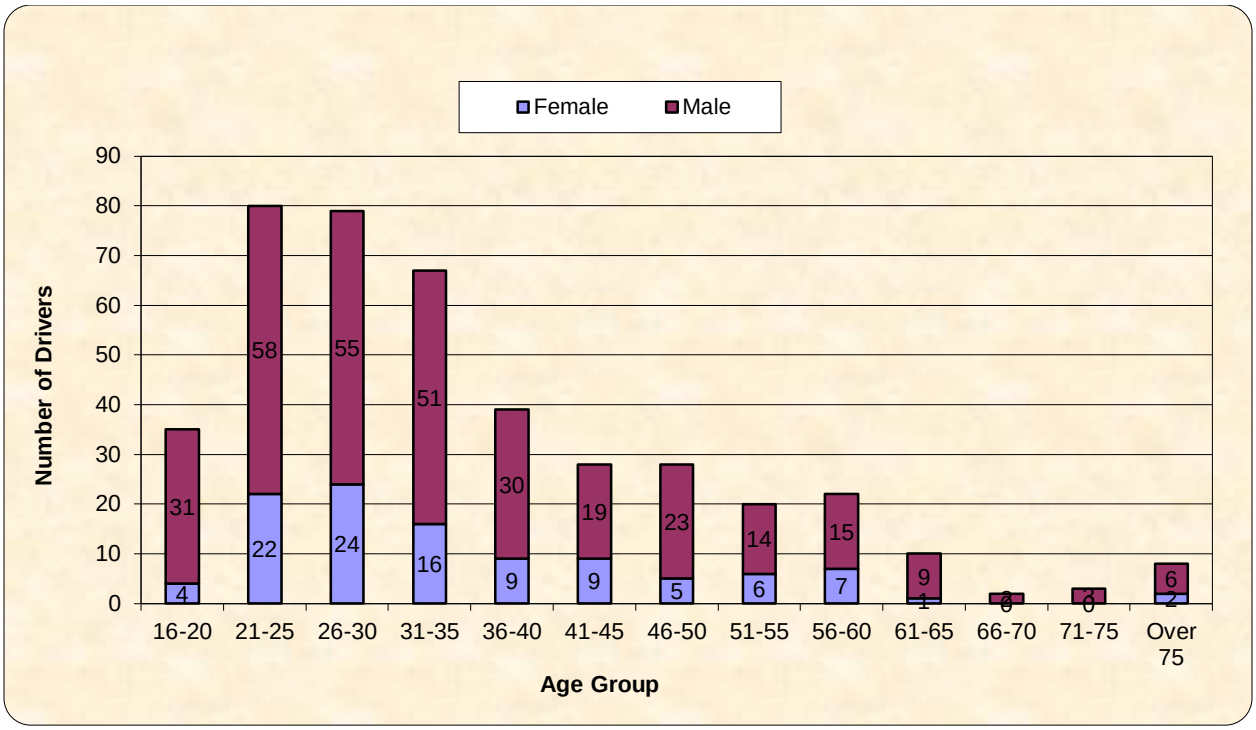

Figure 4.50: Speed-Related Crashes by Age and Gender

4.6.2 Alcohol/Drug Related Crashes

The use of alcohol and drugs has been noted to be one of the most significant contributory factors in the cause of crashes. As shown in the summaries in Table 4.29 and Table 4.30, more alcohol/drug-related crashes were reported during the night and weekends.

Table 4.29: Alcohol/Drug related Crashes by Day of Week in 2012

Day of Week	Number of Alcohol-Related Collisions
Monday	75
Tuesday	30
Wednesday	26
Thursday	35
Friday	37
Saturday	58
Sunday	88
unknown	2
Total	**351**

Table 4.30: Alcohol/Drug related Crashes by Hour in 2012

Hour	Number of Alcohol-Related Collisions
00	27
01	41
02	39
03	42
04	20
05	6
06	1
07	2
08	3
09	1
10	2
12	3
13	2
14	5
15	8
16	10
17	12
18	12
19	15
20	15
21	28
22	22
23	33
unknown	2
Total	**351**

Presented in Table 4.31 and Figure 4.51 are the summaries of alcohol/drug-related crashes by gender. From the summaries young drivers and male drivers were reported as highest group of drivers involved in alcohol/drug violations.

Table 4.31: Alcohol/Drug related Crashes by Gender and Age in 2012

Age Group	Female	Male	Unknown	Total
16-20	3	3	0	6
21-25	20	31	0	51
26-30	17	41	0	58
31-35	13	51	0	64
36-40	11	34	0	45
41-45	3	24	0	27
46-50	5	17	0	22
51-55	5	32	0	37
56-60	3	10	0	13
61-65	1	4	0	5
66-70	0	7	0	7
71-75	1	2	0	3
Over 75	0	0	0	0
unknown	2	7	4	13
Total	**84**	**263**	**4**	**351**

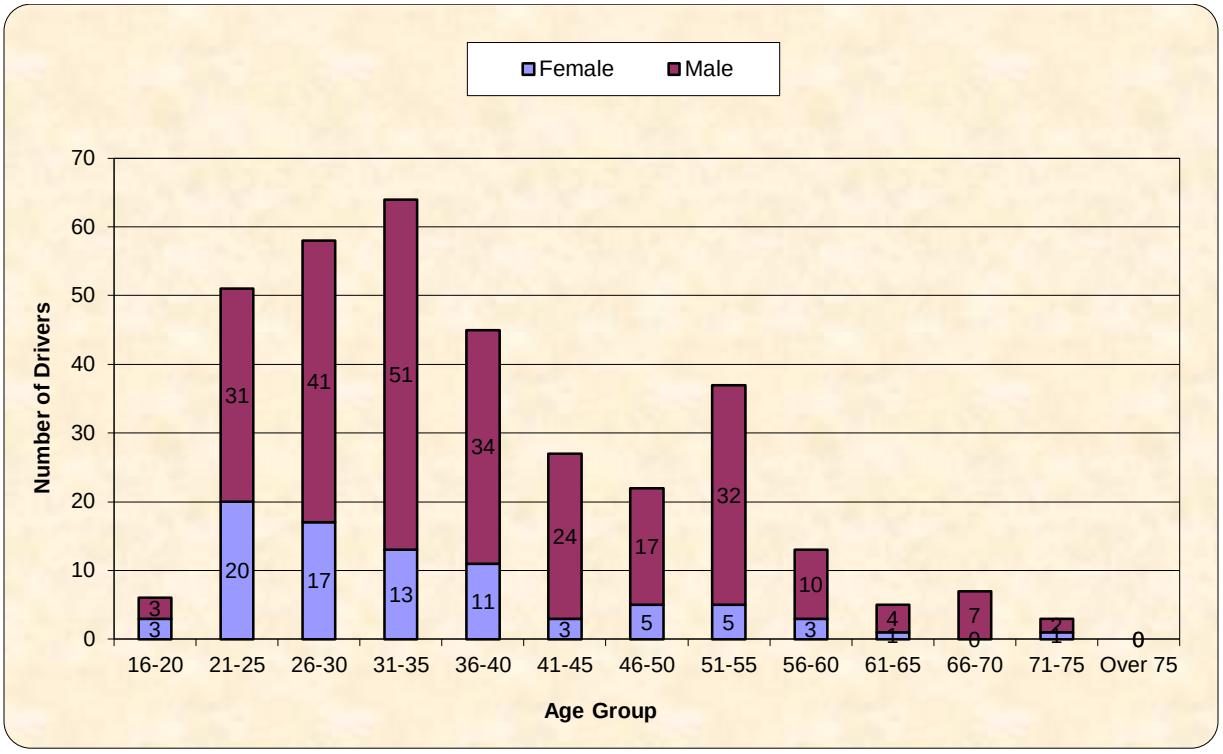

Figure 4.51: Alcohol/Drug-Related Crashes by Age and Gender

4.6.4 Crashes by Restraint Use (Seatbelts or Airbags)

From research studies, restraint devices such as seatbelts and airbags usage have a significant influence on the severity of injury during a crash. The summary of crashes related to the airbag restraint is presented in Table 4.32 and Figure 4.52. The results show that approximately 2% (617) of crashes in 2012 were reported as a result of air bag failing to deploy. The majority of injuries involved vehicles with installed air bags.

Table 4.32: Frequency of Injures by Injury Code and Air Bag Restraint

Air Bag	Fatal	Disabling	Non-Disabling	Complaint but not visible	None	Other	Unknown	Total
Airbag Deployed	3	44	229	546	930	38	147	1,937
Airbag Installed	5	41	197	1,780	13,121	51	776	15,971
Airbag Failed	0	0	15	98	468	4	32	617
Other	0	2	4	9	66	3	7	91
Side-Impact Airbags	0	1	4	18	35	1	1	60
Use Unknown	3	20	120	622	5,504	36	4,280	10,585
Total	**11**	**108**	**569**	**3,073**	**20,124**	**133**	**5,243**	**29,261**

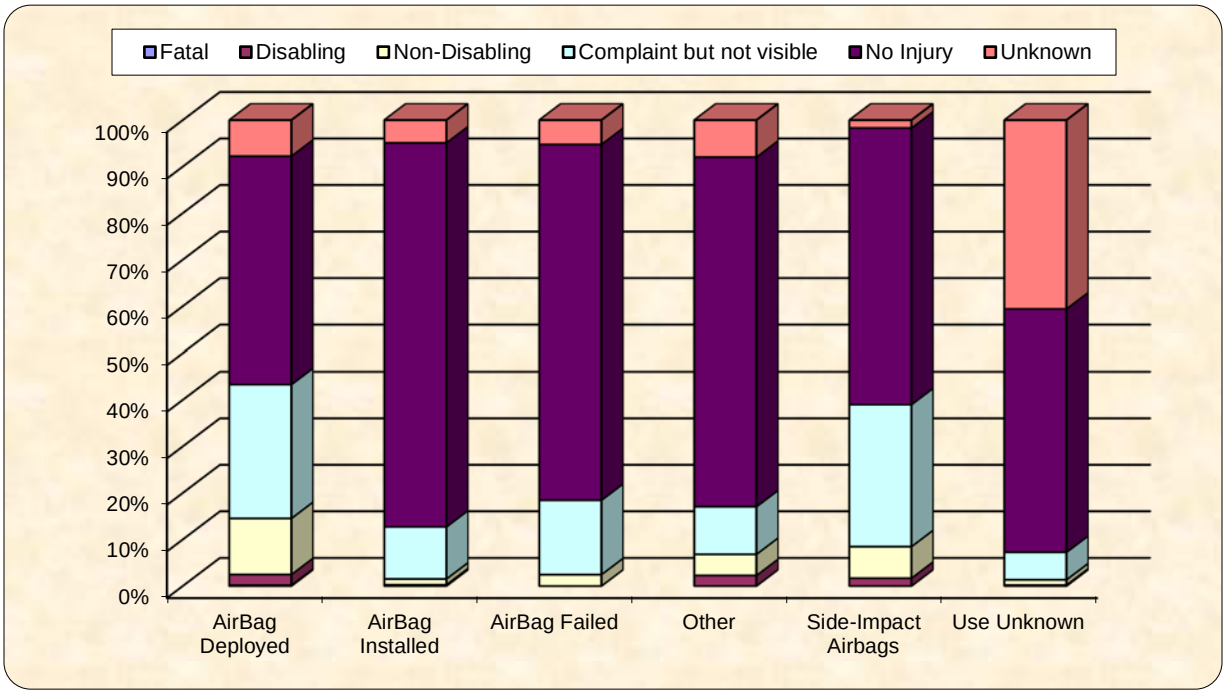

Figure 4.52: Crash Severity by Air Bag Restraint in 2012

The use of seat belts is another important safety restraint device. The analysis focused on its usage to examine the correlation of severity of motor vehicle crashes and its

usage. The results are presented on Table 4.33 and Figure 4.53. The results show that approximately 44% (13,177) of drivers or passengers involved in crashes used their seat belts in 2012. Approximately 54% (15,993) of drivers or passengers involved in crashes were reported with unknown seat belt usage. Overall, only a small fraction (or approximately 1%) of drivers or passengers were reported with seat belt not installed or fastened.

Table 4.33: Number of Injures by Injury Code and Seat Belt Restraint

Seat Belt	Fatal	Disabling	Non-Disabling	Complaint but not visible	No Injury	Other	Unknown	Total
Belt Failed	0	0	0	13	92	0	12	117
Child Restraint	0	0	0	1	2	0	0	3
Fastened	0	56	272	1,576	10,697	38	538	13,177
Helmet	0	2	5	11	5	4	5	32
Not Fastened	2	5	18	35	206	3	24	293
Not Installed	0	3	5	4	54	2	11	79
Other	0	0	3	1	20	0	7	31
Use Unknown	1	53	208	1,146	9,972	69	4,544	15,993
Total	**3**	**119**	**511**	**2,787**	**21,048**	**116**	**5,141**	**29,725**

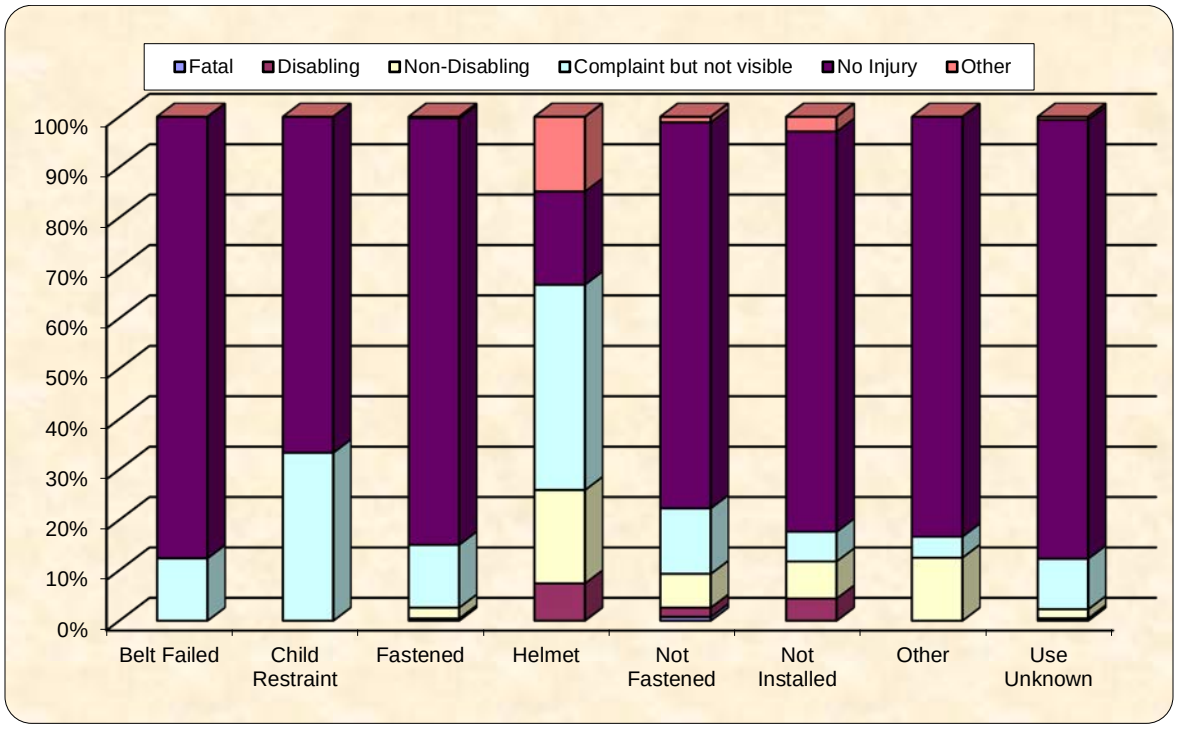

Figure 4.53: Crash Severity by Seatbelt Restraint in 2012

4.6.5 Crashes by Sobriety

The summary of crashes by sobriety is presented in Table 4.33 and Figure 4.54. From the results, 21,759 (or approximately 73%) of drivers or passengers involved in a crash in 2012 were sober (or "had not been drinking"), whereas 7,143 (or approximately 24%) of drivers' impairment status were unknown. Overall, only a small fraction of drivers (or passengers) were reported as driving while intoxicated (DWI) or driving while ability impaired (DWAI).

Table 4.34 Number of Crashes by Sobriety in 2012

Type	Fatal	Disabling	Non-Disabling	Complaint but not visible	No Injury	Other	Unknown	Total
Ability Impaired	0	0	12	18	137	3	26	196
Had been drinking and obviously drunk	0	1	12	6	177	7	22	225
Had not been drinking	0	71	376	2,370	17,929	65	948	21,759
Not Impaired	0	2	6	6	110	1	9	134
Other	0	1	7	24	127	8	101	268
Unknown	3	44	98	363	2,562	32	4,041	7,143
Total	**3**	**119**	**511**	**2787**	**21,042**	**116**	**5,147**	**29,725**

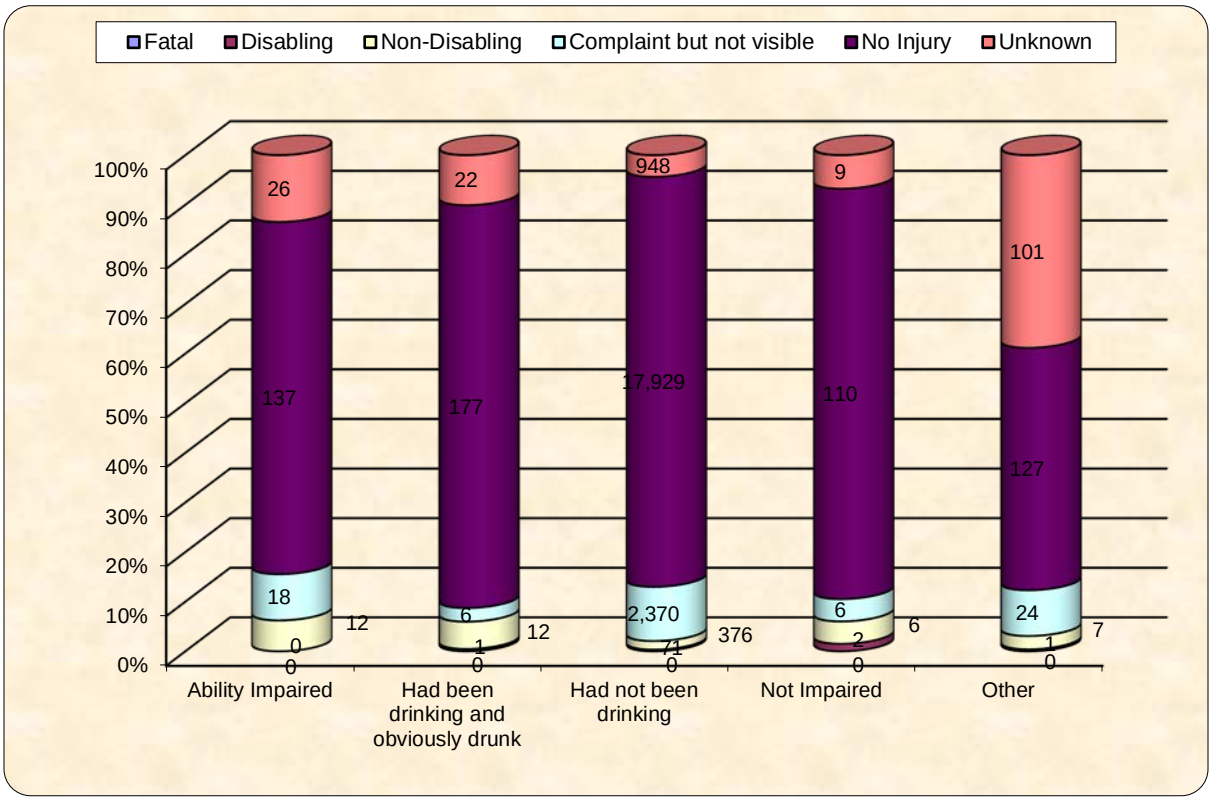

Figure 4.54: Crash Severity by Sobriety in 2012

4.6.6 Crashes by Driver or Pedestrian Distractions

Research has shown that driver or pedestrian distraction is one of the causes of vehicle crashes. The summary of crashes related to driver or pedestrian distraction in 2012 is presented in Table 4.35 and Figure 4.55. From the summary, the most prominent distraction was the use of cell phones, although the highest cause of distraction-related crash was listed as unknown.

Table 4.35: Crashes by Driver or Pedestrian Distraction in 2012

Distraction	Fatal Collisions	Injury Collisions	PDO Collisions	Total by Distraction
Cell Phone (hand held)	0	46	75	121
Cell phone (hands-free)	0	10	21	31
Distracted by passenger(s)	1	32	48	81
Eating	0	3	10	13
Interacting w/Pets	0	7	4	11
Interacting w/unsecured cargo	0	13	9	22
Other	2	593	996	1,591
Personal Grooming	0	2	5	7
Reading	0	6	16	22
Using personal communication technologies	0	10	27	37
Writing	0	1	2	3
Total	**3**	**723**	**1,213**	**1939**

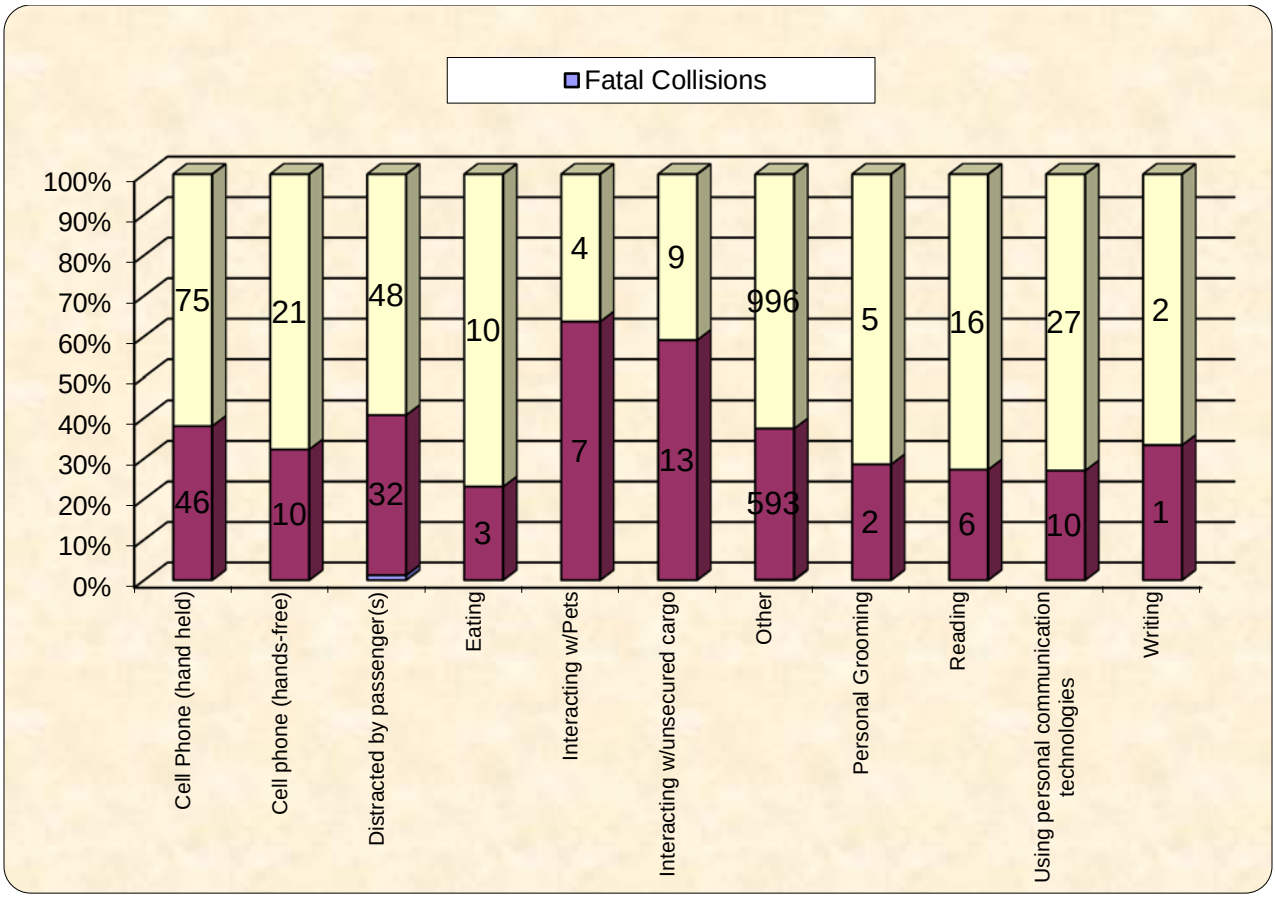

Figure 4.55: Crash Severity by Driver/Pedestrian Distraction in 2012

CHAPTER 5 – HIGH CRASH LOCATIONS

High-hazard traffic safety locations can be identified at specific intersections, line segments (e.g., street corridors), and areas (e.g., Wards). Methodologies used to identify area based high-hazard traffic locations were presented in Chapter 2. This section focuses on identification of high-hazard intersections and corridors.

5.1 Identification of High Hazard Intersections

The five ranks by crash rate, crash severity, crash frequency, crash severity cost and composite index (which is calculated based on the combination of previous three ranking), were used to identify high-hazard intersections. To rank high hazard intersections based on the three-year crash data, each intersection is given a rank based on its calculated values. The first ranking is based on the crash rate. The second ranking is based on the value of crash severity index. The third ranking is according to the number of crashes, or frequency. Finally, intersections are then sorted by composite index to complete the final ranking of the high hazard intersections. The highest hazard intersections are those with the lowest composite index.

5.1.1 Ranking of High Hazard Intersections (2010-2012)

The top 20 high hazard locations based on each individual ranking for Crash Rate, Crash Cost, Crash Frequency, delta method and Composite Index as well as for the 3-year duration are presented in Tables 5.1 through 5.8 and Figures 5.1 and 5.2. The complete list of the top 100 high frequency crash locations is presented in the Appendix.

The crash occurrences for various intersections from 2010 through 2012 were compiled and arranged in order of magnitude to identify the high frequency crash location rankings. From Table 5.1, the intersection of New York Avenue and Bladensburg Road (NE) ranked the highest in 2010 and 2012. The intersection of New York Avenue and North Capitol Street (BN) was found to rank the highest in 2011 and among the top three in 2010 and 2012. Overall, the intersection of New York Avenue and Bladensburg Road (NE) was found to be the most hazardous intersection in the District from 2010 through 2012 on the basis of the number of crash occurrences.

Table 5.1: Top 20 Hazardous Intersections by Crash Frequency in 2010-2012

INTERSECTION NAME	Quad	2010		2011		2012	
		Freq	Rank	Freq	Rank	Freq	Rank
NEW YORK AVE AND BLADENSBURG RD	NE	70	1	76	2	80	1
WISCONSIN AVE AND M ST	NW	62	3	55	6	68	2
NEW YORK AVE AND NORTH CAPITOL ST	BN	66	2	78	1	62	3
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	40	14	47	7	59	4
FLORIDA AVE AND NEW YORK AVE	NE	48	8	56	5	56	5
MINNESOTA AVE AND BENNING RD	NE	45	9	59	4	55	6
H ST AND NORTH CAPITOL ST	BN	39	16	36	17	53	7
14TH ST AND U ST	NW	60	4	63	3	50	8
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	39	16	46	9	48	9
FIRTH STERLING AVE AND SUITLAND PKWY	SE	33	23	41	11	42	10
STANTON RD AND SUITLAND PKWY	SE	42	10	47	7	42	10
1ST ST AND UNION STATION PLAZA	NE	36	19	19	93	39	12
NORTH CAPITOL ST AND RIGGS RD	BN	33	23	27	39	38	13
7TH ST AND FLORIDA AVE	NW	41	12	42	10	38	13
14TH ST AND K ST	NW	50	7	40	12	37	15
1ST ST AND NEW YORK AVE	NE	41	12	33	21	36	16
MONTANA AVE AND NEW YORK AVE	NE	57	5	39	13	36	16
13TH ST AND U ST	NW	27	38	28	34	35	18
9TH ST AND U ST	NW	20	76	30	28	34	19
14TH ST AND PENNSYLVANIA AVE	NW	27	38	33	21	34	19

Table 5.2: Top 20 Hazardous Intersections by Crash Frequency for 3-Year Periods

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		Freq	Rank	Freq	Rank
NEW YORK AVE AND BLADENSBURG RD	NE	226	1	226	1
NEW YORK AVE AND NORTH CAPITOL ST	BN	205	2	206	2
WISCONSIN AVE AND M ST	NW	169	3	185	3
14TH ST AND U ST	NW	166	4	173	4
FLORIDA AVE AND NEW YORK AVE	NE	150	5	160	5
MINNESOTA AVE AND BENNING RD	NE	134	8	159	6
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	107	15	146	7
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	123	10	133	8
MONTANA AVE AND NEW YORK AVE	NE	140	6	132	9
STANTON RD AND SUITLAND PKWY	SE	121	11	131	10
H ST AND NORTH CAPITOL ST	BN	100	17	128	11
14TH ST AND K ST	NW	136	7	127	12
7TH ST AND FLORIDA AVE	NW	109	14	121	13
FIRTH STERLING AVE AND SUITLAND PKWY	SE	102	16	116	14
7TH ST AND H ST	NW	114	12	110	15
1ST ST AND NEW YORK AVE	NE	93	25	110	15
KENILWORTH AVE AND BENNING RD	NE	129	9	104	17
1ST ST AND NEW YORK AVE	NW	96	21	100	18
I ST AND S CAPITOL ST	BN	100	17	99	19
NORTH CAPITOL ST AND RIGGS RD	BN	85	35	98	20

Based on the crash rate calculations, which took into consideration the traffic volumes for each intersection, the summary in Table 5.3 shows that intersections of 14th Street and V Street (NW) and Wisconsin Ave and M Street (NW) were ranked the highest. Wisconsin Ave and M Street (NW) was also ranked the second highest for the three-year crash rate ranking in Table 5.4. Meanwhile, 14th Street and U Street (NW) was ranked the highest among all intersections as shown in Table 5.4. These crash rates were calculated based on the methodology discussed in Chapter 2.

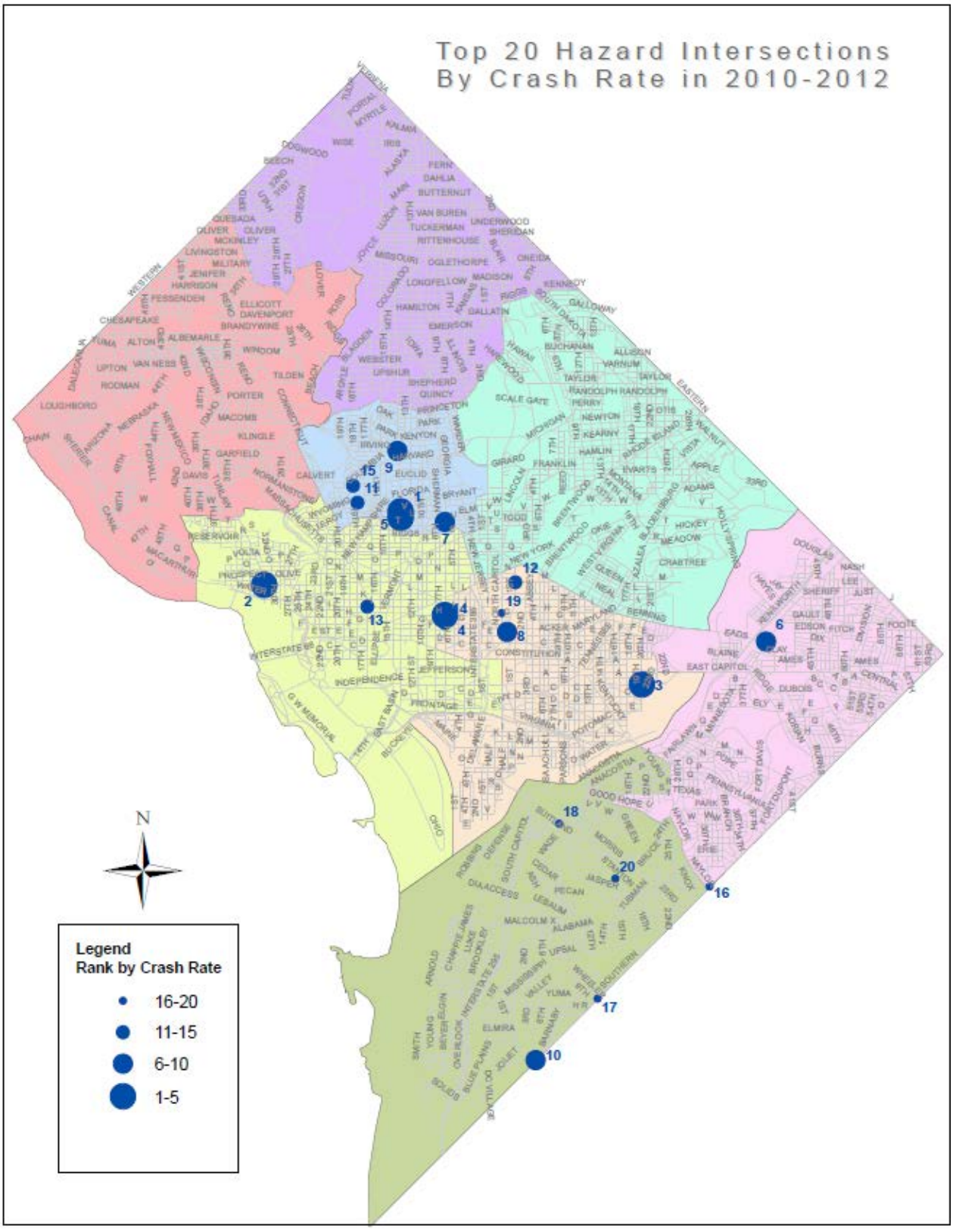

Figure 5.1: Top 20 Hazard Intersections by Crash Rate in 2010-2012

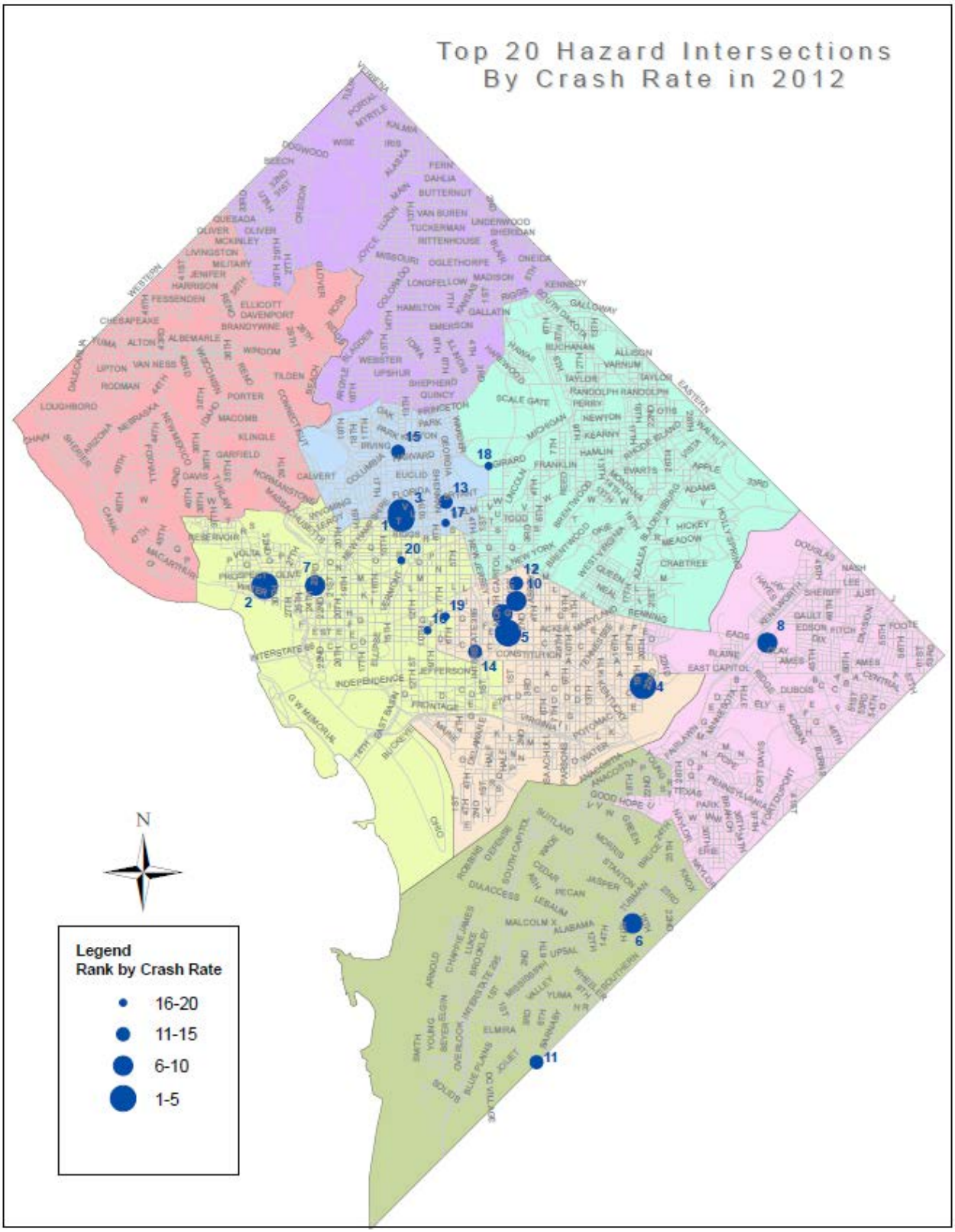

Figure 5.2: Top 20 Hazard Intersections by Crash Rate in 2012

Table 5.3: Top 20 Hazardous Intersections by Crash Rate in 2010-2012

INTERSECTION NAME	Quad	2010		2011		2012	
		Rate	Rank	Rate	Rank	Rate	Rank
14TH ST AND V ST	NW	1.6116	109	2.9546	17	5.6406	1
WISCONSIN AVE AND M ST	NW	4.554	3	4.0398	3	4.9947	2
14TH ST AND U ST	NW	5.6489	1	5.9314	1	4.7074	3
19TH ST AND INDEPENDENCE AVE	SE	3.282	10	3.5674	6	4.4235	4
1ST ST AND UNION STATION PLAZA	NE	3.6802	5	1.9423	77	3.9869	5
SAVANNAH ST AND STANTON RD	SE	0.7116	517	3.5581	7	3.5581	6
24TH ST AND M ST	NW	1.1208	259	2.8643	20	3.4869	7
MINNESOTA AVE AND BENNING RD	NE	2.8473	18	3.7331	4	3.48	8
H ST AND NORTH CAPITOL ST	BN	2.4229	30	2.2365	54	3.2926	9
1ST ST AND K ST	NE	2.2831	37	1.9977	71	3.282	10
SOUTHERN AVE AND S CAPITOL ST	BN	2.2968	35	3.4452	10	3.2811	11
1ST ST AND M ST	NE	1.7595	82	3.5189	8	3.2676	12
GEORGIA AVE AND BRYANT ST	NW	1.1211	256	1.5415	134	3.2232	13
3RD ST AND C ST	NW	1.3172	170	2.8978	18	3.1612	14
14TH ST AND IRVING ST	NW	3.0232	14	3.1176	14	3.1176	15
10TH ST AND F ST	NW	1.3614	158	2.7227	25	3.0631	16
7TH ST AND FLORIDA AVE	NW	3.2845	9	3.3646	11	3.0441	17
1ST ST AND MICHIGAN AVE	NW	1.8725	70	1.7739	94	2.9565	18
7TH ST AND H ST	NW	5.2138	2	2.6561	28	2.9512	19
14TH ST AND P ST	NW	1.7777	78	2.5097	36	2.928	20

Based on the crash cost computations of each individual year, the results presented in Table 5.5 show that the intersections of New York Ave. and Bladensburg Road (NE) and New York Avenue and North Capitol Street (BN) were ranked the highest. When the three-year crash costs were compiled (Table 5.6), the intersections of New York Avenue and Bladensburg Road (NE) and New York Avenue and North Capitol Street (BN) were also ranked the highest.

Table 5.4: Top 20 Hazardous Intersections by Crash Rate for 3-Year Periods

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		RATE	RANK	RATE	RANK
14TH ST AND U ST	NW	5.2096	1	5.4292	1
WISCONSIN AVE AND M ST	NW	4.1378	2	4.5295	2
19TH ST AND INDEPENDENCE AVE	SE	3.7101	4	3.7576	3
7TH ST AND H ST	NW	3.7382	3	3.6071	4
14TH ST AND V ST	NW	2.7755	15	3.4023	5
MINNESOTA AVE AND BENNING RD	NE	2.8262	13	3.3535	6
7TH ST AND FLORIDA AVE	NW	2.9106	10	3.2311	7
1ST ST AND UNION STATION PLAZA	NE	2.6239	19	3.2032	8
14TH ST AND IRVING ST	NW	2.9917	8	3.0861	9
SOUTHERN AVE AND S CAPITOL ST	BN	2.8436	11	3.0077	10
18TH ST AND KALORAMA RD	NW	2.6948	16	2.9344	11
1ST ST AND M ST	NE	2.0108	49	2.8486	12
17TH ST AND I ST	NW	3.263	5	2.7855	13
7TH ST AND G ST	NW	2.819	14	2.7603	14
18TH ST AND ADAMS MILL RD	NW	2.9847	9	2.7576	15
SOUTHERN AVE AND NAYLOR RD	SE	3.1964	6	2.7397	16
SOUTHERN AVE AND WHEELER RD	SE	3.1612	7	2.7096	17
FIRTH STERLING AVE AND HOWARD RD	SE	2.6449	18	2.6948	18
H ST AND NORTH CAPITOL ST	BN	2.0708	44	2.6507	19
STANTON RD AND SUITLAND PKWY	SE	2.418	25	2.6178	20

In order to examine the effect of the various rankings, the composite index methodology was employed to identify the characteristics of intersections or corridors. From the results presented in Table 5.7, it was determined that the intersections of Wisconsin Ave and M Street (NW), and Minnesota Ave and Benning Road (NE) ranked the highest using the composite index method. However, for the three-year composite index ranking (Table 5.8), 14th Street and U Street (NW), and Minnesota Ave and Benning Road (NE) were the top two most hazardous intersections. The GIS maps for the top 20 hazardous intersections by crash composite index from 2010 through 2012 and the top 20 hazard intersection by crash composite index in 2012 can be found in Figures 5.5 and 5.6 respectively.

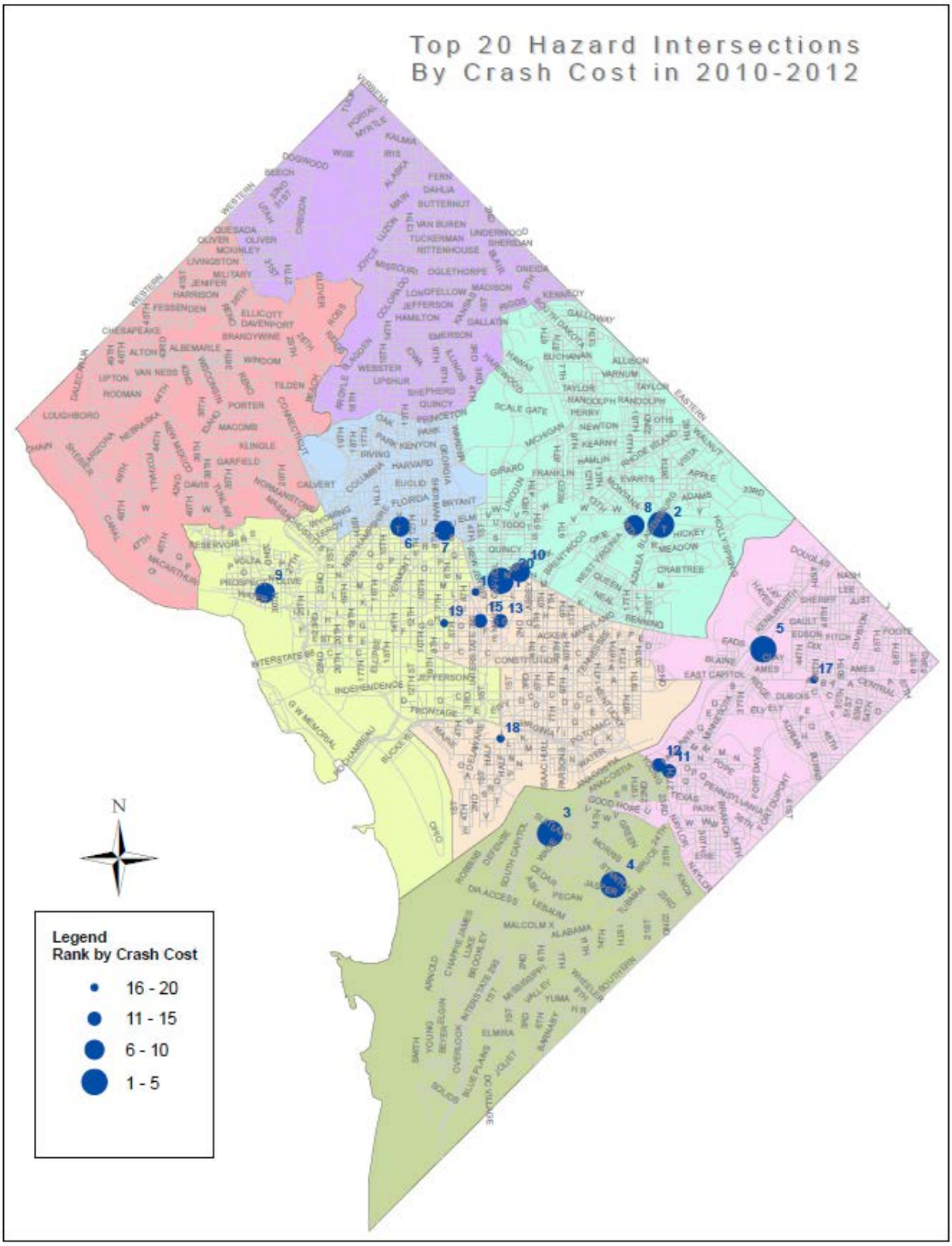

Figure 5.3: Top 20 Hazard Intersections by Crash Cost in 2010-2012

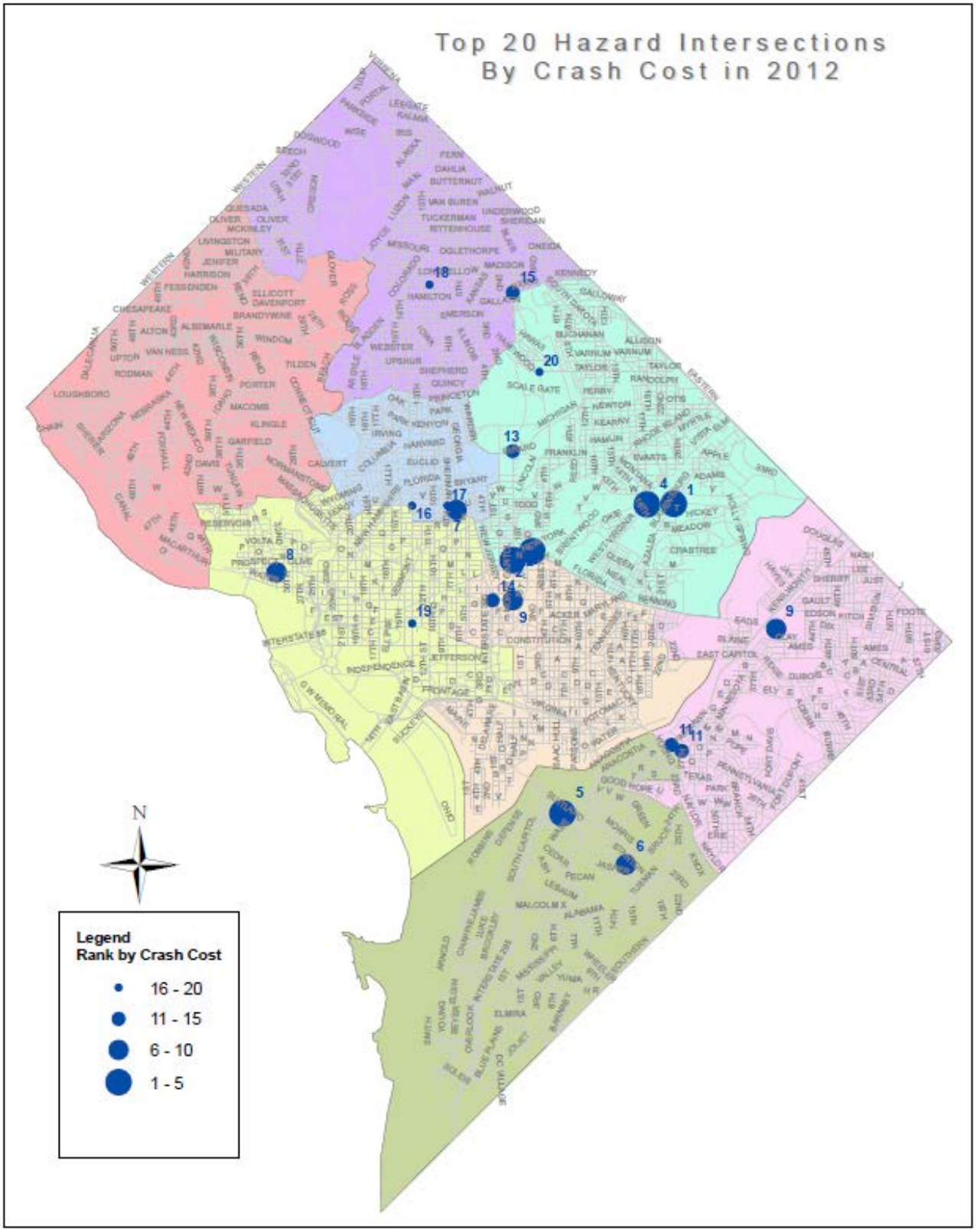

Figure 5.4: Top 20 Hazard Intersections by Crash Cost in 2012

Table 5.5: Top 20 Hazardous Intersections by Crash Severity Cost for 2010-2012

INTERSECTION NAME	Quad	2010		2011		2012	
		Cost	Rank	Cost	Rank	Cost	Rank
NEW YORK AVE AND BLADENSBURG RD	NE	743	3	917	2	797	1
NEW YORK AVE AND NORTH CAPITOL ST	BN	1032	1	935	1	662	2
FLORIDA AVE AND NEW YORK AVE	NE	503	12	533	10	662	3
MONTANA AVE AND NEW YORK AVE	NE	662	5	428	20	653	4
FIRTH STERLING AVE AND SUITLAND PKWY	SE	678	4	752	4	647	5
STANTON RD AND SUITLAND PKWY	SE	786	2	648	7	633	6
7TH ST AND FLORIDA AVE	NW	420	21	719	6	627	7
WISCONSIN AVE AND M ST	NW	564	9	519	11	624	8
MINNESOTA AVE AND BENNING RD	NE	645	6	797	3	617	9
H ST AND NORTH CAPITOL ST	BN	413	24	398	25	617	10
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	413	24	555	8	600	11
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	383	28	510	12	600	12
MICHIGAN AVE AND NORTH CAPITOL ST	BN	240	87	270	74	548	13
2ND ST AND H ST	NW	323	43	383	29	519	14
NORTH CAPITOL ST AND RIGGS RD	BN	416	22	270	74	473	15
14TH ST AND U ST	NW	639	8	729	5	458	16
9TH ST AND U ST	NW	225	96	308	56	444	17
GEORGIA AVE AND KENNEDY ST	NW	158	216	90	542	438	18
14TH ST AND PENNSYLVANIA AVE	NW	300	49	308	56	422	19
HAREWOOD RD AND TAYLOR ST	NE	38	1306	45	1081	411	20

Table 5.6: Top 20 Hazardous Intersections by Crash Severity Cost for 3-Year Periods

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		Cost	Rank	Cost	Rank
NEW YORK AVE AND NORTH CAPITOL ST	BN	2804	1	2629	1
NEW YORK AVE AND BLADENSBURG RD	NE	2562	2	2456	2
FIRTH STERLING AVE AND SUITLAND PKWY	SE	1975	4	2076	3
STANTON RD AND SUITLAND PKWY	SE	1993	3	2068	4
MINNESOTA AVE AND BENNING RD	NE	1742	6	2058	5
14TH ST AND U ST	NW	1751	5	1826	6
7TH ST AND FLORIDA AVE	NW	1540	12	1766	7
MONTANA AVE AND NEW YORK AVE	NE	1716	7	1742	8
WISCONSIN AVE AND M ST	NW	1677	8	1707	9
FLORIDA AVE AND NEW YORK AVE	NE	1583	10	1697	10
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	1442	13	1568	11
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	1088	27	1493	12
H ST AND NORTH CAPITOL ST	BN	1426	15	1427	13
KENILWORTH AVE AND BENNING RD	NE	1602	9	1299	14
2ND ST AND H ST	NW	1029	30	1224	15
NEW JERSEY AVE AND NEW YORK AVE	NW	1434	14	1209	16
BENNING RD AND EAST CAPITOL ST	BN	1576	11	1203	17
I ST AND S CAPITOL ST	BN	1292	18	1202	18
7TH ST AND H ST	NW	1242	19	1197	19
1ST ST AND NEW YORK AVE	NE	960	35	1164	20

Table 5.7: Top 20 Hazardous Intersections by Composite Index for 2010-2012

INTERSECTION NAME	Quad	2010		2011		2012	
		COMP	RANK	COMP	RANK	COMP	RANK
WISCONSIN AVE AND M ST	NW	6	3	7.75	3	5	1
MINNESOTA AVE AND BENNING RD	NE	9.75	4	3.5	1	8	2
H ST AND NORTH CAPITOL ST	BN	23.5	10	30.25	13	8.5	3
14TH ST AND U ST	NW	5.25	1	3.5	1	10.75	4
7TH ST AND FLORIDA AVE	NW	15.75	8	8.25	4	11	5
NEW YORK AVE AND BLADENSBURG RD	NE	15.25	7	14.75	6	13.25	6
1ST ST AND UNION STATION PLAZA	NE	23.5	10	143.5	100	14.75	7
STANTON RD AND SUITLAND PKWY	SE	10.25	5	11	5	15.75	8
FIRTH STERLING AVE AND SUITLAND PKWY	SE	25	12	15.75	7	17.25	9
9TH ST AND U ST	NW	91.5	54	43.5	21	18.75	10
1ST ST AND MICHIGAN AVE	NW	90	53	141.5	96	25.25	11
FLORIDA AVE AND NEW YORK AVE	NE	38.75	24	30	12	27.5	12
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	46	27	27.75	11	30	13
14TH ST AND P ST	NW	129.3	80	66.5	41	33	14
7TH ST AND H ST	NW	5.5	2	69.75	45	34	15
14TH ST AND IRVING ST	NW	36.25	21	40.25	18	34.5	16
2ND ST AND H ST	NW	101.3	62	49.25	27	36.25	17
NEW YORK AVE AND NORTH CAPITOL ST	BN	27.25	13	21	8	38.75	18
18TH ST AND ADAMS MILL RD	NW	59.5	32	54.25	33	39.5	19
14TH ST AND F ST	NW	418	335	217	154	39.75	20
19TH ST AND INDEPENDENCE AVE	SE	67.75	37	54.75	34	39.75	20

Table 5.8: Top 20 Hazardous Intersections by Composite Index for 3-Year Periods

INTERSECTION NAME	Quad	2009-2011		20010-2012	
		COMP	RANK	COMP	RANK
14TH ST AND U ST	NW	3.75	1	4.25	1
MINNESOTA AVE AND BENNING RD	NE	8.25	3	5.5	2
WISCONSIN AVE AND M ST	NW	5.25	2	5.75	3
7TH ST AND FLORIDA AVE	NW	12	6	8.5	4
STANTON RD AND SUITLAND PKWY	SE	10.5	5	9.5	5
NEW YORK AVE AND BLADENSBURG RD	NE	9.25	4	11.25	6
H ST AND NORTH CAPITOL ST	BN	22.75	12	14	7
7TH ST AND H ST	NW	13.25	7	14.25	8
FIRTH STERLING AVE AND SUITLAND PKWY	SE	20.25	10	16.5	9
NEW YORK AVE AND NORTH CAPITOL ST	BN	20	9	22.75	10
14TH ST AND K ST	NW	18.75	8	23.75	11
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	30.75	15	26.75	12
MONTANA AVE AND NEW YORK AVE	NE	21	11	27	13
1ST ST AND UNION STATION PLAZA	NE	49.5	29	28.25	14
FLORIDA AVE AND NEW YORK AVE	NE	30.75	15	28.5	15
14TH ST AND IRVING ST	NW	27	14	29.25	16
9TH ST AND U ST	NW	89.25	57	33.5	17
13TH ST AND U ST	NW	34.5	18	34	18
BENNING RD AND EAST CAPITOL ST	BN	23.5	13	37.75	19
18TH ST AND ADAMS MILL RD	NW	36	19	39	20

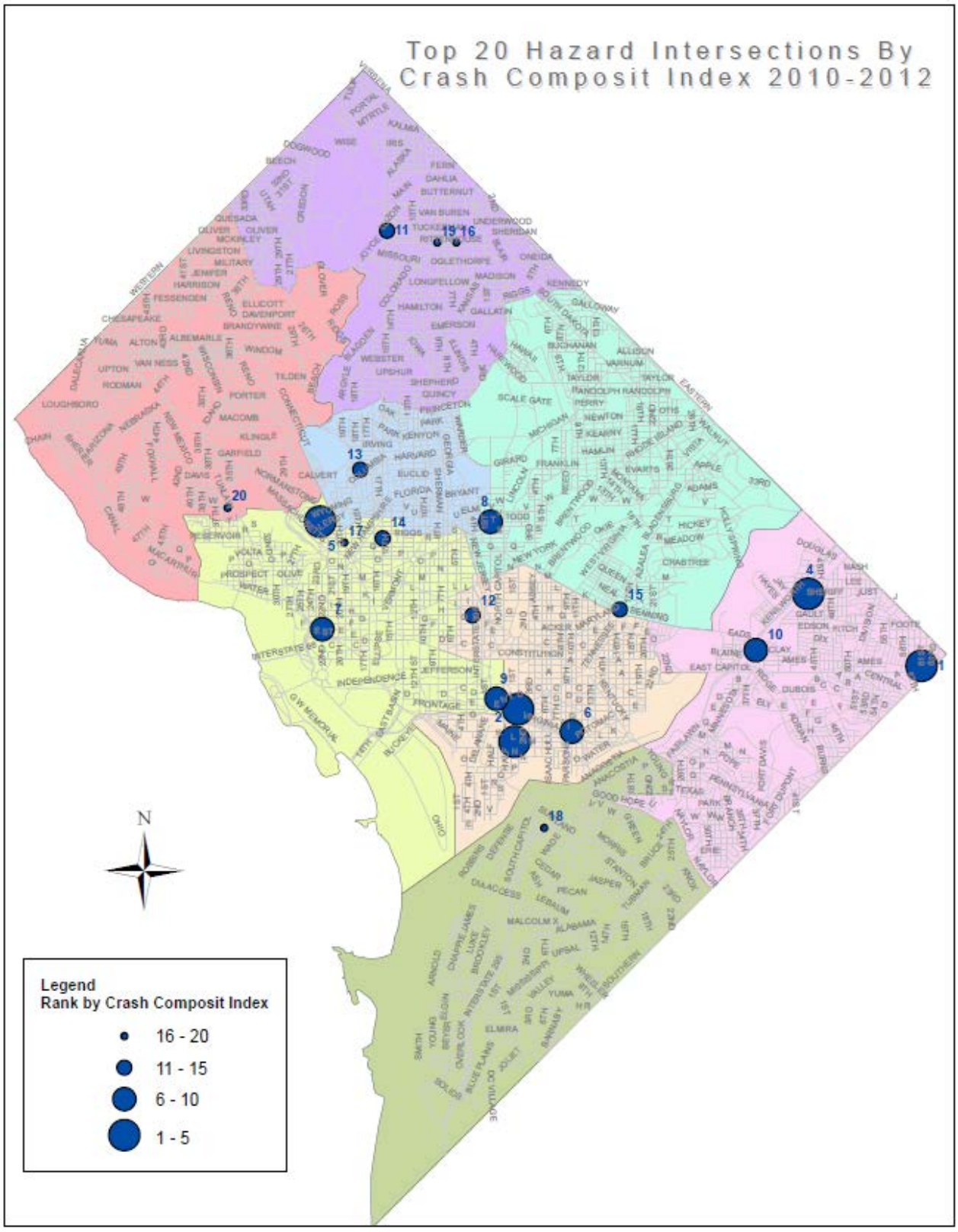

Figure 5.5: Top 20 Hazard Intersections by Crash Composite Index 2010-2012

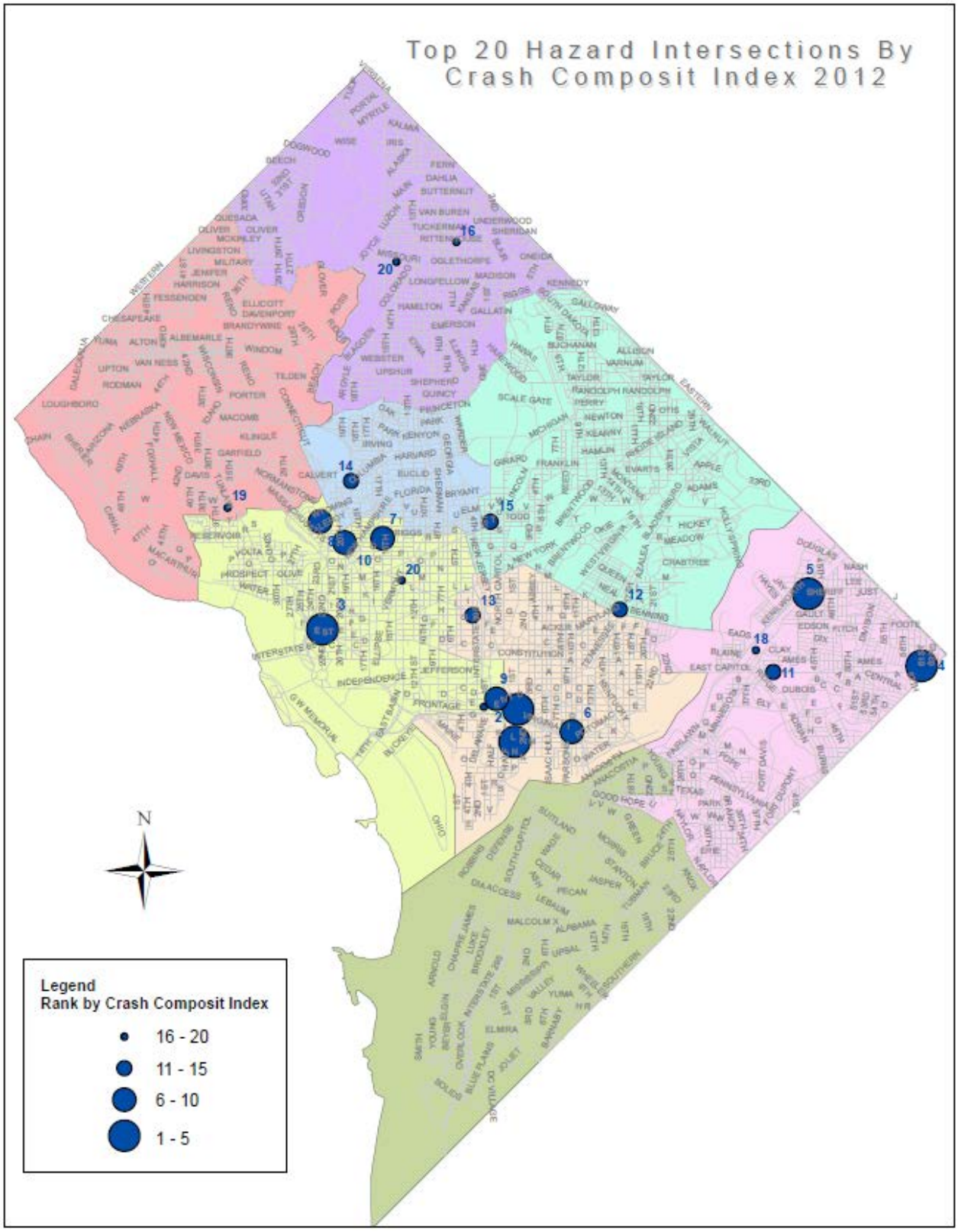

Figure 5.6: Top 20 Hazard Intersections by Crash Composite Index in 2012

5.2 High Frequency Crash Intersection by Type

In order to determine the crash patterns at each of the identified top 20 high frequency crash locations, the crash types for the locations were further analyzed and presented in Table 5.9. From the table, rear end crashes was the leading crash type for most of the high frequency crash locations, whereas side swiped and right-angle crashes were the second and third most frequently reported crashes for the top 20 high frequency crash locations.

Table 5.9: Top 20 Hazardous Intersections by Crash Type

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	Unknown	Total Crash
NEW YORK AVE AND BLADENSBURG RD,NE	8	11	2	13	0	6	3	3	87	15	7	61	4	1	5	226
NEW YORK AVE AND NORTH CAPITOL ST,BN	5	1	4	20	0	8	3	1	45	22	13	77	1	0	6	206
WISCONSIN AVE AND M ST,NW	12	3	0	17	0	8	5	0	31	4	17	83	4	0	1	185
14TH ST AND U ST,NW	9	2	3	14	0	11	13	1	24	9	13	66	5	2	1	173
FLORIDA AVE AND NEW YORK AVE,NE	3	4	4	14	1	1	2	1	67	3	3	54	1	0	2	160
MINNESOTA AVE AND BENNING RD,NE	7	4	5	16	1	4	0	1	49	6	9	45	9	0	3	159
FAIRLAWN AVE AND PENNSYLVANIA AVE,SE	1	4	1	20	1	3	0	2	51	7	6	47	2	0	1	146
MINNESOTA AVE AND PENNSYLVANIA AVE,SE	0	4	2	13	1	3	3	2	27	23	10	41	2	0	2	133
MONTANA AVE AND NEW YORK AVE,NE	3	0	4	8	0	2	1	1	45	12	10	44	2	0	0	132
STANTON RD AND SUITLAND PKWY,SE	1	10	3	2	0	6	4	8	64	3	2	22	3	1	2	131
H ST AND NORTH CAPITOL ST,BN	4	1	0	13	0	7	1	0	34	10	21	37	0	0	0	128
14TH ST AND K ST,NW	3	2	1	10	0	8	6	0	17	11	16	44	4	0	5	127
7TH ST AND FLORIDA AVE,NW	4	3	1	9	0	2	7	0	33	12	8	36	3	0	3	121
FIRTH STERLING AVE AND SUITLAND PKWY,SE	1	2	8	35	0	4	0	0	36	11	2	14	1	0	2	116
1ST ST AND NEW YORK AVE,NE	3	0	2	13	0	3	0	1	33	4	7	37	3	0	4	110
7TH ST AND H ST,NW	5	1	1	8	1	4	7	0	15	4	1	55	6	0	2	110
KENILWORTH AVE AND BENNING RD,NE	0	7	2	2	1	4	1	5	52	1	0	29	0	0	0	104
1ST ST AND NEW YORK AVE,NW	0	2	2	7	0	3	2	1	43	6	7	23	3	0	1	100
4TH ST AND NEW YORK AVE,NW	3	1	1	7	1	2	1	2	33	0	6	41	1	0	1	100
I ST AND S CAPITOL ST,BN	3	2	1	8	1	7	1	1	33	17	5	18	0	0	2	99

5.3 Identification of High Frequency Crash Corridors

5.3.1 Summary of Crashes on Corridors

From the results presented in Table 5.10, it can be observed that Pennsylvania Avenue, New York Avenue, and Georgia Avenue are the corridors with the highest crash frequencies in the District.

Table 5.10: High Frequency Crash Corridors for 2010-2012

Corridor	2010			2011			2012			Total
	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries	Collisions	Fatalities	Injuries	
PENNSYLVANIA AVE	723	0	271	730	0	270	784	0	310	2237
NEW YORK AVE	684	2	310	715	0	292	692	2	341	2091
GEORGIA AVE	560	0	261	568	0	236	622	0	280	1750
NORTH CAPITOL ST	519	1	257	559	1	268	530	0	233	1608
CONNECTICUT AVE	577	1	200	513	1	174	516	1	129	1606
SIXTEENTH ST	538	0	206	521	1	212	533	0	215	1592
WISCONSIN AVE	505	2	133	480	0	128	424	0	111	1409
FLORIDA AVE	458	1	202	449	2	197	454	0	187	1361
RHODE ISLAND AVE	430	0	195	421	0	262	392	1	205	1243
BENNING RD	357	0	235	369	2	240	363	1	212	1089
SOUTHERN AVE	299	1	195	305	3	205	289	1	174	893
BLADENSBURG RD	214	0	101	234	0	121	246	1	98	694
CONSTITUTION AVE	219	1	92	184	0	58	219	1	67	622
NEW JERSEY AVE	170	0	111	135	0	75	150	1	87	455

Presented in Figure 5.7 and Table 5.11 are respectively the summary of the types of crashes reported for the top 20 corridors and the average crashes per mile along the corridors.

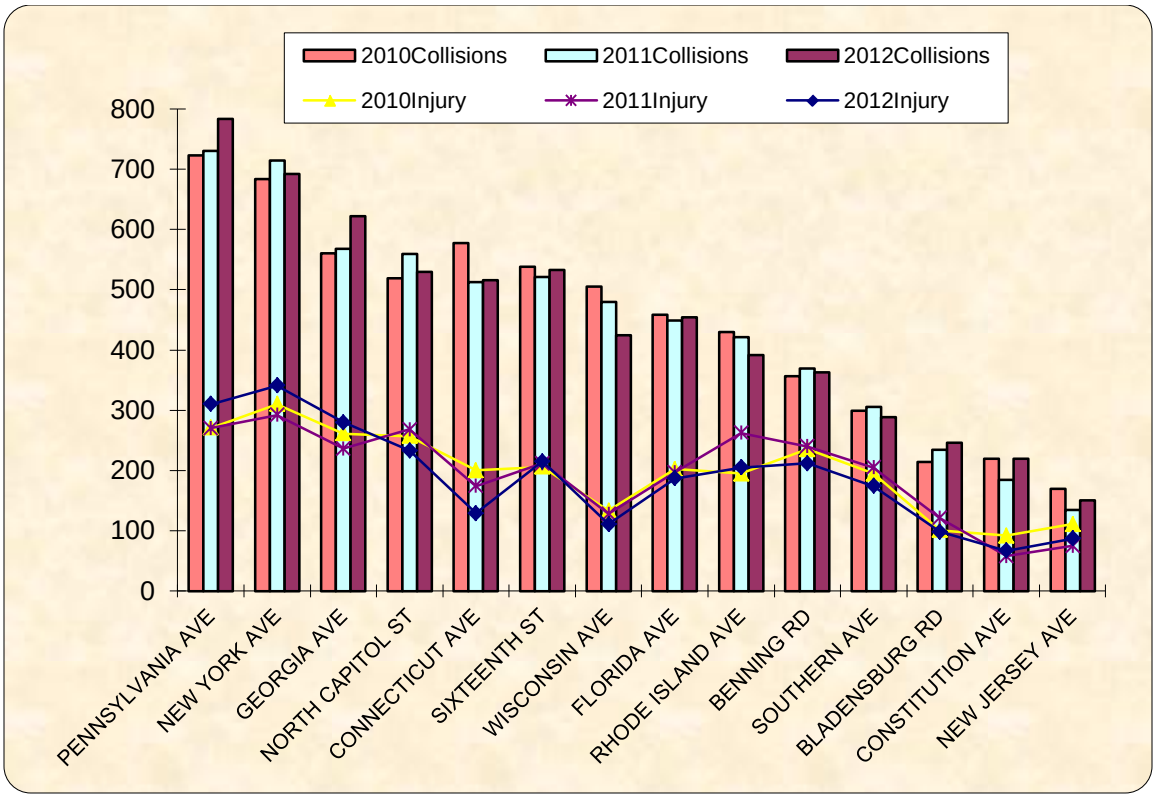

Figure 5.7: High Frequency Crash Corridors for 2010-2012

Table 5.11: Summary of High Frequency Crash Corridors for 2010-2012

Corridor	Length(miles)	No. of Intersections	No. of Crashes	Average Crashes per Mile	Average Crashes per Intersection
PENNSYLVANIA AVE	5.48	89	2237	408.21	25.13
NEW YORK AVE	5.08	46	2091	411.61	45.46
GEORGIA AVE	4.76	65	1750	367.65	26.92
NORTH CAPITOL ST	3.85	73	1608	417.66	22.03
CONNECTICUT AVE	5.01	73	1606	320.56	22.00
SIXTEENTH ST	6.39	89	1592	249.14	17.89
WISCONSIN AVE	4.87	65	1409	289.32	21.68
FLORIDA AVE	5.46	80	1361	249.27	17.01
RHODE ISLAND AVE	4.56	49	1243	272.59	25.37
BENNING RD	3.39	45	1089	321.24	24.20
SOUTHERN AVE	5.4	122	893	165.37	7.32
BLADENSBURG RD	2.65	45	694	261.89	15.42
CONSTITUTION AVE	3.9	52	622	159.49	11.96
NEW JERSEY AVE	2.79	38	455	163.08	11.97

5.3.2 High Frequency Crash Corridors by Number of Crashes per Mile

Presented in Table 5.12 is the summary of the average number of crashes per mile on each corridor is presented for 2010 through 2012. From the results, Pennsylvania Avenue, New York Avenue, and North Capitol Street are the three highest ranked corridors from 2010 through 2012 on the basis of number of crashes per mile. Figure 5.8 and Figure 5.9 shows the GIS maps for the top 20 hazard intersection by crash frequency index 2010-2012 and the top 20 hazard intersection by crash frequency index for only 2012 respectively.

Table 5.12: High Frequency Crash Corridors by Number of Crash Occurrences per Mile in 2010-2012

Average Crashes per Mile	2010	2011	2012
PENNSYLVANIA AVE	131.93	133.21	143.07
NEW YORK AVE	134.65	140.75	136.22
GEORGIA AVE	117.65	119.33	130.67
NORTH CAPITOL ST	134.81	145.19	137.66
CONNECTICUT AVE	115.17	102.40	102.99
SIXTEENTH ST	84.19	81.53	83.41
WISCONSIN AVE	103.70	98.56	87.06
FLORIDA AVE	83.88	82.23	83.15
RHODE ISLAND AVE	94.30	92.32	85.96
BENNING RD	105.31	108.85	107.08
SOUTHERN AVE	55.37	56.48	53.52
BLADENSBURG RD	80.75	88.30	92.83
CONSTITUTION AVE	56.15	47.18	56.15
NEW JERSEY AVE	60.93	48.39	53.76

5.3.3 Number of Crashes per Intersecting Intersection on Corridors

As shown in Table 5.13, it can be noted that Pennsylvania Avenue, New York Avenue, and Georgia Avenue are the three highest ranked corridors on the basis of crashes per intersecting intersection on corridors.

Table 5.13: Number of Crashes per Intersection on Corridors in 2010 - 2012

Average Crashes per Intersection	2010	2011	2012
PENNSYLVANIA AVE	8.12	8.20	8.81
NEW YORK AVE	14.87	15.54	15.04
GEORGIA AVE	8.62	8.74	9.57
NORTH CAPITOL ST	7.11	7.66	7.26
CONNECTICUT AVE	7.90	7.03	7.07
SIXTEENTH ST	6.04	5.85	5.99
WISCONSIN AVE	7.77	7.38	6.52
FLORIDA AVE	5.73	5.61	5.68
RHODE ISLAND AVE	8.78	8.59	8.00
BENNING RD	7.93	8.20	8.07
SOUTHERN AVE	2.45	2.50	2.37
BLADENSBURG RD	4.76	5.20	5.47
CONSTITUTION AVE	4.21	3.54	4.21
NEW JERSEY AVE	4.47	3.55	3.95

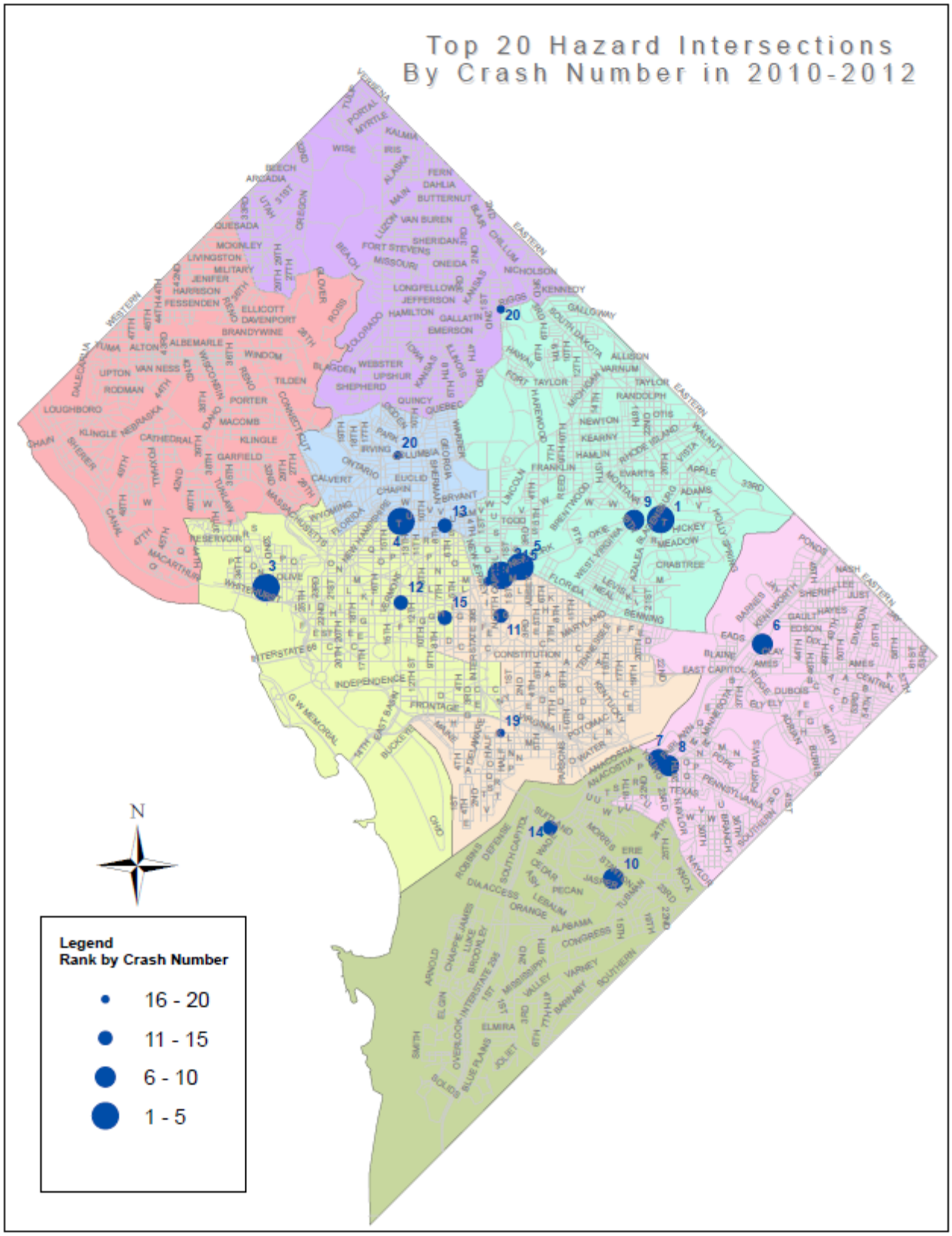

Figure 5.8: Top 20 Hazard Intersections by Crash Frequency Index in 2010-2012

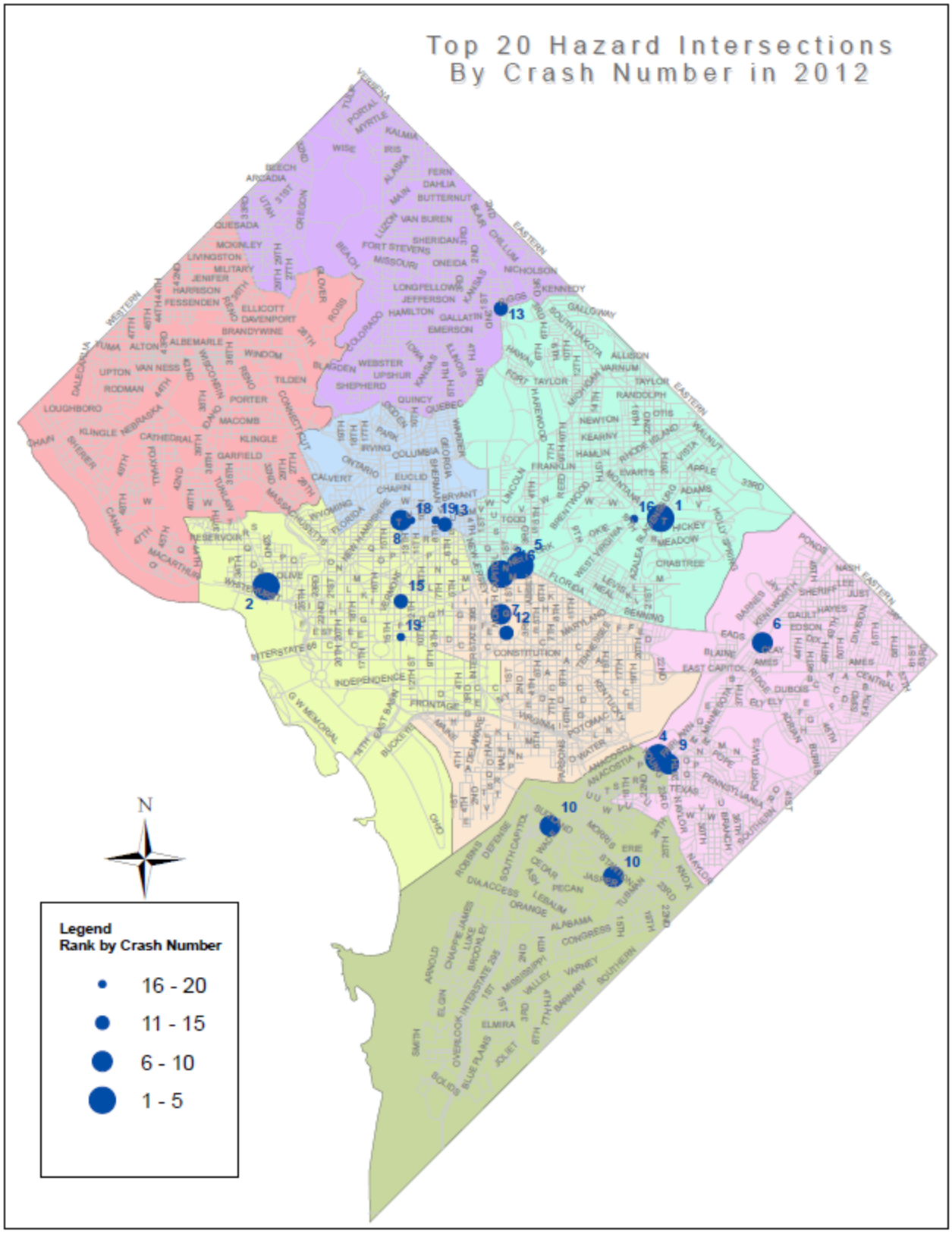

Figure 5.9: Top 20 Hazard Intersections by Crash Frequency in 2012

CHAPTER 6: EXPOSURE

6.1 Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)

Using the exposure data, the fatality rate per 100 million vehicle miles traveled (VMT) was computed based on data obtained from the National Highway Traffic Safety Administration's (NHTSA) database. This was used to examine and compare the motor vehicle crash fatality rate in Washington, DC to the national data.

The results are presented in Table 6.1 and Figure 6.1. From the table and figure, it can be determined that the fatalities per 100 million VMT of the District from 2004 to 2012 were substantially lower than the national level rate except for the year 2007. Overall, the fatalities per 100 million VMT for Washington, DC is relatively lower than the national rate.

Table 6.1: Fatality Rate from 2004 through 2012

Year		Fatalities	Total Vehicle Miles Traveled (Millions)	Fatalities Per 100 Million Vehicle Miles Traveled	Total Population	Fatalities Per 100,000 Population
2004	**Dist of Columbia**	45	3,742	1.20	579,521	7.77
	US	42,836	2,964,788	1.44	292,892,127	14.63
2005	**Dist of Columbia**	49	3,713	1.32	582,049	8.42
	US	43,510	2,989,430	1.46	295,753,121	14.71
2006	**Dist of Columbia**	41	3,623	1.13	583,978	7.02
	US	42,708	3,014,371	1.42	298,593,212	14.30
2007	**Dist of Columbia**	54	3,609	1.50	586,409	9.21
	US	41,259	3,032,399	1.36	301,579,895	13.68
2008	**Dist of Columbia**	39	3,611	1.08	590,074	6.61
	US	37,423	2,973,509	1.26	304,374,846	12.30
2009	**Dist of Columbia**	33	3,607	0.91	599,657	5.50
	US	33,883	2,979,321	1.14	307,006,550	11.04
2010	**Dist of Columbia**	25	3,614	0.69	601,723	4.15
	US	32,999	2,999,821	1.10	308,745,538	10.69
2011	**Dist of Columbia**	32	3,614	0.89	617,996	5.18
	US	32,367	2,964,121	1.09	314,168,000	10.30
2012	**Dist of Columbia**	19	3,629	0.52	632,323	3.00
	US	33,561	2,957,394	1.13	313,914,040	10.69

Data was obtained from the NHTSA except for the fatalities data for the District of Columbia.

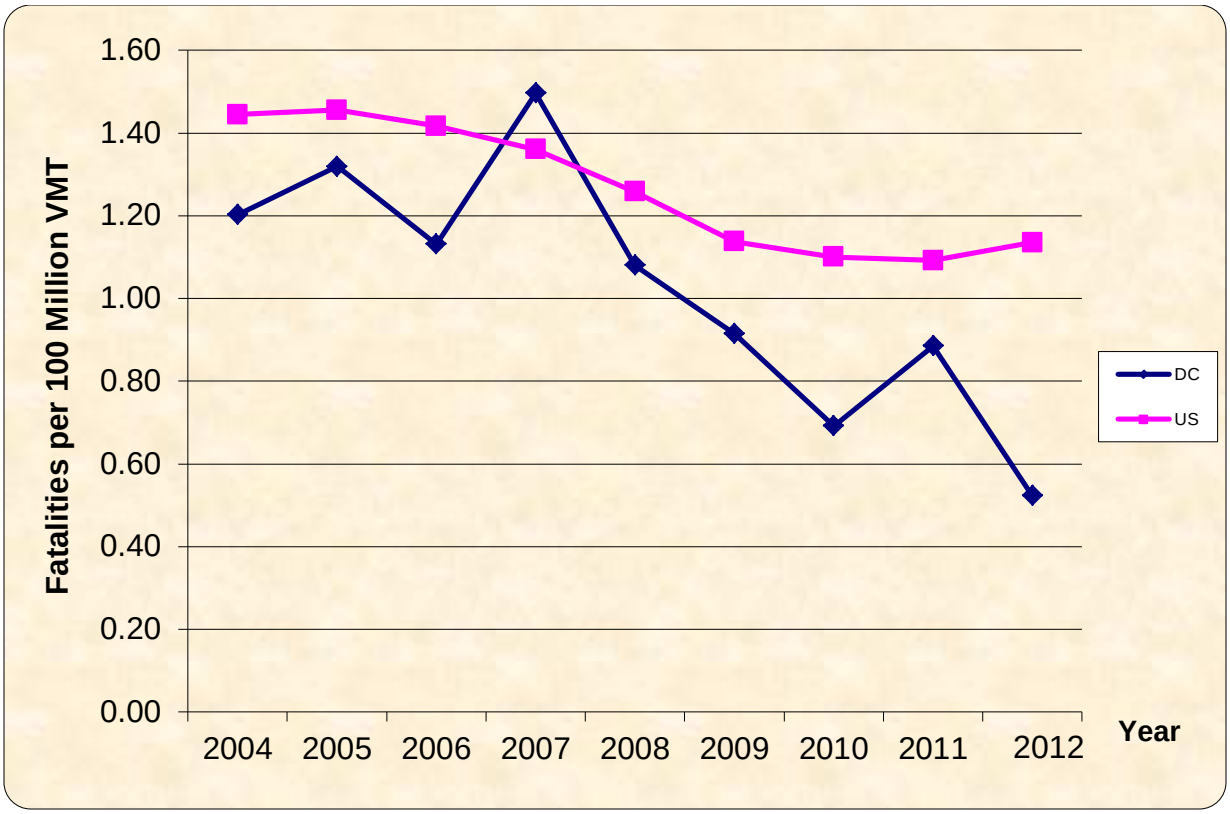

Figure 6.1: Fatality Rate per 100 Million VMT from 2004 through 2012

6.2 Injury Rate per 100 Million Vehicle Miles Traveled (VMT)

The injury rate per 100 million vehicle miles traveled (VMT) information from 2004 through 2012 was also obtained from NHTSA to examine and compare the injury rate of motor vehicle crashes in Washington, DC to the national rate. The summarized results are presented in Table 6.2 and Figure 6.2. The results show that the injuries per 100 million VMT in the District from 2004 to 2011 is considerably higher than the national values.

Table 6.2: Injury Rate from 2004 through 2012

Year		Injuries	Total Vehicle Miles Traveled (Millions)	Injuries Per 100 Million Vehicle Miles Traveled	Total Population	Injuries Per 100,000 Population
2004	Dist of Columbia	8,054	3,742	215.23	579,521	1389.77
	US	2,788,000	2,964,788	94.04	292,892,127	951.89
2005	Dist of Columbia	7,524	3,713	202.64	582,049	1292.67
	US	2,699,000	2,989,430	90.28	295,753,121	912.59
2006	Dist of Columbia	7,061	3,623	194.89	583,978	1209.12
	US	2,575,000	3,014,371	85.42	298,593,212	862.38
2007	Dist of Columbia	6,571	3,609	182.07	586,409	1120.55
	US	2,491,000	3,032,399	82.15	301,579,895	825.98
2008	Dist of Columbia	6,792	3,611	188.09	590,074	1151.04
	US	2,346,000	2,973,509	78.90	304,374,846	770.76
2009	Dist of Columbia	6,529	3,607	181.01	599,657	1088.79
	US	2,217,000	2,979,321	74.41	307,006,550	722.13
2010	Dist of Columbia	7,068	3,614	195.57	601,723	1174.63
	US	2,239,074	2,979,321	75.15	308,745,538	725.22
2011	Dist of Columbia	7,335	3,614	202.96	617,996	1186.90
	US	2,217,000	2,964,121	74.79	314,168,000	705.67
2012	Dist of Columbia	7,268	3,629	200.28	632,323	1149.41
	US	2,362,000	2,957,394	79.87	313,914,040	752.44

Data was obtained from the NHTSA except for the fatalities data for the District of Columbia.
*The 2011 VMT data of the country was not available as at the time of preparing this report. The 2010 value was used.

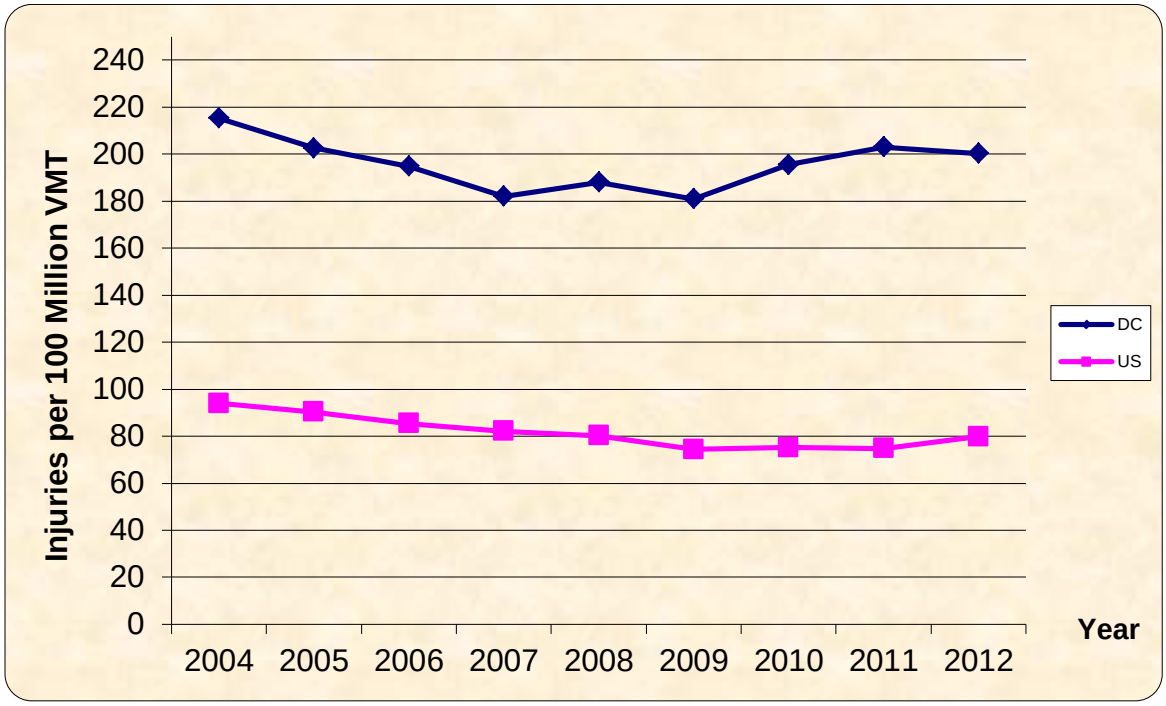

Figure 6.2: Injury Rate per 100 Million VMT from 2004 through 2012

CHAPTER 7: APPENDICES

7.1 Top 100 Hazard Intersections

7.1.1 Rank by Crash Frequency

Table 7.1: Intersection Rank by Crash Frequency for 2010- 2012 (Rank 1~34)

INTERSECTION NAME	Quad	2010		2011		2012	
		Freq	Rank	Freq	Rank	Freq	Rank
NEW YORK AVE AND BLADENSBURG RD	NE	70	1	76	2	80	1
WISCONSIN AVE AND M ST	NW	62	3	55	6	68	2
NEW YORK AVE AND NORTH CAPITOL ST	BN	66	2	78	1	62	3
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	40	14	47	7	59	4
FLORIDA AVE AND NEW YORK AVE	NE	48	8	56	5	56	5
MINNESOTA AVE AND BENNING RD	NE	45	9	59	4	55	6
H ST AND NORTH CAPITOL ST	BN	39	16	36	17	53	7
14TH ST AND U ST	NW	60	4	63	3	50	8
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	39	16	46	9	48	9
FIRTH STERLING AVE AND SUITLAND PKWY	SE	33	23	41	11	42	10
STANTON RD AND SUITLAND PKWY	SE	42	10	47	7	42	10
1ST ST AND UNION STATION PLAZA	NE	36	19	19	93	39	12
NORTH CAPITOL ST AND RIGGS RD	BN	33	23	27	39	38	13
7TH ST AND FLORIDA AVE	NW	41	12	42	10	38	13
14TH ST AND K ST	NW	50	7	40	12	37	15
1ST ST AND NEW YORK AVE	NE	41	12	33	21	36	16
MONTANA AVE AND NEW YORK AVE	NE	57	5	39	13	36	16
13TH ST AND U ST	NW	27	38	28	34	35	18
9TH ST AND U ST	NW	20	76	30	28	34	19
14TH ST AND PENNSYLVANIA AVE	NW	27	38	33	21	34	19
14TH ST AND IRVING ST	NW	32	25	33	21	33	21
14TH ST AND CONSTITUTION AVE	NW	23	55	31	25	32	22
I ST AND S CAPITOL ST	BN	36	19	32	24	31	23
19TH ST AND INDEPENDENCE AVE	SE	23	55	25	51	31	23
2ND ST AND H ST	NW	19	84	28	34	30	25
1ST ST AND MICHIGAN AVE	NW	19	84	18	104	30	25
1ST ST AND NEW YORK AVE	NW	31	26	39	13	30	25
7TH ST AND H ST	NW	53	6	27	39	30	25
KENILWORTH AVE AND EAST CAPITOL ST	BN	28	34	25	51	30	25
18TH ST AND ADAMS MILL RD	NW	29	33	27	39	29	30
15TH ST AND K ST	NW	17	109	25	51	29	30
KENILWORTH AVE AND BENNING RD	NE	40	14	35	19	29	30
4TH ST AND NEW YORK AVE	NE	16	132	38	16	29	30
14TH ST AND P ST	NW	17	109	24	58	28	34
16TH ST AND NEW HAMPSHIRE AVE	NW	24	49	15	156	28	34

Table 7.2: Intersection Rank by Crash Frequency for 2010-2012 (Rank: 34~74)

INTERSECTION NAME	Quad	2010		2011		2012	
		Freq	Rank	Freq	Rank	Freq	Rank
BENNING RD AND EAST CAPITOL ST	BN	38	18	31	25	28	34
24TH ST AND M ST	NW	9	404	23	63	28	34
14TH ST AND F ST	NW	11	299	16	138	28	34
31ST ST AND M ST	NW	31	26	26	44	28	34
RHODE ISLAND AVE AND REED ST	NE	27	38	19	93	28	34
NEW YORK AVE AND SOUTH DAKOTA AVE	NE	36	19	31	25	27	41
CONNECTICUT AVE AND M ST	NW	17	109	18	104	27	41
FAIRVIEW AVE AND NEW YORK AVE	NE	17	109	19	93	27	41
14TH ST AND COLUMBIA RD	NW	16	132	27	39	27	41
M ST AND NORTH CAPITOL ST	BN	21	71	36	17	27	41
14TH ST AND L ST	NW	22	63	18	104	26	46
4TH ST AND NEW YORK AVE	NW	28	34	28	34	26	46
6TH ST AND NEW YORK AVE	NW	24	49	26	44	26	46
NORTH CAPITOL ST AND P ST	BN	23	55	18	104	26	46
11TH ST AND M ST	SE	6	676	9	398	26	46
BENNING RD AND BLADENSBURG RD	NE	30	31	29	30	26	46
EASTERN AVE AND KENILWORTH AVE	NE	2	1792	8	477	25	52
3RD ST AND NEW YORK AVE	NW	15	155	13	210	25	52
13TH ST AND K ST	NW	26	45	23	63	25	52
11TH ST AND H ST	NW	22	63	13	210	25	52
14TH ST AND I ST	NW	25	47	29	30	25	52
K ST AND NORTH CAPITOL ST	BN	23	55	39	13	25	52
15TH ST AND MASSACHUSETTS AVE	NW	11	299	12	245	25	52
16TH ST AND K ST	NW	31	26	29	30	24	59
SOUTH DAKOTA AVE AND BLADENSBURG RD	NE	19	84	34	20	24	59
14TH ST AND H ST	NE	13	214	13	210	24	59
9TH ST AND NEW YORK AVE	NW	14	178	20	80	24	59
6TH ST AND H ST	NW	19	84	22	67	24	59
7TH ST AND K ST	NW	7	558	14	180	23	64
GEORGIA AVE AND BRYANT ST	NW	8	470	11	283	23	64
1ST ST AND K ST	NE	16	132	14	180	23	64
NORTH CAPITOL ST AND R ST	BN	5	845	8	477	23	64
2ND ST AND MASSACHUSETTS AVE	NW	8	470	14	180	23	64
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	14	178	26	44	23	64
RHODE ISLAND AVE AND NORTH CAPITOL ST	BN	23	55	21	75	23	64
13TH ST AND MASSACHUSETTS AVE	NW	13	214	14	180	23	64
M ST AND S CAPITOL ST	BN	23	55	15	156	23	64
17TH ST AND BLADENSBURG RD	NE	31	26	26	44	23	64
4TH ST AND MASSACHUSETTS AVE	NW	14	178	17	122	22	74
14TH ST AND H ST	NW	27	38	19	93	22	74

Table 7.3: Intersection Rank by Crash Frequency for 2010-2012 (Rank: 74~100)

INTERSECTION NAME	Quad	2010		2011		2012	
		Freq	Rank	Freq	Rank	Freq	Rank
9TH ST AND CONSTITUTION AVE	NW	12	261	15	156	22	74
CONNECTICUT AVE AND K ST	NW	17	109	22	67	22	74
NEW JERSEY AVE AND NEW YORK AVE	NW	36	19	26	44	22	74
BRANCH AVE AND PENNSYLVANIA AVE	SE	31	26	28	34	22	74
16TH ST AND FLORIDA AVE	NW	13	214	12	245	22	74
19TH ST AND M ST	NW	21	71	25	51	22	74
14TH ST AND PARK RD	NW	23	55	25	51	21	83
16TH ST AND EUCLID ST	NW	11	299	14	180	21	83
9TH ST AND MASSACHUSETTS AVE	NW	28	34	19	93	21	83
15TH ST AND CONSTITUTION AVE	NW	12	261	10	343	21	83
14TH ST AND V ST	NW	6	676	11	283	21	83
12TH ST AND CONSTITUTION AVE	NW	26	45	16	138	21	83
24TH ST AND PENNSYLVANIA AVE	NW	22	63	18	104	20	89
GEORGIA AVE AND IRVING ST	NW	12	261	18	104	20	89
15TH ST AND H ST	NW	14	178	16	138	20	89
DUPONT CIR AND MASSACHUSETTS AVE	NW	16	132	5	829	20	89
GEORGIA AVE AND MISSOURI AVE	NW	21	71	22	67	20	89
NEBRASKA AVE AND WARD CIR	NW	12	261	18	104	20	89
17TH ST AND PENNSYLVANIA AVE	NW	13	214	18	104	20	89
14TH ST AND THOMAS CIR	NW	7	558	14	180	20	89
12TH ST AND INDEPENDENCE AVE	SW	8	470	11	283	20	89
SOUTHERN AVE AND S CAPITOL ST	BN	14	178	21	75	20	89
38TH ST AND RESERVOIR RD	NW	10	356	9	398	19	99
GEORGIA AVE AND UPSHUR ST	NW	6	676	10	343	19	99
SOUTHERN AVE AND BENNING RD	SE	19	84	17	122	19	99
20TH ST AND IRVING ST	NE	12	261	11	283	19	99
WISCONSIN AVE AND Q ST	NW	11	299	12	245	19	99
FIRTH STERLING AVE AND HOWARD RD	SE	18	96	17	122	19	99
CONNECTICUT AVE AND N ST	NW	22	63	13	210	19	99
GEORGIA AVE AND BARRY PL	NW	11	299	20	80	19	99
24TH ST AND L ST	NW	13	214	9	398	19	99
EASTERN AVE AND COLESVILLE RD	NW	30	31	27	39	19	99
14TH ST AND INDEPENDENCE AVE	SW	16	132	14	180	19	99

Table 7.4: Intersection Rank by Crash Frequency for 3-Year Periods (Rank: 1~32)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		Freq	Rank	Freq	Rank
NEW YORK AVE AND BLADENSBURG RD	NE	226	1	226	1
NEW YORK AVE AND NORTH CAPITOL ST	BN	205	2	206	2
WISCONSIN AVE AND M ST	NW	169	3	185	3
14TH ST AND U ST	NW	166	4	173	4
FLORIDA AVE AND NEW YORK AVE	NE	150	5	160	5
MINNESOTA AVE AND BENNING RD	NE	134	8	159	6
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	107	15	146	7
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	123	10	133	8
MONTANA AVE AND NEW YORK AVE	NE	140	6	132	9
STANTON RD AND SUITLAND PKWY	SE	121	11	131	10
H ST AND NORTH CAPITOL ST	BN	100	17	128	11
14TH ST AND K ST	NW	136	7	127	12
7TH ST AND FLORIDA AVE	NW	109	14	121	13
FIRTH STERLING AVE AND SUITLAND PKWY	SE	102	16	116	14
7TH ST AND H ST	NW	114	12	110	15
1ST ST AND NEW YORK AVE	NE	93	25	110	15
KENILWORTH AVE AND BENNING RD	NE	129	9	104	17
1ST ST AND NEW YORK AVE	NW	96	21	100	18
I ST AND S CAPITOL ST	BN	100	17	99	19
NORTH CAPITOL ST AND RIGGS RD	BN	85	35	98	20
14TH ST AND IRVING ST	NW	95	22	98	20
BENNING RD AND EAST CAPITOL ST	BN	113	13	97	22
NEW YORK AVE AND SOUTH DAKOTA AVE	NE	99	19	94	23
1ST ST AND UNION STATION PLAZA	NE	77	43	94	23
14TH ST AND PENNSYLVANIA AVE	NW	60	71	94	23
13TH ST AND U ST	NW	86	33	90	26
K ST AND NORTH CAPITOL ST	BN	90	28	87	27
14TH ST AND CONSTITUTION AVE	NW	86	33	86	28
18TH ST AND ADAMS MILL RD	NW	92	27	85	29
BENNING RD AND BLADENSBURG RD	NE	88	30	85	29
31ST ST AND M ST	NW	93	25	85	29
NEW JERSEY AVE AND NEW YORK AVE	NW	99	19	84	32
9TH ST AND U ST	NW	60	71	84	32
16TH ST AND K ST	NW	78	41	84	32
M ST AND NORTH CAPITOL ST	BN	87	32	84	32

Table 7.5: Intersection Rank by Crash Frequency for 3-Year Periods (Rank: 36~70)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		Freq	Rank	Freq	Rank
4TH ST AND NEW YORK AVE	NE	76	44	83	36
KENILWORTH AVE AND EAST CAPITOL ST	BN	90	28	83	36
4TH ST AND NEW YORK AVE	NW	80	40	82	38
BRANCH AVE AND PENNSYLVANIA AVE	SE	94	23	81	39
17TH ST AND BLADENSBURG RD	NE	81	39	80	40
19TH ST AND INDEPENDENCE AVE	SE	78	41	79	41
14TH ST AND I ST	NW	75	46	79	41
NEW HAMPSHIRE AVE AND NORTH CAPITOL ST	BN	82	37	79	41
KENILWORTH AVE AND NANNIE HELEN BURROUGHS AVE	NE	94	23	78	44
SOUTH DAKOTA AVE AND BLADENSBURG RD	NE	75	46	77	45
2ND ST AND H ST	NW	64	61	77	45
6TH ST AND NEW YORK AVE	NW	75	46	76	47
EASTERN AVE AND COLESVILLE RD	NW	67	53	76	47
RHODE ISLAND AVE AND REED ST	NE	65	59	74	49
13TH ST AND K ST	NW	62	66	74	49
15TH ST AND K ST	NW	76	44	71	51
14TH ST AND COLUMBIA RD	NW	69	50	70	52
17TH ST AND I ST	NW	82	37	70	52
33RD ST AND M ST	NW	71	49	69	54
14TH ST AND P ST	NW	57	83	69	54
14TH ST AND PARK RD	NW	66	56	69	54
14TH ST AND H ST	NW	57	83	68	57
19TH ST AND M ST	NW	64	61	68	57
9TH ST AND MASSACHUSETTS AVE	NW	66	56	68	57
NORTH CAPITOL ST AND P ST	BN	52	98	67	60
RHODE ISLAND AVE AND NORTH CAPITOL ST	BN	61	68	67	60
1ST ST AND MICHIGAN AVE	NW	48	123	67	60
16TH ST AND NEW HAMPSHIRE AVE	NW	60	71	67	60
14TH ST AND L ST	NW	55	86	66	64
MICHIGAN AVE AND NORTH CAPITOL ST	BN	83	36	65	65
6TH ST AND H ST	NW	55	86	65	65
GEORGIA AVE AND MISSOURI AVE	NW	68	52	63	67
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	58	80	63	67
FAIRVIEW AVE AND NEW YORK AVE	NE	48	123	63	67
12TH ST AND CONSTITUTION AVE	NW	47	131	63	67

Table 7.6: Intersection Rank by Crash Frequency for 3-Year Periods (Rank: 71~100)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		Freq	Rank	Freq	Rank
MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE	NE	65	59	62	71
CONNECTICUT AVE AND M ST	NW	47	131	62	71
16TH ST AND IRVING ST	NW	67	53	62	71
M ST AND S CAPITOL ST	BN	66	56	61	74
CONNECTICUT AVE AND K ST	NW	59	78	61	74
14TH ST AND RHODE ISLAND AVE	NW	67	53	60	76
11TH ST AND H ST	NW	50	109	60	76
24TH ST AND M ST	NW	49	116	60	76
24TH ST AND PENNSYLVANIA AVE	NW	53	95	60	76
21ST ST AND K ST	NW	69	50	59	80
16TH ST AND NEW YORK AVE	NE	61	68	58	81
19TH ST AND K ST	NW	59	78	58	81
9TH ST AND NEW YORK AVE	NW	42	166	58	81
14TH ST AND F ST	NW	51	105	55	84
GEORGIA AVE AND NEW HAMPSHIRE AVE	NW	55	86	55	84
FLORIDA AVE AND NORTH CAPITOL ST	BN	63	63	55	84
SOUTHERN AVE AND BENNING RD	SE	60	71	55	84
PENNSYLVANIA AVE AND ANACOSTIA FRWY	SE	88	30	55	84
SOUTHERN AVE AND S CAPITOL ST	BN	52	98	55	84
19TH ST AND L ST	NW	58	80	55	84
34TH ST AND M ST	NW	39	193	55	84
MONTANA AVE AND RHODE ISLAND AVE	NE	46	138	54	92
CONNECTICUT AVE AND N ST	NW	49	116	54	92
WISCONSIN AVE AND CALVERT ST	NW	55	86	54	92
SOUTHERN AVE AND WHEELER RD	SE	63	63	54	92
FIRTH STERLING AVE AND HOWARD RD	SE	53	95	54	92
7TH ST AND CONSTITUTION AVE	NW	60	71	53	97
4TH ST AND MASSACHUSETTS AVE	NW	43	159	53	97
3RD ST AND NEW YORK AVE	NW	43	159	53	97
1ST ST AND K ST	NE	38	205	53	97
MISSOURI AVE AND NEW HAMPSHIRE AVE	NW	50	109	53	97
18TH ST AND K ST	NW	54	94	53	97
15TH ST AND U ST	NW	55	86	53	97
NORTH CAPITOL ST AND P ST	BN	56	85	52	98

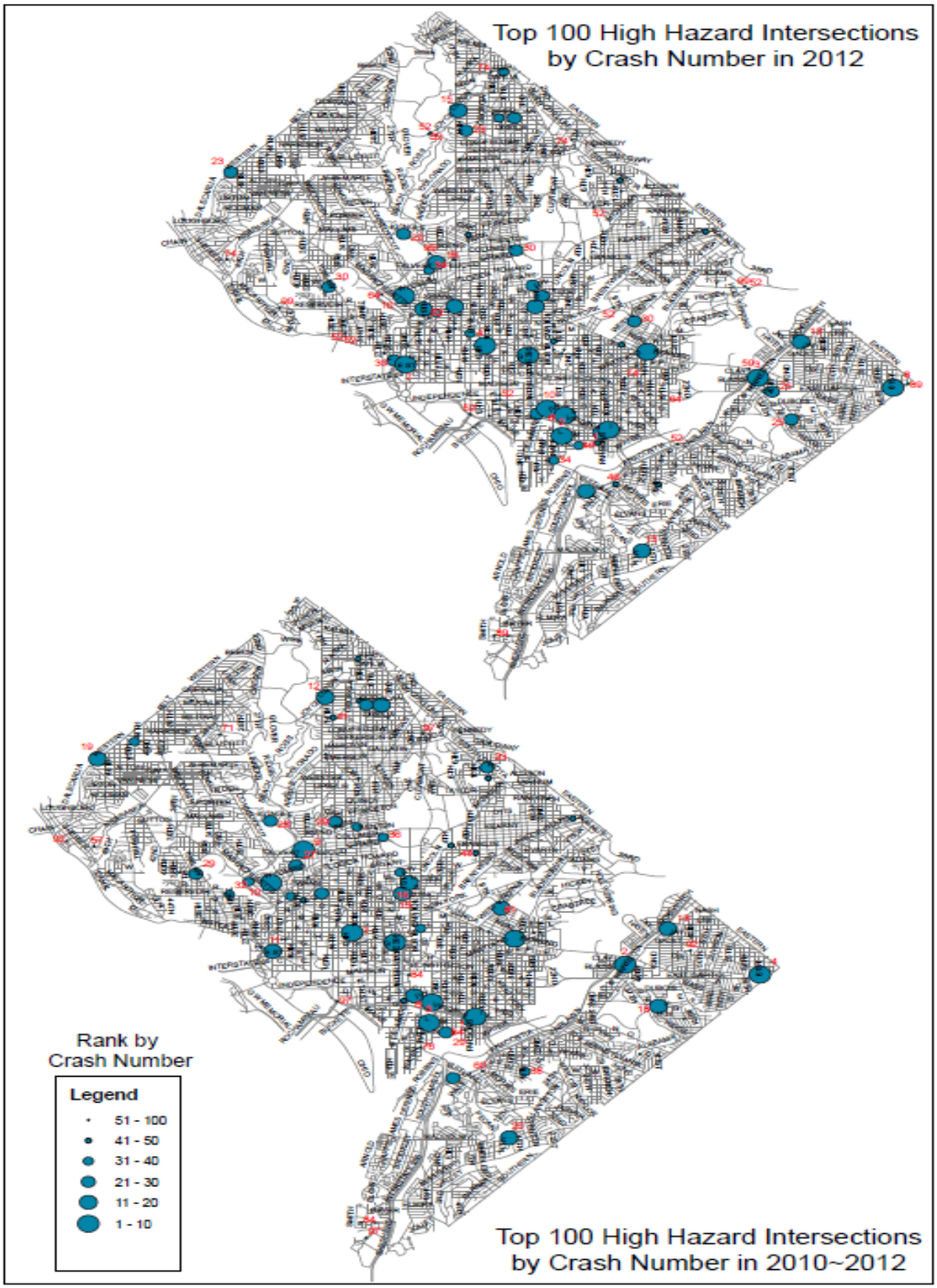

Figure 7.1: Top 100 Hazard Intersections by Crash Number in 2010-2012

7.1.2 Rank by Crash Rate

Table 7.7: Intersection Rank by Crash Rate for 2010-2012 (Rank: 1~35)

INTERSECTION NAME	Quad	2010		2011		2012	
		RATE	RANK	RATE	RANK	RATE	RANK
14TH ST AND V ST	NW	1.6116	109	2.9546	17	5.6406	1
WISCONSIN AVE AND M ST	NW	4.554	3	4.0398	3	4.9947	2
14TH ST AND U ST	NW	5.6489	1	5.9314	1	4.7074	3
19TH ST AND INDEPENDENCE AVE	SE	3.282	10	3.5674	6	4.4235	4
1ST ST AND UNION STATION PLAZA	NE	3.6802	5	1.9423	77	3.9869	5
SAVANNAH ST AND STANTON RD	SE	0.7116	517	3.5581	7	3.5581	6
24TH ST AND M ST	NW	1.1208	259	2.8643	20	3.4869	7
MINNESOTA AVE AND BENNING RD	NE	2.8473	18	3.7331	4	3.48	8
H ST AND NORTH CAPITOL ST	BN	2.4229	30	2.2365	54	3.2926	9
1ST ST AND K ST	NE	2.2831	37	1.9977	71	3.282	10
SOUTHERN AVE AND S CAPITOL ST	BN	2.2968	35	3.4452	10	3.2811	11
1ST ST AND M ST	NE	1.7595	82	3.5189	8	3.2676	12
GEORGIA AVE AND BRYANT ST	NW	1.1211	256	1.5415	134	3.2232	13
3RD ST AND C ST	NW	1.3172	170	2.8978	18	3.1612	14
14TH ST AND IRVING ST	NW	3.0232	14	3.1176	14	3.1176	15
10TH ST AND F ST	NW	1.3614	158	2.7227	25	3.0631	16
7TH ST AND FLORIDA AVE	NW	3.2845	9	3.3646	11	3.0441	17
1ST ST AND MICHIGAN AVE	NW	1.8725	70	1.7739	94	2.9565	18
7TH ST AND H ST	NW	5.2138	2	2.6561	28	2.9512	19
14TH ST AND P ST	NW	1.7777	78	2.5097	36	2.928	20
NEW HAMPSHIRE AVE AND V ST	NW	0.5829	622	1.1658	241	2.9146	21
9TH ST AND U ST	NW	1.6886	98	2.5329	34	2.8706	22
FIRTH STERLING AVE AND HOWARD RD	SE	2.6948	20	2.5451	33	2.8445	23
18TH ST AND ADAMS MILL RD	NW	2.8225	19	2.6278	30	2.8225	24
7TH ST AND G ST	NW	3.5238	6	1.9381	79	2.819	25
14TH ST AND COLUMBIA RD	NW	1.6699	101	2.818	22	2.818	26
14TH ST AND MARYLAND AVE	NE	0.8595	406	1.2893	198	2.7935	27
8TH ST AND H ST	NW	1.2215	216	2.6176	32	2.7921	28
1ST ST AND MARTIN LUTHER KING AVE	SE	0.5425	657	1.085	277	2.7126	29
SOUTHERN AVE AND BENNING RD	SE	2.6902	21	2.407	40	2.6902	30
3RD ST AND D ST	NW	2.2335	40	1.6379	111	2.6802	31
6TH ST AND M ST	NW	1.442	137	2.2659	50	2.6779	32
11TH ST AND H ST	NW	2.3272	33	1.3752	173	2.6445	33
24TH ST AND L ST	NW	1.8034	75	1.2485	215	2.6357	34
13TH ST AND U ST	NW	1.9885	60	2.0622	65	2.5777	35

Table 7.8: Intersection Rank by Crash Rate for 2010-2012 (Rank: 37~69)

INTERSECTION NAME	Quad	2010		2011		2012	
		RATE	RANK	RATE	RANK	RATE	RANK
GEORGIA AVE AND BARRY PL	NW	1.4809	131	2.6926	26	2.558	37
6TH ST AND H ST	NW	2.0216	58	2.3407	42	2.5535	38
14TH ST AND MONROE ST	NW	1.0179	307	2.8839	19	2.5446	39
14TH ST AND H ST	NE	1.3752	151	1.3752	173	2.5387	40
STANTON RD AND SUITLAND PKWY	SE	2.5179	27	2.8177	23	2.5179	41
18TH ST AND KALORAMA RD	NW	3.2338	11	3.0541	15	2.5152	42
21ST ST AND I ST	NW	0.934	355	1.2453	216	2.4907	43
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	1.5131	124	2.81	24	2.4858	44
9TH ST AND F ST	NW	2.0402	57	1.4573	153	2.4774	45
SOUTHERN AVE AND NAYLOR RD	SE	1.6438	103	4.1096	2	2.4658	46
7TH ST AND S ST	NW	3.1612	12	2.1075	60	2.4587	47
6TH ST AND F ST	NW	0.8802	392	1.9805	73	2.4206	48
FIRTH STERLING AVE AND SUITLAND PKWY	SE	1.8758	69	2.3305	44	2.3873	49
NEW YORK AVE AND BLADENSBURG RD	NE	2.0711	54	2.2486	53	2.3669	50
ALABAMA AVE AND MASSACHUSETTS AVE	SE	1.2576	199	0.8983	370	2.3355	51
ROCK CREEK CHURCH RD AND SPRING RD	NW	0	1133	0	1130	2.3153	52
BENNING RD AND G ST	SE	0.8941	374	1.5327	136	2.2991	53
5TH ST AND K ST	NW	1.6357	104	0.8178	424	2.2899	54
14TH ST AND F ST	NW	0.8916	381	1.2969	196	2.2696	55
21ST ST AND M ST	NE	1.5012	126	0.7506	465	2.2518	56
14TH ST AND SPRING RD	NW	1.8401	73	2.0446	68	2.249	57
GEORGIA AVE AND EUCLID ST	NW	1.1054	263	1.2633	211	2.2107	58
GEORGIA AVE AND PARK RD	NW	1.684	99	2.8498	21	2.2021	59
13TH ST AND F ST	NW	1.169	234	1.6073	116	2.1918	60
44TH ST AND NANNIE HELEN BURROUGHS AVE	NE	2.9565	16	2.1681	56	2.1681	61
ALABAMA AVE AND GOOD HOPE RD	SE	2.9327	17	2.0066	70	2.1609	62
24TH ST AND PENNSYLVANIA AVE	NW	2.373	32	1.9415	78	2.1573	63
2ND ST AND D ST	SE	0.8562	408	0.8562	395	2.1404	64
13TH ST AND S ST	NW	1.5535	116	1.271	208	2.1183	65
GEORGIA AVE AND UPSHUR ST	NW	0.6655	552	1.1092	268	2.1075	66
6TH ST AND D ST	NW	0.5748	629	1.7243	102	2.1075	67
MARTIN LUTHER KING AVE AND HOWARD RD	SE	1.4317	140	3.1237	13	2.0825	68
ALABAMA AVE AND STANTON RD	SE	0.9677	341	3.024	16	2.0563	69

Table 7.9: Intersection Rank by Crash Rate for 2010-2012 (Rank: 70~100)

INTERSECTION NAME	Quad	2010		2011		2012	
		RATE	RANK	RATE	RANK	RATE	RANK
7TH ST AND F ST	NW	3.0726	13	1.5363	135	2.0484	70
13TH ST AND K ST	NW	2.1075	52	1.8643	83	2.0264	71
MARTIN LUTHER KING AVE AND GOOD HOPE RD	SE	2.6729	25	1.7819	91	2.0047	72
6TH ST AND FLORIDA AVE	NW	1.3284	166	1.2177	228	1.9925	73
18TH ST AND T ST	NW	0.9918	326	0.2479	954	1.9835	74
23RD ST AND SOUTHERN AVE	SE	0.721	505	1.2617	213	1.9827	75
14TH ST AND K ST	NW	2.6755	24	2.1404	58	1.9799	76
23RD ST AND P ST	NW	1.5535	116	1.5535	129	1.9771	77
7TH ST AND D ST	NW	0.9814	330	0.9814	320	1.9628	78
FORT TOTTEN DR AND HAMILTON ST	NE	0.7828	461	0.7828	446	1.957	79
HAREWOOD RD AND TAYLOR ST	NE	0.532	669	0.532	643	1.9506	80
WISCONSIN AVE AND Q ST	NW	1.1266	254	1.229	226	1.946	81
11TH ST AND M ST	NW	0.5303	672	1.0605	286	1.9443	82
WISCONSIN AVE AND N ST	NW	2.197	44	2.3262	45	1.9385	83
6TH ST AND G ST	NW	1.9189	66	1.066	284	1.9189	84
17TH ST AND I ST	NW	2.9845	15	3.462	9	1.9101	85
GEORGIA AVE AND IRVING ST	NW	1.1455	244	1.7183	104	1.9092	86
16TH ST AND FLORIDA AVE	NW	1.1271	252	1.0404	298	1.9074	87
EASTERN AVE AND MINNESOTA AVE	NE	2.0647	55	1.5883	124	1.9059	88
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	1.5418	120	1.8186	86	1.8977	89
24TH ST AND NEW HAMPSHIRE AVE	NW	0.6298	583	0.9447	342	1.8895	90
19TH ST AND M ST	NW	1.7622	81	2.0978	61	1.8461	91
2ND ST AND H ST	NW	1.1645	235	1.7162	105	1.8387	92
7TH ST AND K ST	NW	0.5567	640	1.1134	265	1.8291	93
2ND ST AND F ST	NW	0.7306	498	0	1130	1.8265	94
GEORGIA AVE AND KENNEDY ST	NW	1.4954	127	1.0681	283	1.8158	95
1ST ST AND G ST	NE	0.7258	500	0.3629	800	1.8144	96
MISSISSIPPI AVE AND SOUTHERN AVE	SE	1.2087	222	1.8131	87	1.8131	97
5TH ST AND KENNEDY ST	NW	0.539	661	0.539	637	1.7965	98
15TH ST AND U ST	NW	1.5854	115	1.8826	82	1.7836	99
17TH ST AND PENNSYLVANIA AVE	NW	1.1545	240	1.5985	119	1.7762	100

Table 7.10: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 1~35)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		RATE	RANK	RATE	RANK
14TH ST AND U ST	NW	5.2096	1	5.4292	1
WISCONSIN AVE AND M ST	NW	4.1378	2	4.5295	2
19TH ST AND INDEPENDENCE AVE	SE	3.7101	4	3.7576	3
7TH ST AND H ST	NW	3.7382	3	3.6071	4
14TH ST AND V ST	NW	2.7755	15	3.4023	5
MINNESOTA AVE AND BENNING RD	NE	2.8262	13	3.3535	6
7TH ST AND FLORIDA AVE	NW	2.9106	10	3.2311	7
1ST ST AND UNION STATION PLAZA	NE	2.6239	19	3.2032	8
14TH ST AND IRVING ST	NW	2.9917	8	3.0861	9
SOUTHERN AVE AND S CAPITOL ST	BN	2.8436	11	3.0077	10
18TH ST AND KALORAMA RD	NW	2.6948	16	2.9344	11
1ST ST AND M ST	NE	2.0108	49	2.8486	12
17TH ST AND I ST	NW	3.263	5	2.7855	13
7TH ST AND G ST	NW	2.819	14	2.7603	14
18TH ST AND ADAMS MILL RD	NW	2.9847	9	2.7576	15
SOUTHERN AVE AND NAYLOR RD	SE	3.1964	6	2.7397	16
SOUTHERN AVE AND WHEELER RD	SE	3.1612	7	2.7096	17
FIRTH STERLING AVE AND HOWARD RD	SE	2.6449	18	2.6948	18
H ST AND NORTH CAPITOL ST	BN	2.0708	44	2.6507	19
STANTON RD AND SUITLAND PKWY	SE	2.418	25	2.6178	20
SAVANNAH ST AND STANTON RD	SE	1.6604	82	2.6093	21
SOUTHERN AVE AND BENNING RD	SE	2.8318	12	2.5958	22
7TH ST AND S ST	NW	2.1075	38	2.5758	23
1ST ST AND K ST	NE	1.8075	65	2.5209	24
24TH ST AND M ST	NW	2.034	47	2.4907	25
4TH ST AND T ST	NE	2.2214	33	2.4682	26
3RD ST AND C ST	NW	1.6684	80	2.4587	27
14TH ST AND COLUMBIA RD	NW	2.4005	26	2.4353	28
44TH ST AND NANNIE HELEN BURROUGHS AVE	NE	2.1024	39	2.4309	29
14TH ST AND W ST	NW	2.3379	29	2.411	30
14TH ST AND P ST	NW	1.9868	50	2.4051	31
10TH ST AND F ST	NW	1.5883	95	2.3824	32
ALABAMA AVE AND GOOD HOPE RD	SE	2.5725	21	2.3667	33
9TH ST AND U ST	NW	1.6886	74	2.364	34
6TH ST AND H ST	NW	1.9506	53	2.3053	35

Table 7.11: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 36~69)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		RATE	RANK	RATE	RANK
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	2.0895	41	2.2696	36
14TH ST AND K ST	NW	2.4258	24	2.2653	37
GEORGIA AVE AND PARK RD	NW	2.6771	17	2.2453	38
GEORGIA AVE AND BARRY PL	NW	2.3336	30	2.2438	39
NEW YORK AVE AND BLADENSBURG RD	NE	2.2289	32	2.2289	40
7TH ST AND F ST	NW	2.1622	34	2.2191	41
MARTIN LUTHER KING AVE AND HOWARD RD	SE	2.5163	23	2.2126	42
8TH ST AND H ST	NW	1.9777	52	2.2104	43
13TH ST AND U ST	NW	2.1113	37	2.2095	44
1ST ST AND MICHIGAN AVE	NW	1.5768	99	2.201	45
FIRTH STERLING AVE AND SUITLAND PKWY	SE	1.9326	57	2.1978	46
3RD ST AND D ST	NW	1.886	62	2.1838	47
24TH ST AND PENNSYLVANIA AVE	NW	1.9056	61	2.1573	48
WISCONSIN AVE AND N ST	NW	2.1539	36	2.1539	49
MARTIN LUTHER KING AVE AND GOOD HOPE RD	SE	2.5244	22	2.1532	50
14TH ST AND MONROE ST	NW	2.375	28	2.1488	51
6TH ST AND M ST	NW	1.9226	58	2.1286	52
11TH ST AND H ST	NW	1.763	69	2.1156	53
19TH ST AND N ST	NW	1.9853	51	2.0846	54
14TH ST AND D ST	SE	2.0756	43	2.0756	55
14TH ST AND SPRING RD	NW	2.3853	27	2.0446	56
ALABAMA AVE AND STANTON RD	SE	2.0966	40	2.016	57
13TH ST AND K ST	NW	1.6752	77	1.9994	58
9TH ST AND F ST	NW	1.9431	54	1.9916	59
BRENTWOOD RD AND W ST	NE	1.9334	56	1.9746	60
MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE	NE	2.0683	45	1.9729	61
GEORGIA AVE AND BRYANT ST	NW	1.3547	137	1.962	62
14TH ST AND RHODE ISLAND AVE	NW	2.1621	35	1.9362	63
19TH ST AND M ST	NW	1.7901	66	1.902	64
24TH ST AND L ST	NW	1.2947	154	1.8958	65
14TH ST AND I ST	NW	1.7653	68	1.8594	66
33RD ST AND M ST	NW	1.9127	60	1.8588	67
EASTERN AVE AND MINNESOTA AVE	NE	2.5941	20	1.853	68
14TH ST AND FLORIDA AVE	NW	1.942	55	1.837	69

Table 7.12: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 70~100)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		RATE	RANK	RATE	RANK
34TH ST AND WISCONSIN AVE	NW	1.5462	103	1.8362	70
7TH ST AND I ST	NW	1.5811	96	1.7992	71
17TH ST AND U ST	NW	2.0352	46	1.7743	72
BURNS ST AND RIDGE RD	SE	1.6092	92	1.7702	73
14TH ST AND H ST	NE	1.1636	203	1.763	74
6TH ST AND F ST	NW	1.1003	231	1.7605	75
8TH ST AND I ST	SE	1.6157	89	1.7562	76
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	1.6209	87	1.7527	77
21ST ST AND MARYLAND AVE	NE	1.7514	70	1.7514	78
15TH ST AND U ST	NW	1.8166	63	1.7505	79
BRANCH AVE AND PENNSYLVANIA AVE	SE	2.0199	48	1.7405	80
4TH ST AND NEW YORK AVE	NW	1.6951	73	1.7375	81
WISCONSIN AVE AND CALVERT ST	NW	1.7655	67	1.7334	82
MONTANA AVE AND NEW YORK AVE	NE	1.8148	64	1.7111	83
PENNSYLVANIA AVE AND SOUTHERN AVE	SE	1.4237	125	1.7015	84
6TH ST AND NEW YORK AVE	NW	1.6726	79	1.6949	85
23RD ST AND P ST	NW	1.5064	108	1.6947	86
NEW YORK AVE AND NORTH CAPITOL ST	BN	1.6851	76	1.6933	87
EASTERN AVE AND RIGGS RD	NE	1.6339	85	1.6923	88
FLORIDA AVE AND NEW YORK AVE	NE	1.5782	98	1.6834	89
13TH ST AND F ST	NW	1.3151	147	1.656	90
9TH ST AND MASSACHUSETTS AVE	NW	1.6052	93	1.6538	91
13TH ST AND S ST	NW	1.271	161	1.6476	92
14TH ST AND MARYLAND AVE	NE	1.0744	240	1.6474	93
19TH ST AND L ST	NW	1.7367	71	1.6468	94
BENNING RD AND EAST CAPITOL ST	BN	1.9182	59	1.6466	95
25TH ST AND M ST	NW	1.6375	84	1.6375	96
5TH ST AND H ST	NW	1.6743	78	1.6362	97
6TH ST AND G ST	NW	1.4925	113	1.6346	98
DIVISION AVE AND SHERIFF RD	BN	2.2722	31	1.6167	99
MISSISSIPPI AVE AND SOUTHERN AVE	SE	1.343	141	1.6116	100

7.1.3 Rank by Crash Cost

Table 7.13: Intersection Rank by Crash Severity Cost for 3-Year Periods (Rank: 1~31)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		COST	RANK	COST	RANK
NEW YORK AVE AND NORTH CAPITOL ST	BN	2,804	1	2,629	1
NEW YORK AVE AND BLADENSBURG RD	NE	2,562	2	2,456	2
FIRTH STERLING AVE AND SUITLAND PKWY	SE	1,975	4	2,076	3
STANTON RD AND SUITLAND PKWY	SE	1,993	3	2,068	4
MINNESOTA AVE AND BENNING RD	NE	1,742	6	2,058	5
14TH ST AND U ST	NW	1,751	5	1,826	6
7TH ST AND FLORIDA AVE	NW	1,540	12	1,766	7
MONTANA AVE AND NEW YORK AVE	NE	1,716	7	1,742	8
WISCONSIN AVE AND M ST	NW	1,677	8	1,707	9
FLORIDA AVE AND NEW YORK AVE	NE	1,583	10	1,697	10
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	1,442	13	1,568	11
FAIRLAWN AVE AND PENNSYLVANIA AVE	SE	1,088	27	1,493	12
H ST AND NORTH CAPITOL ST	BN	1,426	15	1,427	13
KENILWORTH AVE AND BENNING RD	NE	1,602	9	1,299	14
2ND ST AND H ST	NW	1,029	30	1,224	15
NEW JERSEY AVE AND NEW YORK AVE	NW	1,434	14	1,209	16
BENNING RD AND EAST CAPITOL ST	BN	1,576	11	1,203	17
I ST AND S CAPITOL ST	BN	1,292	18	1,202	18
7TH ST AND H ST	NW	1,242	19	1,197	19
1ST ST AND NEW YORK AVE	NE	960	35	1,164	20
NORTH CAPITOL ST AND RIGGS RD	BN	1,101	26	1,158	21
NEW YORK AVE AND SOUTH DAKOTA AVE	NE	1,424	16	1,157	22
14TH ST AND K ST	NW	1,185	22	1,133	23
KENILWORTH AVE AND NANNIE HELEN BURROUGHS AVE	NE	1,227	20	1,115	24
1ST ST AND NEW YORK AVE	NW	1,118	24	1,089	25
BENNING RD AND BLADENSBURG RD	NE	960	35	1,061	26
MICHIGAN AVE AND NORTH CAPITOL ST	BN	992	33	1,058	27
KENILWORTH AVE AND EAST CAPITOL ST	BN	1,371	17	1,052	28
NEW HAMPSHIRE AVE AND NORTH CAPITOL ST	BN	1,046	29	1,040	29
14TH ST AND CONSTITUTION AVE	NW	1,085	28	1,031	30
14TH ST AND PENNSYLVANIA AVE	NW	608	111	1,029	31

Table 7.14: Intersection Rank by Crash Severity Cost for 3-Year Periods (Rank: 32~65)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		COST	RANK	COST	RANK
17TH ST AND BLADENSBURG RD	NE	1,154	23	1,025	32
13TH ST AND U ST	NW	980	34	1,002	33
9TH ST AND U ST	NW	630	106	977	34
4TH ST AND NEW YORK AVE	NE	917	42	969	35
M ST AND NORTH CAPITOL ST	BN	1,028	31	968	36
SOUTHERN AVE AND BENNING RD	SE	909	43	965	37
RHODE ISLAND AVE AND REED ST	NE	737	68	956	38
13TH ST AND SOUTHERN AVE	SE	1,214	21	951	39
BRANCH AVE AND PENNSYLVANIA AVE	SE	999	32	947	40
1ST ST AND UNION STATION PLAZA	NE	737	68	926	41
K ST AND NORTH CAPITOL ST	BN	923	41	915	42
4TH ST AND NEW YORK AVE	NW	894	44	902	43
SOUTH DAKOTA AVE AND BLADENSBURG RD	NE	840	49	893	44
6TH ST AND NEW YORK AVE	NW	825	53	893	44
14TH ST AND IRVING ST	NW	939	39	893	44
MARTIN LUTHER KING AVE AND HOWARD RD	SE	957	37	884	47
RHODE ISLAND AVE AND NORTH CAPITOL ST	BN	744	65	881	48
15TH ST AND K ST	NW	881	46	873	49
16TH ST AND K ST	NW	836	51	857	50
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	797	60	842	51
EASTERN AVE AND COLESVILLE RD	NW	744	65	827	52
9TH ST AND MASSACHUSETTS AVE	NW	798	59	821	53
FAIRVIEW AVE AND NEW YORK AVE	NE	650	97	813	54
16TH ST AND NEW HAMPSHIRE AVE	NW	699	78	813	54
18TH ST AND ADAMS MILL RD	NW	810	54	810	56
MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE	NE	804	56	804	57
ALABAMA AVE AND PENNSYLVANIA AVE	SE	696	82	794	58
33RD ST AND M ST	NW	854	47	792	59
14TH ST AND L ST	NW	687	86	791	60
SOUTHERN AVE AND WHEELER RD	SE	849	48	789	61
13TH ST AND K ST	NW	692	83	789	61
BENNING RD AND G ST	SE	926	40	786	63
PENNSYLVANIA AVE AND SOUTHERN AVE	SE	633	104	783	64
14TH ST AND P ST	NW	570	127	782	65

Table 7.15: Intersection Rank by Crash Severity Cost for 3-Year Periods (Rank: 66~100)

INTERSECTION NAME	Quad	2009-2011		2010-2012	
		COST	RANK	COST	RANK
31ST ST AND M ST	NW	941	38	780	66
ALABAMA AVE AND STANTON RD	SE	839	50	779	67
24TH ST AND PENNSYLVANIA AVE	NW	633	104	777	68
1ST ST AND MICHIGAN AVE	NW	564	131	773	69
GEORGIA AVE AND BARRY PL	NW	801	58	770	70
19TH ST AND INDEPENDENCE AVE	SE	780	61	765	71
FLORIDA AVE AND RHODE ISLAND AVE	NW	806	55	753	72
12TH ST AND INDEPENDENCE AVE	SW	670	92	752	73
DIVISION AVE AND SHERIFF RD	BN	891	45	736	74
16TH ST AND IRVING ST	NW	690	85	735	75
17TH ST AND BENNING RD	NE	774	62	714	76
NORTH CAPITOL ST AND P ST	BN	570	127	713	77
SOUTHERN AVE AND S CAPITOL ST	BN	570	127	708	78
MISSISSIPPI AVE AND S CAPITOL ST	BN	548	142	707	79
PENNSYLVANIA AVE AND ANACOSTIA FRWY	SE	1,104	25	707	79
M ST AND S CAPITOL ST	BN	804	56	707	79
14TH ST AND COLUMBIA RD	NW	660	94	705	82
1ST ST AND K ST	NE	489	180	693	83
MISSOURI AVE AND NEW HAMPSHIRE AVE	NW	638	101	692	84
14TH ST AND I ST	NW	638	101	690	85
15TH ST AND PENNSYLVANIA AVE	SE	590	116	687	86
GEORGIA AVE AND KENNEDY ST	NW	459	210	686	87
MONTANA AVE AND RHODE ISLAND AVE	NE	572	126	684	88
14TH ST AND PARK RD	NW	585	118	683	89
SOUTHERN AVE AND EAST CAPITOL ST	BN	660	94	668	90
SOUTH DAKOTA AVE AND MONROE ST	NE	581	120	665	91
16TH ST AND NEW YORK AVE	NE	731	71	662	92
FIRTH STERLING AVE AND S CAPITOL ST	BN	739	67	661	93
19TH ST AND M ST	NW	593	115	660	94
PENNSYLVANIA AVE AND BARNEY CIR	SE	530	153	657	95
NEBRASKA AVE AND WARD CIR	NW	422	247	656	96
ALTAMONT PL AND GOOD HOPE RD	SE	830	52	656	96
ALABAMA AVE AND BRANCH AVE	SE	564	131	654	98
21ST ST AND K ST	NW	698	80	654	98
MALCOLM X AVE AND S CAPITOL ST	BN	746	64	647	100

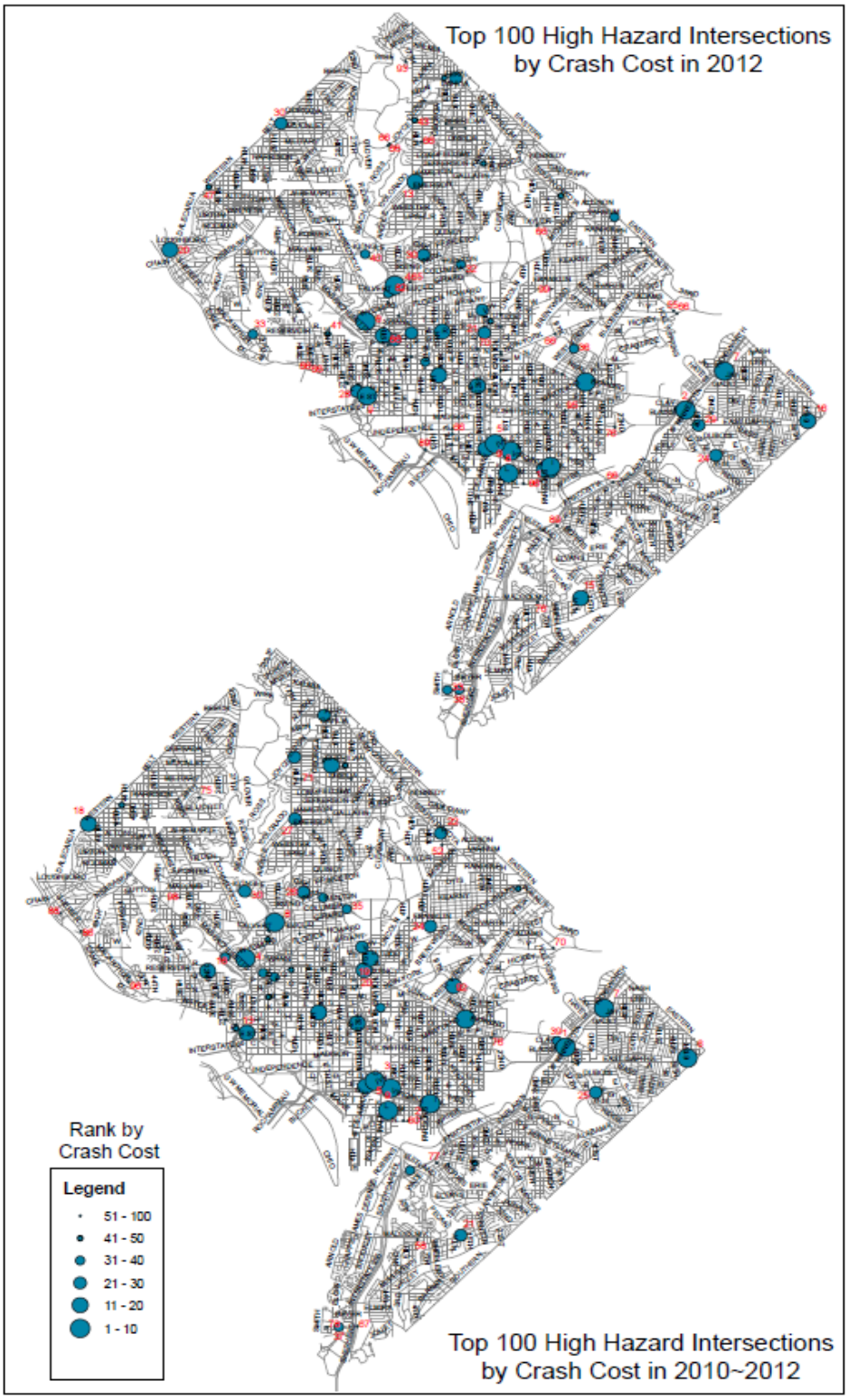

Figure 7.2: Top 100 Hazard Intersections by Crash Cost in 2010-2012

7.1.4 Rank by Crash Composite Index

Table 7.16: Intersection Rank by Crash Composite Index for 2010-2012 (Rank: 1~35)

INTERSECTION NAME	Quad	2010		2011		2012	
		COMP	RANK	COMP	RANK	COMP	RANK
WISCONSIN AVE AND M ST	NW	6	3	7.75	3	5	1
MINNESOTA AVE AND BENNING RD	NE	9.75	4	3.5	1	8	2
H ST AND NORTH CAPITOL ST	BN	23.5	10	30.25	13	8.5	3
14TH ST AND U ST	NW	5.25	1	3.5	1	10.75	4
7TH ST AND FLORIDA AVE	NW	15.75	8	8.25	4	11	5
NEW YORK AVE AND BLADENSBURG RD	NE	15.25	7	14.75	6	13.25	6
1ST ST AND UNION STATION PLAZA	NE	23.5	10	143.5	100	14.75	7
STANTON RD AND SUITLAND PKWY	SE	10.25	5	11	5	15.75	8
FIRTH STERLING AVE AND SUITLAND PKWY	SE	25	12	15.75	7	17.25	9
9TH ST AND U ST	NW	91.5	54	43.5	21	18.75	10
1ST ST AND MICHIGAN AVE	NW	90	53	141.5	96	25.25	11
FLORIDA AVE AND NEW YORK AVE	NE	38.75	24	30	12	27.5	12
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	46	27	27.75	11	30	13
14TH ST AND P ST	NW	129.3	80	66.5	41	33	14
7TH ST AND H ST	NW	5.5	2	69.75	45	34	15
14TH ST AND IRVING ST	NW	36.25	21	40.25	18	34.5	16
2ND ST AND H ST	NW	101.3	62	49.25	27	36.25	17
NEW YORK AVE AND NORTH CAPITOL ST	BN	27.25	13	21	8	38.75	18
18TH ST AND ADAMS MILL RD	NW	59.5	32	54.25	33	39.5	19
14TH ST AND F ST	NW	418	335	217	154	39.75	20
19TH ST AND INDEPENDENCE AVE	SE	67.75	37	54.75	34	39.75	20
SOUTHERN AVE AND S CAPITOL ST	BN	169.8	123	89.75	60	41.5	22
14TH ST AND PENNSYLVANIA AVE	NW	73	41	60.5	37	42.25	23
13TH ST AND U ST	NW	33.5	17	61.75	38	43.75	24
14TH ST AND K ST	NW	17.25	9	32.5	14	44.25	25
1ST ST AND K ST	NE	81.25	44	183.25	131	48	26
16TH ST AND NEW HAMPSHIRE AVE	NW	92.75	56	196.5	141	49	27
NORTH CAPITOL ST AND RIGGS RD	BN	62.75	36	119.25	86	50	28
15TH ST AND K ST	NW	200.8	147	73	49	50	28
SOUTHERN AVE AND BENNING RD	SE	41.75	25	83.5	54	51.25	30
MONTANA AVE AND NEW YORK AVE	NE	14.5	6	48	23	52	31
14TH ST AND COLUMBIA RD	NW	195.8	144	46.75	22	52.75	32
GEORGIA AVE AND BRYANT ST	NW	525.5	458	251.75	185	57.25	33
GEORGIA AVE AND BARRY PL	NW	215.5	157	52	31	61.5	34
24TH ST AND M ST	NW	548.8	483	106.75	74	62.25	35

Table 7.17: Intersection Rank by Crash Composite Index for 2010-2012 (Rank: 36~73)

INTERSECTION NAME	Quad	2010		2011		2012	
		COMP	RANK	COMP	RANK	COMP	RANK
GEORGIA AVE AND KENNEDY ST	NW	184.3	132	427.5	351	64.5	36
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	114.5	70	36	17	66.5	37
I ST AND S CAPITOL ST	BN	33.75	18	50.5	30	67.75	38
6TH ST AND NEW YORK AVE	NW	61.75	33	71	46	68.25	39
14TH ST AND L ST	NW	116	72	109.25	79	70.25	40
20TH ST AND IRVING ST	NE	284	207	353.75	271	71.25	41
BENNING RD AND G ST	SE	249.5	188	242.75	174	71.25	41
15TH ST AND MASSACHUSETTS AVE	NW	433.8	354	269	198	75	43
24TH ST AND PENNSYLVANIA AVE	NW	71.75	40	76	51	76	44
4TH ST AND NEW YORK AVE	NW	54.25	29	49	24	79.75	45
BENNING RD AND EAST CAPITOL ST	BN	27.75	14	49	24	80.75	46
11TH ST AND H ST	NW	85	47	297.25	220	81.25	47
1ST ST AND NEW YORK AVE	NW	86.5	51	49	24	82	48
13TH ST AND K ST	NW	47.25	28	87	57	82.75	49
MARTIN LUTHER KING AVE AND HOWARD RD	SE	141.3	92	42.25	19	84.25	50
14TH ST AND H ST	NE	168.3	122	216.25	153	84.75	51
19TH ST AND M ST	NW	105.5	64	88.5	58	88.75	52
7TH ST AND K ST	NW	730.5	699	231.75	166	88.75	52
4TH ST AND NEW YORK AVE	NE	249	186	33.75	16	88.75	52
16TH ST AND V ST	NW	506	436	194.75	139	89	55
CONNECTICUT AVE AND M ST	NW	249	186	206.5	149	90.25	56
13TH ST AND MASSACHUSETTS AVE	NW	228.5	169	306.25	230	91	57
WISCONSIN AVE AND Q ST	NW	420.3	337	300.75	226	92	58
16TH ST AND FLORIDA AVE	NW	206	151	299.75	225	92.25	59
SOUTHERN AVE AND WHEELER RD	SE	35.25	20	120.5	88	92.75	60
3RD ST AND D ST	NW	113.8	69	228	164	95.25	61
14TH ST AND I ST	NW	85.75	49	67.25	42	95.5	62
6TH ST AND H ST	NW	103	63	95.75	65	95.75	63
16TH ST AND K ST	NW	54.25	29	72.75	48	96.25	64
14TH ST AND CONSTITUTION AVE	NW	143.3	95	95.75	65	98.75	65
ALABAMA AVE AND GOOD HOPE RD	SE	92.75	56	234	167	99.25	66
14TH ST AND V ST	NW	690.3	655	276.5	203	99.5	67
GEORGIA AVE AND UPSHUR ST	NW	690	654	335.75	253	101.3	68
SOUTH DAKOTA AVE AND BLADENSBURG RD	NE	156.8	110	33.5	15	103.3	69
K ST AND NORTH CAPITOL ST	BN	113.3	67	25.5	10	104.3	70
17TH ST AND PENNSYLVANIA AVE	NW	292	217	176.25	128	107.3	71
9TH ST AND F ST	NW	206.3	152	370	289	107.5	72
HAREWOOD RD AND TAYLOR ST	NE	1,158	1,320	1,030.3	1,115	107.8	73

Table 7.18: Intersection Rank by Crash Composite Index for 2010-2012 (Rank: 74~100)

INTERSECTION NAME	Quad	2010		2011		2012	
		COMP	RANK	COMP	RANK	COMP	RANK
BRANCH AVE AND PENNSYLVANIA AVE	SE	32.75	16	62.25	39	110.3	74
SOUTHERN AVE AND EAST CAPITOL ST	BN	123	78	174	125	111.5	75
15TH ST AND CONSTITUTION AVE	NW	304.8	226	498	422	113.3	76
FIRTH STERLING AVE AND HOWARD RD	SE	96.5	61	146.25	101	113.5	77
ALABAMA AVE AND PENNSYLVANIA AVE	SE	142	93	139.75	95	115	78
GEORGIA AVE AND PARK RD	NW	215.8	158	108	76	118	79
14TH ST AND MONROE ST	NW	805.8	811	95.25	63	122	80
M ST AND NORTH CAPITOL ST	BN	152.3	106	49.25	27	122.3	81
5TH ST AND H ST	NW	286.3	210	107	75	123.8	82
9TH ST AND NEW YORK AVE	NW	288.8	213	133.5	91	123.8	82
9TH ST AND MASSACHUSETTS AVE	NW	38	23	111.75	81	124	84
NORTH CAPITOL ST AND R ST	BN	791	786	506.75	431	125.8	85
GEORGIA AVE AND IRVING ST	NW	330.8	248	120.5	88	126.8	86
MISSISSIPPI AVE AND S CAPITOL ST	BN	252.8	191	149.75	104	128.8	87
NORTH CAPITOL ST AND P ST	BN	140.3	91	200.75	143	128.8	87
PENNSYLVANIA AVE AND SOUTHERN AVE	SE	186.3	135	49.75	29	129	89
14TH ST AND PARK RD	NW	122.5	77	99.5	68	130.8	90
MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE	NE	29.25	15	119.75	87	131	91
ALABAMA AVE AND STANTON RD	SE	331.8	250	23.75	9	132	92
5TH ST AND NEW YORK AVE	NW	828.3	836	427	350	132	92
19TH ST AND BENNING RD	NE	680	640	1029.5	1114	134	94
NEW HAMPSHIRE AVE AND NORTH CAPITOL ST	BN	85.25	48	75.75	50	139.5	95
NEW JERSEY AVE AND NEW YORK AVE	NW	45.75	26	96.25	67	141	96
2ND ST AND MASSACHUSETTS AVE	NW	644.3	574	281.25	207	143	97
9TH ST AND CONSTITUTION AVE	NW	345.8	263	281	206	143.3	98
15TH ST AND H ST	NW	218	164	243.25	177	144.8	99
23RD ST AND P ST	NW	204.3	149	349	263	145	100

Table 7.19: Intersection Rank by Crash Composite Index for 3-Year Periods (Rank: 1~36)

INTERSECTION NAME	Quad	2009-2011		20010-2012	
		COMP	RANK	COMP	RANK
14TH ST AND U ST	NW	3.75	1	4.25	1
MINNESOTA AVE AND BENNING RD	NE	8.25	3	5.5	2
WISCONSIN AVE AND M ST	NW	5.25	2	5.75	3
7TH ST AND FLORIDA AVE	NW	12	6	8.5	4
STANTON RD AND SUITLAND PKWY	SE	10.5	5	9.5	5
NEW YORK AVE AND BLADENSBURG RD	NE	9.25	4	11.25	6
H ST AND NORTH CAPITOL ST	BN	22.75	12	14	7
7TH ST AND H ST	NW	13.25	7	14.25	8
FIRTH STERLING AVE AND SUITLAND PKWY	SE	20.25	10	16.5	9
NEW YORK AVE AND NORTH CAPITOL ST	BN	20	9	22.75	10
14TH ST AND K ST	NW	18.75	8	23.75	11
MINNESOTA AVE AND PENNSYLVANIA AVE	SE	30.75	15	26.75	12
MONTANA AVE AND NEW YORK AVE	NE	21	11	27	13
1ST ST AND UNION STATION PLAZA	NE	49.5	29	28.25	14
FLORIDA AVE AND NEW YORK AVE	NE	30.75	15	28.5	15
14TH ST AND IRVING ST	NW	27	14	29.25	16
9TH ST AND U ST	NW	89.25	57	33.5	17
13TH ST AND U ST	NW	34.5	18	34	18
BENNING RD AND EAST CAPITOL ST	BN	23.5	13	37.75	19
18TH ST AND ADAMS MILL RD	NW	36	19	39	20
I ST AND S CAPITOL ST	BN	36	19	40	21
SOUTHERN AVE AND BENNING RD	SE	42.25	23	45	22
19TH ST AND INDEPENDENCE AVE	SE	41.75	22	46.5	23
2ND ST AND H ST	NW	67.75	45	46.5	23
14TH ST AND PENNSYLVANIA AVE	NW	141.8	97	48.25	25
BRANCH AVE AND PENNSYLVANIA AVE	SE	33.75	17	49.75	26
WEST VIRGINIA AVE AND MOUNT OLIVET RD	NE	60.25	38	51.25	27
4TH ST AND NEW YORK AVE	NW	50.25	30	51.25	27
17TH ST AND BLADENSBURG RD	NE	42.75	24	52	29
K ST AND NORTH CAPITOL ST	BN	47.75	28	53.25	30
14TH ST AND P ST	NW	96.75	67	53.75	31
6TH ST AND NEW YORK AVE	NW	57.75	34	55	32
13TH ST AND K ST	NW	77.25	51	57.25	33
SOUTHERN AVE AND WHEELER RD	SE	41.5	21	57.75	34
1ST ST AND NEW YORK AVE	NW	58.5	36	59	35
33RD ST AND M ST	NW	50.75	31	59.75	36

Table 7.20: Intersection Rank by Crash Composite Index for 3-Year Periods (Rank: 37~74)

INTERSECTION NAME	Quad	2009-2011		20010-2012	
		COMP	RANK	COMP	RANK
MARTIN LUTHER KING AVE AND HOWARD RD	SE	44.25	25	60.75	37
1ST ST AND MICHIGAN AVE	NW	121	86	60.75	37
14TH ST AND COLUMBIA RD	NW	66	42	61	39
16TH ST AND K ST	NW	65	41	61	39
MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE	NE	54	32	61.5	41
NORTH CAPITOL ST AND RIGGS RD	BN	78.5	52	62.5	42
SOUTHERN AVE AND S CAPITOL ST	BN	90.75	59	62.5	42
9TH ST AND MASSACHUSETTS AVE	NW	66.75	43	63.5	44
24TH ST AND PENNSYLVANIA AVE	NW	91	60	65	45
SOUTH DAKOTA AVE AND BLADENSBURG RD	NE	67.75	45	65.5	46
14TH ST AND I ST	NW	79	53	69.25	47
4TH ST AND NEW YORK AVE	NE	81.25	54	71.25	48
1ST ST AND K ST	NE	157.5	114	71.75	49
15TH ST AND K ST	NW	61.5	40	72.25	50
GEORGIA AVE AND BARRY PL	NW	61	39	72.25	50
ALABAMA AVE AND STANTON RD	SE	59.5	37	75.25	52
17TH ST AND I ST	NW	47.5	26	76.25	53
14TH ST AND L ST	NW	109.3	75	76.5	54
NEW JERSEY AVE AND NEW YORK AVE	NW	47.5	26	77.25	55
19TH ST AND M ST	NW	89.25	57	77.25	55
16TH ST AND NEW HAMPSHIRE AVE	NW	101.3	70	78.25	57
EASTERN AVE AND COLESVILLE RD	NW	99.75	69	82.75	58
PENNSYLVANIA AVE AND SOUTHERN AVE	SE	127.3	91	83.75	59
M ST AND NORTH CAPITOL ST	BN	72.25	48	85	60
6TH ST AND H ST	NW	112.3	77	87	61
NEW HAMPSHIRE AVE AND NORTH CAPITOL ST	BN	75	49	87.5	62
16TH ST AND IRVING ST	NW	86.5	55	95.75	63
14TH ST AND RHODE ISLAND AVE	NW	67	44	96.75	64
14TH ST AND PARK RD	NW	112.8	80	98	65
14TH ST AND H ST	NW	123.8	89	99.25	66
14TH ST AND CONSTITUTION AVE	NW	94	64	101.3	67
FIRTH STERLING AVE AND HOWARD RD	SE	99.25	68	103	68
ALABAMA AVE AND GOOD HOPE RD	SE	93.5	63	104.5	69
21ST ST AND K ST	NW	76	50	106.8	70
MISSOURI AVE AND NEW HAMPSHIRE AVE	NW	122	87	109	71
11TH ST AND H ST	NW	156.5	111	109.8	72
MICHIGAN AVE AND NORTH CAPITOL ST	BN	68.75	47	111.3	73
19TH ST AND L ST	NW	112.8	80	111.5	74

Table 7.21: Intersection Rank by Crash Composite Index for 3-Year Periods (Rank: 75~100)

INTERSECTION NAME	Quad	2009-2011		20010-2012	
		COMP	RANK	COMP	RANK
MONTANA AVE AND RHODE ISLAND AVE	NE	155.8	109	113.8	75
SOUTHERN AVE AND EAST CAPITOL ST	BN	101.8	71	114.8	76
14TH ST AND F ST	NW	165.3	121	115.3	77
4TH ST AND RHODE ISLAND AVE	NE	118.3	83	115.5	78
ALABAMA AVE AND PENNSYLVANIA AVE	SE	178.5	129	116	79
14TH ST AND H ST	NE	242.3	186	117	80
GEORGIA AVE AND PARK RD	NW	58.25	35	117	80
6TH ST AND MASSACHUSETTS AVE	NW	204.3	155	118.3	82
BENNING RD AND G ST	SE	93.25	62	119.5	83
3RD ST AND D ST	NW	151.8	105	120.5	84
BRENTWOOD RD AND W ST	NE	92.25	61	120.8	85
GEORGIA AVE AND NEW HAMPSHIRE AVE	NW	108.5	74	120.8	85
GEORGIA AVE AND KENNEDY ST	NW	190.8	139	121.5	87
DIVISION AVE AND SHERIFF RD	BN	54.75	33	122.3	88
GEORGIA AVE AND MISSOURI AVE	NW	86.5	55	123.3	89
24TH ST AND M ST	NW	188.3	137	123.8	90
7TH ST AND G ST	NW	118.3	83	124	91
18TH ST AND KALORAMA RD	NW	187.5	136	126	92
5TH ST AND H ST	NW	148.8	104	128.5	93
CONNECTICUT AVE AND R ST	NW	102.8	72	132.8	94
15TH ST AND U ST	NW	112.3	77	138	95
NORTH CAPITOL ST AND P ST	BN	208.5	159	139.8	96
19TH ST AND K ST	NW	144.8	100	140.5	97
GEORGIA AVE AND IRVING ST	NW	147	102	141	98
9TH ST AND NEW YORK AVE	NW	210	161	144.3	99
MISSISSIPPI AVE AND S CAPITOL ST	BN	196.3	144	144.5	100

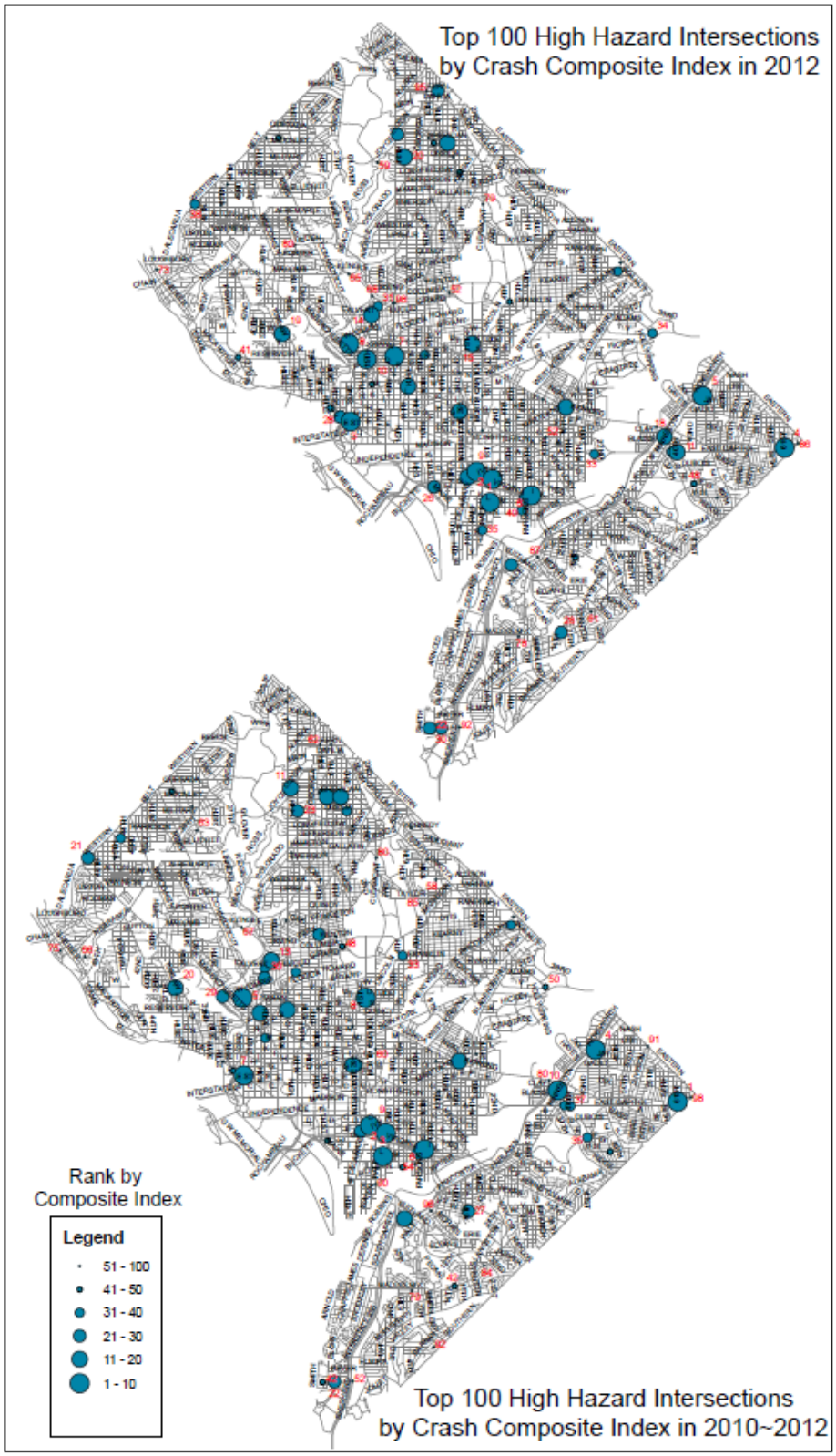

Figure 7.3: Top 100 Hazard Intersections by Crash Composite Index in 2010-2012

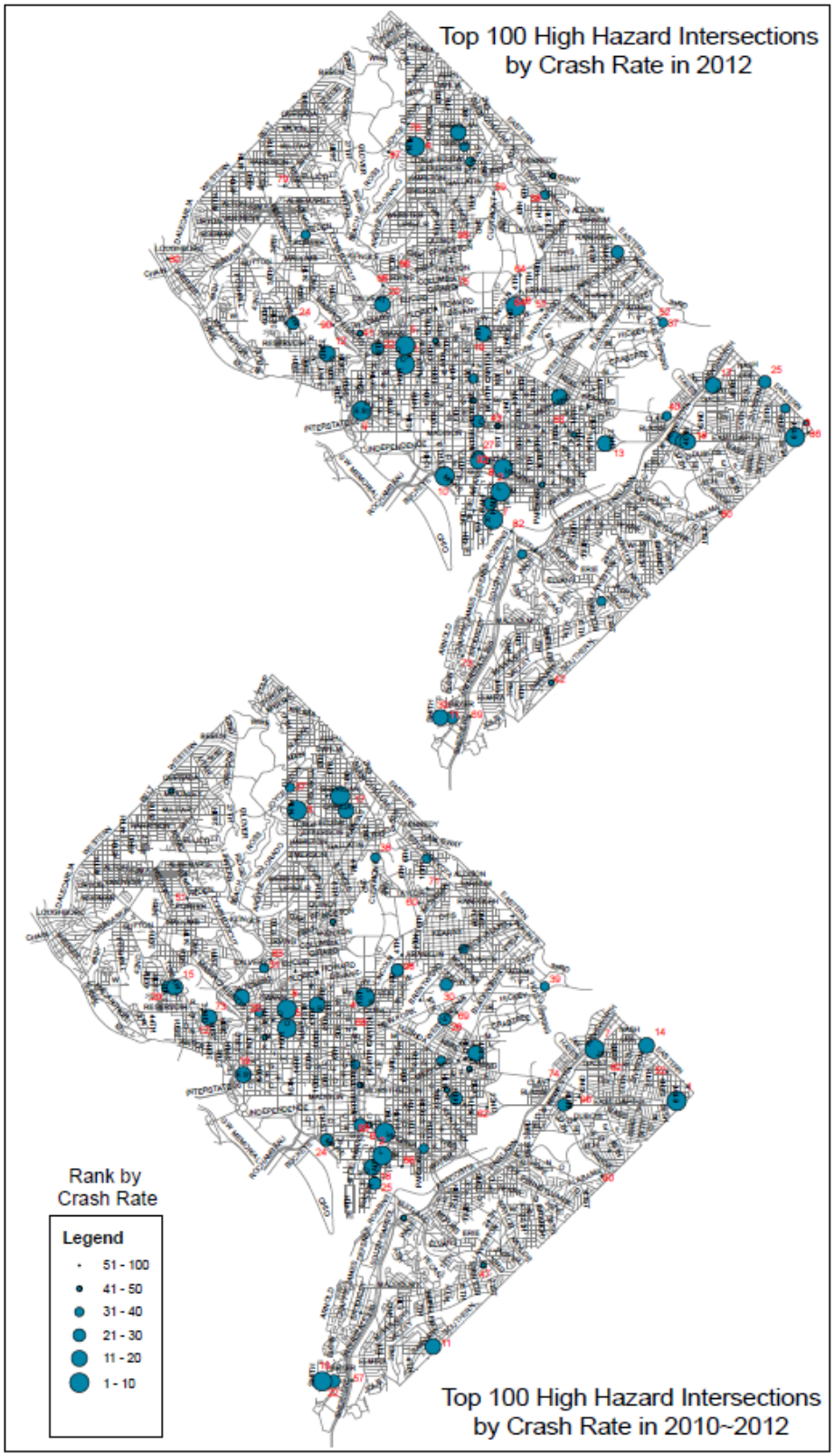

Figure 7.4: Top 100 Hazard Intersections by Crash Rate Index in 2010-2012

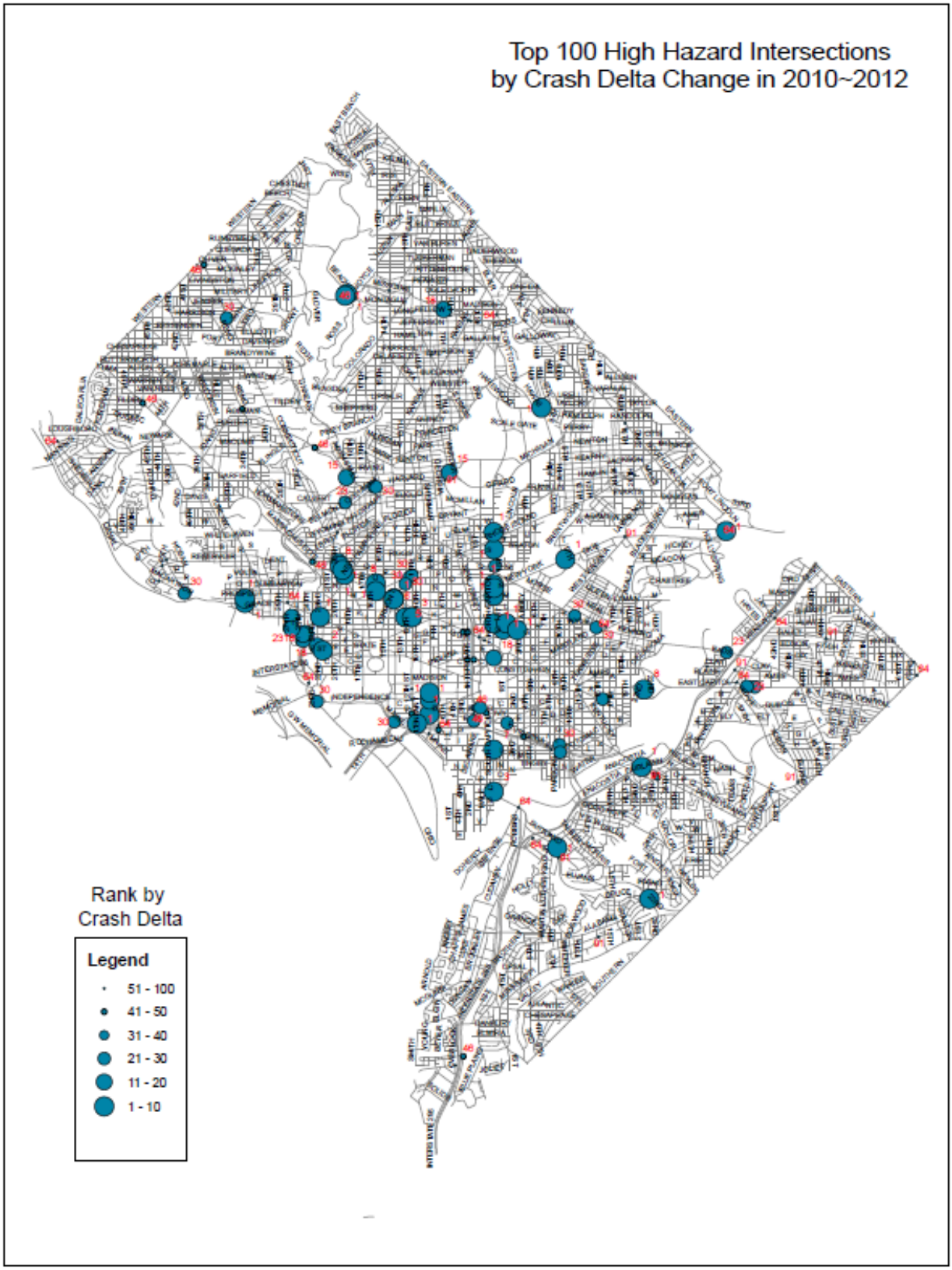

Figure 7.5: Top 100 Hazard Intersections by Crash Rate Index in 2010-2012

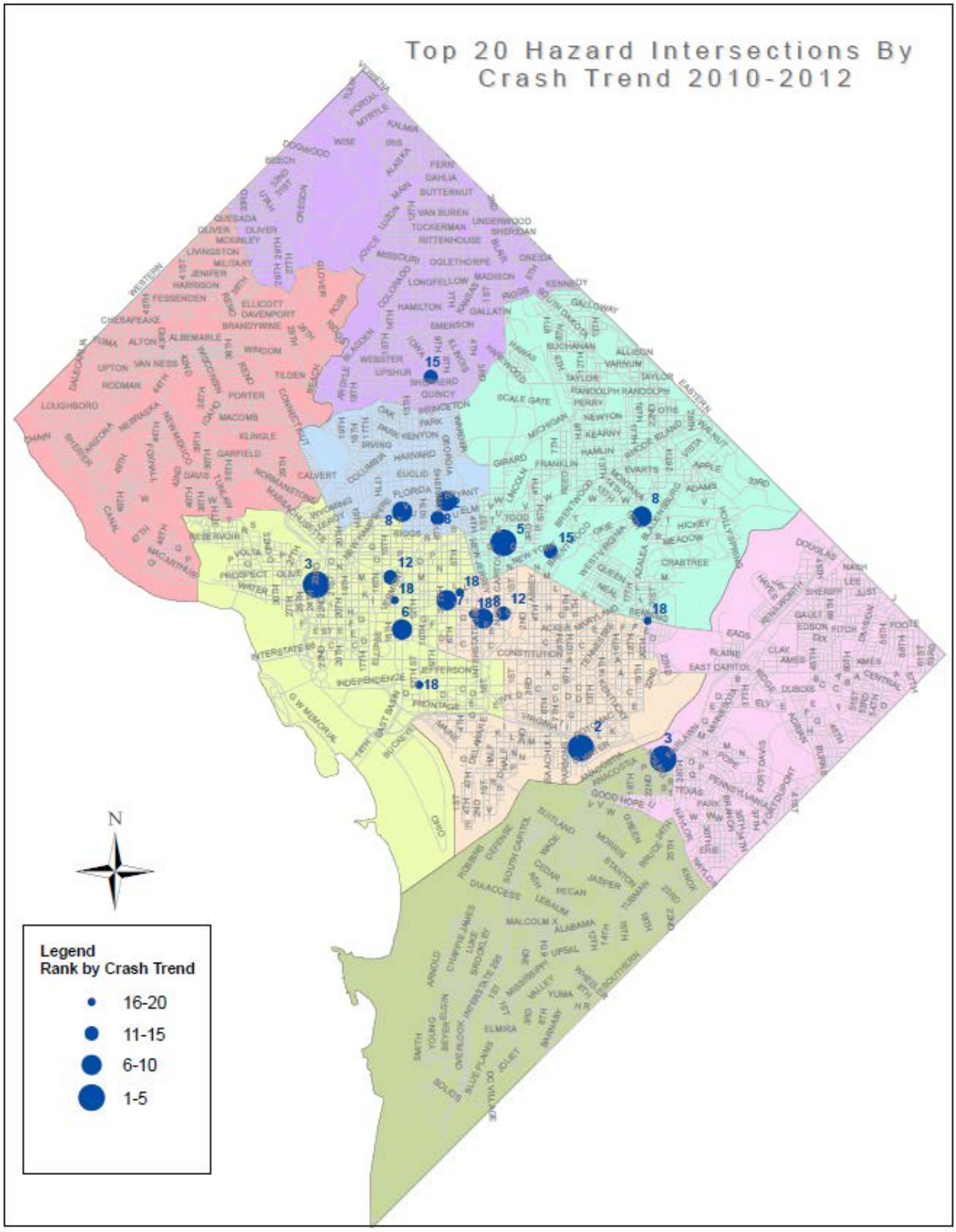

Figure 7.6: Top 20 Hazard Intersections by Crash Trend through 2010-2012

7.2 PD-10 Forms