



***DRAFT REPORT***

**Traffic Safety Statistics Report for the  
District of Columbia  
(2013-2015)**

***Submitted to:***

**District Department of Transportation**  
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| <b>9. Supplementary Notes</b>   |   |   |                         |
| <b>10. Abstract</b><br><br>This report is a compilation crash statistics and analyses for roadways in the District of Columbia during the period 2013 through 2015. 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. |   |   |                         |
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# TABLE OF CONTENTS

|  |           |
|--|-----------|
| <b>CHAPTER 1 – INTRODUCTION</b> .....                          | <b>1</b>  |
| 1.1 Objective.....   | 1         |
| 1.2 Report Organization.....                                   | 1         |
| <b>CHAPTER 2 – CRASH ANALYSIS METHODOLOGY</b> .....            | <b>3</b>  |
| 2.1 Traffic Crash Statistics.....                              | 3         |
| 2.2 High-Hazardous Location Analysis.....                      | 3         |
| 2.2.1 Crash Frequency Method.....                              | 4         |
| 2.2.2 Crash Rate Method.....                                   | 4         |
| 2.2.3 Crash Severity Cost Method.....                          | 5         |
| 2.2.4 Composite Crash Index.....                               | 5         |
| 2.2.5 Delta Change.....  | 6         |
| <b>CHAPTER 3 – SUMMARY OF CRASH TRENDS AND FACTS</b> .....     | <b>7</b>  |
| 3.1 2015 DC Crash Statistics Quick Facts.....                  | 7         |
| 3.2 DC Crashes Trend for 2006 through 2015.....                | 8         |
| <b>CHAPTER 4 – CRASH STATISTICS AND TRENDS</b> .....           | <b>12</b> |
| 4.1 Temporal.....  | 12        |
| 4.1.1 Traffic Crashes and Injuries by Hour of the Day.....     | 12        |
| 4.1.2 Traffic Crashes by Day of the Week.....                  | 15        |
| 4.1.3 Traffic Crashes by Month.....                            | 16        |
| 4.2 Location.....  | 17        |
| 4.2.1 Crashes by Quadrant.....                                 | 17        |
| 4.2.2 Crashes by Ward.....                                     | 19        |
| 4.2.3 Crashes by Police Districts.....                         | 20        |
| 4.2.4 Crashes by Advisory Neighborhood Commissions (ANCs)..... | 22        |
| 4.2.5 Crashes by On-Street Location.....                       | 25        |
| 4.2.6 Crashes by Construction Zone.....                        | 26        |
| 4.3 Crash Classification.....                                  | 26        |
| 4.3.1 Crash Severity Type.....                                 | 26        |
| 4.3.2 Hit-and-Run Crashes.....                                 | 27        |
| 4.3.3 Crashes by Vehicle Classification.....                   | 28        |
| 4.3.5 Crashes involving Pedestrians.....                       | 30        |
| 4.3.6 Crashes involving Bicyclists.....                        | 34        |
| 4.3.6 Crashes involving Motorcycles.....                       | 37        |
| 4.4 Drivers.....   | 41        |

|       |  |           |
|-------|--|-----------|
| 4.4.1 | <i>Drivers by Age</i> .....  | 41        |
| 4.4.2 | <i>Drivers by Gender</i> .....   | 42        |
| 4.4.3 | <i>Drivers by State Issued Driver's License</i> .....                          | 43        |
| 4.4.4 | <i>Crashes by Drivers Action</i> .....   | 44        |
| 4.5   | <b>Environmental Conditions</b> .....  | 45        |
| 4.5.1 | <i>Crashes by Roadway Conditions</i> .....                                     | 45        |
| 4.5.2 | <i>Crashes by Weather Conditions</i> .....                                     | 46        |
| 4.5.3 | <i>Crashes by Lighting Conditions</i> .....                                    | 47        |
| 4.5.4 | <i>Crashes by Traffic Conditions</i> .....                                     | 49        |
| 4.5.5 | <i>Crashes by Traffic Control Type</i> .....                                   | 50        |
| 4.5.7 | <i>Crashes by Roadway Functional Classification</i> .....                      | 51        |
| 4.6   | <b>Contributing Factors</b> .....  | 54        |
| 4.6.1 | <i>Crashes by Primary Crash Contributing Factors</i> .....                     | 54        |
| 4.6.2 | <i>Speed-Related Crashes</i> .....   | 54        |
| 4.6.3 | <i>Alcohol/Drug Related Crashes</i> .....                                      | 57        |
| 4.6.4 | <i>Crashes by Restraint Use (Seatbelts or Airbags)</i> .....                   | 59        |
| 4.6.6 | <i>Crashes by Driver or Pedestrian Distractions</i> .....                      | 61        |
|       | <br>   |           |
|       | <b>CHAPTER 5 – HIGH CRASH LOCATIONS</b> .....                                  | <b>63</b> |
| 5.1   | <b>Identification of High Hazardous Intersections</b> .....                    | 63        |
| 5.1.1 | <i>Ranking of High Hazardous Intersections (2013-2015)</i> .....               | 63        |
| 5.2   | <b>High Frequency Crash Intersection by Type</b> .....                         | 77        |
| 5.3   | <b>Identification of High Frequency Crash Corridors</b> .....                  | 78        |
| 5.3.1 | <i>Summary of Crashes on Corridors</i> .....                                   | 78        |
| 5.3.2 | <i>High Frequency Crash Corridors by Average Number of Crashes per Mile</i> 80 |           |
| 5.3.3 | <i>Number of Crashes per Intersecting on Corridors</i> .....                   | 80        |
|       | <br>   |           |
|       | <b>CHAPTER 6: EXPOSURE</b> .....   | <b>84</b> |
| 6.1   | <b>Fatality Rate per 100 Million Vehicle Miles Traveled (VMT)</b> .....        | 84        |
| 6.2   | <b>Injury Rate per 100 Million Vehicle Miles Traveled (VMT)</b> .....          | 85        |
|       | <br>   |           |
|       | <b>CHAPTER 7: APPENDICES</b> .....   | <b>88</b> |
| 7.1   | <b>Top 100 Hazardous Intersections</b> .....                                   | 88        |
| 7.1.1 | <i>Rank by Crash Frequency</i> .....   | 88        |
| 7.1.2 | <i>Rank by Crash Rate</i> .....  | 95        |

|   |     |
|---|-----|
| 7.1.3 Rank by Crash Cost.....             | 101 |
| 7.1.4 Rank by Crash Composite Index ..... | 105 |
| 7.2 PD-10 Form .....                      | 115 |

## LIST OF TABLES

|   |    |
|---|----|
| Table 3.1: DC Crash Quick Facts for 2015.....   | 7  |
| Table 4.1: Crashes by Hour of the Day for 2015 .....                                      | 13 |
| Table 4.2: Crashes by Day of the week for 2015.....                                       | 15 |
| Table 4.3: Crashes by Month for 2015.....   | 16 |
| Table 4.4: Crashes by Quadrant for 2015.....  | 17 |
| Table 4.5: Crashes by Ward from 2013-2015.....  | 19 |
| Table 4.6: Crashes by Police District for 2013-2015.....                                  | 20 |
| Table 4.7: Crashes by ANCs in 2015 .....  | 22 |
| Table 4.7: Crashes by ANCs in 2015 (Cont'd).....  | 23 |
| Table 4.8: Crashes by On-Street Location for 2015.....                                    | 25 |
| Table 4.9: Crashes in Construction Zones for 2012-2015.....                               | 26 |
| Table 4.10: Crash Details in Construction Zones in 2015 .....                             | 26 |
| Table 4.12: Summary of Crash in 2015 by Vehicle Classification.....                       | 29 |
| Table 4.13: Pedestrian Involved Crashes by Injury Type in 2015 .....                      | 31 |
| Table 4.14: Bicycle Crashes by Injury Type in 2015*.....                                  | 35 |
| Table 4.15: Motorcyclists Crashes by Injury Type in 2015.....                             | 39 |
| Table 4.16: Number Crashes by Age and Year of Drivers for 2013-2015 .....                 | 41 |
| Table 4.17: Driver Involvement by State of Permit for 2013-2015 .....                     | 44 |
| Table 4.18: Driver Involvement by Driver Action and Year for 2013-2015 .....              | 45 |
| Table 4.19: Summary of Crashes by Roadway Conditions for 2013-2015 .....                  | 46 |
| Table 4.21: Summary of Crashes by Weather Condition for 2012-2014.....                    | 47 |
| Table 4.22: Summary of Crashes by Street Lighting for 2013-2015.....                      | 48 |
| Table 4.23 Summary of Crashes by Lighting Condition for 2013-2015.....                    | 49 |
| Table 4.24: Summary of Crashes by Traffic Condition in 2013-2015 .....                    | 50 |
| Table 4.25: Summary of Crashes by Traffic Control in 2013-2015.....                       | 51 |
| Table 4.26: Summary of Crashes by Roadway Functional Classification from.....             | 52 |
| 2013-2015.....  | 52 |
| Table 4.27: Number of Crashes by Contributing Factors in 2013-2015 .....                  | 55 |
| Table 4.28: Speed-Related Crashes by Age and Gender for 2015 .....                        | 56 |
| Table 4.29: Alcohol/Drug related Crashes by Day of Week in 2015.....                      | 57 |
| Table 4.30: Alcohol/Drug related Crashes by Hour in 2015.....                             | 58 |
| Table 4.31: Alcohol/Drug related Crashes by Gender and Age in 2015.....                   | 58 |
| Table 4.32: Frequency of Injures by Injury Code and Air Bag Restraint in 2015 .....       | 59 |
| Table 4.33: Number of Injures by Injury Code and Seat Belt Restraint in 2015.....         | 60 |
| Table 4.35: Crashes by Driver or Pedestrian Distraction in 2015 .....                     | 61 |
| Table 5.1: Top 20 Hazardous Intersections by Crash Frequency in 2013-2015.....            | 64 |
| Table 5.2: Top 20 Hazardous Intersections by Crash Frequency for 3-Year Periods.....      | 64 |
| Table 5.3: Top 20 Hazardous Intersections by Crash Rate in 2013-2015.....                 | 67 |
| Table 5.4: Top 20 Hazardous Intersections by Crash Rate for 3-Year Periods.....           | 68 |
| Table 5.5: Top 20 Hazardous Intersections by Crash Severity Cost for 2013-2015 .....      | 69 |
| Table 5.6: Top 20 Hazardous Intersections by Crash Severity Cost for 3-Year Periods ..... | 70 |
| Table 5.7: Top 20 Hazardous Intersections by Composite Index for 2013-2015.....           | 71 |
| Table 5.8: Top 20 Hazardous Intersections by Composite Index for 3-Year Periods.....      | 72 |

|   |     |
|---|-----|
| Table 5.9: Top 20 Hazardous Intersections by Crash Type in 2015 .....                                   | 77  |
| Table 5.10: High Frequency Crash Corridors for 2013-2015.....   | 78  |
| Table 5.11: Summary of High Frequency Crash Corridors for 2013-2015.....                                | 79  |
| Table 5.12: High Frequency Crash Corridors by Number of Crash Occurrences per Mile in<br>2013-2015..... | 80  |
| Table 5.13: Average Number of Crashes per Intersection on Corridors in 2013 - 2015 .....                | 81  |
| Table 6.1: Fatality Rate from 2007 through 2015 .....   | 84  |
| Table 6.2: Injury Rate from 2007 to 2015 .....  | 86  |
| Table 7.1: Intersection Rank by Crash Frequency for 2013- 2015 (Rank 1~35).....                         | 88  |
| Table 7.2: Intersection Rank by Crash Frequency for 2013-2015(Rank: 35~72).....                         | 89  |
| Table 7.3: Intersection Rank by Crash Frequency for 2013-2015 (Rank: 72~86).....                        | 90  |
| Table 7.4: Intersection Rank by Crash Frequency for 3-Year Periods.....                                 | 91  |
| (Rank: 1~37) .....  | 91  |
| Table 7.5: Intersection Rank by Crash Frequency for 3-Year Periods.....                                 | 92  |
| (Rank: 37~74).....  | 92  |
| Table 7.6: Intersection Rank by Crash Frequency for 3-Year Periods.....                                 | 93  |
| (Rank: 74~99).....  | 93  |
| .....   | 94  |
| Table 7.7: Intersection Rank by Crash Rate for 2013-2015 (Rank: 1~36).....                              | 95  |
| Table 7.8: Intersection Rank by Crash Rate for 2013-2015 (Rank: 37~73).....                             | 96  |
| Table 7.9: Intersection Rank by Crash Rate for 2013-2015 (Rank: 74~100).....                            | 97  |
| Table 7.10: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 1~37).....                        | 98  |
| Table 7.11: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 38~75).....                       | 99  |
| Table 7.12: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 76~100).....                      | 100 |
| Table 7.13: Intersection Rank by Crash Severity Cost for 3-Year Periods.....                            | 101 |
| (Rank: 1~35) .....  | 101 |
| Table 7.14: Intersection Rank by Crash Severity Cost for 3-Year Periods.....                            | 102 |
| (Rank: 36~71).....  | 102 |
| Table 7.15: Intersection Rank by Crash Severity Cost for 3-Year Periods.....                            | 103 |
| (Rank: 71~99).....  | 103 |
| Figure 7.2: Top 100 Hazardous Intersections by Crash Cost in 2013-2015 .....                            | 104 |
| Table 7.16: Intersection Rank by Crash Composite Index for 2013-2015.....                               | 105 |
| (Rank: 1~35) .....  | 105 |
| Table 7.17: Intersection Rank by Crash Composite Index for 2013-2015.....                               | 106 |
| (Rank: 36~71).....  | 106 |
| Table 7.18: Intersection Rank by Crash Composite Index for 2013-2015.....                               | 107 |
| (Rank: 72~100).....   | 107 |
| Table 7.19: Intersection Rank by Crash Composite Index for 3-Year Periods.....                          | 108 |
| (Rank: 1~37) .....  | 108 |
| Table 7.20: Intersection Rank by Crash Composite Index for 3-Year Periods.....                          | 109 |
| (Rank: 38~74).....  | 109 |
| Table 7.21: Intersection Rank by Crash Composite Index for 3-Year Periods.....                          | 110 |
| (Rank: 75~100).....   | 110 |

## LIST OF FIGURES

|  |    |
|--|----|
| Figure 3.1: Crash Severity Types for 2015 .....  | 8  |
| Figure 3.2: Traffic Crashes and Injury Crashes for 2006-2015 .....                             | 9  |
| Figure 3.3: Number of Fatalities for 2006-2015.....  | 9  |
| Figure 3.4: Number of Injured Persons for 2006-2015.....                                       | 10 |
| Figure 3.5: Number of Disabling Injuries for 2006-2015.....                                    | 10 |
| Figure 3.6: Number of Non-Disabling Injuries for 2006-2015 .....                               | 11 |
| Figure 4.1: Total Fatalities by Hour for 2015.....   | 13 |
| Figure 4.2: Crashes and Injuries by Hour of Day for Weekdays for 2015 .....                    | 14 |
| Figure 4.3: Crashes and Injuries by Hour of Day on Weekends for 2015.....                      | 14 |
| Figure 4.4: Crashes and Injuries by Day of Week for 2015. ....                                 | 15 |
| Figure 4.5: Total Crashes by Month for 2013-2015.....  | 16 |
| Figure 4.6: Total Crashes by Quadrant for 2013-2015.....                                       | 17 |
| Figure 4.7: Crashes, Fatalities, Injuries by Wards for 2015 .....                              | 18 |
| Figure 4.8: Total Crashes by Ward for 2013-2015.....   | 19 |
| Figure 4.9: Total Crashes by Police District for 2013-2015 .....                               | 20 |
| Figure 4.10: Crashes, Fatalities, Injuries by Police District for 2015.....                    | 21 |
| Figure 4.11: Crashes, Fatalities, Injuries by Advisory Neighborhood Commissions for 2015 ..... | 24 |
| Figure 4.12: Crashes by On-Street Location for 2015.....                                       | 25 |
| Figure 4.13: Crashes Severity Type in 2015 .....   | 27 |
| Figure 4.15: Hit and Run Crashes in 2015 .....   | 28 |
| Figure 4.16: Severity of Hit and Run Crashes in 2015 .....                                     | 28 |
| Figure 4.17: Three-year Trend of Crashes by Vehicle Type.....                                  | 29 |
| Figure 4.18: Three-year Trend of Fatalities by Vehicle Type .....                              | 30 |
| Figure 4.19: Three-year Trend of Injuries by Vehicle Type .....                                | 30 |
| Figure 4.20: Three-year Trend of Crashes involving Pedestrians.....                            | 31 |
| Figure 4.21: Three-year Trend of Crashes involving Pedestrians by Age .....                    | 32 |
| Figure 4.22: Three-year Trend of Crashes involving Pedestrians by Gender.....                  | 32 |
| Figure 4.23: Pedestrian Involved Crashes at Intersections in 2015 .....                        | 33 |
| Figure 4.24: Three-year Trend of Crashes involving Bicyclists.....                             | 34 |
| Figure 4.25: Three-year Trend of Crashes involving Bicyclists by Age .....                     | 34 |
| Figure 4.26: Three-year Trend of Crashes involving Bicyclists by Gender.....                   | 35 |
| Figure 4.27: Crashes Involving Bicycles at Intersections in 2015.....                          | 36 |
| Figure 4.28: Three-year Trend of Crashes involving Motorcyclists.....                          | 37 |
| Figure 4.29: Three-year Trend of Crashes involving Motorcyclists by Age .....                  | 38 |
| Figure 4.30: Three-year Trend of Crashes involving Motorcyclists by Gender.....                | 38 |
| Figure 4.31: Motorcycle Involved Crashes at Intersections in 2015.....                         | 40 |
| Figure 4.34: Crashes Drivers by Age for 2013-2015 .....  | 42 |
| Figure 4.35: Injury Type Drivers by Age for 2015.....  | 42 |
| Figure 4.36: Crashes by Gender of Drivers for 2013-2015.....                                   | 43 |
| Figure 4.37: Drivers Involved in Crashes by State Issued License for 2013-2015 .....           | 44 |
| Figure 4.38: Number of Crashes and Injuries by Road Condition.....                             | 46 |
| Figure 4.40: Number of Crashes and Injuries by Weather in 2015.....                            | 47 |
| Figure 4.41: Number of Crashes and Injuries by Street Lighting .....                           | 48 |

|  |     |
|--|-----|
| Figure 4.42: Number of Crashes and Injuries by Lighting Condition in 2015.....                       | 49  |
| Figure 4.43: Number of Crashes and Injuries by Traffic Conditions in 2015 .....                      | 50  |
| Figure 4.44: Number of Crashes and Injuries by Traffic Control.....                                  | 51  |
| Figure 4.45: Crashes and Injuries by Functional Classification.....                                  | 52  |
| Figure 4.46: Number of Speed-Related Crashes by Roadway Functional Classification.....               | 53  |
| Figure 4.47: Number of Speed-Related Injuries by Roadway Functional Classification.....              | 53  |
| Figure 4.48: Number of Crashes and Injuries per lane-mile by Functional Classification in 2015 ..... | 54  |
| Figure 4.49: Speed-Related Crashes in 2015.....  | 56  |
| Figure 4.50: Speed-Related Crashes by Age and Gender.....  | 57  |
| Figure 4.51: Alcohol/Drug-Related Crashes by Age and Gender.....                                     | 59  |
| Figure 4.52: Crash Severity by Air Bag Restraint in 2015.....  | 60  |
| Figure 4.53: Crash Severity by Seatbelt Restraint in 2015 .....                                      | 61  |
| Figure 4.55: Crash Severity by Driver/Pedestrian Distraction in 2015.....                            | 62  |
| Figure 5.1: Top 20 Hazardous Intersections by Crash Rate in 2013-2015.....                           | 65  |
| Figure 5.2: Top 20 Hazardous Intersections by Crash Rate in 2015 .....                               | 66  |
| Figure 5.3: Top 20 Hazardous Intersections by Crash Cost in 2013-2015 .....                          | 73  |
| Figure 5.4: Top 20 Hazardous Intersections by Crash Cost in 2015.....                                | 74  |
| Figure 5.5: Top 20 Hazardous Intersections by Crash Composite Index 2013-2015.....                   | 75  |
| Figure 5.6: Top 20 Hazardous Intersections by Crash Composite Index for 2015 .....                   | 76  |
| Figure 5.7: High Frequency Crash Corridors for 2013-2015.....  | 79  |
| Figure 5.8: Top 20 Hazardous Intersections by Crash Frequency Index in 2013-2015.....                | 82  |
| Figure 5.9: Top 20 Hazardous Intersections by Crash Frequency in 2015.....                           | 83  |
| Figure 6.1: Fatality Rate per 100 Million VMT from 2007 through 2015.....                            | 85  |
| Figure 6.2: Injury Rate per 100 Million VMT from 2007 through 2015.....                              | 87  |
| Figure 7.1: Top 100 Hazardous Intersections by Crash Number in 2013-2015.....                        | 94  |
| Figure 7.2: Top 100 Hazardous Intersections by Crash Cost in 2013-2015 .....                         | 94  |
| Figure 7.3: Top 100 Hazard Intersections by Crash Composite Index in 2013-2015 .....                 | 111 |
| Figure 7.4: Top 100 Hazardous Intersections by Crash Rate Index in 2013-2015.....                    | 112 |
| Figure 7.5: Top 100 Hazardous Intersections by Crash Rate Index in 2013-2015.....                    | 113 |
| Figure 7.6: Top 20 Hazardous Intersections by Crash Trend through 2013-2015 .....                    | 114 |

## **CHAPTER 1 – INTRODUCTION**

### **1.1 Objective**

This report provides traffic crash statistics for the District of Columbia for the years from 2013 through 2015. The information presented in this report will help the City to meet federal requirements on reporting traffic crashes, and provide a resource for identifying safety trends, development of countermeasures, and evaluating the results of highway safety programs, projects, and policies. The District of Columbia Metropolitan Police Department (MPD) records traffic crash information electronically on the PD-10 crash reporting form, which is the main source of the information presented in this report. The crash data was downloaded through secure servers from MPD into DDOT's database and was processed via an Oracle-based application called Traffic Accident Reporting and Analysis System (TARAS).

TARAS contains data fields that include crash location, date, time, crash type, crash severity, and environmental conditions. This report presents a summary of all reported crash in TARAS 2013, 2014 and 2015 (up to August 23, 2015). The report also presents statistics on various contributing factors and consequences of all types of vehicle crashes. The results of the can be used to identify safety problems, develop performance measures, and support development and evaluation of highway and vehicle safety countermeasures.

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

### **1.2 Report Organization**

This report is divided into 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 2013 through 2015. 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 provides the list of high-hazardous 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 the methodology used in obtaining the general traffic crash statistics and the identification and analysis of high hazardous crash locations. Descriptive statistics was used to determine the frequency of occurrence, the rates of crashes, as well as crash trends over the 3-year period from 2013-2015.

### **2.1 Traffic Crash Statistics**

This report presents detailed statistics of the characteristics of traffic crashes and identifies 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-Hazardous Location Analysis**

Frequency and severity of traffic crashes are two critical factors used in identifying high hazardous locations. Generally, a relatively high crash frequency at a location is an indicator of potential adverse condition(s) that may 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. A macroscopic approach was used to determine the frequency and severity of traffic crashes in this report, thereby providing a starting point for more elaborate safety studies at identified high-hazardous intersections or corridors.

Several methods can be used to identify high hazardous 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 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 Method

Crash frequency represents the number of crashes that occurred within a defined time period at each location. The locations/sites are ranked in a 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 of identifying high hazardous 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.

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

Crash rate for 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:

$$R = \frac{A \times 1,000,000}{V \times 365} \quad [1]$$

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 was computed. The intersections were then ranked and sorted in descending order of the crash rate. The location with the largest crash rate

received the highest ranking. For locations where 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 PD-10s contain data fields with codes regarding the injury severity for each person involved in a crash. These codes represent police officers' observation(s) of the level of severity experienced by persons involved in a crash, if any. In order to properly assess the extent of a crash, the resultant of the crash such as fatality, injury and property damage only (PDO) were utilized to determine the severity of the crash. This procedure is intended to avoid inaccuracies in the crash severity data. For example, the injury condition(s) of person(s) involved in a crash may be updated based on information received after the person(s) involved in the crash is/are sent to the hospital.

In this report, the resulting costs of the traffic crash were computed for each location to identify the severity indices, with a higher value of severity index indicating significant level of incapacitation. The costs are computed based on published crash cost rates by the Federal Highway Administration. The crash locations were then ranked in descending order based on the crash severity cost.

### 2.2.4 Composite Crash Index

Each of the methods described thus far provide a limited basis for identifying high-hazardous 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 to determine 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 hazardous crash locations, a ranked list was prepared for each of the three factors. The three rankings of each site were entered into 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 (as shown in Equation 2). The intersections are then sorted in descending order of the crash 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 could be used to 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:

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

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 2013 through 2015. The data presented also includes a summary of comparative crash statistics from 2013 through 2015.

### 3.1 2015 DC Crash Statistics Quick Facts

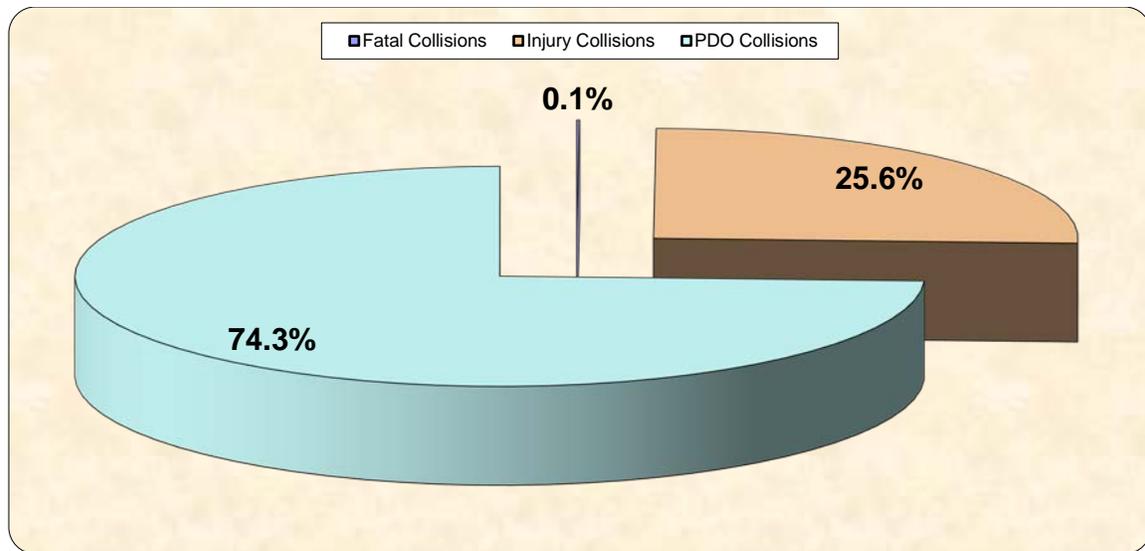
Table 3.1 presents a summary of the crashes reported in the DC from 2013 through 2015. The pie chart in Figure 3.1 represents the percentage distribution of collisions by severity for 2015 only.

**Table 3.1: DC Crash Quick Facts for 2015**

| Year                                  | 2013     | 2014     | 2015     |
|---------------------------------------|----------|----------|----------|
| Total Collisions                      | 19,456   | 21,539   | 24,265   |
| Fatal Collisions                      | 29       | 24       | 26       |
| Injury Collisions                     | 5,358    | 5,811    | 6,215    |
| Property Damage Only (PDO) Collisions | 14,069   | 15,704   | 18,024   |
| Fatalities                            | 29       | 26       | 26       |
| Total Non-Fatal Injuries              | 7,505    | 8,030    | 8,341    |
| Disabling Injuries*                   | 305      | 311      | 279      |
| Non-Disabling Injuries*               | 1,398    | 1,490    | 2,065    |
| Total Vehicles Involved               | 38,382   | 42,404   | 46,854   |
| Total Persons Involved                | 47,690   | 51,550   | 51,550   |
| Total Pedestrians Involved            | 1,038    | 1,258    | 1,243    |
| Pedestrian Fatalities                 | 12       | 10       | 15       |
| Fatalities/100 Million VMT            | 0.79     | 0.70     | 0.70     |
| Injuries/100,000 Population           | 1,160.96 | 1,218.71 | 1,240.80 |

\*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 and fatalities recorded in 2015 increased from 2014. The most frequent crash severity type recorded in 2015 was Property Damage Only (PDO), which represented approximately 74.3% (18,024) of all crashes for that year. Injury and fatality crashes respectively represented about 25.6% and 0.1% of the total crashes recorded in 2015.



**Figure 3.1: Crash Severity Types for 2015**

### **3.2 DC Crashes Trend for 2006 through 2015**

Figure 3.2 shows the trends in total crashes and resulting in injuries by year from 2006 through 2015. The figure shows that there has been a consistent increase in the number of crashes since 2011 until 2015.

Figure 3.3 shows the number of fatalities by year, while Figure 3.4 presents the number of injured persons recorded by year from 2006 through 2015. The summary of the number of disabling and non-disabling injuries by year are presented in Figures 3.5 and 3.6, respectively.

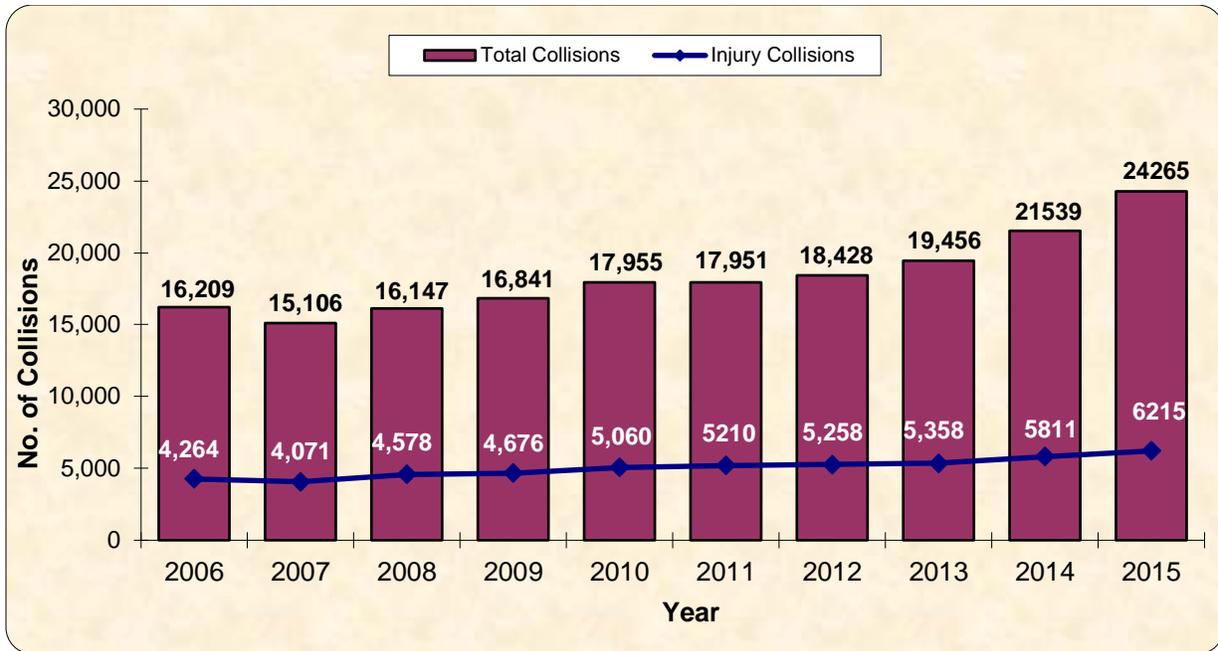


Figure 3.2: Traffic Crashes and Injury Crashes for 2006-2015



Figure 3.3: Number of Fatalities for 2006-2015



Figure 3.4: Number of Injured Persons for 2006-2015

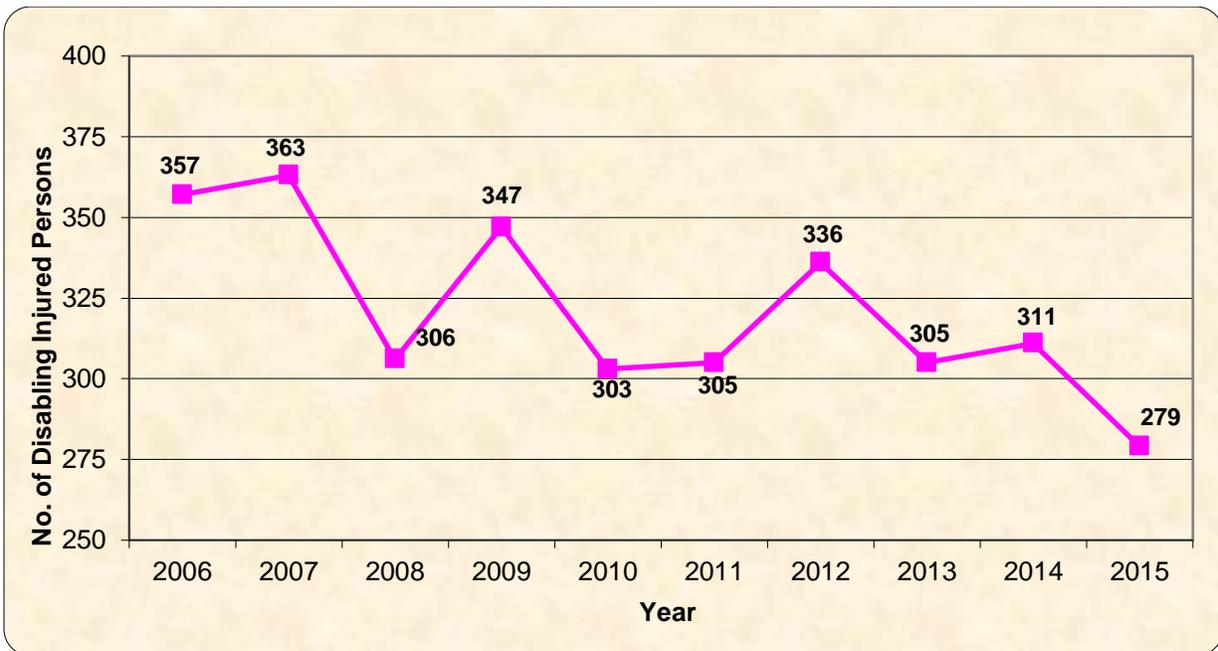


Figure 3.5: Number of Disabling Injuries for 2006-2015

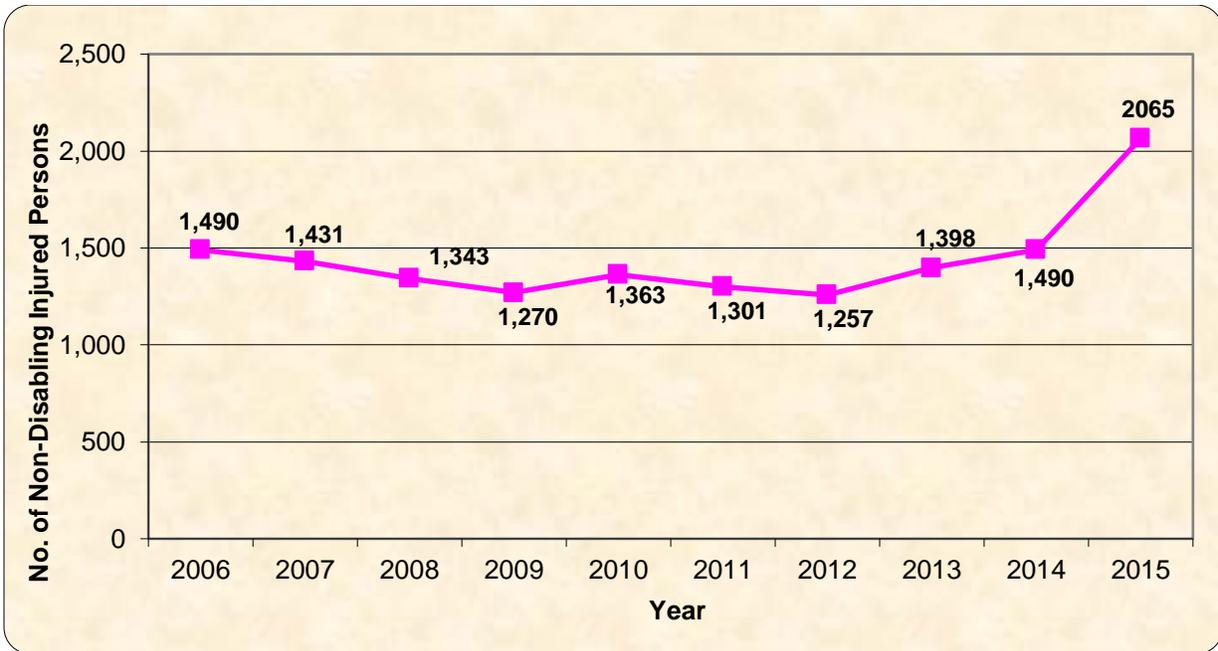


Figure 3.6: Number of Non-Disabling Injuries for 2006-2015

## CHAPTER 4 – CRASH STATISTICS AND TRENDS

This section of the report presents descriptive statistics for traffic crashes reported in the District of Columbia from 2013 to 2015. Some of 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

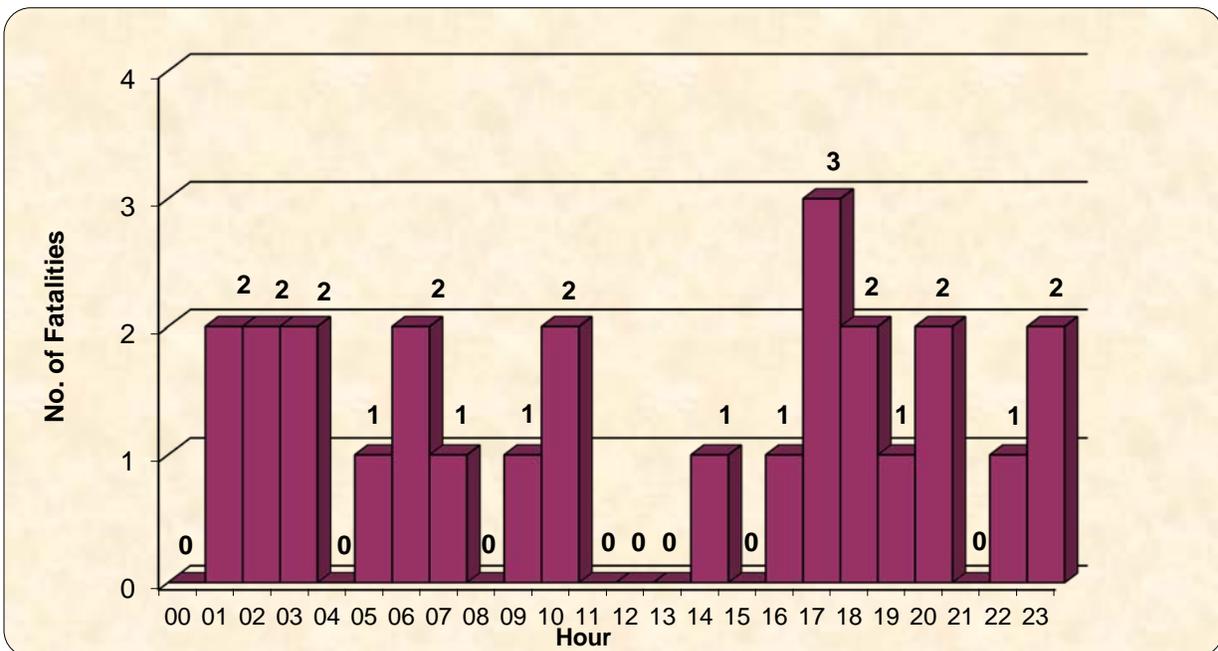
The tables and figures in this section present the frequencies and distributions of crashes by time of day, day of week, day of month, month and year.

#### 4.1.1 Traffic Crashes and Injuries by Hour of the Day

Table 4.1 presents the frequency of crashes for weekdays and weekends by hour of day for 2015. 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 number of reported injuries (617) occurring in hour 16 (4 P.M.). The total number of fatalities in 2015 recorded by the hour is presented in Figure 4.1. The maximum number of fatalities recorded by the hour was 3 in hour 17 (5 P.M.).

**Table 4.1: Crashes by Hour of the Day for 2015**

| Hour         | Collisions    | Fatalities | Injuries     |
|--------------|---------------|------------|--------------|
| 00           | 645           | 0          | 215          |
| 01           | 509           | 2          | 173          |
| 02           | 456           | 2          | 164          |
| 03           | 532           | 2          | 175          |
| 04           | 302           | 0          | 103          |
| 05           | 316           | 1          | 98           |
| 06           | 507           | 2          | 194          |
| 07           | 1,001         | 1          | 410          |
| 08           | 1,388         | 0          | 512          |
| 09           | 1,318         | 1          | 433          |
| 10           | 1,105         | 2          | 391          |
| 11           | 1,079         | 0          | 341          |
| 12           | 1,202         | 0          | 414          |
| 13           | 1,218         | 0          | 437          |
| 14           | 1,270         | 1          | 428          |
| 15           | 1,660         | 0          | 579          |
| 16           | 1,778         | 1          | 617          |
| 17           | 1,836         | 3          | 599          |
| 18           | 1,620         | 2          | 529          |
| 19           | 1,125         | 1          | 373          |
| 20           | 902           | 2          | 296          |
| 21           | 817           | 0          | 291          |
| 22           | 861           | 1          | 307          |
| 23           | 818           | 2          | 262          |
| <b>Total</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



**Figure 4.1: Total Fatalities by Hour for 2015**

Figures 4.2 and 4.3 show the crashes and injuries by the hour of day for weekdays and weekends respectively. The figures show that the crash frequency in 2015 was highest during hour 17 (5 P.M.) on weekdays and hour 3 (3 A.M.) on the weekends.

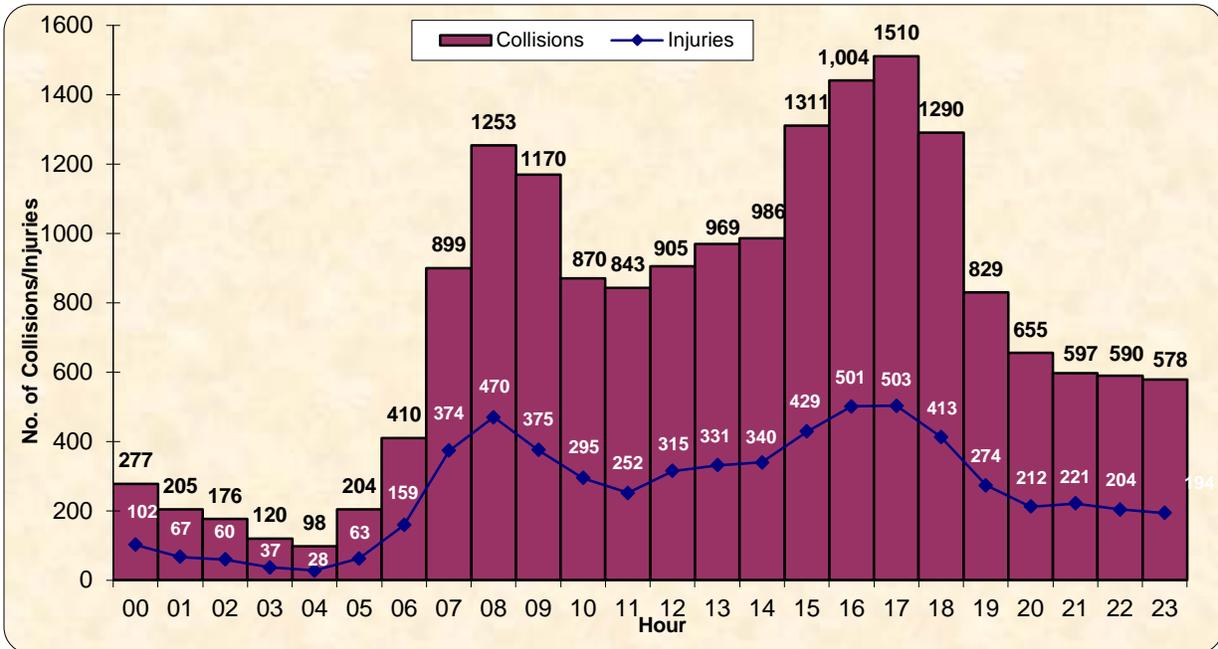


Figure 4.2: Crashes and Injuries by Hour of Day for Weekdays for 2015

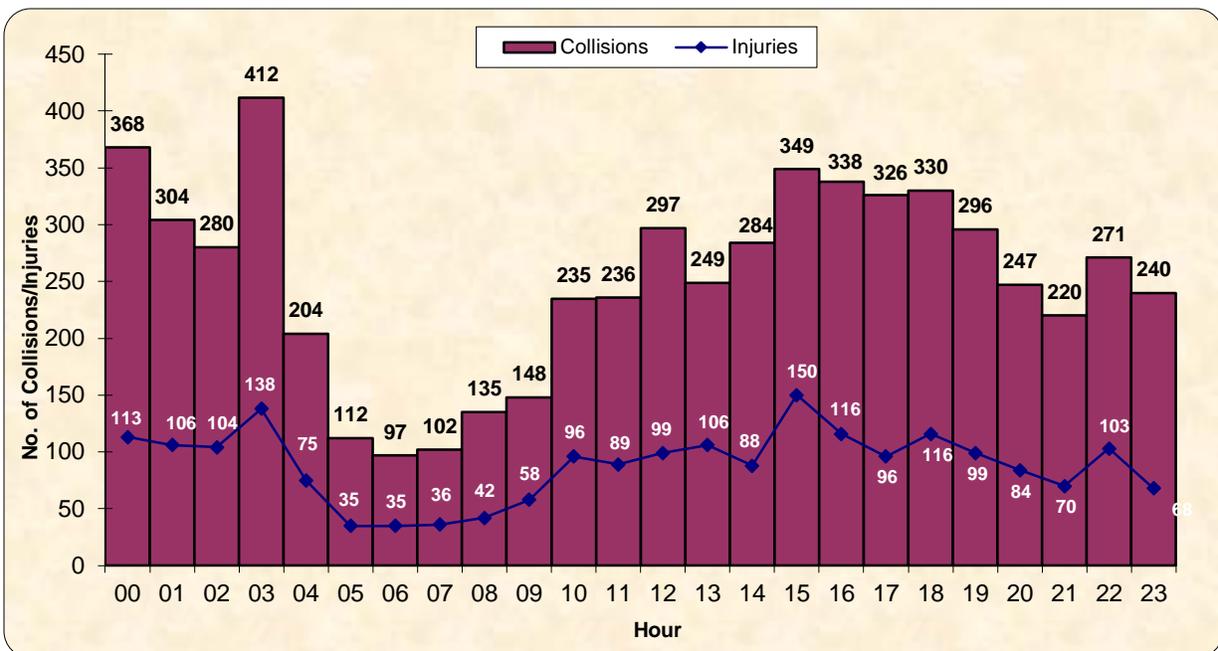


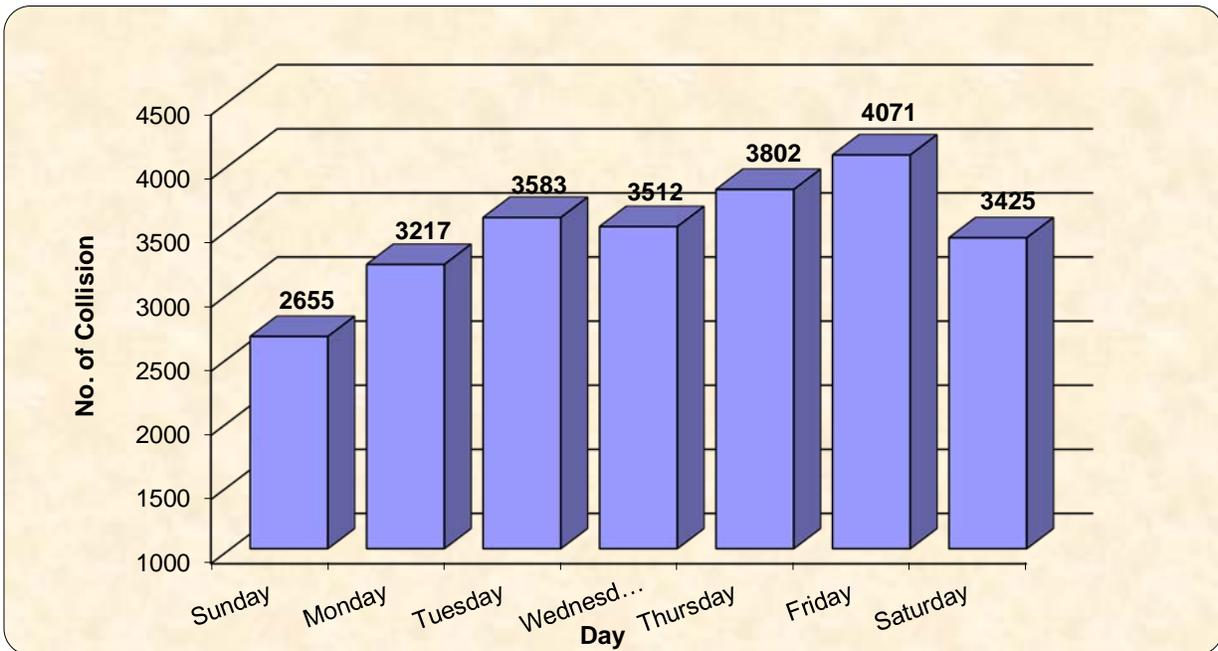
Figure 4.3: Crashes and Injuries by Hour of Day on Weekends for 2015

#### 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 number of crashes and injuries occurred on Friday while the highest number of fatalities occurred on Thursday. On the other hand, the lowest number of crashes and injuries was observed on Sunday.

**Table 4.2: Crashes by Day of the week for 2015**

| 2015         | Collisions    | Fatalities | Injuries     |
|--------------|---------------|------------|--------------|
| Sunday       | 2,655         | 5          | 962          |
| Monday       | 3,217         | 3          | 1,079        |
| Tuesday      | 3,583         | 3          | 1,238        |
| Wednesday    | 3,512         | 1          | 1,251        |
| Thursday     | 3,802         | 6          | 1,245        |
| Friday       | 4,071         | 4          | 1,406        |
| Saturday     | 3,425         | 4          | 1,160        |
| <b>Total</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



**Figure 4.4: Crashes and Injuries by Day of Week for 2015.**

4.1.3 Traffic Crashes by Month

Table 4.3 and Figure 4.5 respectively show the overall vehicle crashes by month in 2015 and by month for 2013 through 2015. From the table, the highest number of crashes occurred in October while the lowest occurred in February.

Table 4.3: Crashes by Month for 2015

| Month        | Crashes       | Fatalities | Injuries     |
|--------------|---------------|------------|--------------|
| January      | 1722          | 1          | 551          |
| February     | 1658          | 2          | 463          |
| March        | 1916          | 1          | 606          |
| April        | 2081          | 2          | 731          |
| May          | 2302          | 0          | 880          |
| June         | 2072          | 4          | 776          |
| July         | 2068          | 4          | 767          |
| August       | 1913          | 1          | 731          |
| September    | 2077          | 2          | 699          |
| October      | 2412          | 4          | 831          |
| November     | 2086          | 3          | 644          |
| December     | 1958          | 2          | 662          |
| <b>Total</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



Figure 4.5: Total Crashes by Month for 2013-2015

## 4.2 Location

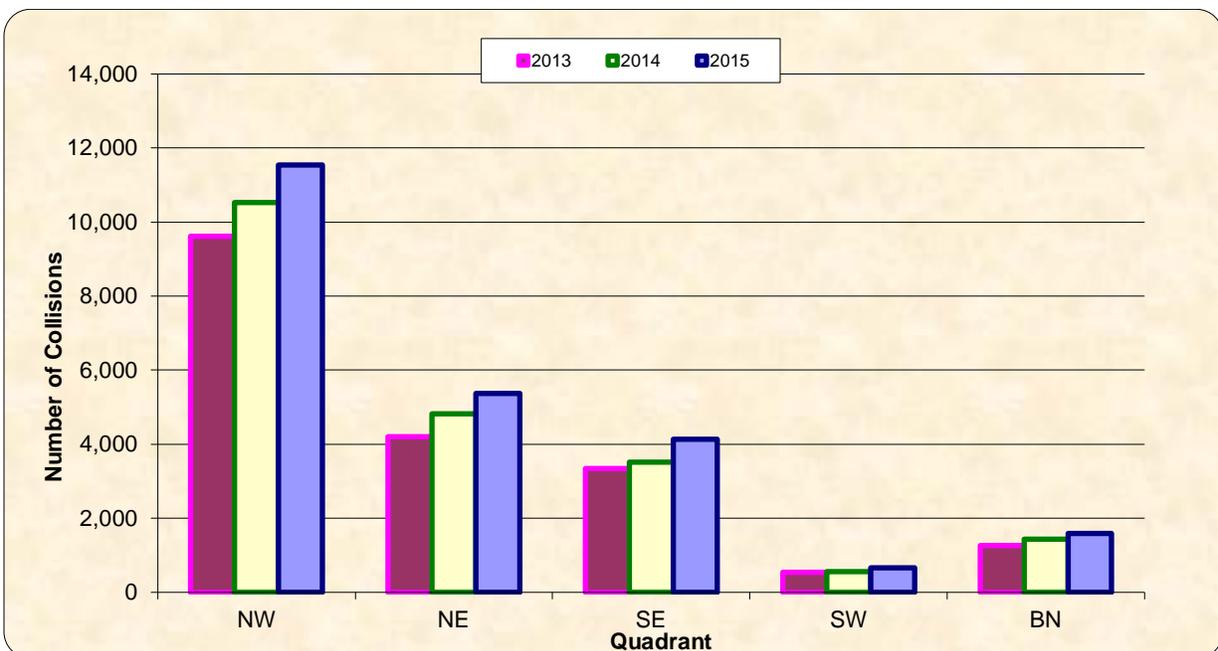
### 4.2.1 Crashes by Quadrant

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 in 2015. Since the NW quadrant is the largest coverage area and therefore has the highest mileage, 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 2015**

| Quadrant     | # of Collisions | Fatalities | Injuries     |
|--------------|-----------------|------------|--------------|
| NW           | 11,543          | 6          | 3,322        |
| NE           | 5,376           | 8          | 2,027        |
| SE           | 4,134           | 7          | 1,615        |
| SW           | 656             | 3          | 210          |
| BR           | 1,585           | 1          | 666          |
| Unknown      | 971             | 1          | 501          |
| <b>Total</b> | <b>24,265</b>   | <b>26</b>  | <b>8,341</b> |

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



**Figure 4.6: Total Crashes by Quadrant for 2013-2015**

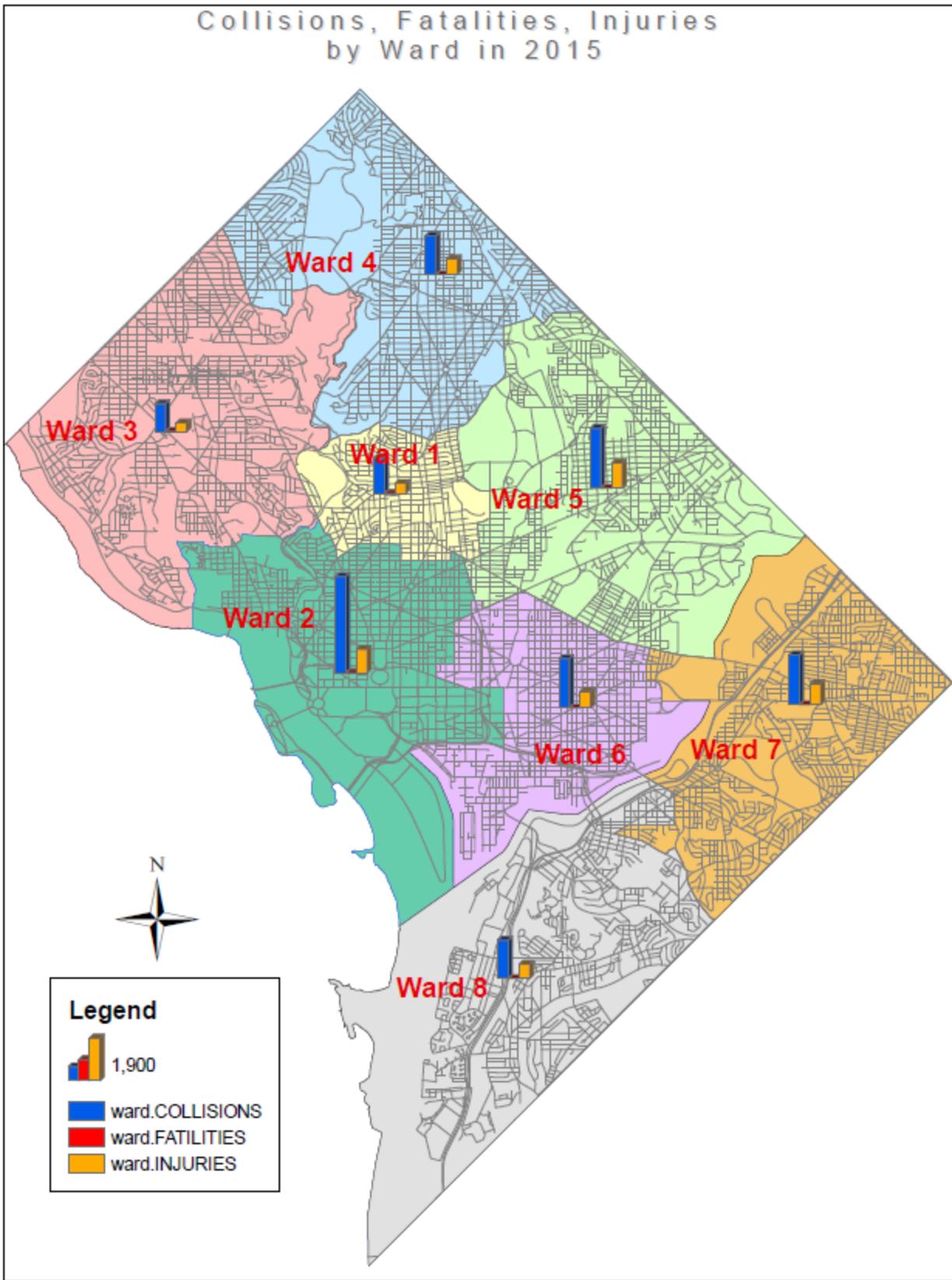


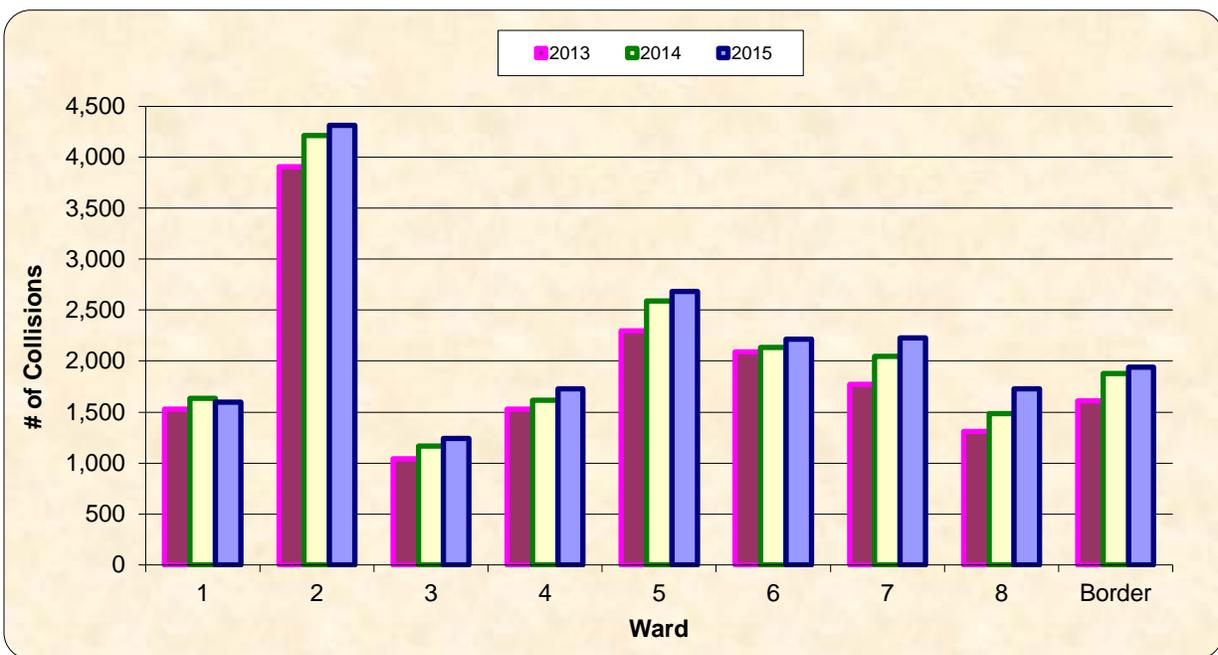
Figure 4.7: Crashes, Fatalities, Injuries by Wards for 2015

### 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 2013 through 2015. The highest crash frequency occurred in Ward 2, representing approximately 18% of all traffic crashes in 2015, followed by Ward 5 with approximately 11% of the total crashes. Wards 2 and 5 experienced, again, the highest frequencies of injury crashes as shown in Table 4.5. The summary also shows that, all the Wards recorded increases (between 5-16%) in the number if crashes from 2014 to 2015.

**Table 4.5: Crashes by Ward from 2013-2015**

| Ward           | 2013          |            |              | 2014          |            |              | 2015          |            |              |
|----------------|---------------|------------|--------------|---------------|------------|--------------|---------------|------------|--------------|
|                | # of Crashes  | Fatalities | Injuries     | # of Crashes  | Fatalities | Injuries     | # of Crashes  | Fatalities | Injuries     |
| <b>1</b>       | 1,528         | 4          | 502          | 1,637         | 0          | 505          | 1,600         | 0          | 457          |
| <b>2</b>       | 3,905         | 3          | 1,015        | 4,211         | 2          | 1,089        | 4,311         | 2          | 1,053        |
| <b>3</b>       | 1,039         | 1          | 362          | 1,168         | 1          | 345          | 1,238         | 2          | 378          |
| <b>4</b>       | 1,531         | 0          | 642          | 1,615         | 0          | 643          | 1,729         | 2          | 698          |
| <b>5</b>       | 2,297         | 2          | 987          | 2,593         | 1          | 1,149        | 2,686         | 5          | 1,126        |
| <b>6</b>       | 2,088         | 5          | 661          | 2,134         | 3          | 727          | 2,214         | 1          | 743          |
| <b>7</b>       | 1,773         | 6          | 915          | 2,049         | 4          | 974          | 2,230         | 3          | 944          |
| <b>8</b>       | 1,311         | 4          | 675          | 1,486         | 1          | 654          | 1,729         | 4          | 648          |
| <b>Border</b>  | 1,612         | 1          | 587          | 1,879         | 5          | 739          | 1,939         | 0          | 664          |
| <b>Unknown</b> | 2372          | 3          | 1159         | 2,767         | 9          | 1,205        | 4,589         | 7          | 1,630        |
| <b>Total</b>   | <b>18,428</b> | <b>19</b>  | <b>7,268</b> | <b>19,456</b> | <b>29</b>  | <b>7,505</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



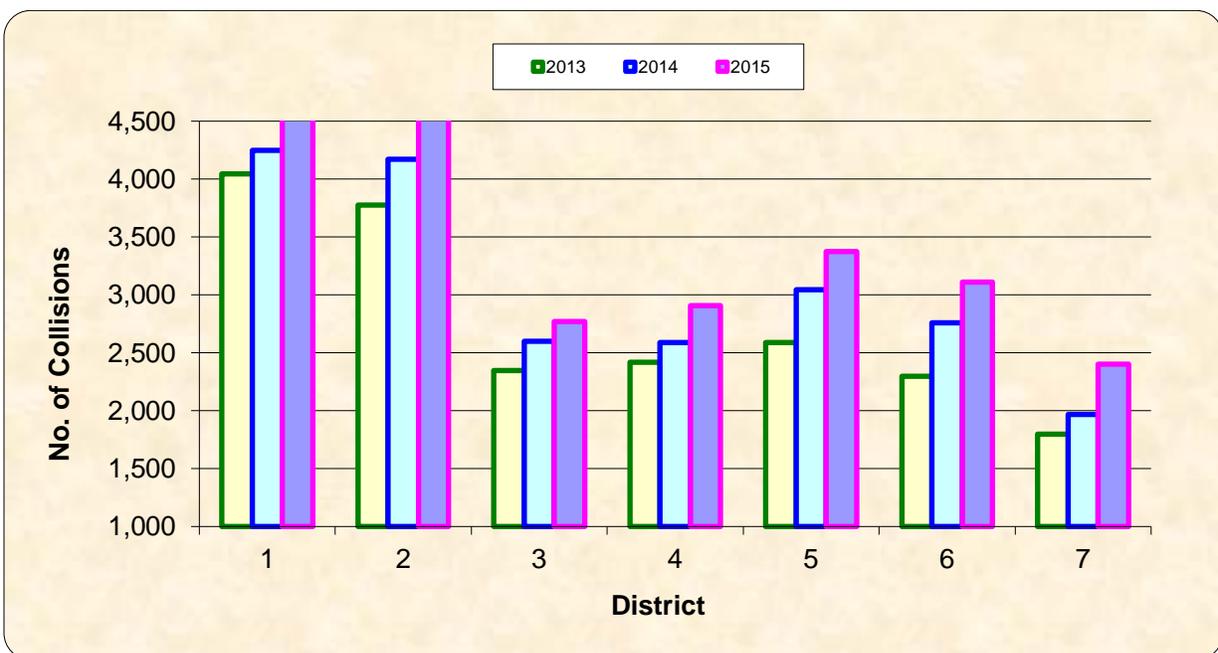
**Figure 4.8: Total Crashes by Ward for 2013-2015**

### 4.2.3 Crashes by Police Districts

The crash frequencies by Police Districts from 2013 through 2015 are shown in Table 4.6 and depicted in Figure 4.9. From the table and figure, Police District 1 recorded the highest frequency of crashes; an average of 20%, during the three year period. There were modest increases in the crash frequencies in some of the Police Districts over the 3-year period. Also, Districts 1 and 2 recorded approximately 40% of the total crashes combined from 2013 through 2015. The GIS map for the crashes by Police District in 2014 is presented in Figure 4.10.

**Table 4.6: Crashes by Police District for 2013-2015**

| Police District | 2013          |            |              | 2014          |            |              | 2015          |            |              |
|-----------------|---------------|------------|--------------|---------------|------------|--------------|---------------|------------|--------------|
|                 | # of Crashes  | Fatalities | Injuries     | # of Crashes  | Fatalities | Injuries     | # of Crashes  | Fatalities | Injuries     |
| 1               | 4,045         | 3          | 1,425        | 4,248         | 7          | 1,546        | 4,904         | 1          | 1,697        |
| 2               | 3,775         | 5          | 1,081        | 4,173         | 5          | 1,047        | 4,668         | 1          | 1,179        |
| 3               | 2,349         | 3          | 724          | 2,602         | 2          | 816          | 2,768         | 0          | 776          |
| 4               | 2,418         | 1          | 1,010        | 2,588         | 1          | 1,026        | 2,905         | 2          | 1,132        |
| 5               | 2,588         | 3          | 1,068        | 3,043         | 0          | 1,306        | 3,376         | 3          | 1,264        |
| 6               | 2,300         | 5          | 1,180        | 2,760         | 7          | 1,340        | 3,109         | 1          | 1,296        |
| 7               | 1,798         | 4          | 972          | 1,966         | 4          | 896          | 2,403         | 2          | 955          |
| Unknown         | 183           | 5          | 45           | 159           | 0          | 53           | 132           | 16         | 42           |
| <b>Total</b>    | <b>19,456</b> | <b>29</b>  | <b>7,505</b> | <b>21,539</b> | <b>26</b>  | <b>8,030</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



**Figure 4.9: Total Crashes by Police District for 2013-2015**

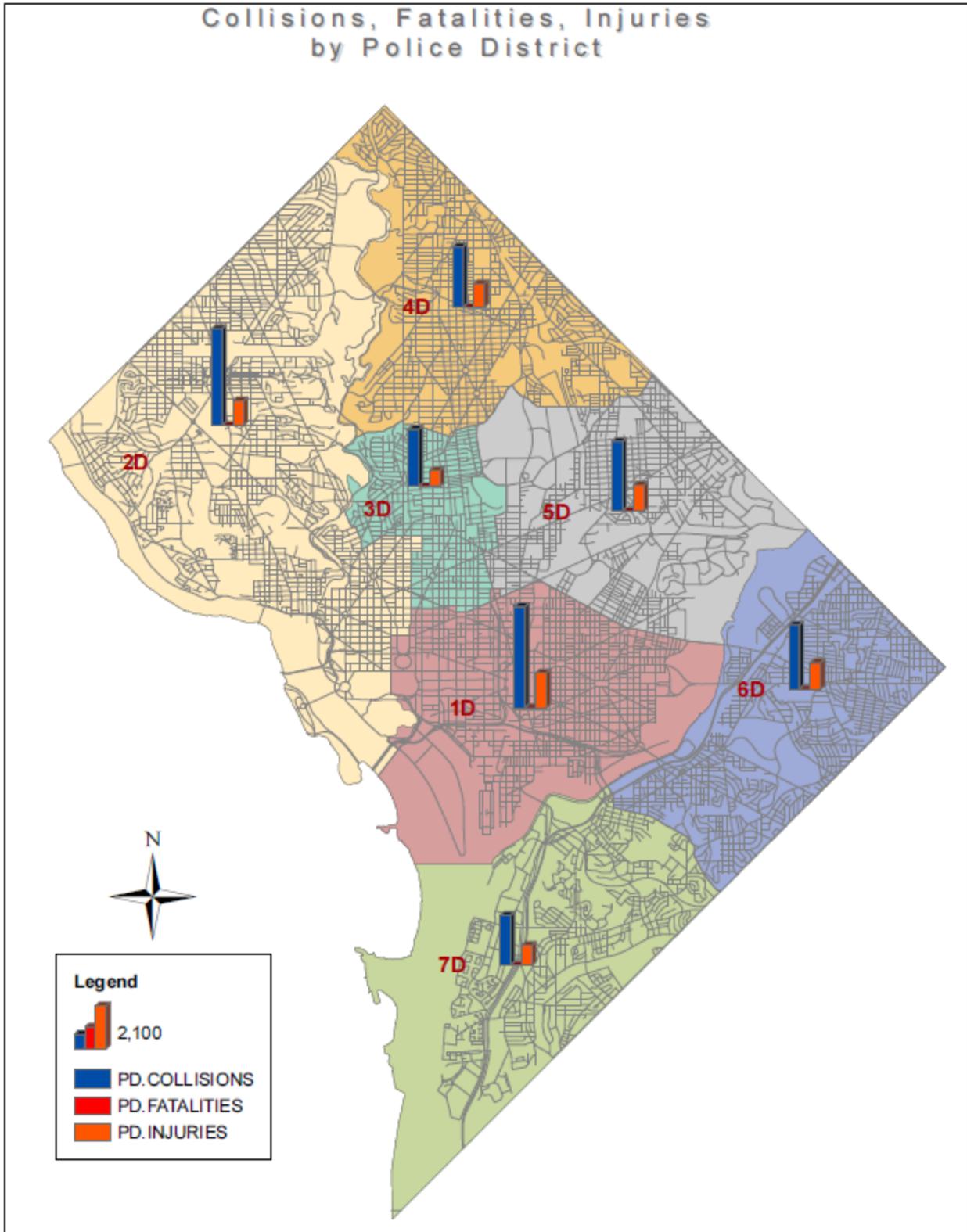


Figure 4.10: Crashes, Fatalities, Injuries by Police District for 2015

#### 4.2.4 Crashes by Advisory Neighborhood Commissions (ANCs)

Washington DC has 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 2015**

| ANC     | Description  | Crashes | Fatalities | Injury |
|---------|--|---------|------------|--------|
| Unknown | Unknown  | 4589    | 7          | 1630   |
| 1A      | Columbia Heights, Pleasant Plains  | 430     | 0          | 125    |
| 1B      | Cardozo, Howard University, LeDroit Park, Shaw   | 735     | 0          | 223    |
| 1C      | Adams Morgan, Kalorama Heights, Lanier Heights, Western U Street                           | 228     | 0          | 38     |
| 1D      | Mount Pleasant   | 52      | 0          | 8      |
| 2A      | Foggy Bottom, West End   | 642     | 1          | 145    |
| 2B      | DuPont Circle  | 1019    | 0          | 220    |
| 2C      | Blagden Alley, Chinatown, Logan Circle, Mount Vernon Square, Shaw                          | 423     | 0          | 110    |
| 2D      | Kalorama, Sheridan   | 65      | 0          | 7      |
| 2E      | Burleith, Georgetown, Hilandale  | 503     | 0          | 115    |
| 2F      | Logan Circle   | 841     | 0          | 217    |
| 3B      | Cathedral Heights, Glover Park   | 76      | 1          | 9      |
| 3C      | Cathedral Heights, Cleveland Park, Massachusetts Heights, McLean Gardens, Woodley Park     | 372     | 0          | 110    |
| 3D      | American University, Foxhall, Kent, The Palisades, Spring Valley, Wesley Heights           | 160     | 0          | 44     |
| 3E      | American University Park, Friendship Heights, Tenleytown                                   | 154     | 0          | 47     |
| 3F      | Forest Hills, North Cleveland Park, Tenleytown   | 233     | 1          | 72     |
| 3G      | Chevy Chase  | 133     | 0          | 51     |
| 4A      | Brightwood, Colonial Village, Crestwood, Shepherd Park, Sixteenth Street Heights           | 278     | 1          | 105    |
| 4B      | Brightwood, Lamond-Riggs, Manor Park, Riggs Park, South Manor Park, Takoma                 | 371     | 0          | 138    |
| 4C      | Columbia Heights, Crestwood, Petworth, Sixteenth Street Heights                            | 426     | 0          | 176    |
| 4D      | Petworth   | 169     | 0          | 60     |
| 5A      | Brookland, Fort Lincoln, Michigan Park, North Michigan Park, University Heights, Woodridge | 568     | 3          | 286    |
| 5B      | Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad             | 1196    | 1          | 436    |
| 5C      | Bloomingdale, Eckington, Edgewood  | 720     | 1          | 308    |
| 6A      | North Lincoln Park, Rosedale, Stanton Park   | 356     | 0          | 113    |
| 6B      | Barney Circle, Capitol Hill, Eastern Market  | 515     | 0          | 161    |
| 6C      | Near Northeast, Penn Quarter, Union Station  | 972     | 1          | 303    |
| 6D      | Carrollsborg, Fort McNair, Navy Yard, Near Southwest/Southeast, Waterfront                 | 384     | 0          | 139    |
| 7A      | Fort DuPont, Greenway, River Terrace   | 329     | 0          | 136    |
| 7B      | Fairfax Village, Hillcrest, Penn Branch, Randle Highlands                                  | 346     | 0          | 170    |
| 7C      | Burrville, Deanwood, Grant Park, Lincoln Heights   | 314     | 0          | 115    |
| 7D      | Eastland Gardens, Kenilworth, Kingman Park, Mayfair  | 541     | 0          | 226    |
| 7E      | Benning Heights, Capitol View, Fort Davis, Marshall Heights                                | 301     | 1          | 131    |
| 8A      | Anacostia, Fairlawn, Fort Stanton, Hillsdale   | 361     | 0          | 94     |

**Table 4.7: Crashes by ANCs in 2015 (Cont'd)**

| ANC          | Description   | Crashes       | Fatalities | Injury       |
|--------------|---|---------------|------------|--------------|
| 8B           | Garfield Heights, Knox Hill, Shipley Terrace                                    | 356           | 0          | 130          |
| 8C           | Barry Farms, Bolling Air Force Base, Congress Heights, St. Elizabeth's Hospital | 357           | 1          | 144          |
| 8D           | Bellevue, Far Southwest   | 248           | 0          | 74           |
| 8E           | Congress Heights, Valley Green, Washington Highlands                            | 225           | 2          | 113          |
| Border       | Border between ANCs   | 4277          | 5          | 1612         |
| <b>Total</b> |   | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |

From the summary presented in Table 4.7, ANC 5B (Arboretum, Brentwood, Brookland, Carver, Langdon, Langston, Ivy City, Trinidad) and 2B (DuPont Circle) were the top two ANCs that had the highest crash frequencies in 2015. The border lines between the various ANCs recorded the highest crash frequencies representing approximately 18% of the total number of crashes. Presented in Figure 4.11 is a GIS map showing the crash frequency distributions by the ANCs in 2015.

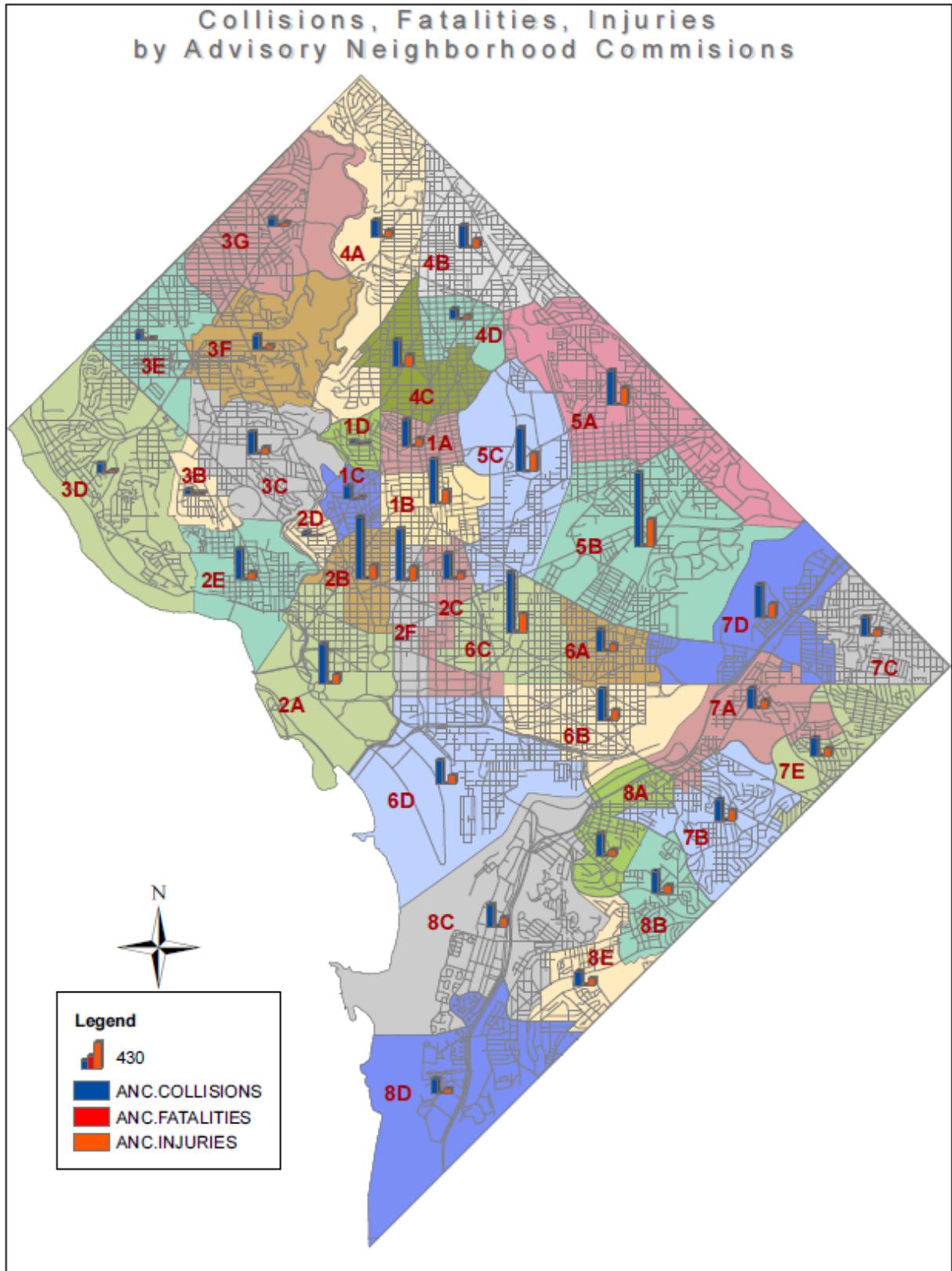


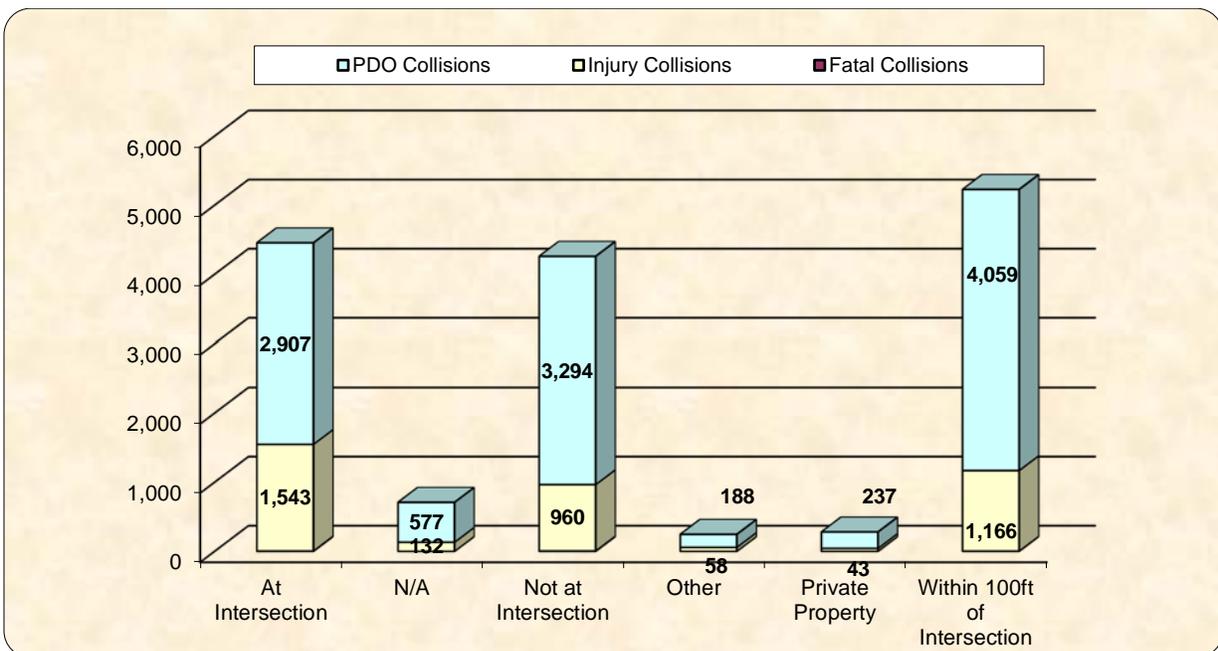
Figure 4.11: Crashes, Fatalities, Injuries by Advisory Neighborhood Commissions for 2015

### 4.2.5 Crashes by On-Street Location

In order to identify contributory factors of a crash and present recommendations for mitigation, 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 (5,228 or approximately 22% of the total number of crashes) occurred within 100 feet of intersections in 2015. This is followed by crashes that occurred at intersection, representing approximately 18% (4,455) of the total crashes.

**Table 4.8: Crashes by On-Street Location for 2015**

| On Street                    | Total collisions | Fatal Collisions | Injury Collisions | PDO Collisions | Fatalities | Injuries     |
|------------------------------|------------------|------------------|-------------------|----------------|------------|--------------|
| At Intersection              | 4,455            | 5                | 1,543             | 2,907          | 5          | 2,095        |
| N/A                          | 709              | 0                | 132               | 577            | 0          | 172          |
| Not at Intersection          | 4,260            | 6                | 960               | 3,294          | 6          | 1,298        |
| Other                        | 246              | 0                | 58                | 188            | 0          | 81           |
| Private Property             | 280              | 0                | 43                | 237            | 0          | 52           |
| Within 100ft of Intersection | 5,228            | 3                | 1,166             | 4,059          | 3          | 1,601        |
| Unknown                      | 9,087            | 12               | 2,313             | 6,762          | 12         | 3,042        |
| <b>Total</b>                 | <b>24,265</b>    | <b>26</b>        | <b>6,215</b>      | <b>18,024</b>  | <b>26</b>  | <b>8,341</b> |



**Figure 4.12: Crashes by On-Street Location for 2015**

### 4.2.6 Crashes by Construction Zone

Safety in construction zones continues to be a high priority for traffic engineering professionals and highway agencies. As a result, there is the need to assess crashes in such zones in order to identify mitigation strategies to reduce them. 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 2015. From Table 4.9, there has been a steady decline in the frequency of crashes in construction zones from 2013 to 2015. In Table 4.10, there were a total of 517 crashes (approximately 2% of the total number of crashes) which occurred in construction zones resulting in 2 fatalities and 137 injuries in 2015.

**Table 4.9: Crashes in Construction Zones for 2012-2015**

| Year   | 2012  | 2013  | 2014  | 2015  |
|--|-------|-------|-------|-------|
| <b>Number of Collisions in Construction Zone</b>     | 715   | 720   | 643   | 517   |
| <b>Percentage of Collisions in Construction Zone</b> | 3.88% | 3.70% | 2.99% | 2.40% |

**Table 4.10: Crash Details in Construction Zones in 2015**

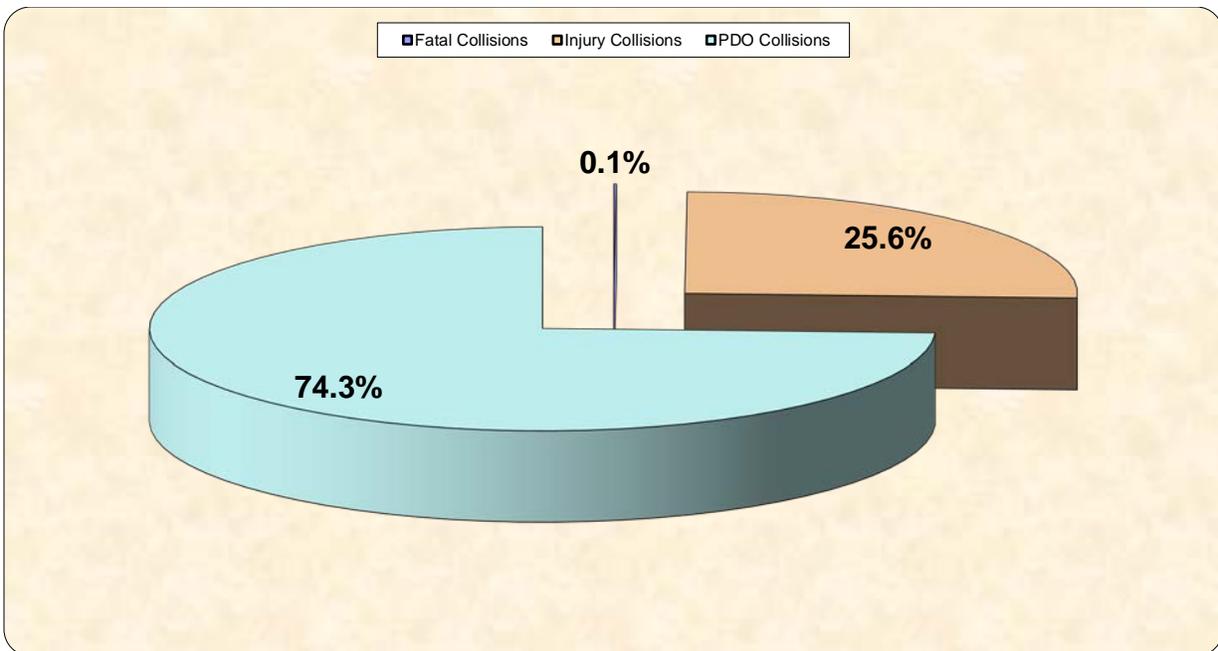
| Construction Zone               | Total Collisions | Fatal Collisions | Injury Collisions | PDO Collisions | Fatalities | Injuries     |
|---------------------------------|------------------|------------------|-------------------|----------------|------------|--------------|
| <b>Construction Zone</b>        | 517              | 2                | 102               | 413            | 2          | 137          |
| <b>Not In Construction Zone</b> | 23,748           | 24               | 6,113             | 17,611         | 24         | 8,204        |
| <b>Total</b>                    | <b>24,265</b>    | <b>26</b>        | <b>6,215</b>      | <b>18,024</b>  | <b>26</b>  | <b>8,341</b> |

## 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

Figure 4.13 presents the summary of crashes recorded in the DC in 2015 by crash severity. The classifications are: fatalities, injury and PDOs.



**Figure 4.13: Crashes Severity Type in 2015**

From Figure 4.13, the most crash severity type recorded was Property Damage Only (PDO), which represented approximately 74.3% of all crashes in 2015. Crashes resulting in injury represented approximately 26% of the crashes recorded while fatalities were 0.1% of the total crashes.

### 4.3.2 Hit-and-Run Crashes

The summary of reported hit-and-run crashes is presented in Figure 4.15. Hit and run crashes showed a 30.4% decrease in 2015 from 2014. The percentage of hit and run crashes also decreased from 2013 to 2015 by nearly 19%. Figure 4.16 shows the resulting severity of hit and run crashes in 2015. In all, hit-and-run crashes resulted in 4 fatalities in 2015.

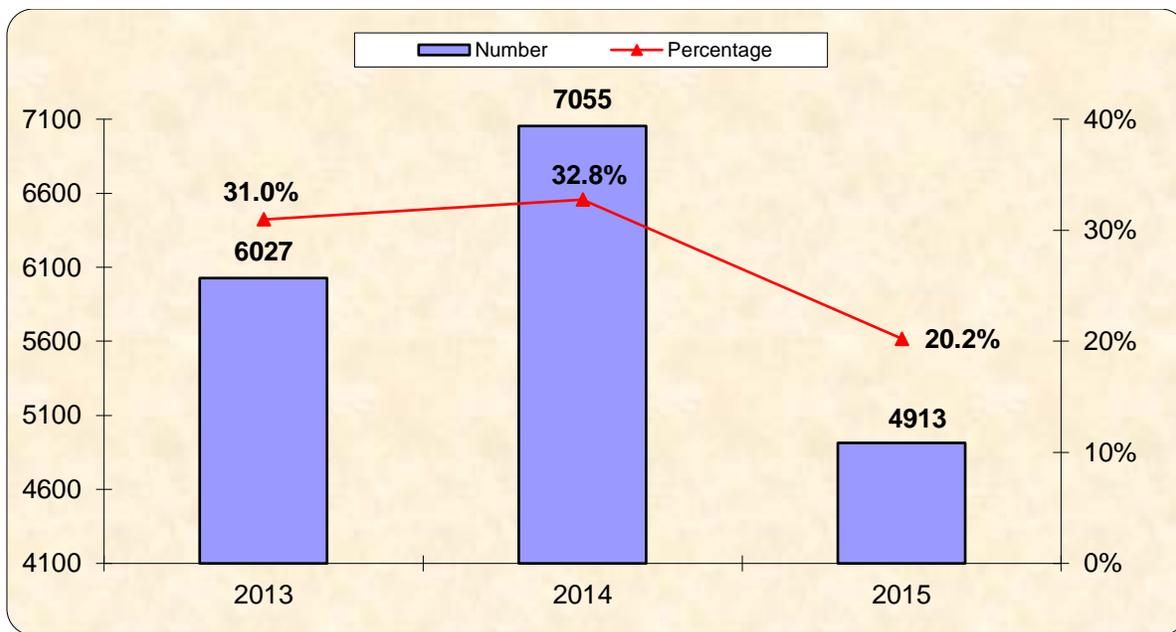


Figure 4.15: Hit and Run Crashes in 2015

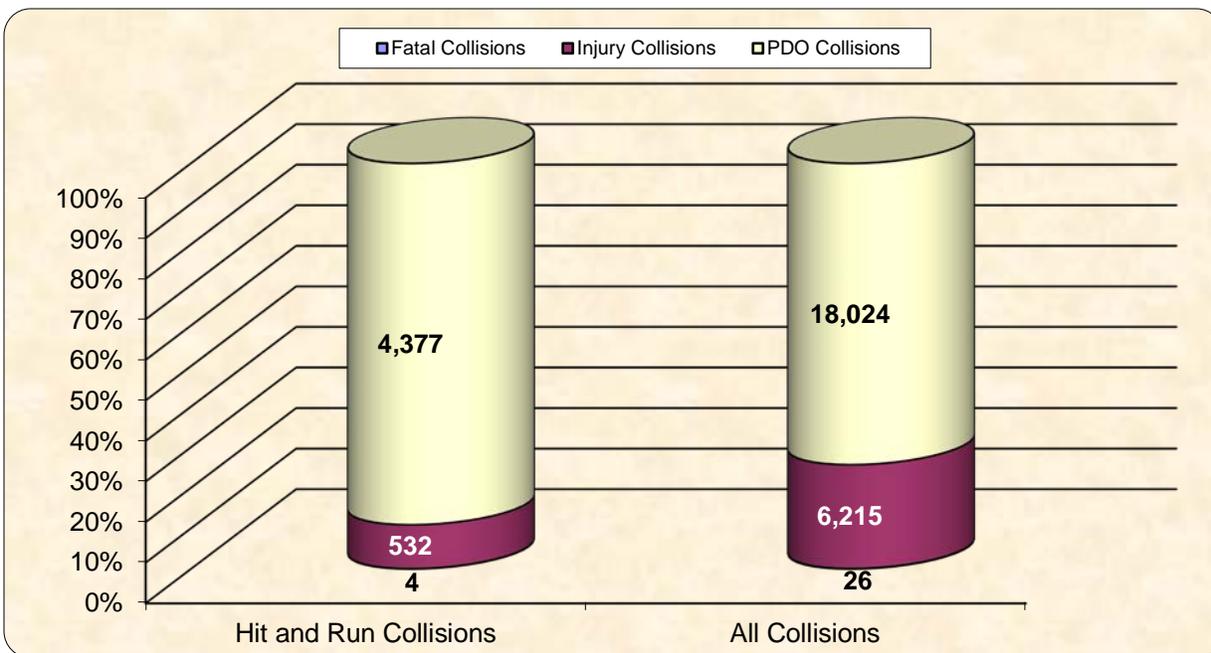


Figure 4.16: Severity of Hit and Run Crashes in 2015

### 4.3.3 Crashes by Vehicle Classification

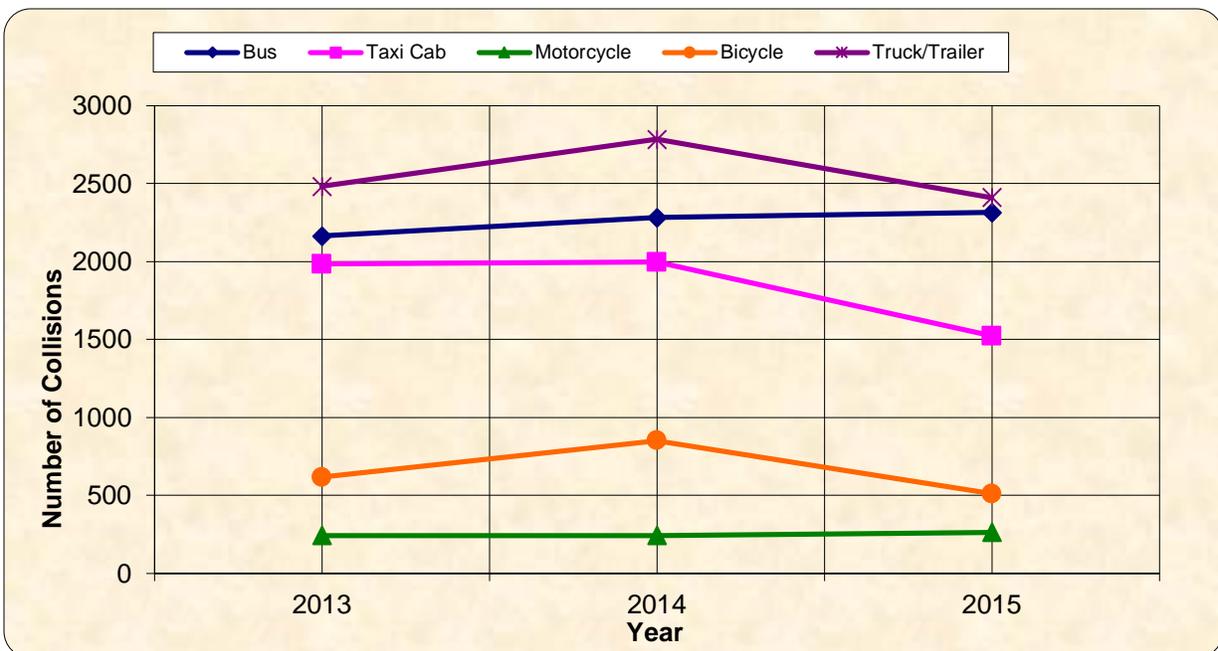
Crashes involving buses, trucks, motorcycles, and bicycles are also of special interest. Crashes involving these special vehicles often pose increased risk of serious or fatal injuries. The summary of crash frequencies by vehicle classification in 2015 is presented in Table 4.12.

**Table 4.12: Summary of Crash in 2015 by Vehicle Classification**

| Vehicle Involved | Crashes | Fatalities | Injuries |
|------------------|---------|------------|----------|
| Passenger Auto   | 35,544  | 22         | 13,680   |
| Bus              | 2,315   | 1          | 389      |
| Taxi Cab         | 1,523   | 0          | 290      |
| Motorcycle       | 264     | 2          | 189      |
| Truck/Trailer    | 2,411   | 3          | 545      |

From the table, passenger automobiles were the most involved in crashes followed by trucks and/or trailers and buses. Crashes that resulted in fatalities and injuries were predominantly those involved with passenger cars as well. Overall, crashes involving bicycles and motorcycles represented approximately 1.8% of the total number of crashes in 2015. 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 passenger autos and buses showed a consistent increase from 2013 to 2015. On the other hand, crashes involving taxi cabs and bicycles experienced a continuous decrease on the same timeframe. There was an overall decline in fatalities for most vehicle types from 2013 to 2015. Similarly, there was an increase in the number of injuries over the same period involving passenger autos and motorcycles.



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

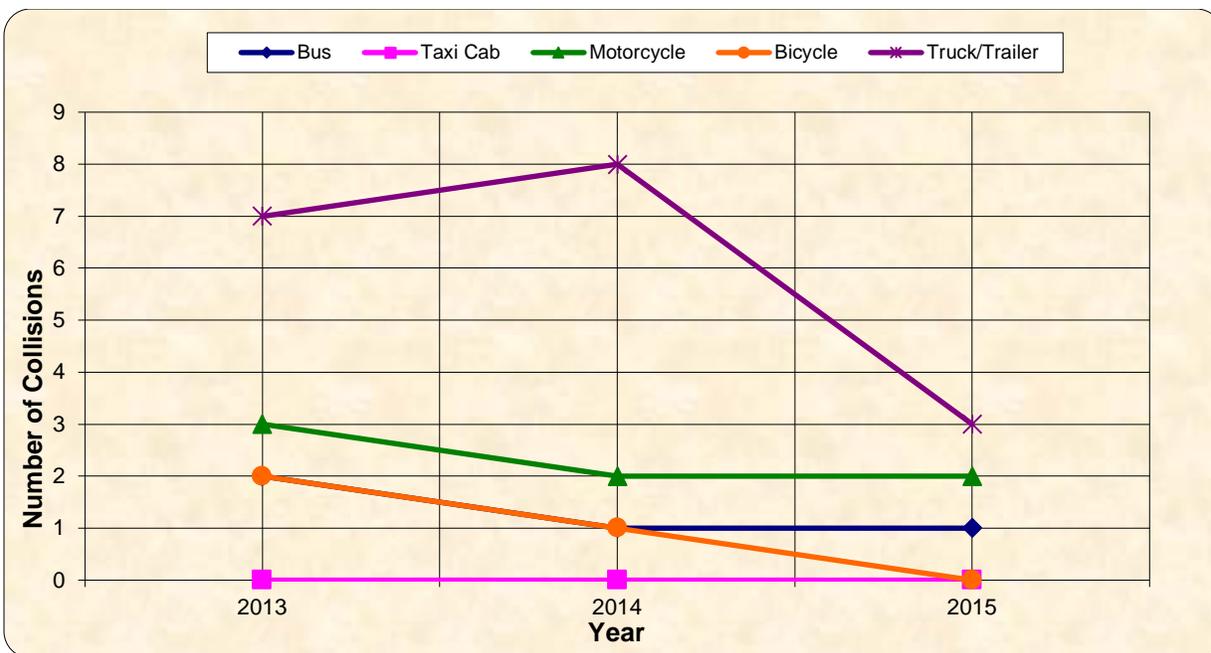


Figure 4.18: Three-year Trend of Fatalities by Vehicle Type

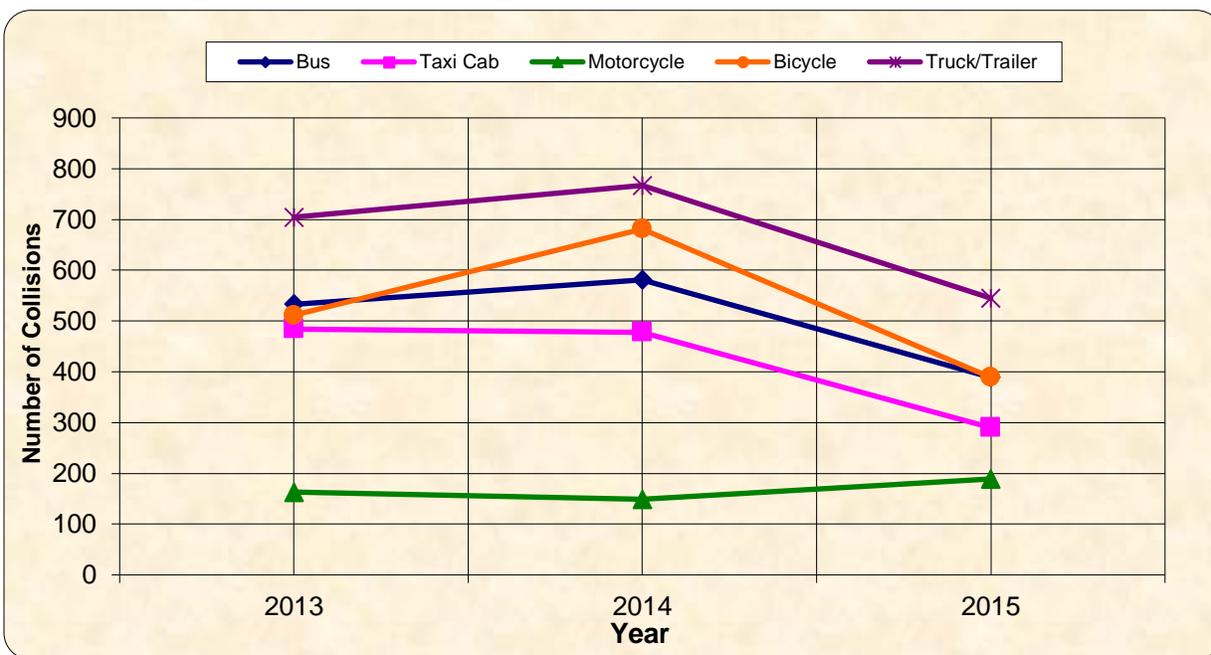


Figure 4.19: Three-year Trend of Injuries by Vehicle Type

### 4.3.5 Crashes involving Pedestrians

Since approximately 49% of workers in the District either commute by public transportation or walk to work, it is necessary to understand the causes and severity of crashes involving pedestrians. Presented in Figures 4.20 through 4.22 are the summaries of

crashes involving pedestrians from 2013 through 2015 classified by age and gender. From the figures, there was a modest decrease in the total number of pedestrian crashes in 2015 compared to those in 2014. In addition, the distribution also shows that pedestrians in the age group of 21-30 were the most involved in crashes. Comparing crashes in 2014 to 2015, there was a decrease in crashes involving female pedestrians. On the other hand, there was an increase in crashes involving male pedestrians. Presented in Table 4.13 is a summary of injury codes reported by pedestrians in 2015 after being involved in a crash. Approximately 37.5% of the 1,203 pedestrians complained but did not have any visible injuries. Lastly, Figure 4.23 shows pedestrian-involved crashes at intersections in 2015.

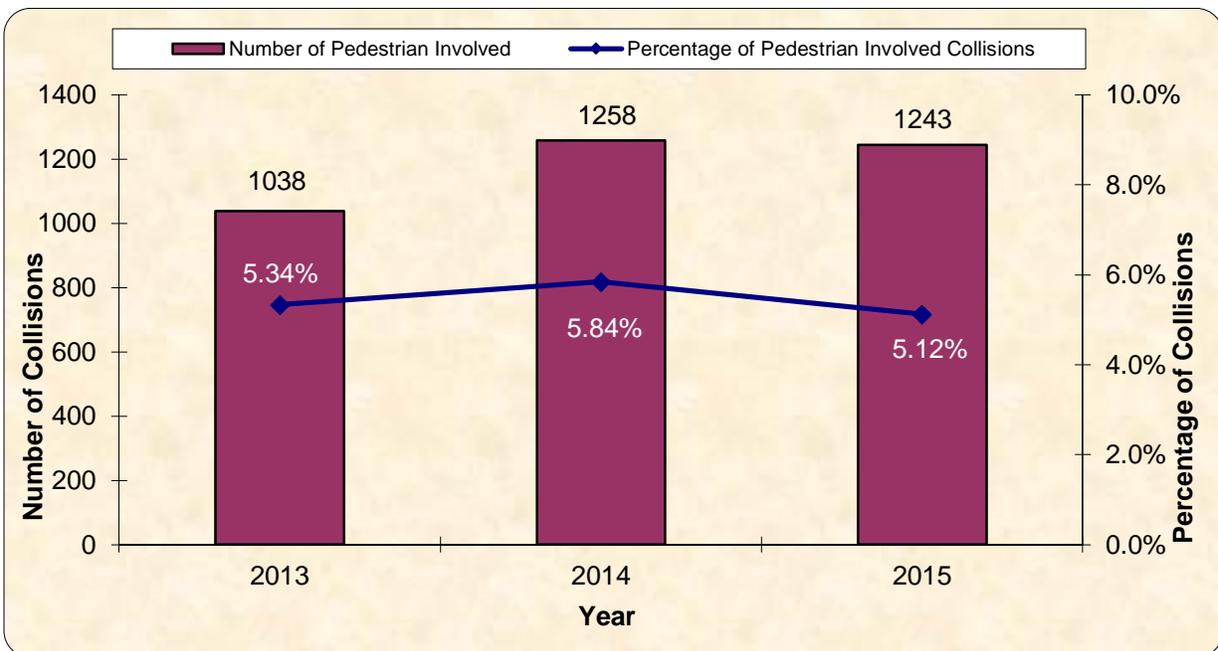


Figure 4.20: Three-year Trend of Crashes involving Pedestrians

Table 4.13: Pedestrian Involved Crashes by Injury Type in 2015

| Injury Code               | Frequency    |
|---------------------------|--------------|
| Complaint but not visible | 451          |
| Disabling                 | 60           |
| Fatalities                | 15           |
| Non-Disabling             | 301          |
| No Injury                 | 256          |
| Unknown                   | 58           |
| Other                     | 62           |
| <b>Total</b>              | <b>1,203</b> |

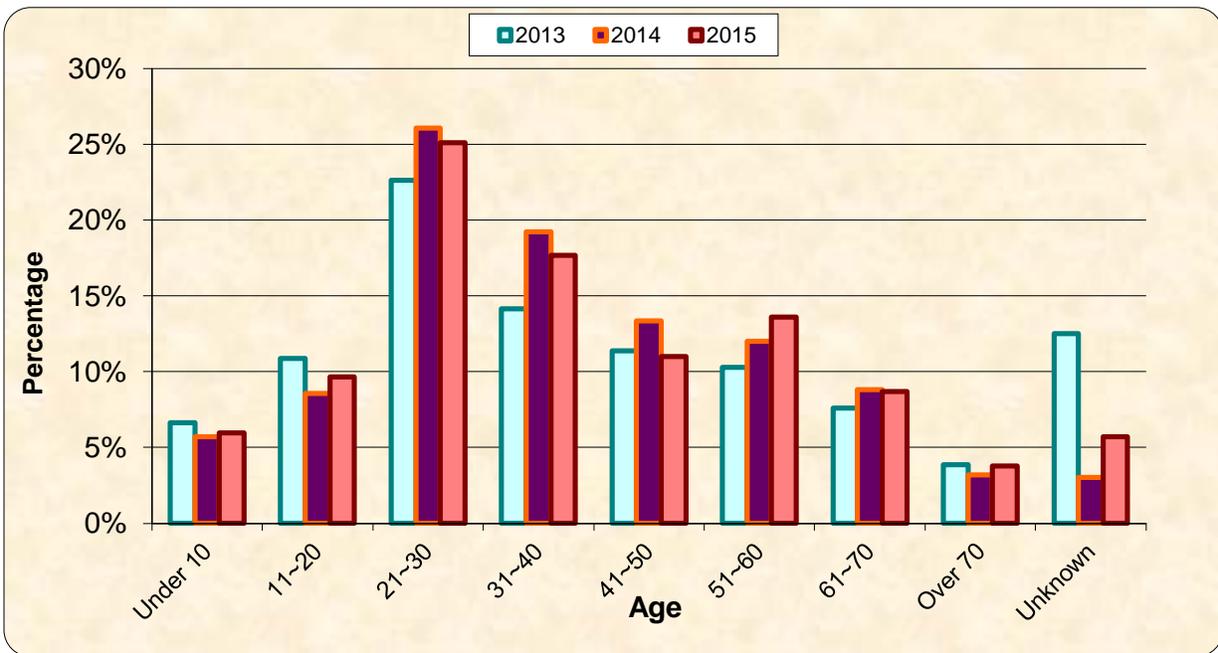


Figure 4.21: Three-year Trend of Crashes involving Pedestrians by Age

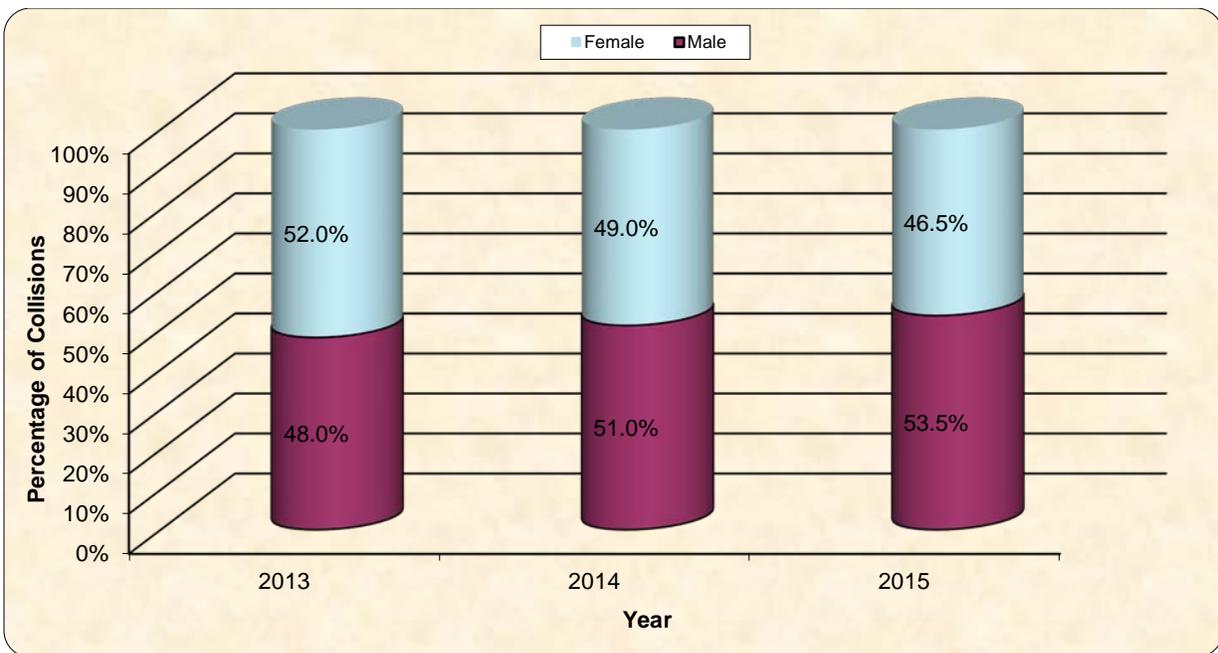


Figure 4.22: Three-year Trend of Crashes involving Pedestrians by Gender

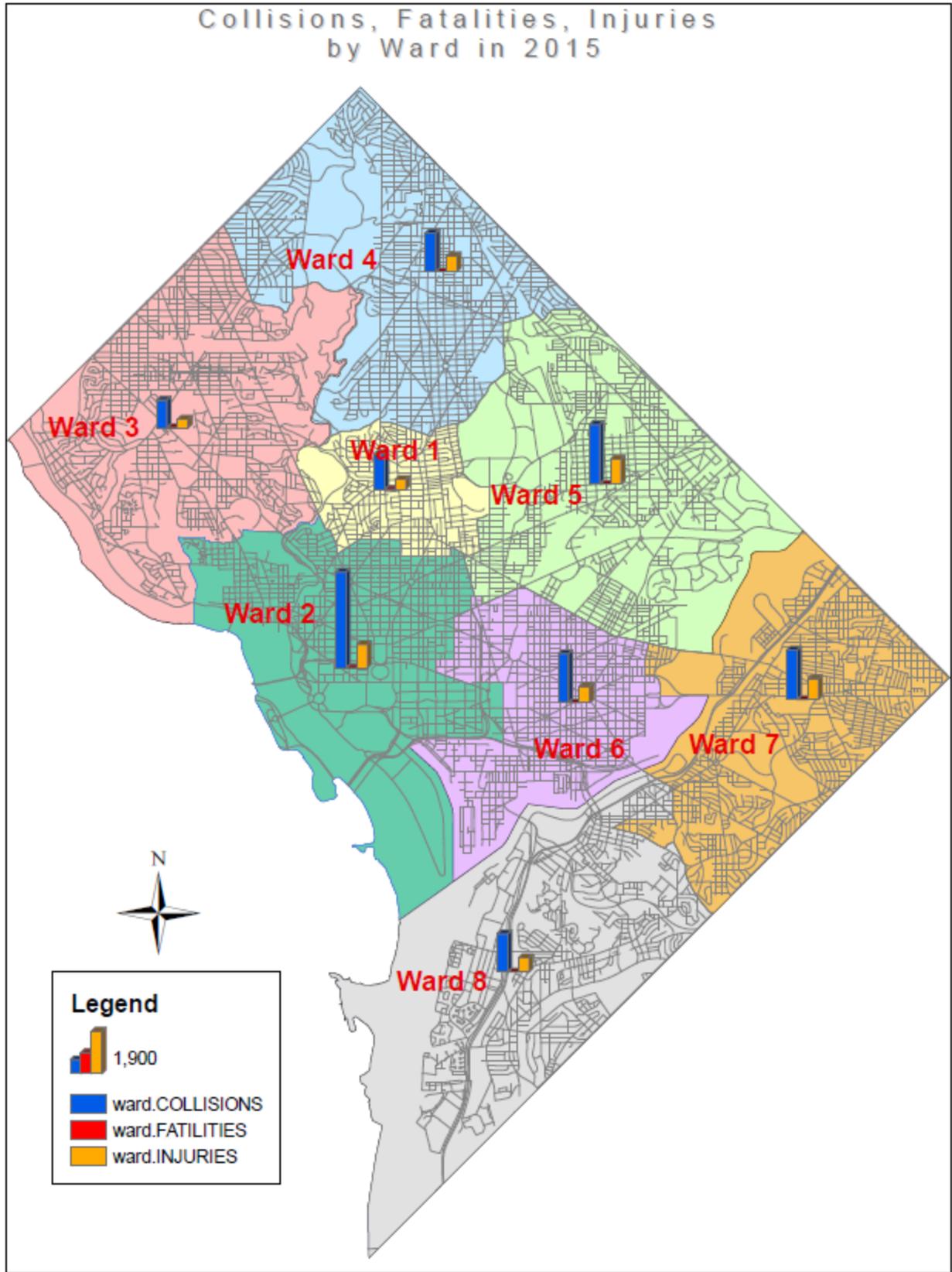


Figure 4.23: Pedestrian Involved Crashes at Intersections in 2015

### 4.3.6 Crashes involving Bicyclists

With the increasing use of bicycles in the District of Columbia, it is pertinent to determine crashes involving bicyclists. Figures 4.24 through 4.27 present the summaries of crashes involving bicyclists from 2013 through 2015 in terms of total crashes, by age and gender. It must be noted that the data for 2015 is only through August 23 of that year.

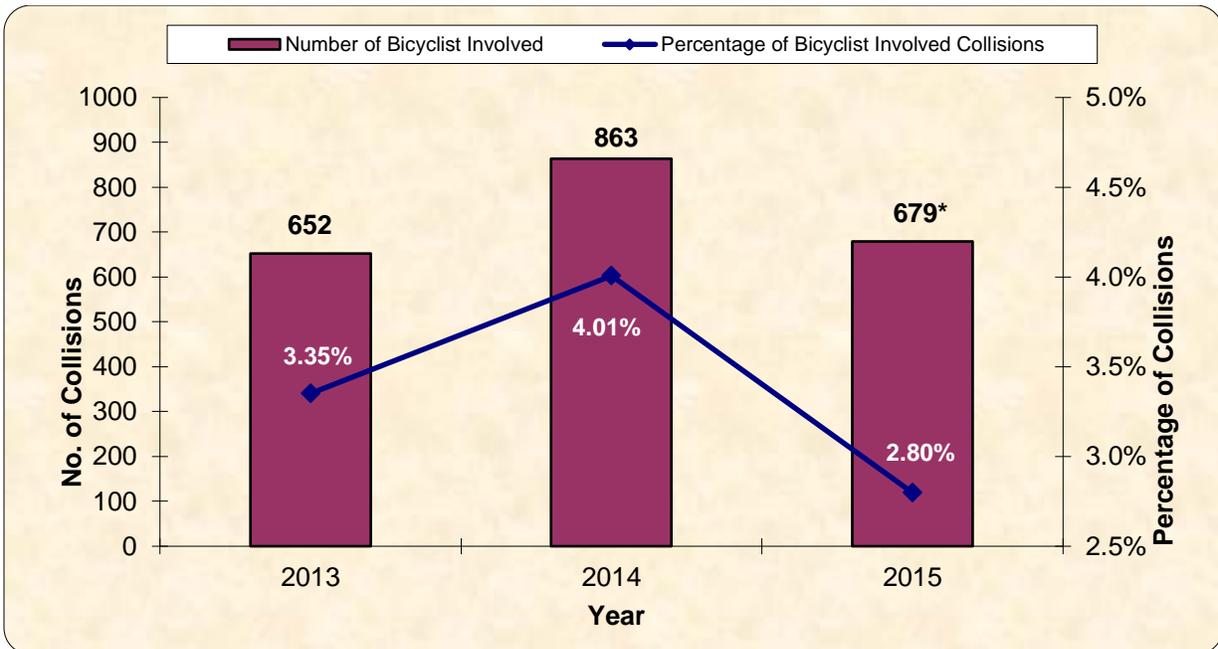


Figure 4.24: Three-year Trend of Crashes involving Bicyclists

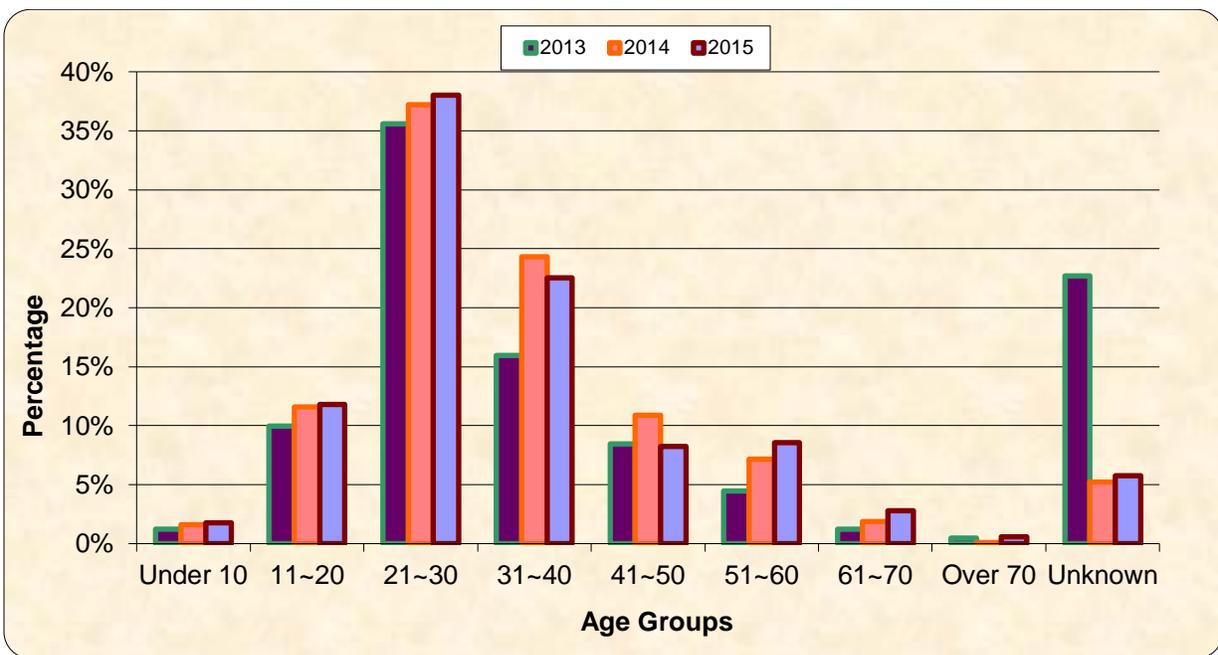
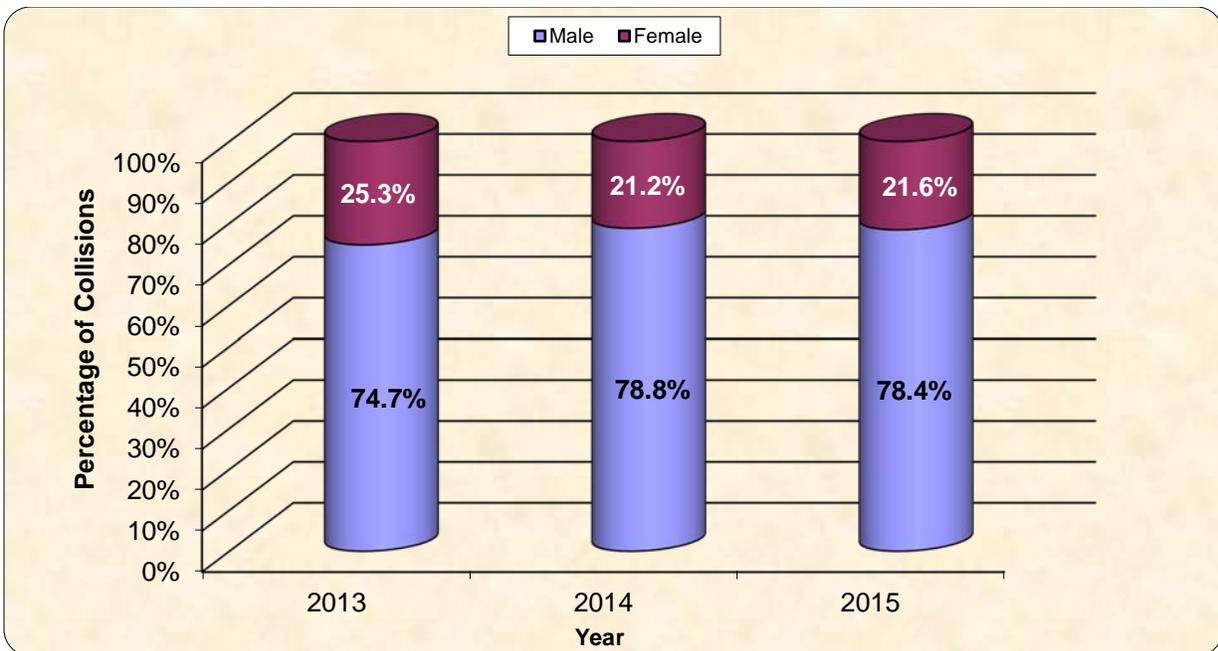


Figure 4.25: Three-year Trend of Crashes involving Bicyclists by Age



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

From the figures, there was a significant decrease in the total number of bicycle crashes in 2015 compared with those in 2014. In addition, the distribution also shows that bicyclists in the age group of 21-30 were the most involved in those crashes. Compared to the reported 2014 bicycle crashes, there was a slight increase in 2015 involving female bicyclists while the male bicyclists’ crashes were slightly reduced. Figure 4.27 shows the GIS map for bicycle crashes at intersections in 2015.

Presented in Table 4.14 is a summary of injury types reported by bicyclists in 2015 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 Type in 2015\***

| Injury Type               | Number     |
|---------------------------|------------|
| Complaint but not visible | 161        |
| Disabling                 | 45         |
| Fatal                     | 1          |
| Non-Disabling             | 268        |
| No Injury                 | 143        |
| Other                     | 23         |
| Unknown                   | 34         |
| <b>Total</b>              | <b>675</b> |

\*Crash Data for 2015 is only through August of that year

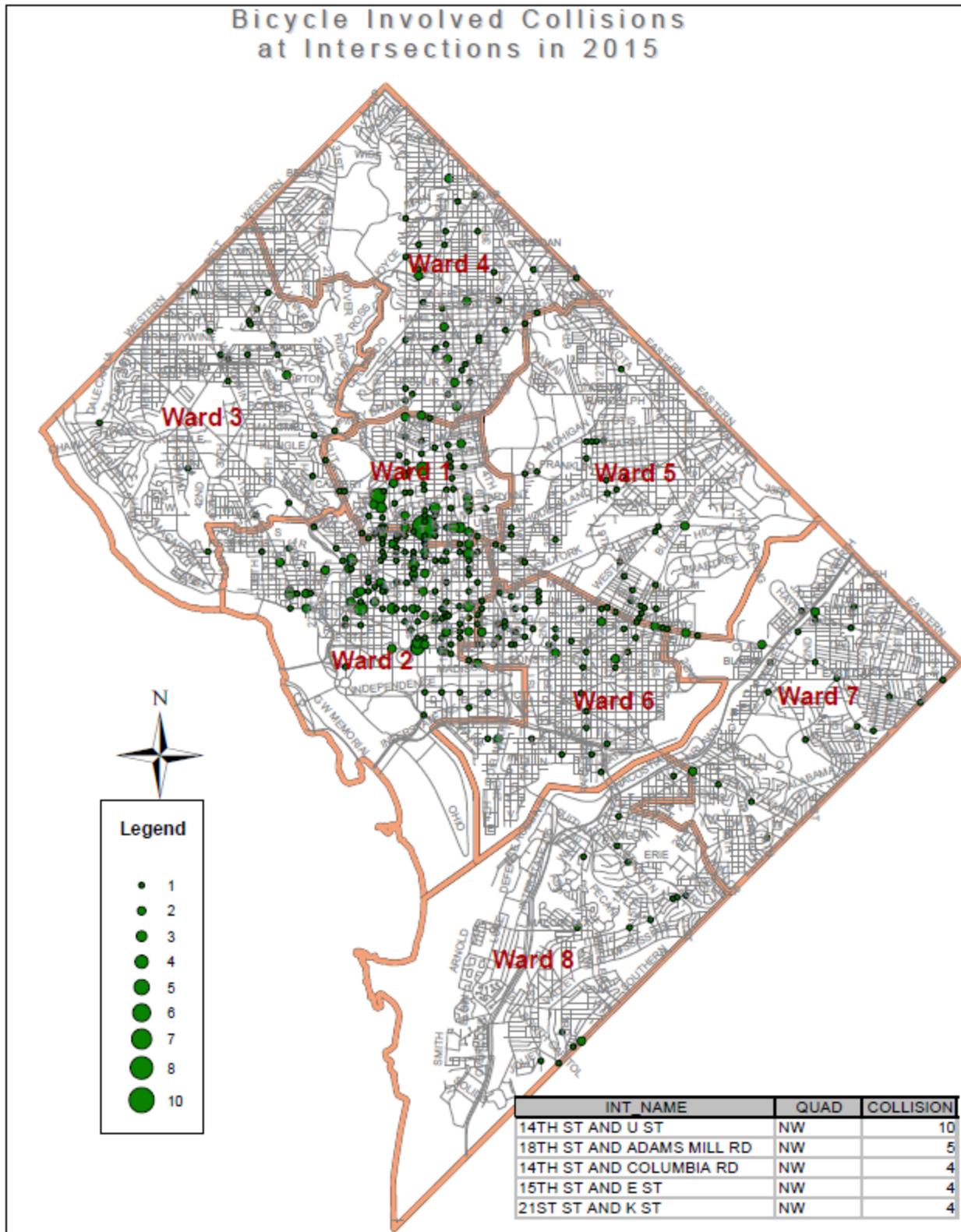


Figure 4.27: Crashes Involving Bicycles at Intersections in 2015

### 4.3.6 Crashes involving Motorcycles

The summaries of crashes involving motorcycles from 2013 through 2015 are presented in Figures 4.28 through 4.30. 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 of approximately 16% in the total number of crashes in 2015 compared with those in the previous year. In addition, the distribution also shows that motorcyclists in the age group of 21-30 were the most involved in crashes. Compared with 2014 crashes, there was a significant decrease in crashes involving males while an increase in the percentage of crashes involving female motorcyclists was reported in 2015.

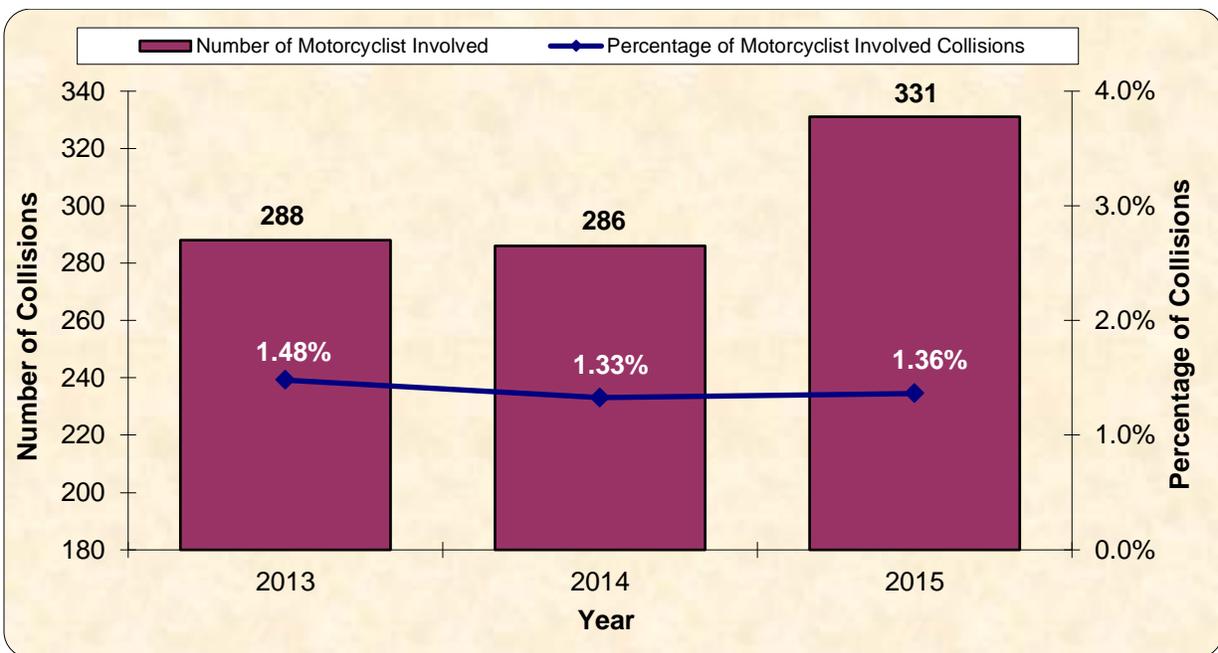


Figure 4.28: Three-year Trend of Crashes involving Motorcyclists

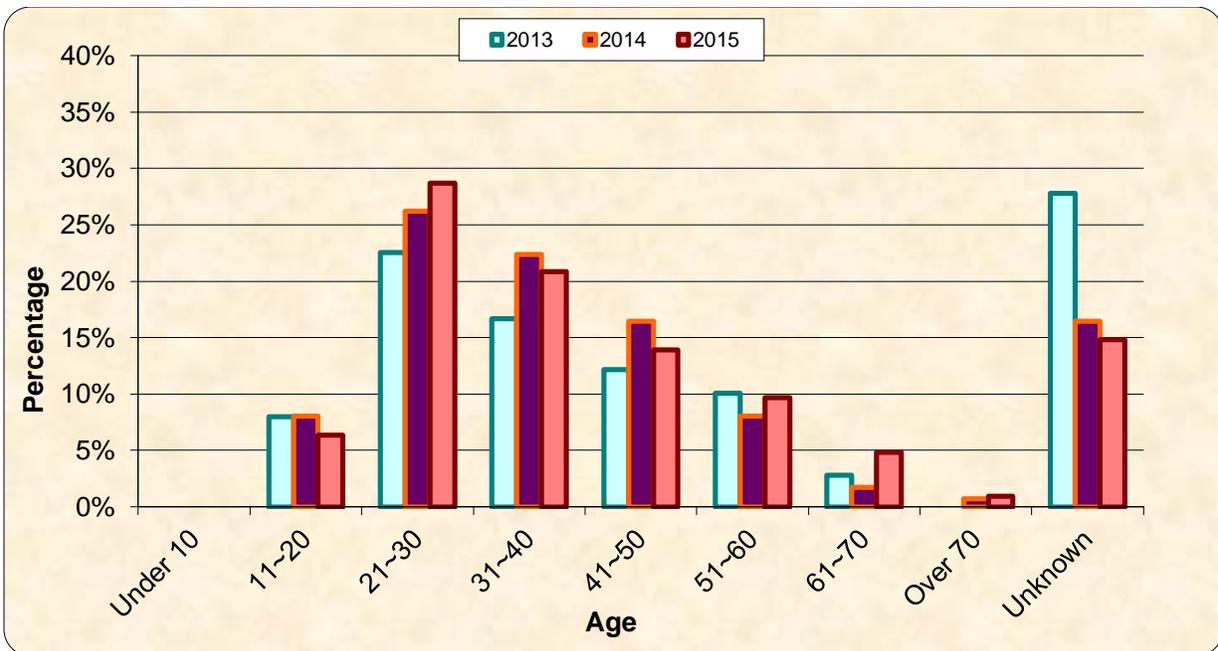


Figure 4.29: Three-year Trend of Crashes involving Motorcyclists by Age

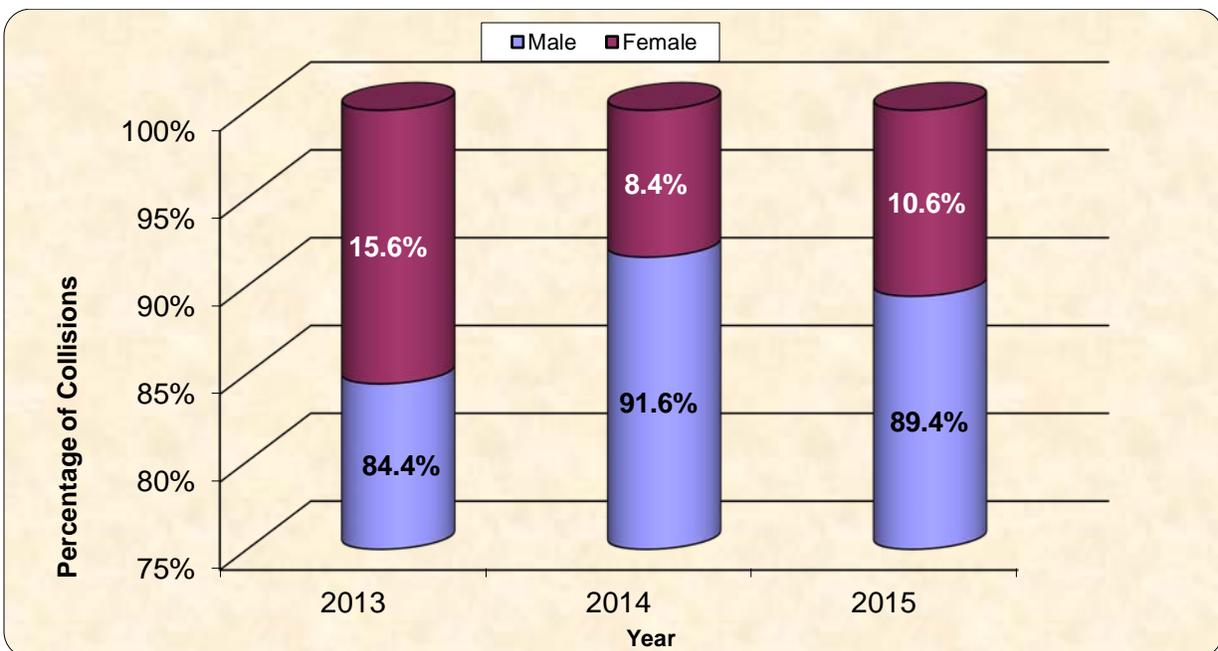


Figure 4.30: Three-year Trend of Crashes involving Motorcyclists by Gender

Presented in Table 4.15 is a summary of injury types reported by motorcyclists in 2015 after being involved in a crash. The majority of the motorcyclists (representing 113 out of 330 or ~34%) sustained non-disabling injuries.

**Table 4.15: Motorcyclists Crashes by Injury Type in 2015**

| <b>Injury Type</b>        | <b>Frequency</b> |
|---------------------------|------------------|
| Complaint but not visible | 50               |
| Disabling                 | 32               |
| Fatal                     | 3                |
| Non-Disabling             | 113              |
| No-Injury                 | 70               |
| Other                     | 13               |
| Unknown                   | 49               |
| <b>Total</b>              | <b>330</b>       |

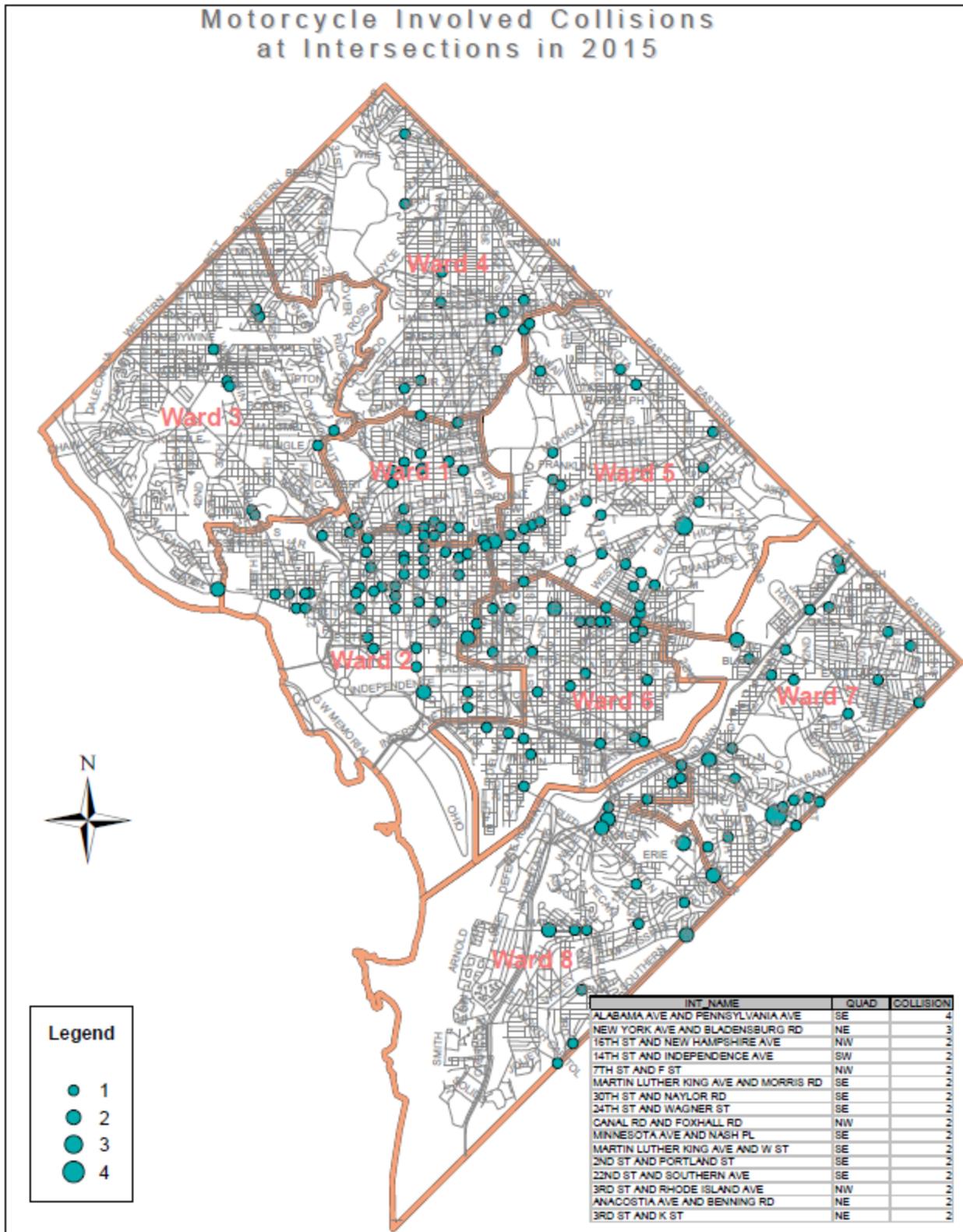


Figure 4.31: Motorcycle Involved Crashes at Intersections in 2015

## 4.4 Drivers

### 4.4.1 Drivers by Age

Crashes by driver age group continue to be important information for government agencies and local authorities to determine the appropriate crash prevention and mitigation strategies. From 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 2014 followed by the age group 31-35. The data shows that the age groups of approximately 18% of those involved in crashes in 2015 were not recorded or were unknown.

Figure 4.35 presents the types of injuries sustained of the drivers by age group in 2015. 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 2013-2015**

| Age Group    | No. of Crashes |               |               | Percentage    |               |               |
|--------------|----------------|---------------|---------------|---------------|---------------|---------------|
|              | 2013           | 2014          | 2015          | 2013          | 2014          | 2015          |
| 16~20        | 576            | 798           | 809           | 1.8%          | 2.2%          | 2.0%          |
| 21~25        | 2485           | 3373          | 3719          | 7.6%          | 9.3%          | 9.0%          |
| 26~30        | 2997           | 4134          | 4918          | 9.1%          | 11.3%         | 11.9%         |
| 31~35        | 2870           | 3899          | 4419          | 8.7%          | 10.7%         | 10.7%         |
| 36~40        | 2433           | 3343          | 3796          | 7.4%          | 9.2%          | 9.2%          |
| 41~45        | 2568           | 3234          | 3465          | 7.8%          | 8.9%          | 8.4%          |
| 46~50        | 2216           | 3001          | 3329          | 6.7%          | 8.2%          | 8.0%          |
| 51~55        | 2068           | 2711          | 3214          | 6.3%          | 7.4%          | 7.8%          |
| 56~60        | 1529           | 2198          | 2479          | 4.7%          | 6.0%          | 6.0%          |
| 61~65        | 1093           | 1453          | 1664          | 3.3%          | 4.0%          | 4.0%          |
| 66~70        | 592            | 895           | 1006          | 1.8%          | 2.5%          | 2.4%          |
| 71~75        | 309            | 430           | 530           | 0.9%          | 1.2%          | 1.3%          |
| Over 75      | 364            | 492           | 569           | 1.1%          | 1.3%          | 1.4%          |
| Unknown      | 10,738         | 6,487         | 7,513         | 32.7%         | 17.8%         | 18.1%         |
| <b>Total</b> | <b>32,838</b>  | <b>36,448</b> | <b>41,430</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> |

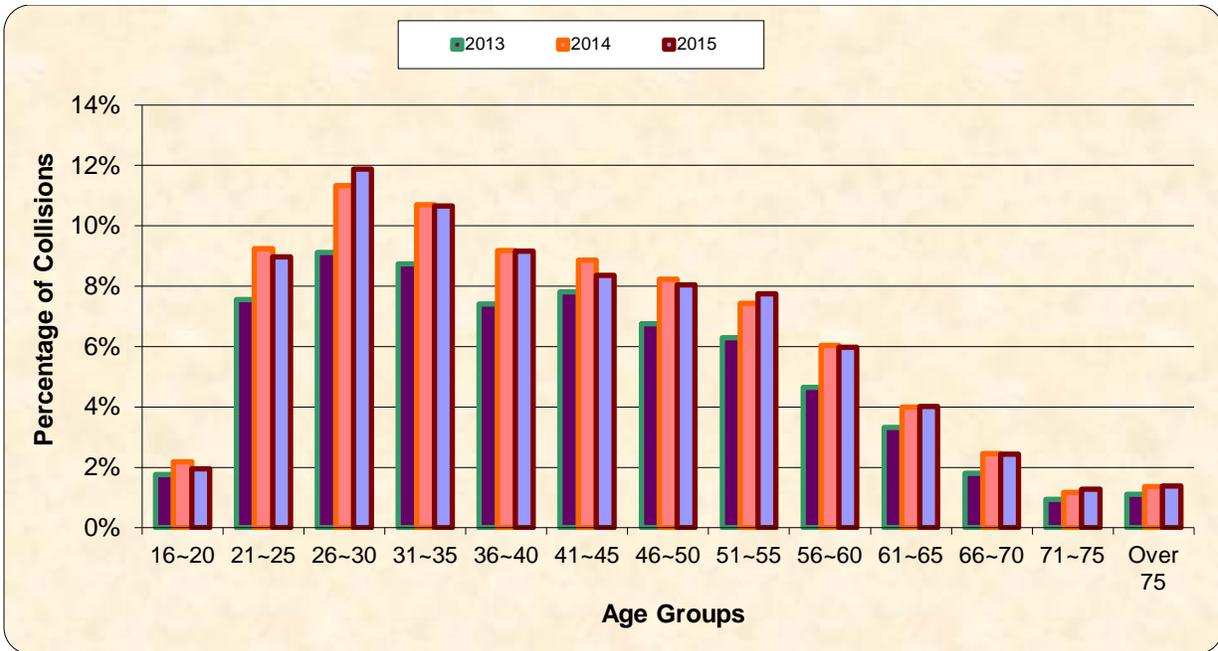


Figure 4.34: Crashes Drivers by Age for 2013-2015

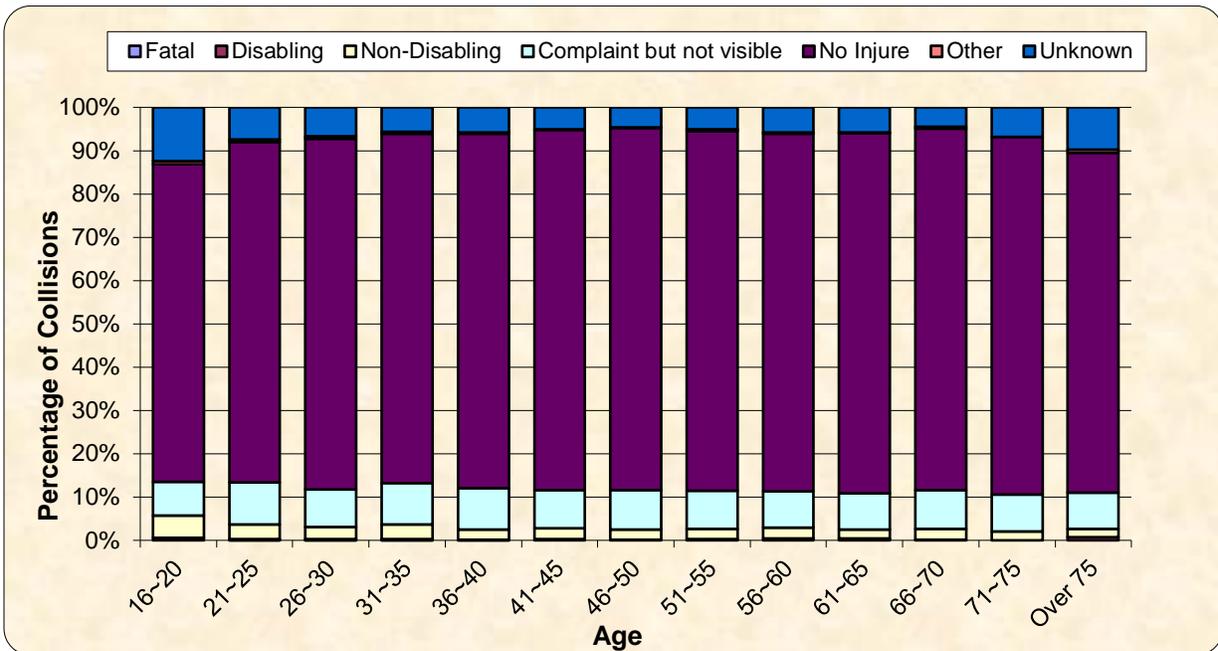


Figure 4.35: Injury Type Drivers by Age for 2015

#### 4.4.2 Drivers by Gender

The summary of crashes recorded by the gender of drivers involved is presented in Figure 4.36. The figure shows that there was a modest decrease (0.9%) in the percentage of

crashes for female drivers, while an increase of 0.9% was also recorded for male drivers in from 2014 to 2015.

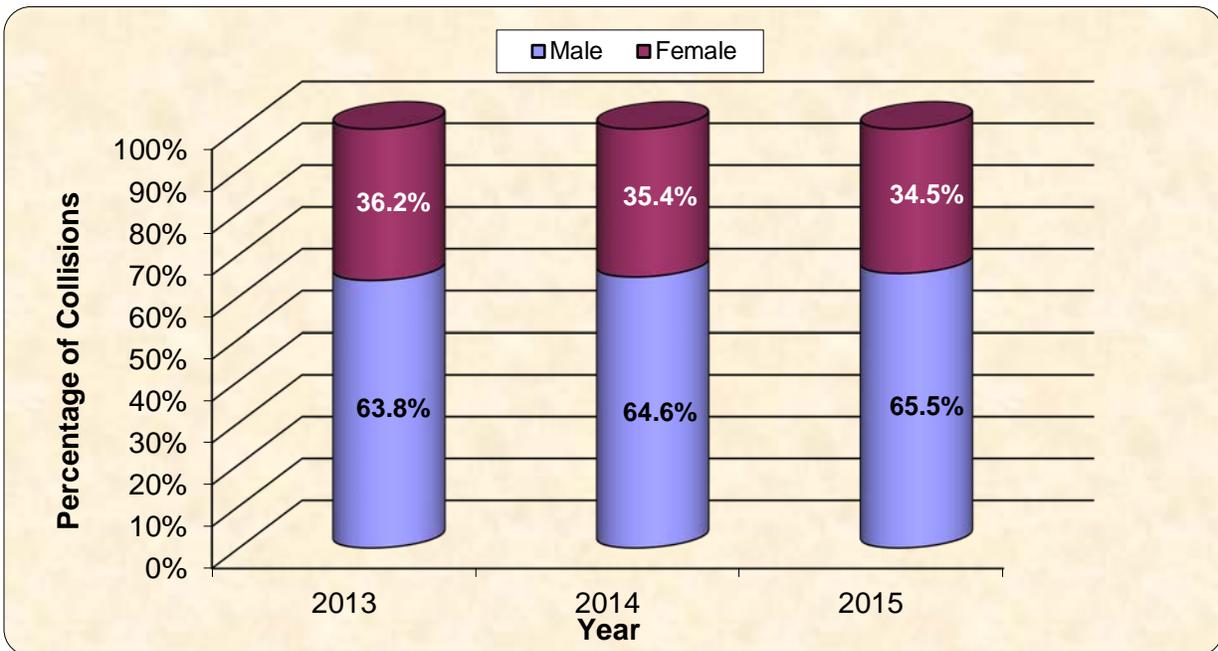


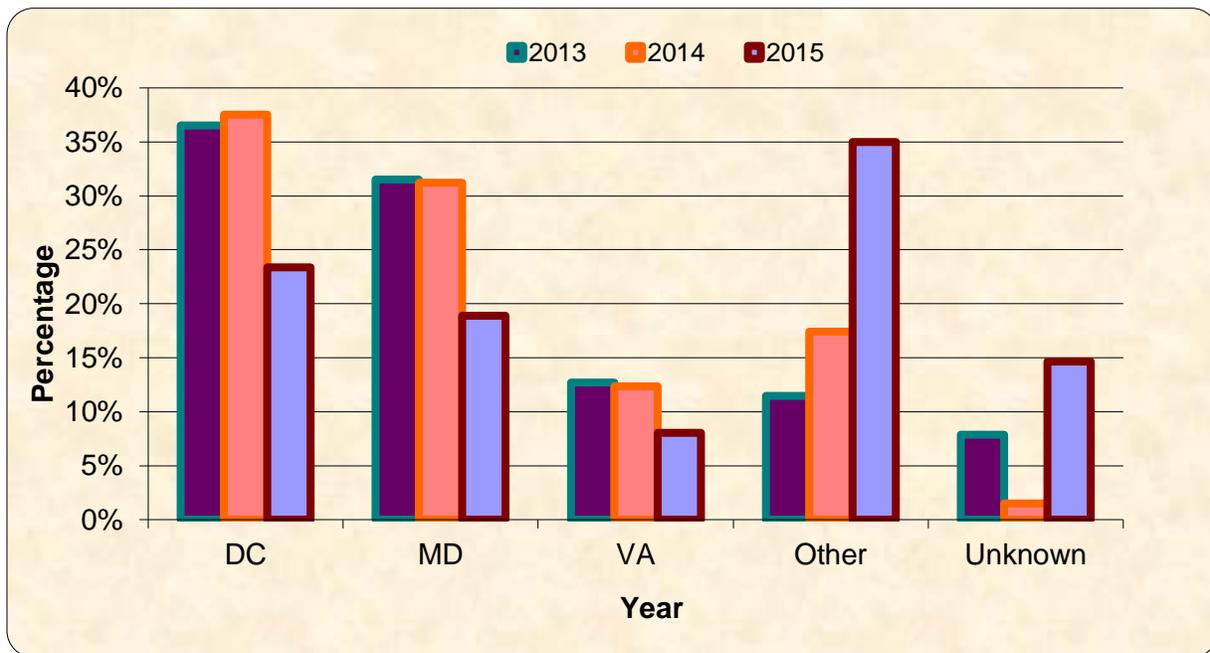
Figure 4.36: Crashes by Gender of Drivers for 2013-2015

#### 4.4.3 Drivers by State Issued Driver’s License

Since most who work in DC commute from the outer suburbs in 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 (~23%) involved DC drivers in 2015, followed by 18.9% from Maryland and 8.1% from Virginia. The remainder were from other states or unknown.

**Table 4.17: Driver Involvement by State of Permit for 2013-2015**

| State        | No. of Collisions |               |               | Percentage    |               |               |
|--------------|-------------------|---------------|---------------|---------------|---------------|---------------|
|              | 2013              | 2014          | 2015          | 2013          | 2014          | 2015          |
| DC           | 11,988            | 13,678        | 9,685         | 36.5%         | 37.5%         | 23.4%         |
| MD           | 10,340            | 11,379        | 7,834         | 31.5%         | 31.2%         | 18.9%         |
| VA           | 4,168             | 4,496         | 3,340         | 12.7%         | 12.3%         | 8.1%          |
| Other        | 3,755             | 6,358         | 14,498        | 11.4%         | 17.4%         | 35.0%         |
| Unknown      | 2,587             | 537           | 6,073         | 7.9%          | 1.5%          | 14.7%         |
| <b>Total</b> | <b>32,838</b>     | <b>36,448</b> | <b>41,430</b> | <b>100.0%</b> | <b>100.0%</b> | <b>100.0%</b> |



**Figure 4.37: Drivers Involved in Crashes by State Issued License for 2013-2015**

#### 4.4.4 Crashes by Drivers Action

The top three drivers’ actions that were responsible for crashes in 2015 were: going straight, turning left and changing lanes which represent respectively (approximately) 30.5%, 13% and 12% of the total crashes as presented in Table 4.18.

**Table 4.18: Driver Involvement by Driver Action and Year for 2013-2015**

| <b>Drivers Action</b>            | <b>2013</b>   | <b>2014</b>   | <b>2015</b>   |
|----------------------------------|---------------|---------------|---------------|
| Going Straight                   | 7,458         | 7,840         | 5,430         |
| Turning Left                     | 1,730         | 1,843         | 2,363         |
| Changing Lanes                   | 1,277         | 1,484         | 2,063         |
| Turning Right                    | 1,038         | 1,252         | 1,485         |
| Backing                          | 924           | 1,057         | 1,274         |
| Entering/Leaving Parked Position | 498           | 578           | 418           |
| Slowing/Stopping                 | 317           | 378           | 275           |
| Merging                          | 384           | 424           | 321           |
| Making U-turn                    | 268           | 273           | 369           |
| Parked                           | 377           | 463           | 975           |
| Overtaking                       | 235           | 252           | 538           |
| Stop/Stand Traffic Lane          | 359           | 368           | 2,080         |
| Ran Off Road                     | 204           | 203           | 112           |
| Avoiding                         | 90            | 127           | 108           |
| <b>Total</b>                     | <b>15,159</b> | <b>16,542</b> | <b>17,811</b> |

## **4.5 Environmental Conditions**

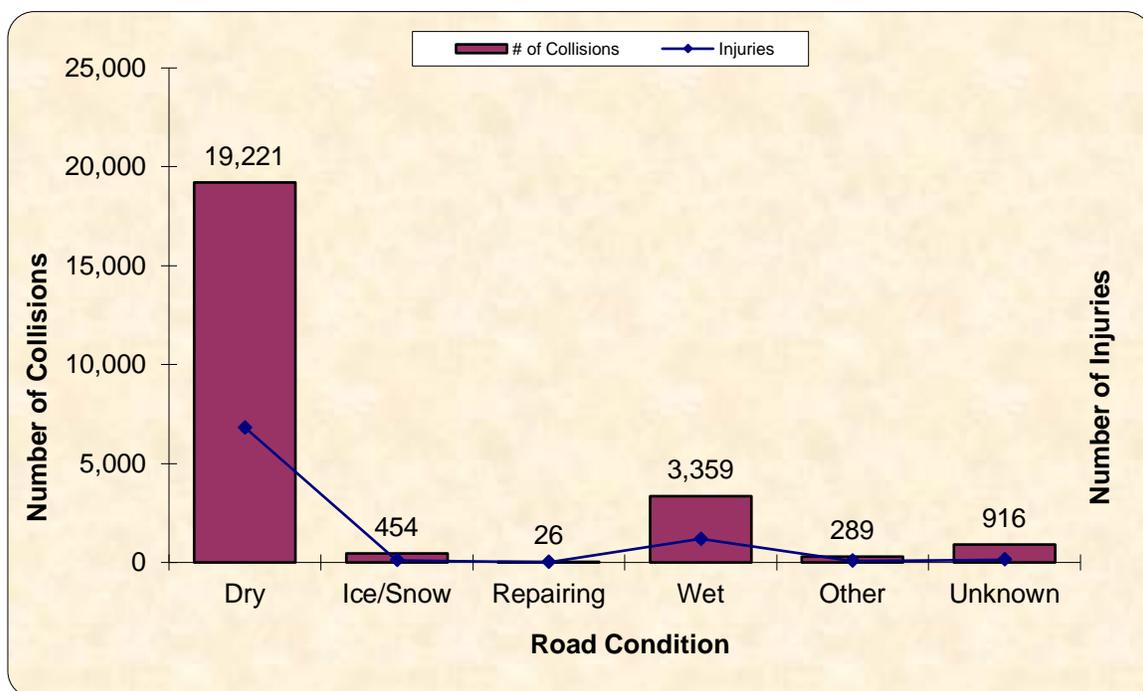
### **4.5.1 Crashes by Roadway Conditions**

The summary of crashes by roadway conditions are presented in Table 4.19 and Figure 4.38. The highest crashes occurred on roads with dry conditions from 2013 through 2015. The results also show that approximately 79% of the total motor vehicle crashes in 2015 occurred on roadways where the road surface was dry.

Crashes occurring during wet roadway conditions were observed to be second highest; with 3,359 (or approximately 14%) being reported in 2015.

**Table 4.19: Summary of Crashes by Roadway Conditions for 2013-2015**

| Road Condition | 2013    |          |        | 2014    |          |        | 2015    |          |        |
|----------------|---------|----------|--------|---------|----------|--------|---------|----------|--------|
|                | Crashes | Fatality | Injury | Crashes | Fatality | Injury | Crashes | Fatality | Injury |
| Dry            | 15649   | 24       | 6141   | 17072   | 22       | 6533   | 19221   | 21       | 6821   |
| Ice            | 31      | 0        | 26     | 125     | 0        | 53     | 190     | 0        | 42     |
| Other          | 42      | 0        | 9      | 33      | 0        | 9      | 101     | 0        | 30     |
| Repairing      | 55      | 1        | 20     | 33      | 0        | 12     | 26      | 1        | 9      |
| Sand..         | 18      | 0        | 9      | 22      | 0        | 10     | 22      | 0        | 5      |
| Slush          | 20      | 0        | 4      | 96      | 0        | 23     | 103     | 0        | 31     |
| Snow           | 61      | 1        | 29     | 236     | 1        | 62     | 264     | 0        | 60     |
| Standing Water | 7       | 0        | 1      | 6       | 0        | 1      | 63      | 0        | 19     |
| Unknown        | 540     | 0        | 73     | 611     | 0        | 79     | 640     | 0        | 73     |
| Wet            | 2625    | 2        | 1054   | 2842    | 1        | 1119   | 3359    | 1        | 1183   |



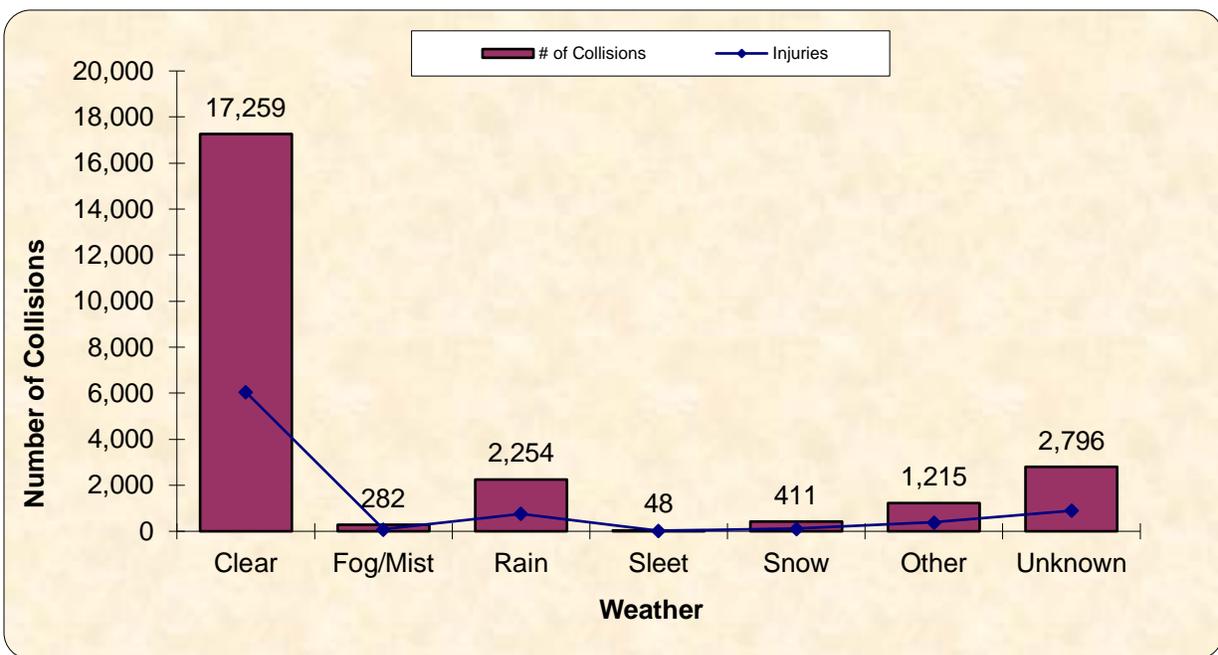
**Figure 4.38: Number of Crashes and Injuries by Road Condition**

### 4.5.2 Crashes by Weather Conditions

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

**Table 4.21: Summary of Crashes by Weather Condition for 2012-2014**

| Weather      | 2013          |           |              | 2014          |           |              | 2015          |           |              |
|--------------|---------------|-----------|--------------|---------------|-----------|--------------|---------------|-----------|--------------|
|              | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       |
| Clear        | 15,567        | 23        | 6,135        | 17,134        | 22        | 6,552        | 17,259        | 19        | 6,055        |
| Fog/Mist     | 263           | 2         | 92           | 176           | 0         | 59           | 282           | 0         | 92           |
| Rain         | 2,032         | 1         | 829          | 2,240         | 1         | 875          | 2,254         | 1         | 769          |
| Sleet        | 27            | 0         | 8            | 22            | 0         | 12           | 48            | 0         | 24           |
| Snow         | 152           | 0         | 64           | 388           | 1         | 119          | 411           | 0         | 110          |
| Other        | 260           | 0         | 104          | 257           | 1         | 110          | 1,215         | 1         | 396          |
| Unknown      | 1,155         | 3         | 273          | 1,322         | 1         | 303          | 2,796         | 5         | 895          |
| <b>Total</b> | <b>19,456</b> | <b>29</b> | <b>7,505</b> | <b>21,539</b> | <b>26</b> | <b>8,030</b> | <b>24,265</b> | <b>26</b> | <b>8,341</b> |



**Figure 4.40: Number of Crashes and Injuries by Weather in 2015**

From the summary, it can be observed that the majority of the crashes occurred under clear weather conditions which represent approximately 71% (or 17,259) of the total crashes in 2015. This is followed by crashes occurring during rainy conditions, representing approximately 9% (or 2,254) of the total crashes in 2015.

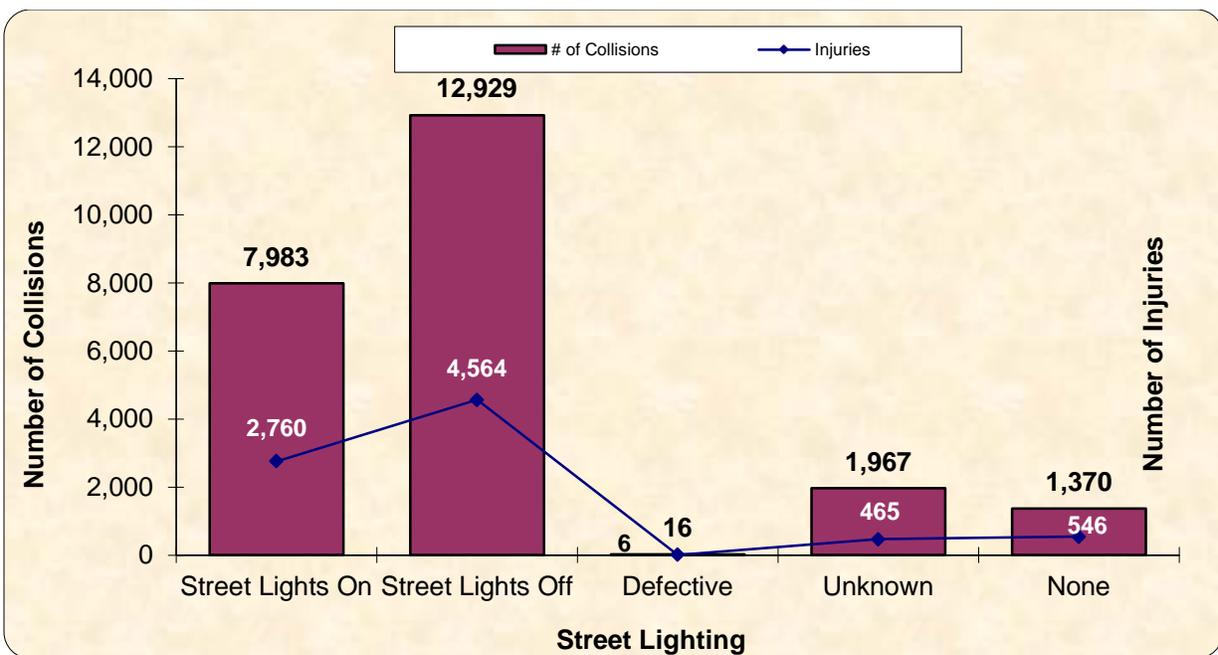
### 4.5.3 Crashes by Lighting Conditions

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 off. These crashes occurred under such conditions

in approximately 53% (12,929) of the total reported crashes in 2015. Approximately 33% (7,983) of the total reported motor vehicle crashes in 2015 occurred on roadways when street illumination was present.

**Table 4.22: Summary of Crashes by Street Lighting for 2013-2015**

| Street Lighting   | 2013          |           |              | 2014          |           |              | 2015          |           |              |
|-------------------|---------------|-----------|--------------|---------------|-----------|--------------|---------------|-----------|--------------|
|                   | Collisions    | Fatality  | Injuries     | Collisions    | Fatality  | Injuries     | Collisions    | Fatality  | Injuries     |
| Street Lights On  | 6,362         | 12        | 2,489        | 6,951         | 10        | 2,613        | 7,983         | 14        | 2,760        |
| Street Lights Off | 10,488        | 14        | 4,159        | 11,059        | 13        | 4,308        | 12,929        | 6         | 4,564        |
| Defective         | 15            | 0         | 8            | 9             | 0         | 2            | 16            | 0         | 6            |
| Unknown           | 1,434         | 1         | 331          | 1,817         | 2         | 465          | 1,967         | 3         | 465          |
| None              | 1,157         | 2         | 518          | 1,703         | 1         | 642          | 1,370         | 3         | 546          |
| <b>Total</b>      | <b>19,456</b> | <b>29</b> | <b>7,505</b> | <b>21,539</b> | <b>26</b> | <b>8,030</b> | <b>24,265</b> | <b>26</b> | <b>8,341</b> |

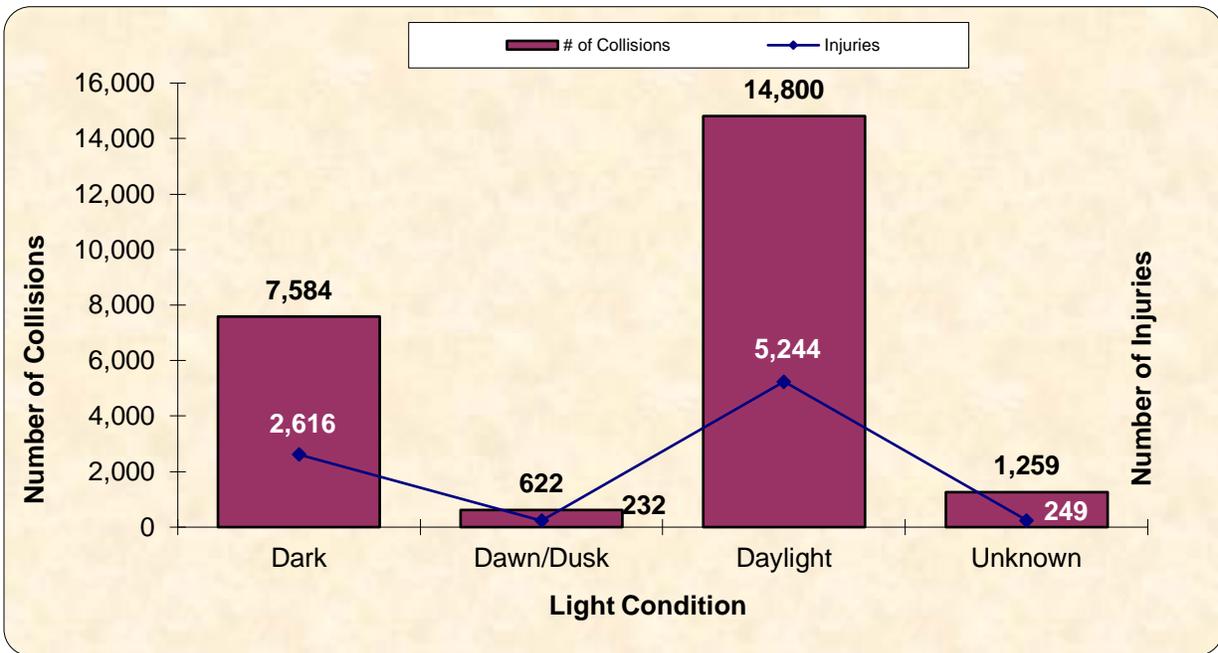


**Figure 4.41: Number of Crashes and Injuries by Street Lighting**

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% (14,800) of the total reported motor vehicle crashes in 2015. Approximately 31% (7,584) of the total reported crashes occurred in the dark in 2015.

**Table 4.23 Summary of Crashes by Lighting Condition for 2013-2015**

| Light Condition | 2013          |           |              | 2014          |           |              | 2015          |           |              |
|-----------------|---------------|-----------|--------------|---------------|-----------|--------------|---------------|-----------|--------------|
|                 | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       |
| Dark            | 6,043         | 13        | 2,346        | 6,732         | 11        | 2,519        | 7,584         | 13        | 2,616        |
| Dawn/Dusk       | 437           | 0         | 172          | 482           | 0         | 172          | 622           | 2         | 232          |
| Daylight        | 11,922        | 15        | 4,759        | 13,159        | 14        | 5,103        | 14,800        | 8         | 5,244        |
| Unknown         | 1,054         | 1         | 228          | 1,166         | 1         | 236          | 1,259         | 3         | 249          |
| <b>Total</b>    | <b>19,456</b> | <b>39</b> | <b>6,792</b> | <b>21,539</b> | <b>26</b> | <b>8,030</b> | <b>24,265</b> | <b>26</b> | <b>8,341</b> |



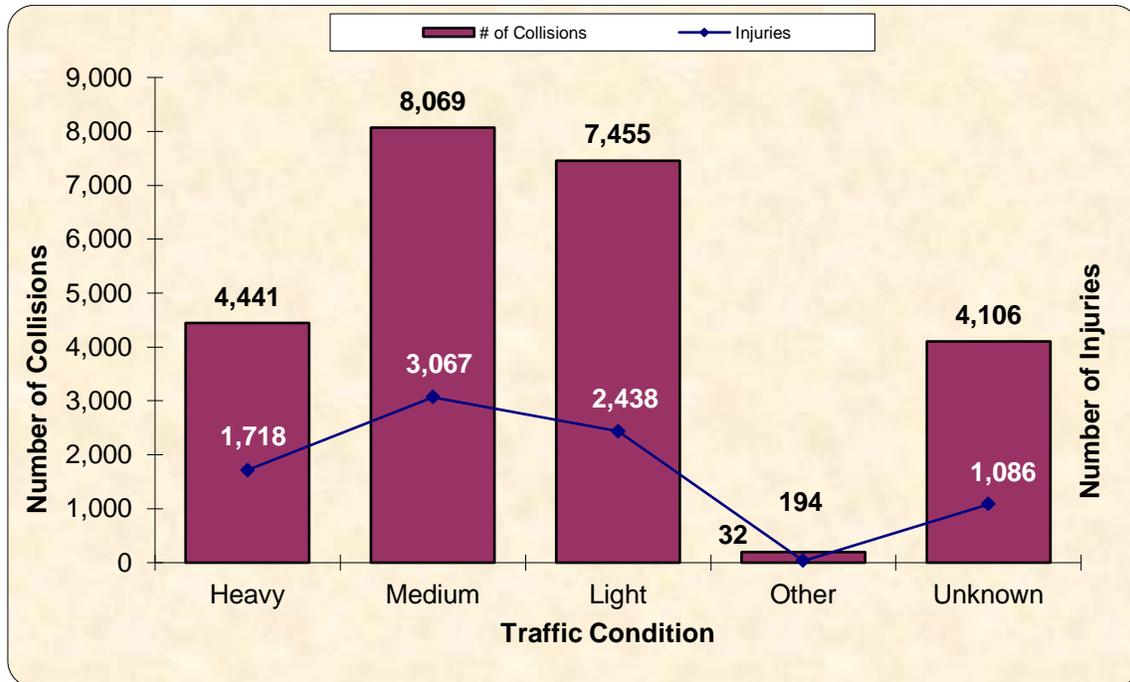
**Figure 4.42: Number of Crashes and Injuries by Lighting Condition in 2015**

#### 4.5.4 Crashes by Traffic Conditions

Traffic exposure 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. The results show that approximately 33% of the total reported crashes in 2015 occurred in medium (8,069) traffic conditions with approximately 31% under light (7,455) traffic conditions.

**Table 4.24: Summary of Crashes by Traffic Condition in 2013-2015**

| Traffic Condition | 2013          |            |              | 2014          |            |              | 2015          |            |              |
|-------------------|---------------|------------|--------------|---------------|------------|--------------|---------------|------------|--------------|
|                   | Collisions    | Fatalities | Injuries     | Collisions    | Fatalities | Injuries     | Collisions    | Fatalities | Injuries     |
| Heavy             | 3,345         | 1          | 1,497        | 3,833         | 2          | 1,593        | 4,441         | 3          | 1,718        |
| Medium            | 6,464         | 7          | 2,755        | 7,073         | 6          | 3,014        | 8,069         | 6          | 3,067        |
| Light             | 5,801         | 16         | 2,165        | 6,605         | 16         | 2,298        | 7,455         | 12         | 2,438        |
| Other             | 272           | 0          | 42           | 266           | 0          | 49           | 194           | 1          | 32           |
| Unknown           | 3,574         | 5          | 1,046        | 3,762         | 2          | 1,076        | 4,106         | 4          | 1,086        |
| <b>Total</b>      | <b>19,456</b> | <b>29</b>  | <b>7,505</b> | <b>21,539</b> | <b>26</b>  | <b>8,030</b> | <b>24,265</b> | <b>26</b>  | <b>8,341</b> |



**Figure 4.43: Number of Crashes and Injuries by Traffic Conditions in 2015**

#### 4.5.5 Crashes by Traffic Control Type

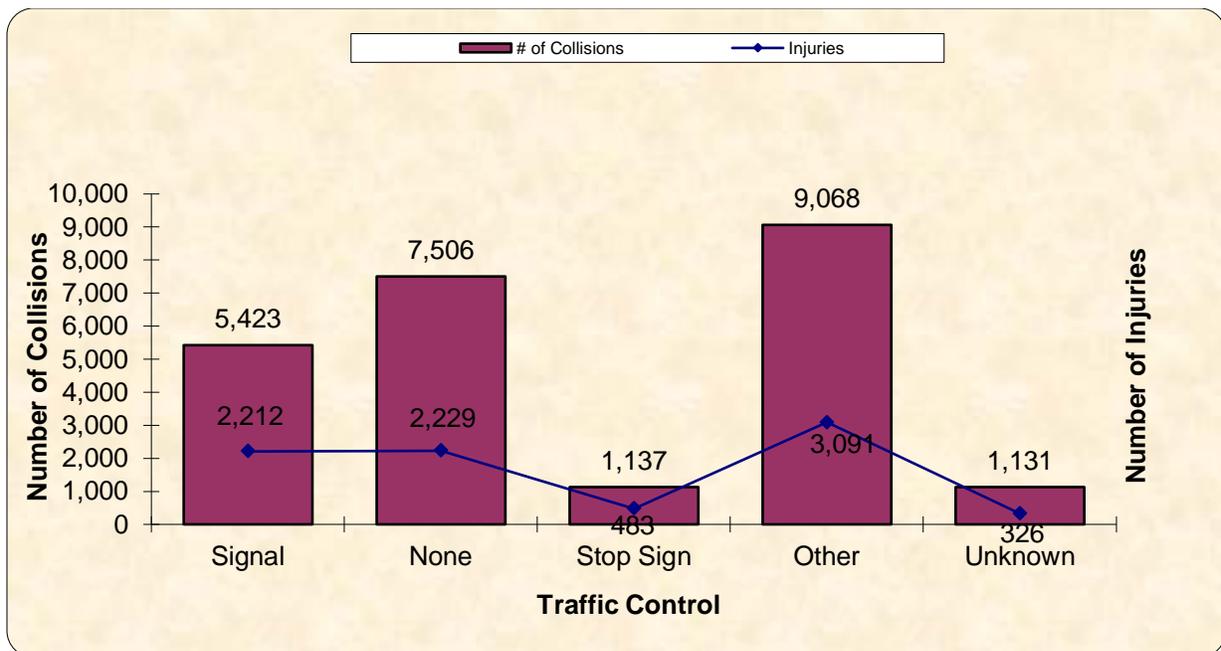
Traffic control devices serve as an important vehicular and pedestrian guidance to ensure the safety of general public. The summary of crashes by the type of traffic control device is presented in Table 4.25 and graphically in Figure 4.44 for 2015. From the results, approximately 22% of crashes occurred at or close to a signalized intersection. The majority of the crashes (31%) occurred at locations where there is no traffic control.

**Table 4.25: Summary of Crashes by Traffic Control in 2013-2015**

| Traffic Controls | 2013          |           |              | 2014          |           |              | 2015          |           |              |
|------------------|---------------|-----------|--------------|---------------|-----------|--------------|---------------|-----------|--------------|
|                  | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       | Collisions    | Fatality  | Injury       |
| Signal           | 7,227         | 13        | 3,159        | 7,838         | 7         | 3,521        | 5,423         | 4         | 2,212        |
| None             | 9,392         | 13        | 3,175        | 10,556        | 13        | 3,288        | 7,506         | 10        | 2,229        |
| Stop Sign        | 1,505         | 1         | 698          | 1,599         | 2         | 727          | 1,137         | 0         | 483          |
| Other            | 493           | 1         | 244          | 533           | 2         | 233          | 9,068         | 9         | 3,091        |
| Unknown          | 839           | 1         | 229          | 1,013         | 2         | 261          | 1,131         | 3         | 326          |
| <b>Total</b>     | <b>19,456</b> | <b>29</b> | <b>7,505</b> | <b>21,539</b> | <b>26</b> | <b>8,030</b> | <b>24,265</b> | <b>26</b> | <b>8,341</b> |

\* "Other" includes yield, flashing, turn restricted and officer.

\* "None" includes mid-block crashes.



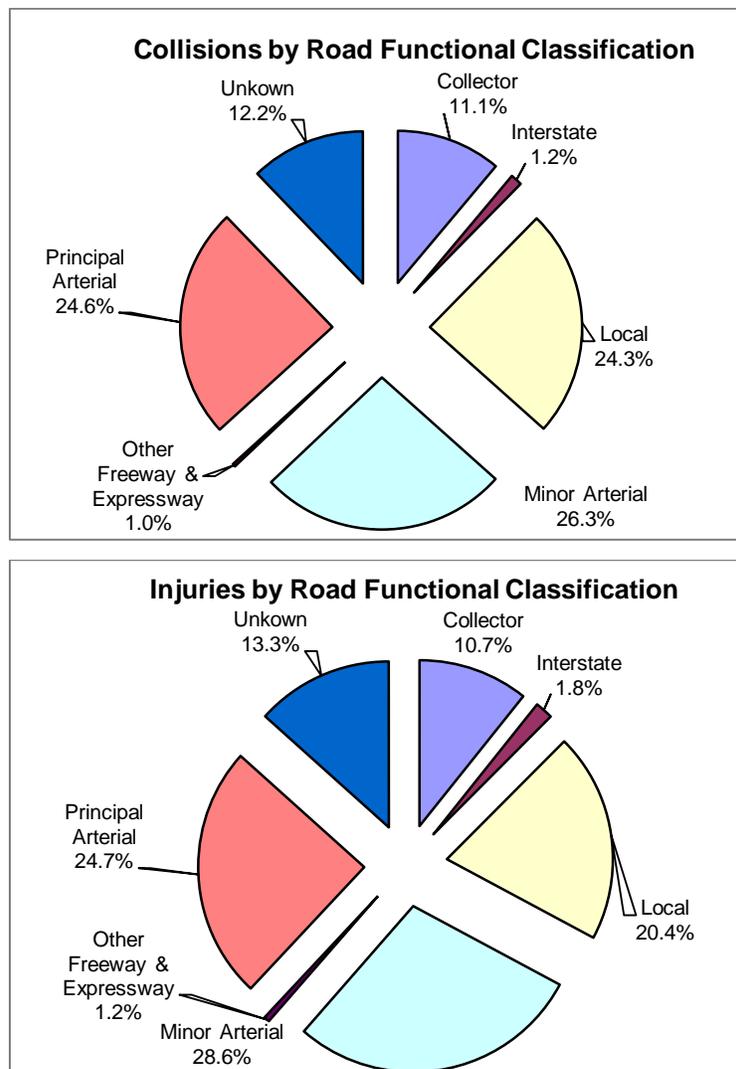
**Figure 4.44: Number of Crashes and Injuries by Traffic Control**

#### 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 2014 to 2015 showed for the most part an increasing trend.

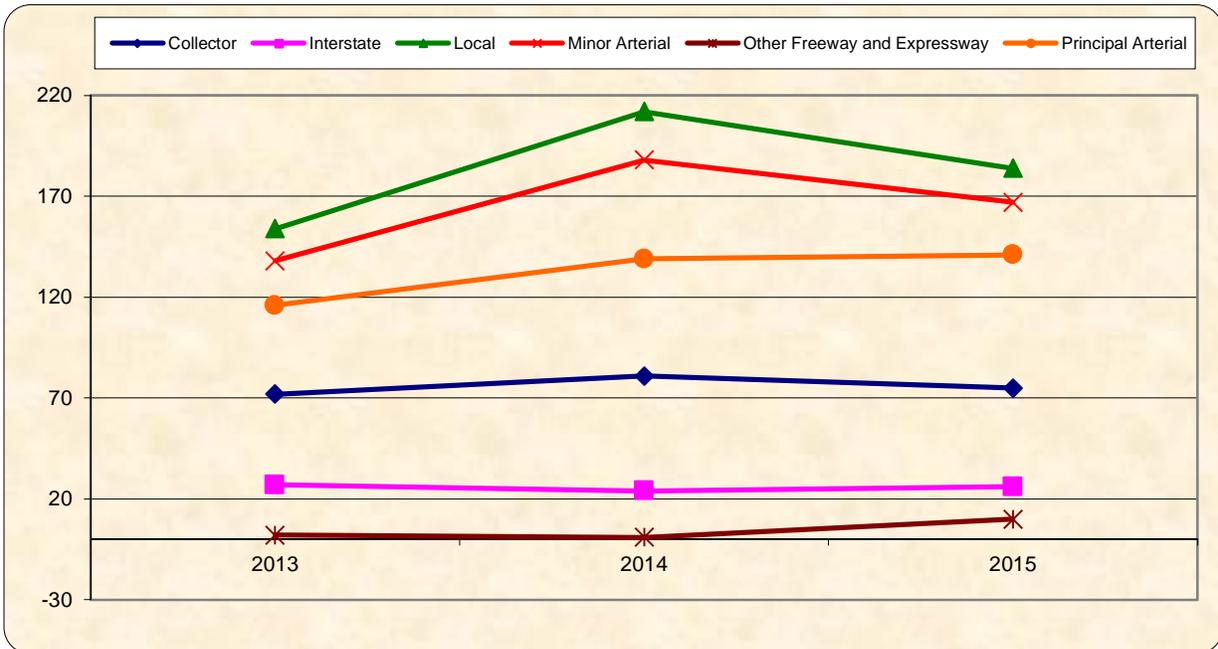
**Table 4.26: Summary of Crashes by Roadway Functional Classification from 2013-2015**

| Road Func. Classification  | 2013         |            |             | 2014         |            |             | 2015         |            |             |
|----------------------------|--------------|------------|-------------|--------------|------------|-------------|--------------|------------|-------------|
|                            | Collisions   | Fatalities | Injuries    | Collisions   | Fatalities | Injuries    | Collisions   | Fatalities | Injuries    |
| Collector                  | 2545         | 4          | 961         | 2766         | 1          | 1009        | 2696         | 3          | 894         |
| Interstate                 | 355          | 0          | 179         | 267          | 1          | 150         | 299          | 0          | 146         |
| Local                      | 5186         | 7          | 1621        | 6092         | 6          | 1848        | 5890         | 3          | 1698        |
| Minor Arterial             | 5447         | 7          | 2289        | 6105         | 9          | 2512        | 6386         | 9          | 2384        |
| Other Freeway & Expressway | 60           | 2          | 46          | 53           | 1          | 30          | 79           | 2          | 46          |
| Principal Arterial         | 4989         | 7          | 1926        | 5257         | 4          | 1963        | 5960         | 7          | 2060        |
| Unknown                    | 874          | 2          | 483         | 999          | 4          | 518         | 2955         | 2          | 1113        |
| <b>Total</b>               | <b>19456</b> | <b>29</b>  | <b>7505</b> | <b>21539</b> | <b>26</b>  | <b>8030</b> | <b>24265</b> | <b>26</b>  | <b>8341</b> |

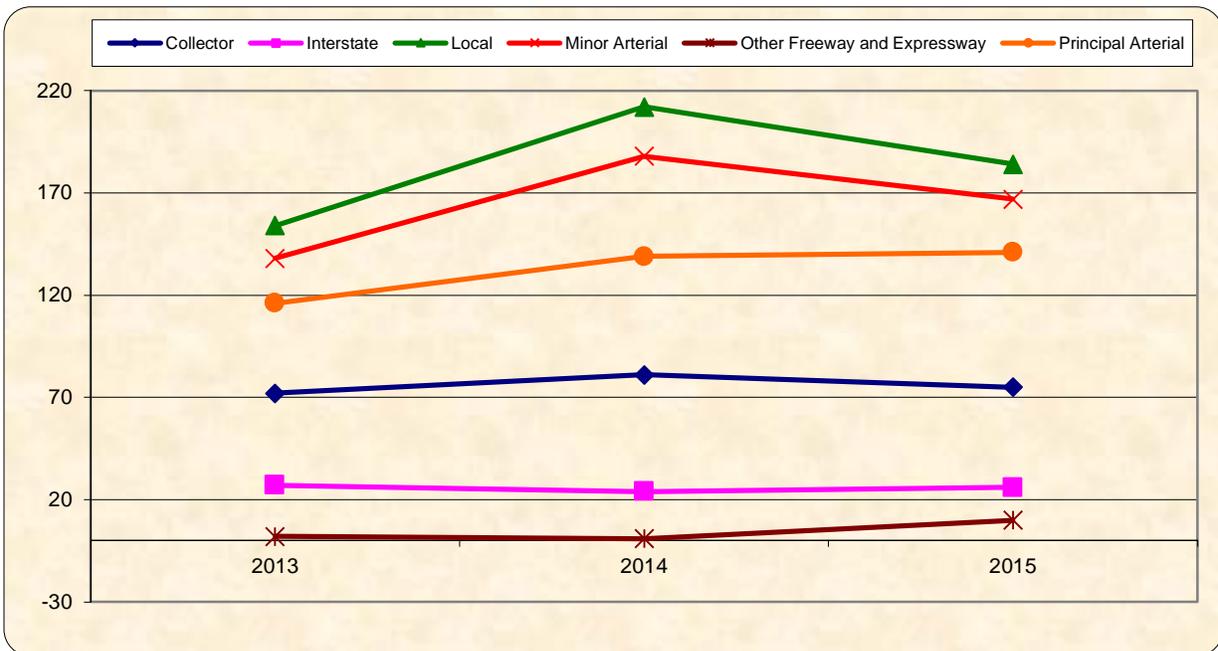


**Figure 4.45: Crashes and Injuries by Functional Classification**

Figures 4.46 and 4.47 respectively present the frequency of speed-related crashes and injuries on all functional classifications from 2013 to 2015.

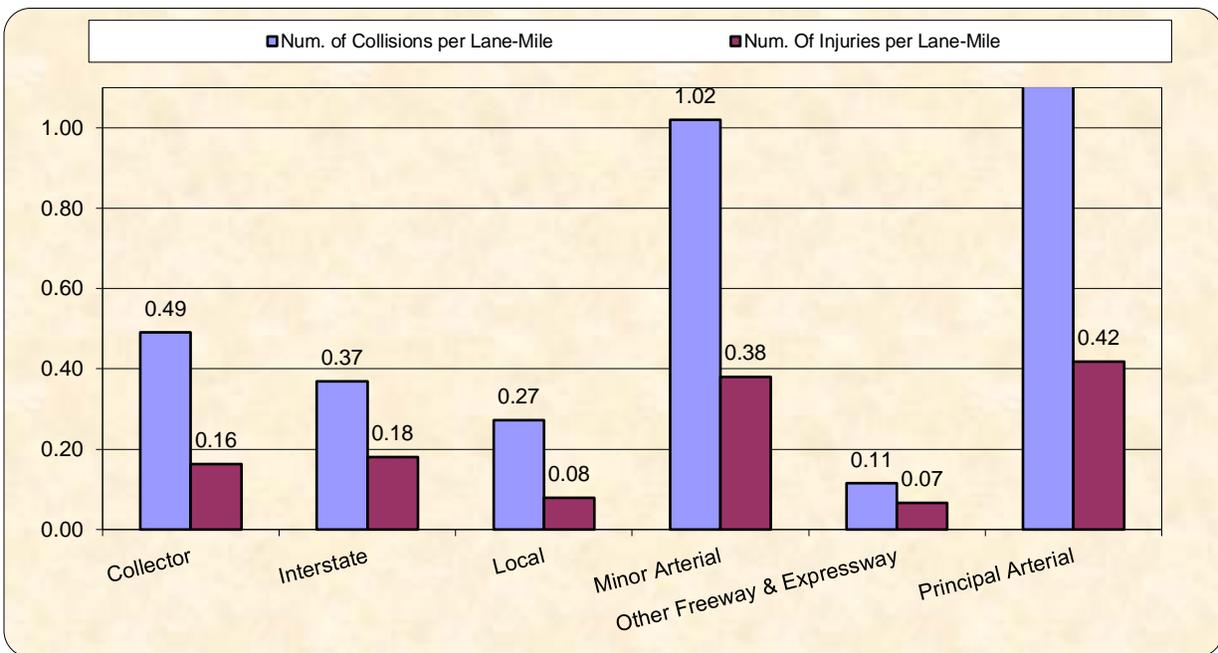


**Figure 4.46: Number of Speed-Related Crashes by Roadway Functional Classification**



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

In addition, Figure 4.48 shows the number of crashes and injuries per lane-miles by roadway functional classification in 2014. The highest number of crashes and injuries per lane-mile was reported on principal arterials.



**Figure 4.48: Number of Crashes and Injuries per lane-mile by Functional Classification in 2015**

## 4.6 Contributing Factors

### 4.6.1 Crashes by Primary Crash Contributing Factors

Table 4.27 presents the summary of all reported contributing factors for the crashes in DC from 2013 through 2015. With the exception of “No violation” and “Other”, the prominent contributing factors of crashes reported in 2015 included driver inattention, changing lanes without caution, and following too close.

### 4.6.2 Speed-Related Crashes

Speeding is one of the most common contributing factors of traffic crashes. The summary of crashes related to speeding is presented in Figure 4.49. Only 2.8% of the reported crashes were speed-related, which represents an increase compared to the statistics in 2014.

**Table 4.27: Number of Crashes by Contributing Factors in 2013-2015**

| <b>Contributing Factor</b>         | <b>2013</b>  | <b>2014</b>  | <b>2015</b>  |
|------------------------------------|--------------|--------------|--------------|
| No Violation                       | 18876        | 21087        | 20682        |
| Other                              | 3863         | 4082         | 4496         |
| Driver Inattention                 | 3100         | 3743         | <b>2643</b>  |
| Following too Close                | 1396         | 1465         | 1855         |
| Changing Lanes W/O Caution         | 1437         | 1571         | 1145         |
| Failed To Yield Right-of-way       | 0            | 0            | 848          |
| Speed                              | 592          | 735          | 697          |
| Improper Backing                   | 516          | 531          | 679          |
| Improper Passing                   | 482          | 513          | 662          |
| Failed To Keep In Proper Lane      | 0            | 0            | 651          |
| Auto/Ped. Right of Way             | 979          | 911          | 557          |
| Improper Turn                      | 0            | 0            | 350          |
| Red Light Violation                | 375          | 377          | 345          |
| Other Distraction                  | 261          | 280          | 260          |
| Alcohol/Drug Influence             | 437          | 461          | 246          |
| Stop Sign                          | 162          | 170          | 179          |
| Wrong Way/Side of Street           | 126          | 125          | 136          |
| Pedestrian Violation               | 234          | 230          | 134          |
| Open Door to Traffic               | 224          | 231          | 120          |
| Diregarded Marking/Signing         | 0            | 0            | 115          |
| Road Defects                       | 56           | 79           | 78           |
| Driver Vision Obstructed           | 83           | 83           | 77           |
| Defective Brakes, Lights, etc.     | 69           | 81           | 48           |
| Cell Phone/Other Electronic Device | 48           | 46           | 30           |
| Yield Sign                         | 20           | 36           | 21           |
| Right Turn on Red                  | 19           | 16           | 13           |
| Fail to Set Parking Brake          | 19           | 25           | 11           |
| Flashing/Directional Light         | 11           | 4            | 8            |
| <b>Total</b>                       | <b>33385</b> | <b>36882</b> | <b>37086</b> |

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 the highest group of drivers involved in speed-related crashes.

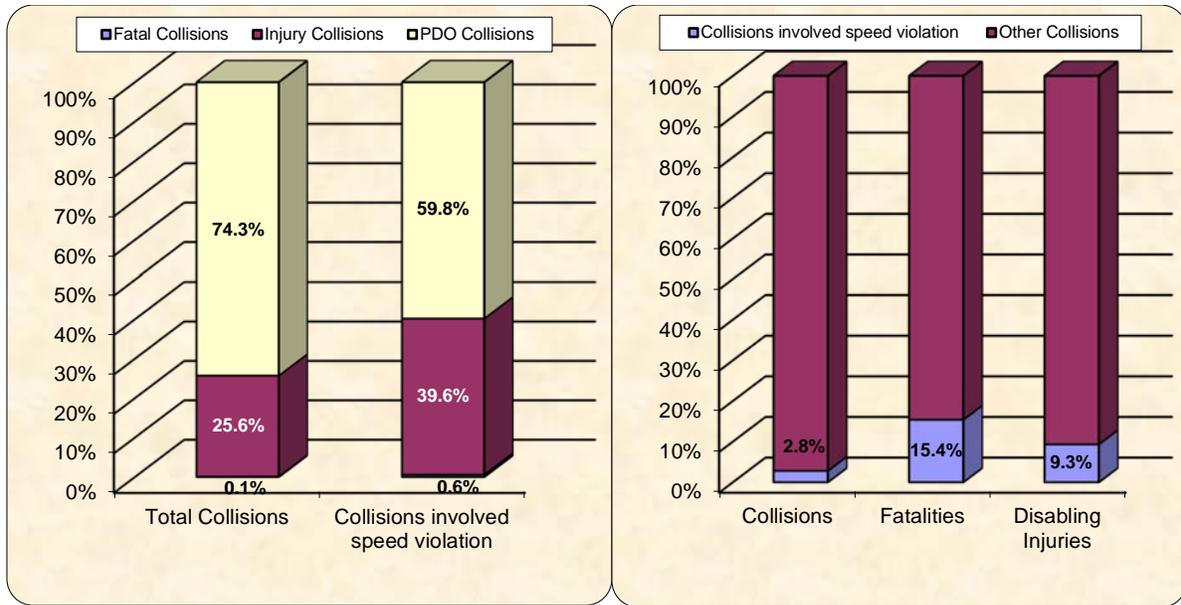


Figure 4.49: Speed-Related Crashes in 2015

Table 4.28: Speed-Related Crashes by Age and Gender for 2015

| Age Group    | Female     | Male       | Unknown   | Total      |
|--------------|------------|------------|-----------|------------|
| 16-20        | 8          | 20         | 0         | 28         |
| 21-25        | 25         | 78         | 2         | 105        |
| 26-30        | 31         | 78         | 1         | 110        |
| 31-35        | 17         | 47         | 0         | 64         |
| 36-40        | 13         | 38         | 0         | 51         |
| 41-45        | 12         | 35         | 0         | 47         |
| 46-50        | 8          | 23         | 0         | 31         |
| 51-55        | 7          | 23         | 0         | 30         |
| 56-60        | 6          | 12         | 0         | 18         |
| 61-65        | 4          | 9          | 0         | 13         |
| 66-70        | 0          | 3          | 0         | 3          |
| 71-75        | 2          | 4          | 0         | 6          |
| Over 75      | 7          | 4          | 1         | 12         |
| Unknown      | 9          | 83         | 87        | 179        |
| <b>Total</b> | <b>149</b> | <b>457</b> | <b>91</b> | <b>697</b> |

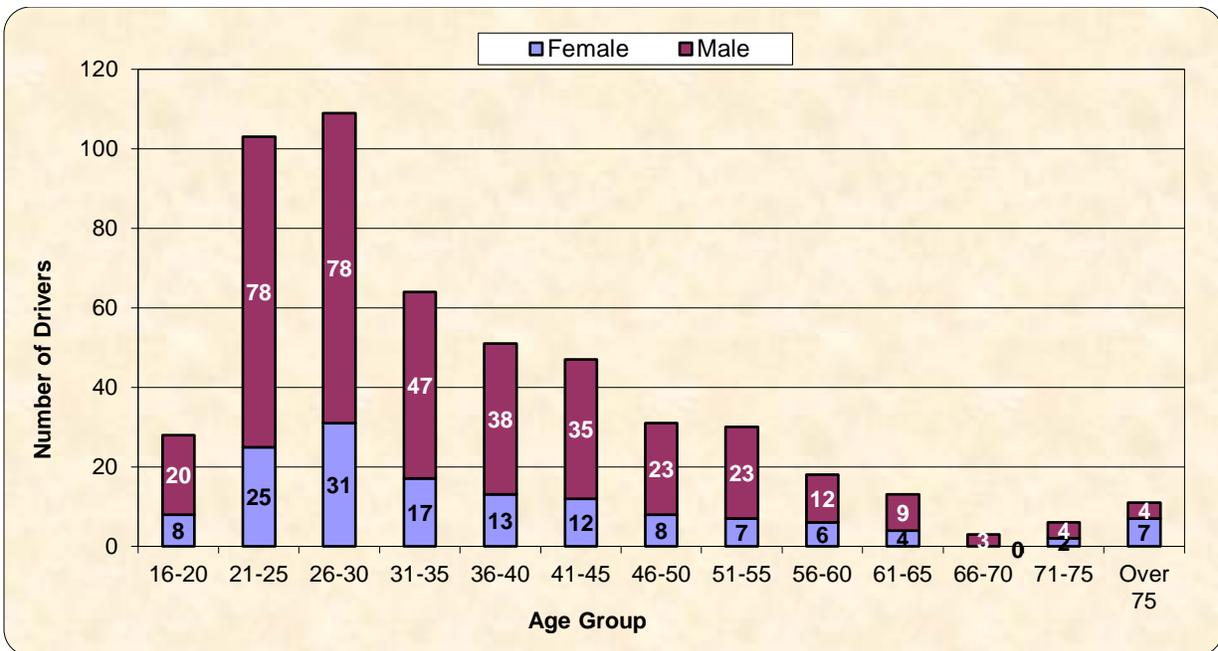


Figure 4.50: Speed-Related Crashes by Age and Gender

### 4.6.3 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, alcohol/drug-related crashes were reported during early mornings and late nights on Saturdays and Sundays the most.

Table 4.29: Alcohol/Drug related Crashes by Day of Week in 2015

| Day of Week  | Number of Alcohol-Related Collisions |
|--------------|--------------------------------------|
| Monday       | 64                                   |
| Tuesday      | 22                                   |
| Wednesday    | 20                                   |
| Thursday     | 23                                   |
| Friday       | 20                                   |
| Saturday     | 28                                   |
| Sunday       | 63                                   |
| <b>Total</b> | <b>240</b>                           |

**Table 4.30: Alcohol/Drug related Crashes by Hour in 2015**

| Hour         | Number of Alcohol-Related Collisions |
|--------------|--------------------------------------|
| 00           | 19                                   |
| 01           | 21                                   |
| 02           | 21                                   |
| 03           | 31                                   |
| 04           | 17                                   |
| 05           | 3                                    |
| 06           | 1                                    |
| 07           | 2                                    |
| 08           | 2                                    |
| 09           | 2                                    |
| 10           | 0                                    |
| 11           | 1                                    |
| 12           | 1                                    |
| 13           | 1                                    |
| 14           | 1                                    |
| 15           | 6                                    |
| 16           | 8                                    |
| 17           | 12                                   |
| 18           | 11                                   |
| 19           | 7                                    |
| 20           | 10                                   |
| 21           | 22                                   |
| 22           | 17                                   |
| 23           | 24                                   |
| <b>Total</b> | <b>240</b>                           |

Presented in Table 4.31 and Figure 4.51 are the summaries of alcohol/drug-related crashes by gender. From the summaries, male drivers from 26 to 40 years were reported as highest group involved in alcohol/drug violations.

**Table 4.31: Alcohol/Drug related Crashes by Gender and Age in 2015**

| Age Group    | Female    | Male       | Unknown  | Total      |
|--------------|-----------|------------|----------|------------|
| 16-20        | 1         | 2          | 0        | 3          |
| 21-25        | 9         | 20         | 1        | 30         |
| 26-30        | 7         | 29         | 0        | 36         |
| 31-35        | 11        | 31         | 0        | 42         |
| 36-40        | 8         | 35         | 0        | 43         |
| 41-45        | 6         | 12         | 0        | 18         |
| 46-50        | 2         | 11         | 0        | 13         |
| 51-55        | 1         | 20         | 0        | 21         |
| 56-60        | 1         | 10         | 0        | 11         |
| 61-65        | 2         | 3          | 0        | 5          |
| 66-70        | 0         | 6          | 0        | 6          |
| 71-75        | 0         | 2          | 0        | 2          |
| Over 75      | 0         | 0          | 0        | 0          |
| <b>Total</b> | <b>48</b> | <b>181</b> | <b>1</b> | <b>230</b> |

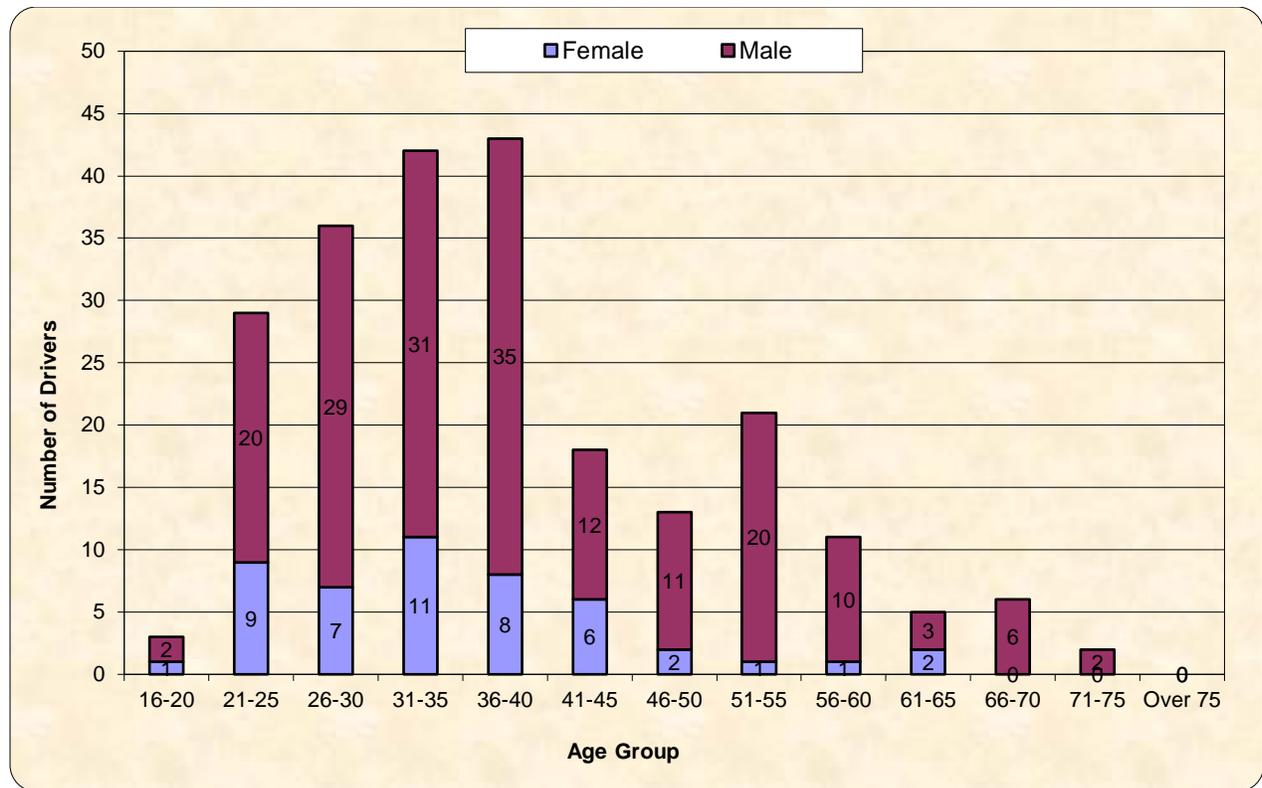


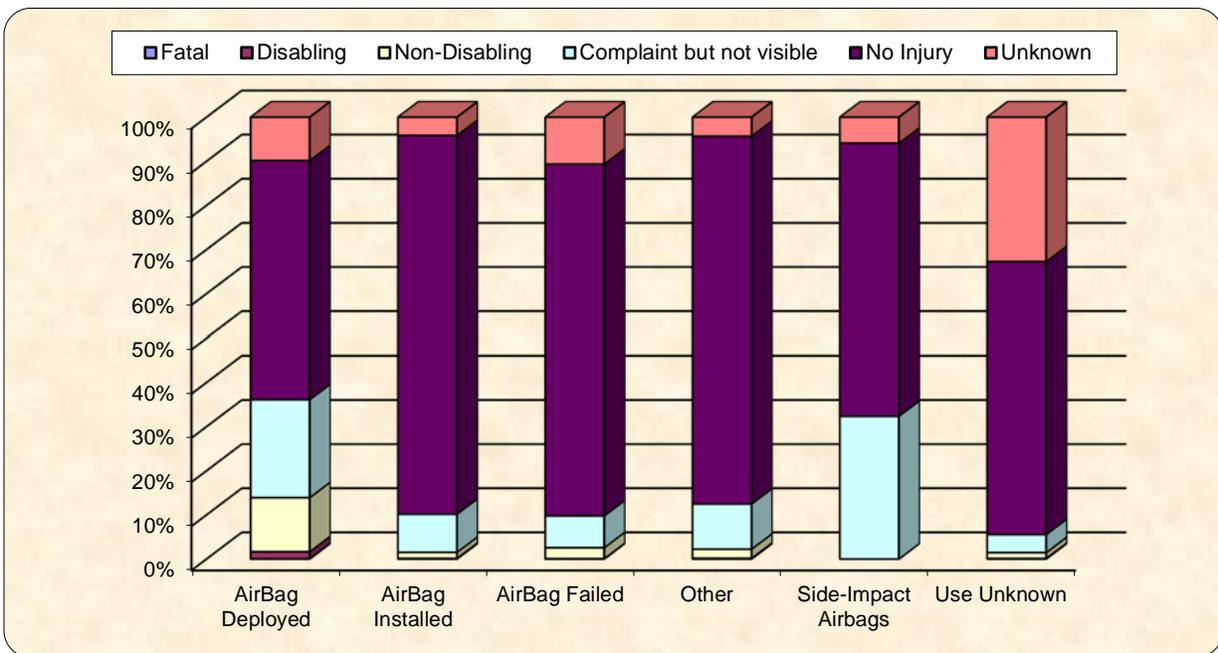
Figure 4.51: Alcohol/Drug-Related Crashes by Age and Gender

#### 4.6.4 Crashes by Restraint Use (Seatbelts or Airbags)

Restraint devices such as seatbelts and airbags usage have a significant influence on the severity of injury during a crash, based on several research studies. Table 4.32 and Figure 4.52 present the summary of crashes related to the airbag restraint. The results show that approximately 24% (9,855) of crashes in 2015 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 in 2015

| Air Bag             | Fatal    | Disabling | Non-Disabling | Complaint but not visible | None          | Other      | Unknown      | Total         |
|---------------------|----------|-----------|---------------|---------------------------|---------------|------------|--------------|---------------|
| Airbag Deployed     | 2        | 41        | 318           | 576                       | 1,403         | 55         | 255          | 2,650         |
| Airbag Installed    | 0        | 20        | 161           | 1,027                     | 10,184        | 11         | 490          | 11,893        |
| Airbag Failed       | 0        | 11        | 241           | 709                       | 7,819         | 32         | 1,043        | 9,855         |
| Other               | 0        | 3         | 35            | 174                       | 1,415         | 1          | 73           | 1,701         |
| Side-Impact Airbags | 0        | 0         | 0             | 11                        | 21            | 0          | 2            | 34            |
| Use Unknown         | 2        | 20        | 201           | 624                       | 9,416         | 43         | 4,991        | 15,297        |
| <b>Total</b>        | <b>4</b> | <b>95</b> | <b>956</b>    | <b>3,121</b>              | <b>30,258</b> | <b>142</b> | <b>6,854</b> | <b>41,430</b> |



**Figure 4.52: Crash Severity by Air Bag Restraint in 2015**

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 in 2015, approximately 38% (15,801) of drivers or passengers involved in crashes used their seat belts. Approximately 60% (24,787) 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 in 2015**

| Seat Belt       | Fatal    | Disabling | Non-Disabling | Complaint but not visible | No Injury     | Other      | Unknown      | Total         |
|-----------------|----------|-----------|---------------|---------------------------|---------------|------------|--------------|---------------|
| Belt Failed     | 0        | 0         | 6             | 14                        | 85            | 0          | 4            | 109           |
| Child Restraint | 0        | 0         | 1             | 4                         | 15            | 0          | 0            | 20            |
| Fastened        | 1        | 45        | 433           | 1,630                     | 12,979        | 54         | 659          | 15,801        |
| Helmet          | 0        | 3         | 33            | 11                        | 53            | 8          | 13           | 121           |
| Not Fastened    | 0        | 2         | 14            | 17                        | 146           | 1          | 11           | 191           |
| Not Installed   | 0        | 1         | 6             | 4                         | 48            | 0          | 8            | 67            |
| Other           | 0        | 2         | 7             | 6                         | 74            | 1          | 27           | 117           |
| Use Unknown     | 3        | 40        | 448           | 1,423                     | 16,692        | 76         | 6,105        | 24,787        |
| <b>Total</b>    | <b>4</b> | <b>95</b> | <b>956</b>    | <b>3,121</b>              | <b>30,258</b> | <b>142</b> | <b>6,854</b> | <b>41,430</b> |

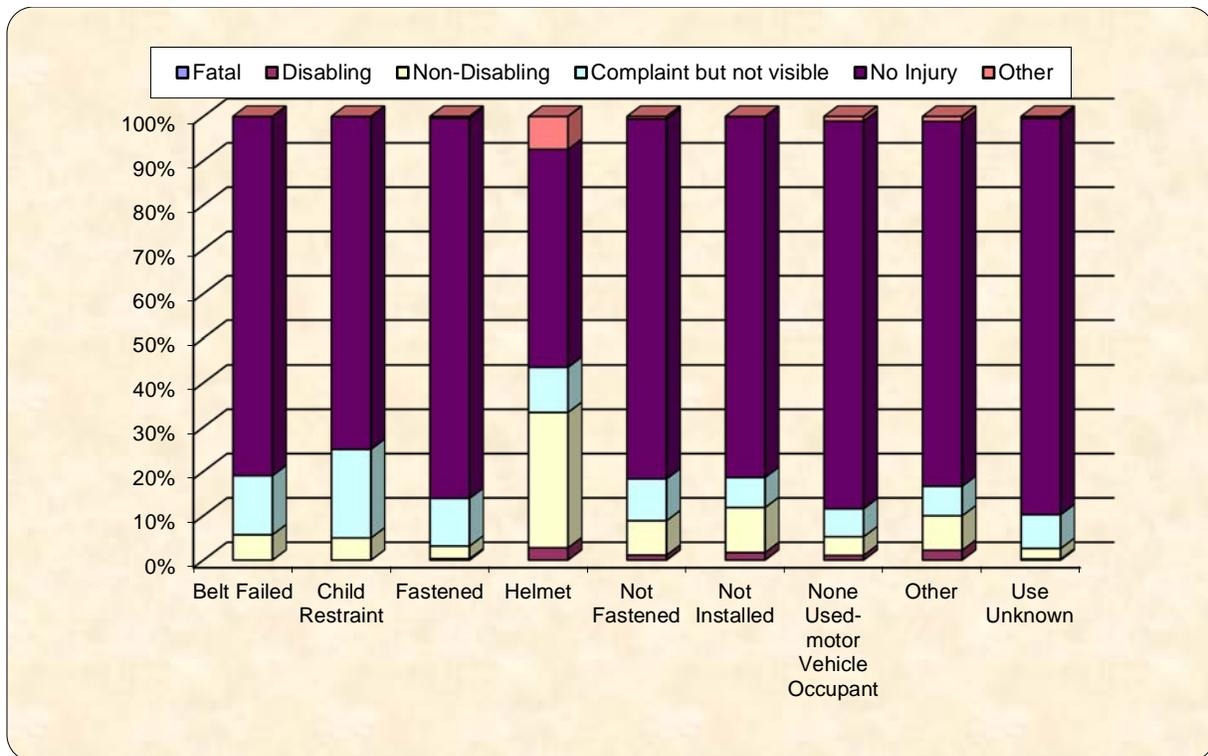


Figure 4.53: Crash Severity by Seatbelt Restraint in 2015

#### 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 2015 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 other/unknown.

Table 4.35: Crashes by Driver or Pedestrian Distraction in 2015

| Distraction                               | Fatal Collisions | Injury Collisions | PDO Collisions | Total by Distraction |
|---|------------------|-------------------|----------------|----------------------|
| Cell Phone (hand held)                    | 0                | 35                | 57             | 92                   |
| Cell phone (hands-free)                   | 0                | 11                | 10             | 21                   |
| Distracted by passenger(s)                | 0                | 29                | 41             | 70                   |
| Eating                                    | 0                | 1                 | 1              | 2                    |
| Interacting w/Pets                        | 0                | 0                 | 1              | 1                    |
| Interacting w/unsecured cargo             | 0                | 5                 | 6              | 11                   |
| Other                                     | 1                | 413               | 707            | 1,121                |
| Personal Grooming                         | 0                | 0                 | 3              | 3                    |
| Reading                                   | 0                | 4                 | 5              | 9                    |
| Using personal communication technologies | 0                | 13                | 20             | 33                   |
| Writing                                   | 0                | 0                 | 6              | 6                    |
| <b>Total</b>                              | <b>1</b>         | <b>511</b>        | <b>857</b>     | <b>1369</b>          |

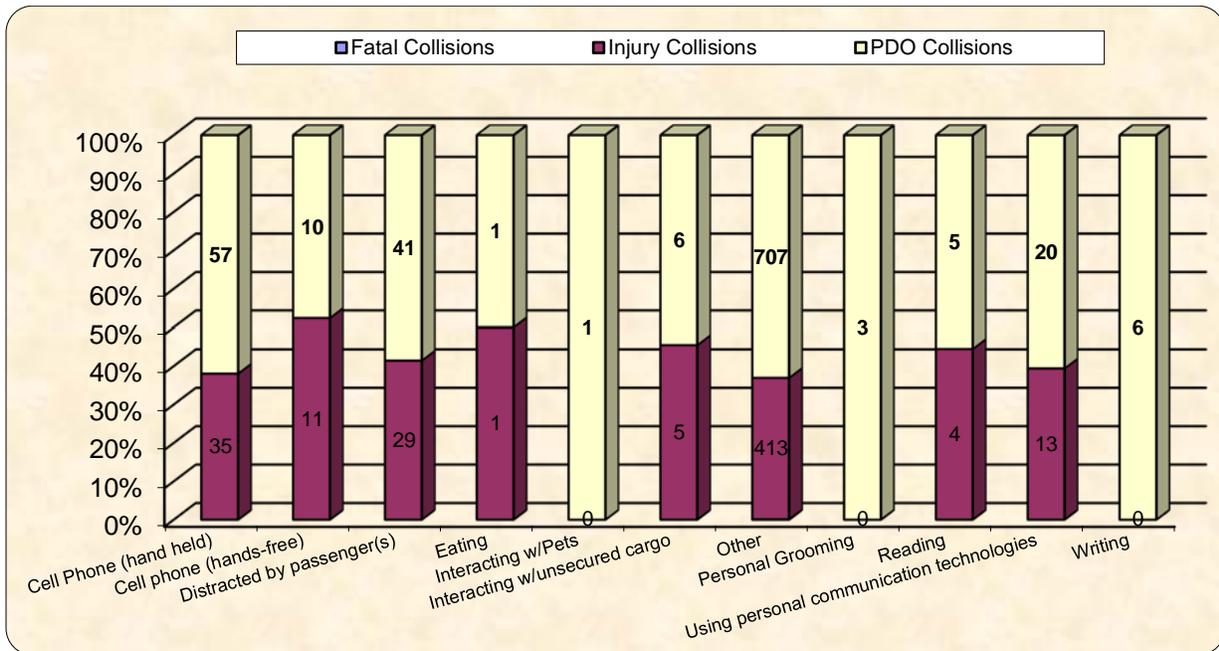


Figure 4.55: Crash Severity by Driver/Pedestrian Distraction in 2015

## CHAPTER 5 – HIGH CRASH LOCATIONS

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

### 5.1 Identification of High Hazardous Intersections

Five ranking methods were used to identify high-hazardous intersections in the following order: crash rate, crash severity, crash frequency, crash severity cost and composite index (which is calculated based on the combination of previous three ranking). To rank high hazardous 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 followed by crash severity index, crash frequency and finally, by composite index. The highest hazardous intersections are those with the lowest composite index.

#### 5.1.1 Ranking of High Hazardous Intersections (2013-2015)

The top 20 high hazardous 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 2013 through 2015 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 from 2013 to 2015. The intersection of First Street and Union Station Plaza was determined to rank the second highest in 2015. Overall, the intersection of New York Avenue and Bladensburg Road (NE) was found to be the most hazardous intersection in the District from 2013 to 2015 based on the crash frequencies.

**Table 5.1: Top 20 Hazardous Intersections by Crash Frequency in 2013-2015**

| INTERSECTION NAME                       | Quad | 2013 |      | 2014 |      | 2015 |      |
|---|------|------|------|------|------|------|------|
|   |      | Freq | Rank | Freq | Rank | Freq | Rank |
| NEW YORK AVE AND BLADENSBURG RD         | NE   | 83   | 1    | 119  | 1    | 133  | 1    |
| 1ST ST AND UNION STATION PLAZA          | NE   | 52   | 7    | 67   | 3    | 84   | 2    |
| MINNESOTA AVE AND BENNING RD            | NE   | 56   | 3    | 50   | 10   | 78   | 3    |
| 14TH ST AND U ST                        | NW   | 53   | 5    | 60   | 4    | 69   | 4    |
| NEW YORK AVE AND NORTH CAPITOL ST       | BN   | 57   | 2    | 68   | 2    | 66   | 5    |
| FLORIDA AVE AND NEW YORK AVE            | NE   | 55   | 4    | 47   | 13   | 64   | 6    |
| WISCONSIN AVE AND M ST                  | NW   | 49   | 8    | 48   | 12   | 58   | 7    |
| 1ST ST AND NEW YORK AVE                 | NE   | 48   | 9    | 49   | 11   | 55   | 8    |
| NEW YORK AVE AND SOUTH DAKOTA AVE       | NE   | 53   | 5    | 53   | 6    | 47   | 9    |
| 9TH ST AND MASSACHUSETTS AVE            | NW   | 41   | 14   | 39   | 19   | 47   | 9    |
| MONTANA AVE AND NEW YORK AVE            | NE   | 35   | 24   | 53   | 6    | 47   | 9    |
| FIRTH STERLING AVE AND SUITLAND PKWY    | SE   | 39   | 17   | 44   | 15   | 47   | 9    |
| 7TH ST AND FLORIDA AVE                  | NW   | 38   | 19   | 51   | 9    | 45   | 13   |
| 1ST ST AND NEW YORK AVE                 | NW   | 32   | 31   | 22   | 96   | 44   | 14   |
| RHODE ISLAND AVE AND NORTH CAPITOL ST   | BN   | 28   | 42   | 36   | 24   | 42   | 15   |
| 9TH ST AND U ST                         | NW   | 28   | 42   | 23   | 82   | 42   | 15   |
| STANTON RD AND SUITLAND PKWY            | SE   | 40   | 15   | 45   | 14   | 42   | 15   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD | SE   | 15   | 185  | 22   | 96   | 39   | 18   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE       | SE   | 39   | 17   | 44   | 15   | 39   | 18   |
| I ST AND S CAPITOL ST                   | BN   | 43   | 11   | 39   | 19   | 39   | 18   |

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

| INTERSECTION NAME                    | Quad | 2012-2014 |      | 2013-2015 |      |
|--------------------------------------|------|-----------|------|-----------|------|
|                                      |      | Freq      | Rank | Freq      | Rank |
| NEW YORK AVE AND BLADENSBURG RD      | NE   | 282       | 1    | 335       | 1    |
| 1ST ST AND UNION STATION PLAZA       | NE   | 158       | 6    | 203       | 2    |
| NEW YORK AVE AND NORTH CAPITOL ST    | BN   | 187       | 2    | 191       | 3    |
| MINNESOTA AVE AND BENNING RD         | NE   | 161       | 5    | 184       | 4    |
| 14TH ST AND U ST                     | NW   | 163       | 4    | 182       | 5    |
| FLORIDA AVE AND NEW YORK AVE         | NE   | 158       | 6    | 166       | 6    |
| WISCONSIN AVE AND M ST               | NW   | 165       | 3    | 155       | 7    |
| NEW YORK AVE AND SOUTH DAKOTA AVE    | NE   | 133       | 10   | 153       | 8    |
| 1ST ST AND NEW YORK AVE              | NE   | 133       | 10   | 152       | 9    |
| MONTANA AVE AND NEW YORK AVE         | NE   | 124       | 16   | 135       | 10   |
| 7TH ST AND FLORIDA AVE               | NW   | 127       | 13   | 134       | 11   |
| FIRTH STERLING AVE AND SUITLAND PKWY | SE   | 125       | 15   | 130       | 12   |
| 9TH ST AND MASSACHUSETTS AVE         | NW   | 101       | 23   | 127       | 13   |
| 14TH ST AND K ST                     | NW   | 129       | 12   | 127       | 13   |
| STANTON RD AND SUITLAND PKWY         | SE   | 127       | 13   | 127       | 13   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE    | SE   | 142       | 8    | 122       | 16   |
| I ST AND S CAPITOL ST                | BN   | 113       | 20   | 121       | 17   |
| 14TH ST AND IRVING ST                | NW   | 115       | 17   | 120       | 18   |
| MINNESOTA AVE AND PENNSYLVANIA AVE   | SE   | 136       | 9    | 118       | 19   |
| 13TH ST AND U ST                     | NW   | 114       | 18   | 109       | 20   |

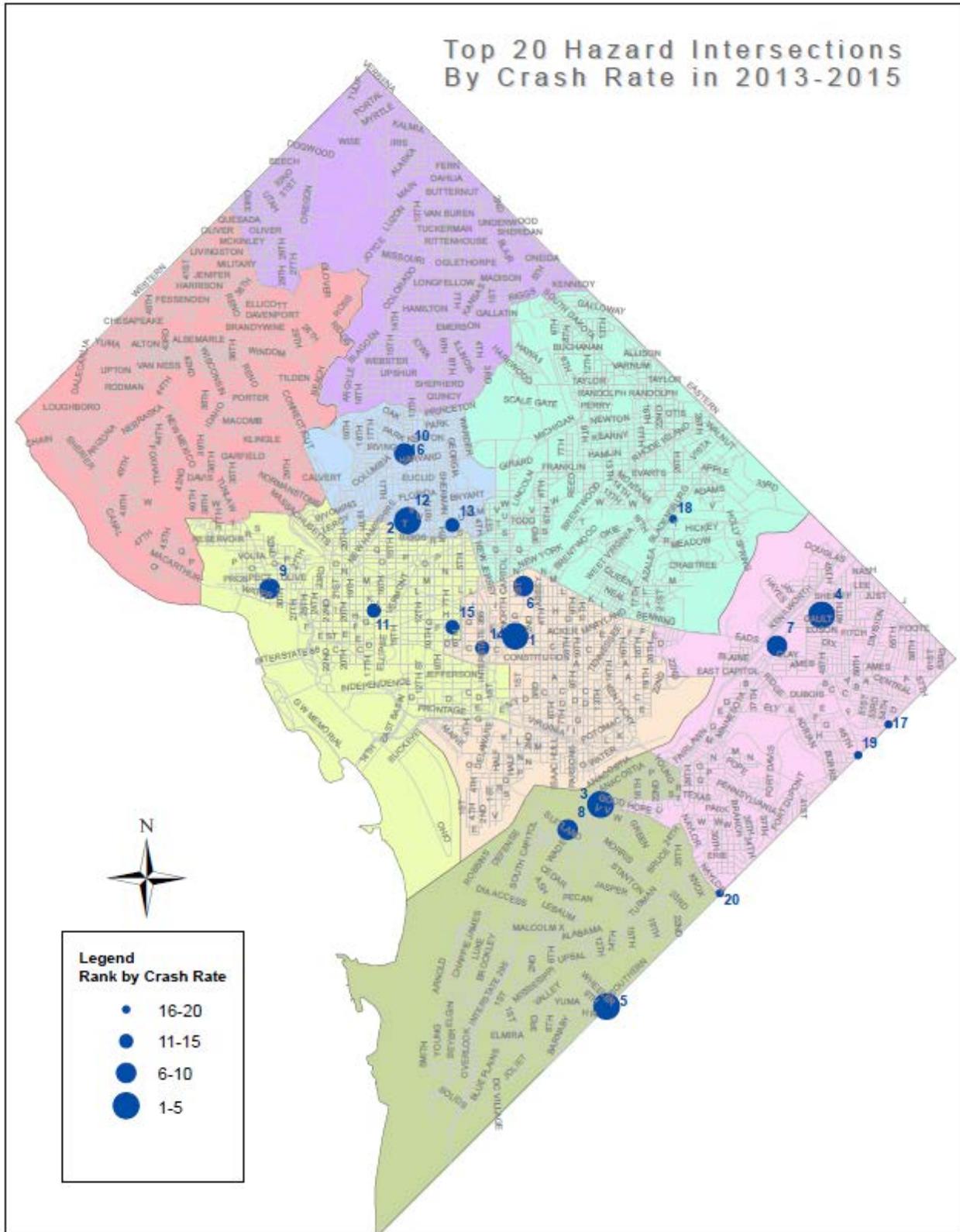


Figure 5.1: Top 20 Hazardous Intersections by Crash Rate in 2013-2015

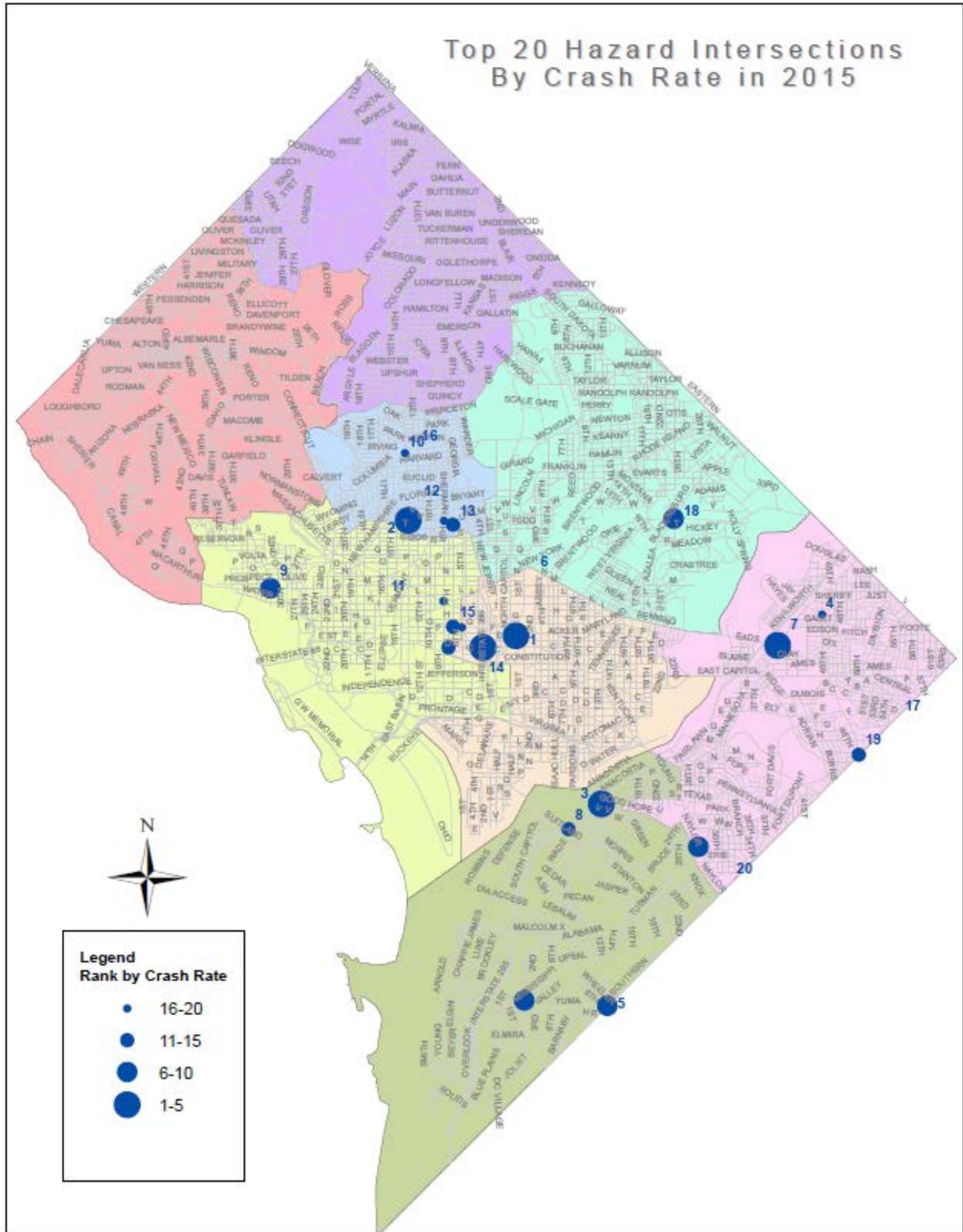


Figure 5.2: Top 20 Hazardous Intersections by Crash Rate in 2015

Based on the crash rate calculations, which took into consideration the traffic volumes for each intersection, the summary in Table 5.3 shows that the intersection of Martin Luther King Avenue and Good Hope Road SE was ranked the highest in 2015. The intersection of First Street and Union Station Plaza NE was ranked second highest based on the crash rate ranking presented in Table 5.3. These crash rates were calculated based on the methodology discussed in Chapter 2.

**Table 5.3: Top 20 Hazardous Intersections by Crash Rate in 2013-2015**

| INTERSECTION NAME                       | Quad | 2013    |      | 2014    |      | 2015    |      |
|---|------|---------|------|---------|------|---------|------|
|   |      | Rate    | Rank | Rate    | Rank | Rate    | Rank |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD | SE   | 3.34113 | 17   | 4.90032 | 3    | 8.68694 | 1    |
| 1ST ST AND UNION STATION PLAZA          | NE   | 5.31589 | 2    | 6.84932 | 1    | 8.5872  | 2    |
| 14TH ST AND U ST                        | NW   | 4.98988 | 4    | 5.64892 | 2    | 6.49626 | 3    |
| MINNESOTA AVE AND BENNING RD            | NE   | 3.54329 | 12   | 3.16366 | 27   | 4.9353  | 4    |
| 3RD ST AND D ST                         | NW   | 3.27576 | 19   | 2.38237 | 65   | 4.91364 | 5    |
| SOUTHERN AVE AND WHEELER RD             | SE   | 4.06443 | 8    | 3.91389 | 12   | 4.51603 | 6    |
| WISCONSIN AVE AND M ST                  | NW   | 3.5991  | 10   | 3.52565 | 19   | 4.26016 | 7    |
| ALABAMA AVE AND GOOD HOPE RD            | SE   | 2.93266 | 29   | 2.77831 | 46   | 4.01312 | 8    |
| 1ST ST AND MISSISSIPPI AVE              | SE   | 1.48093 | 172  | 2.96187 | 38   | 3.94915 | 9    |
| NEW YORK AVE AND BLADENSBURG RD         | NE   | 2.45569 | 44   | 3.52081 | 20   | 3.93503 | 10   |
| 7TH ST AND G ST                         | NW   | 1.93807 | 99   | 4.75708 | 5    | 3.87614 | 11   |
| SOUTHERN AVE AND BENNING RD             | SE   | 3.25652 | 21   | 2.83176 | 42   | 3.82287 | 12   |
| 8TH ST AND D ST                         | NW   | 1.82648 | 108  | 1.82648 | 127  | 3.65297 | 13   |
| 7TH ST AND FLORIDA AVE                  | NW   | 3.04414 | 25   | 4.08556 | 11   | 3.6049  | 14   |
| FIRTH STERLING AVE AND HOWARD RD        | SE   | 4.34164 | 6    | 3.59308 | 18   | 3.59308 | 15   |
| 14TH ST AND IRVING ST                   | NW   | 3.96788 | 9    | 3.77893 | 14   | 3.58999 | 16   |
| 9TH ST AND U ST                         | NW   | 2.36402 | 49   | 1.94187 | 114  | 3.54602 | 17   |
| 9TH ST AND MASSACHUSETTS AVE            | NW   | 2.99145 | 27   | 2.84552 | 41   | 3.42922 | 18   |
| 6TH ST AND G ST                         | NW   | 2.77171 | 35   | 2.98492 | 37   | 3.41133 | 19   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE  | NE   | 4.73046 | 5    | 4.73046 | 6    | 3.35074 | 20   |

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

| INTERSECTION NAME                       | Quad | 2012-2014 |      | 2013-2015 |      |
|---|------|-----------|------|-----------|------|
|   |      | RATE      | RANK | RATE      | RANK |
| 1ST ST AND UNION STATION PLAZA          | NE   | 5.38404   | 1    | 6.91747   | 1    |
| 14TH ST AND U ST                        | NW   | 5.11541   | 2    | 5.71169   | 2    |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD | SE   | 3.41538   | 11   | 5.6428    | 3    |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE  | NE   | 3.87635   | 6    | 4.27056   | 4    |
| SOUTHERN AVE AND WHEELER RD             | SE   | 3.51247   | 9    | 4.16478   | 5    |
| 1ST ST AND M ST                         | NE   | 4.35675   | 4    | 4.02162   | 6    |
| MINNESOTA AVE AND BENNING RD            | NE   | 3.39566   | 12   | 3.88075   | 7    |
| FIRTH STERLING AVE AND HOWARD RD        | SE   | 3.59308   | 8    | 3.8426    | 8    |
| WISCONSIN AVE AND M ST                  | NW   | 4.03981   | 5    | 3.79497   | 9    |
| 14TH ST AND IRVING ST                   | NW   | 3.62148   | 7    | 3.77893   | 10   |
| 17TH ST AND I ST                        | NW   | 3.34259   | 14   | 3.70072   | 11   |
| 14TH ST AND V ST                        | NW   | 4.47668   | 3    | 3.58134   | 12   |
| 7TH ST AND FLORIDA AVE                  | NW   | 3.39128   | 13   | 3.5782    | 13   |
| 3RD ST AND D ST                         | NW   | 2.77943   | 28   | 3.52392   | 14   |
| 7TH ST AND G ST                         | NW   | 3.17139   | 17   | 3.52376   | 15   |
| 14TH ST AND COLUMBIA RD                 | NW   | 3.33986   | 15   | 3.40944   | 16   |
| SOUTHERN AVE AND FITCH ST               | SE   | 3.15484   | 18   | 3.32088   | 17   |
| NEW YORK AVE AND BLADENSBURG RD         | NE   | 2.78115   | 27   | 3.30385   | 18   |
| SOUTHERN AVE AND BENNING RD             | SE   | 2.92615   | 23   | 3.30372   | 19   |
| SOUTHERN AVE AND NAYLOR RD              | SE   | 3.19635   | 16   | 3.28767   | 20   |

Table 5.5 shows that the intersection of New York Avenue and Bladensburg Avenue (NE) ranked the highest based on the crash cost index for each individual year. When the three-year crash costs were taken into consideration (Table 5.6), the same intersection ranked the highest.

**Table 5.5: Top 20 Hazardous Intersections by Crash Severity Cost for 2013-2015**

| INTERSECTION NAME                            | Quad | 2013 |      | 2014 |      | 2015 |      |
|--|------|------|------|------|------|------|------|
|  |      | Cost | Rank | Cost | Rank | Cost | Rank |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 840  | 2    | 1352 | 1    | 1512 | 1    |
| MINNESOTA AVE AND BENNING RD                 | NE   | 684  | 3    | 746  | 4    | 803  | 2    |
| NEW YORK AVE AND NORTH CAPITOL ST            | BN   | 503  | 9    | 750  | 3    | 705  | 3    |
| 14TH ST AND U ST                             | NW   | 458  | 13   | 548  | 12   | 675  | 4    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 420  | 19   | 548  | 12   | 668  | 5    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 488  | 11   | 746  | 4    | 618  | 6    |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 557  | 6    | 563  | 10   | 578  | 7    |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 368  | 33   | 585  | 9    | 570  | 8    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 964  | 1    | 722  | 7    | 555  | 9    |
| RHODE ISLAND AVE AND NORTH CAPITOL ST        | BN   | 488  | 11   | 512  | 15   | 548  | 10   |
| WISCONSIN AVE AND M ST                       | NW   | 497  | 10   | 435  | 22   | 540  | 11   |
| 36TH ST AND BENNING RD                       | NE   | 225  | 116  | 218  | 136  | 539  | 12   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE            | SE   | 450  | 14   | 489  | 18   | 525  | 13   |
| 1ST ST AND NEW YORK AVE                      | NW   | 362  | 35   | 233  | 117  | 503  | 14   |
| NEW YORK AVE AND SOUTH DAKOTA AVE            | NE   | 600  | 4    | 647  | 8    | 488  | 15   |
| 1ST ST AND NEW YORK AVE                      | NE   | 450  | 14   | 465  | 19   | 488  | 15   |
| KENILWORTH AVE AND EAST CAPITOL ST           | BN   | 566  | 5    | 497  | 17   | 458  | 17   |
| 7TH ST AND FLORIDA AVE                       | NW   | 413  | 21   | 557  | 11   | 458  | 17   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 300  | 58   | 383  | 32   | 435  | 19   |
| 13TH ST AND SOUTHERN AVE                     | SE   | 210  | 138  | 120  | 428  | 423  | 20   |

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

| INTERSECTION NAME                     | Quad | 2012-2014 |      | 2013-2015 |      |
|---------------------------------------|------|-----------|------|-----------|------|
|                                       |      | Cost      | Rank | Cost      | Rank |
| NEW YORK AVE AND BLADENSBURG RD       | NE   | 2988      | 1    | 3704      | 1    |
| FIRTH STERLING AVE AND SUITLAND PKWY  | SE   | 2332      | 2    | 2240      | 2    |
| MINNESOTA AVE AND BENNING RD          | NE   | 2046      | 3    | 2232      | 3    |
| NEW YORK AVE AND NORTH CAPITOL ST     | BN   | 1914      | 4    | 1958      | 4    |
| STANTON RD AND SUITLAND PKWY          | SE   | 1866      | 5    | 1851      | 5    |
| NEW YORK AVE AND SOUTH DAKOTA AVE     | NE   | 1577      | 10   | 1734      | 6    |
| FLORIDA AVE AND NEW YORK AVE          | NE   | 1781      | 6    | 1697      | 7    |
| 14TH ST AND U ST                      | NW   | 1463      | 13   | 1680      | 8    |
| 1ST ST AND UNION STATION PLAZA        | NE   | 1374      | 15   | 1635      | 9    |
| RHODE ISLAND AVE AND NORTH CAPITOL ST | BN   | 1254      | 19   | 1547      | 10   |
| MONTANA AVE AND NEW YORK AVE          | NE   | 1605      | 8    | 1523      | 11   |
| KENILWORTH AVE AND EAST CAPITOL ST    | BN   | 1454      | 14   | 1520      | 12   |
| MINNESOTA AVE AND PENNSYLVANIA AVE    | SE   | 1697      | 7    | 1494      | 13   |
| WISCONSIN AVE AND M ST                | NW   | 1556      | 11   | 1472      | 14   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE     | SE   | 1539      | 12   | 1464      | 15   |
| 7TH ST AND FLORIDA AVE                | NW   | 1596      | 9    | 1427      | 16   |
| 1ST ST AND NEW YORK AVE               | NE   | 1322      | 17   | 1403      | 17   |
| I ST AND S CAPITOL ST                 | BN   | 1269      | 18   | 1367      | 18   |
| 14TH ST AND K ST                      | NW   | 1200      | 21   | 1254      | 19   |
| PENNSYLVANIA AVE AND ANACOSTIA FRWY   | SE   | 1216      | 20   | 1156      | 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. Based on the results presented in Table 5.7, it was determined that the intersection of Minnesota Ave and Benning Road (NE) ranked the highest using the composite index method. When the three-year composite index ranking was taken into consideration as shown in Table 5.8, Minnesota Ave and Benning Road (NE) and New York Avenue and Bladensburg Avenue (NE) were the top two most hazardous intersections. The GIS maps for the top 20 hazardous intersections by crash cost from 2013 through 2015 and the top 20 hazardous intersection by crash cost in 2015 are respectively presented in Figures 5.3 and 5.4 respectively. Figures 5.5 and 5.6 present the top 20 hazardous intersections by crash composite index from 2013 to 2015 and the top 20 hazardous intersection by crash composite index in 2015 respectively.

**Table 5.7: Top 20 Hazardous Intersections by Composite Index for 2013-2015**

| INTERSECTION NAME                            | Quad | 2013  |      | 2014   |      | 2015  |      |
|--|------|-------|------|--------|------|-------|------|
|  |      | COMP  | RANK | COMP   | RANK | COMP  | RANK |
| MINNESOTA AVE AND BENNING RD                 | NE   | 5.25  | 1    | 11.25  | 5    | 2.75  | 1    |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 12.25 | 5    | 5.75   | 1    | 3.25  | 2    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 11.75 | 4    | 7      | 2    | 3.5   | 3    |
| 14TH ST AND U ST                             | NW   | 8.75  | 2    | 7.5    | 3    | 3.75  | 4    |
| WISCONSIN AVE AND M ST                       | NW   | 9.5   | 3    | 18.75  | 7    | 9     | 5    |
| 7TH ST AND FLORIDA AVE                       | NW   | 21.5  | 13   | 10.5   | 4    | 15.25 | 6    |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 28.75 | 15   | 34     | 18   | 17.25 | 7    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 20.25 | 9    | 21.25  | 9    | 18.75 | 8    |
| 9TH ST AND U ST                              | NW   | 66.25 | 37   | 136    | 86   | 19.5  | 9    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 21    | 12   | 17.75  | 6    | 20    | 10   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 55    | 33   | 31.25  | 15   | 20.5  | 11   |
| 14TH ST AND IRVING ST                        | NW   | 19.75 | 8    | 26.75  | 13   | 23.25 | 12   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD      | SE   | 190.5 | 128  | 111.75 | 72   | 23.25 | 12   |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 34.5  | 21   | 56.75  | 33   | 27.75 | 14   |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 18.25 | 7    | 57.25  | 34   | 29.5  | 15   |
| 24TH ST AND PENNSYLVANIA AVE                 | NW   | 51.5  | 30   | 83.5   | 49   | 30.5  | 16   |
| SOUTHERN AVE AND BENNING RD                  | SE   | 47.25 | 28   | 103.5  | 63   | 31.75 | 17   |
| 3RD ST AND D ST                              | NW   | 59    | 34   | 200    | 147  | 34.75 | 18   |
| CONNECTICUT AVE AND R ST                     | NW   | 90.25 | 54   | 144.75 | 100  | 35.5  | 19   |
| ALABAMA AVE AND GOOD HOPE RD                 | SE   | 154.5 | 106  | 106.75 | 67   | 35.5  | 19   |

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

| INTERSECTION NAME                            | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COMP      | RANK | COMP      | RANK |
| MINNESOTA AVE AND BENNING RD                 | NE   | 5.75      | 1    | 4.25      | 1    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 9.25      | 5    | 5.25      | 2    |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 7.5       | 2    | 5.25      | 2    |
| 14TH ST AND U ST                             | NW   | 8         | 4    | 5.75      | 4    |
| WISCONSIN AVE AND M ST                       | NW   | 7.5       | 2    | 11        | 5    |
| 7TH ST AND FLORIDA AVE                       | NW   | 11        | 6    | 14        | 6    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 16.25     | 8    | 15        | 7    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 15.5      | 7    | 15.75     | 8    |
| 14TH ST AND IRVING ST                        | NW   | 21.5      | 9    | 20        | 9    |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 37.75     | 20   | 20.25     | 10   |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 35        | 17   | 24.5      | 11   |
| 14TH ST AND K ST                             | NW   | 26.25     | 12   | 26.25     | 12   |
| 14TH ST AND COLUMBIA RD                      | NW   | 29.25     | 14   | 26.75     | 13   |
| 13TH ST AND U ST                             | NW   | 25.5      | 11   | 26.75     | 13   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 49.75     | 30   | 27.25     | 15   |
| 7TH ST AND H ST                              | NW   | 28.5      | 13   | 31.75     | 16   |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 34.5      | 16   | 33.25     | 17   |
| I ST AND S CAPITOL ST                        | BN   | 36.5      | 19   | 34        | 18   |
| 17TH ST AND I ST                             | NW   | 46.25     | 29   | 35        | 19   |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 41.25     | 24   | 35.75     | 20   |

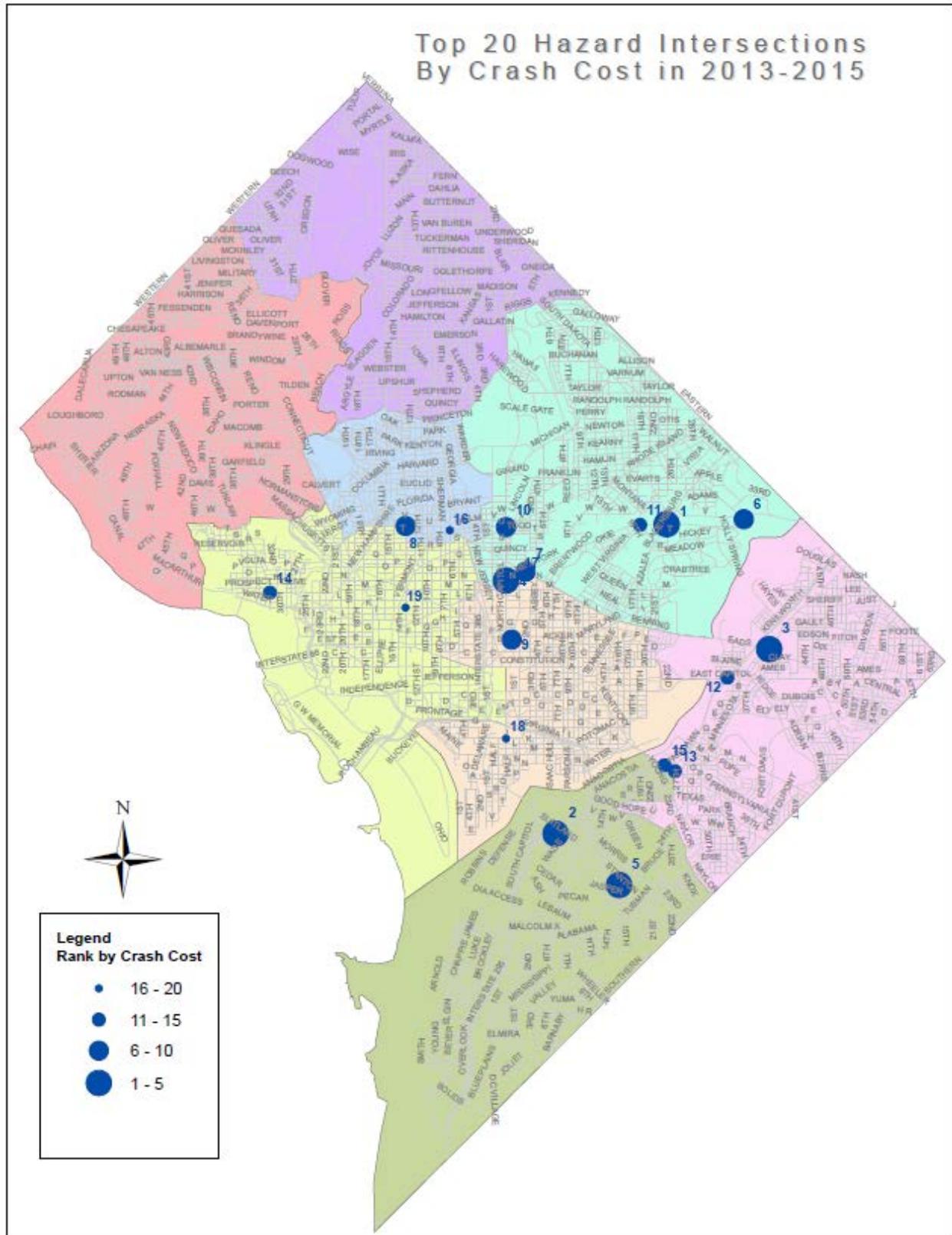


Figure 5.3: Top 20 Hazardous Intersections by Crash Cost in 2013-2015

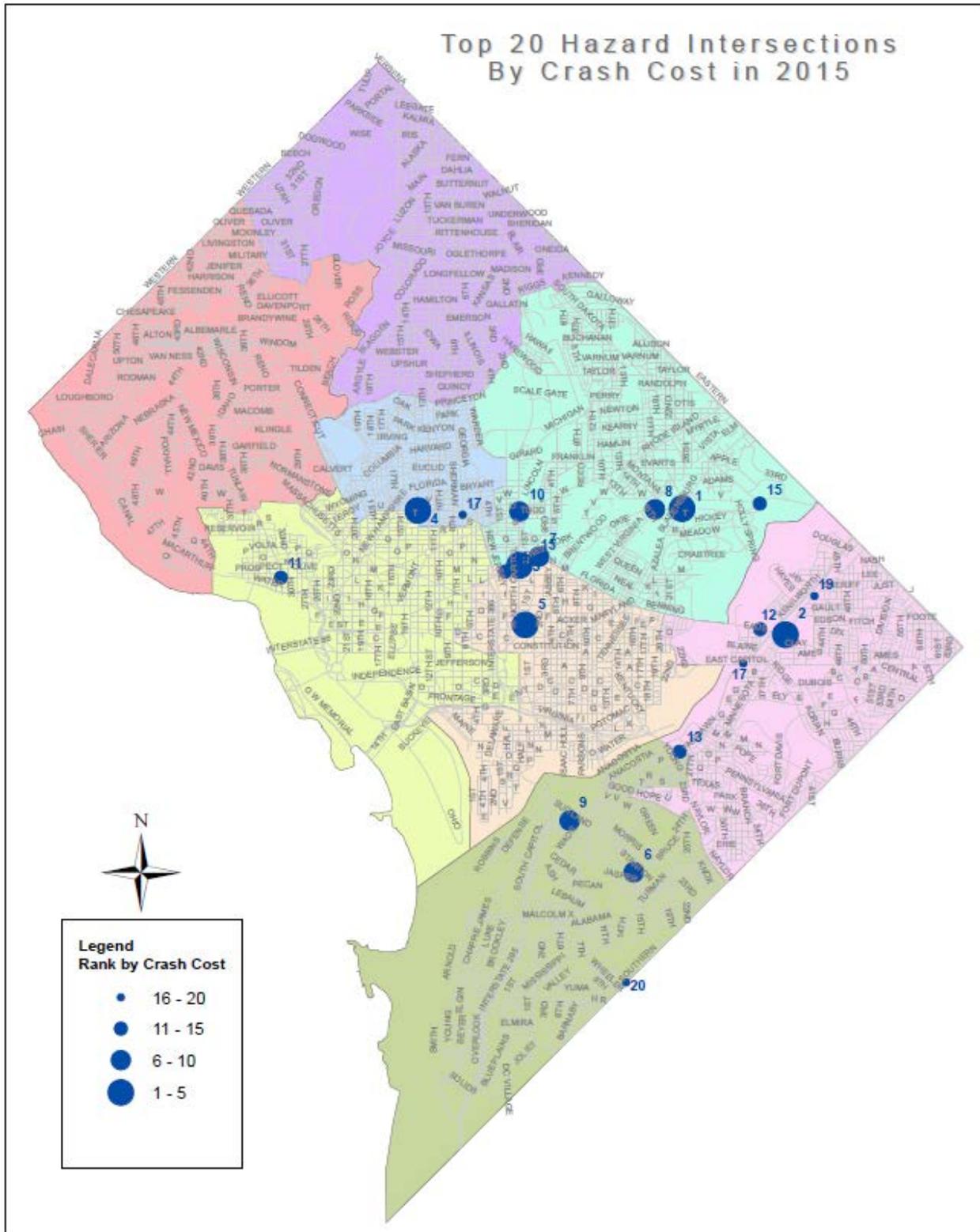


Figure 5.4: Top 20 Hazardous Intersections by Crash Cost in 2015

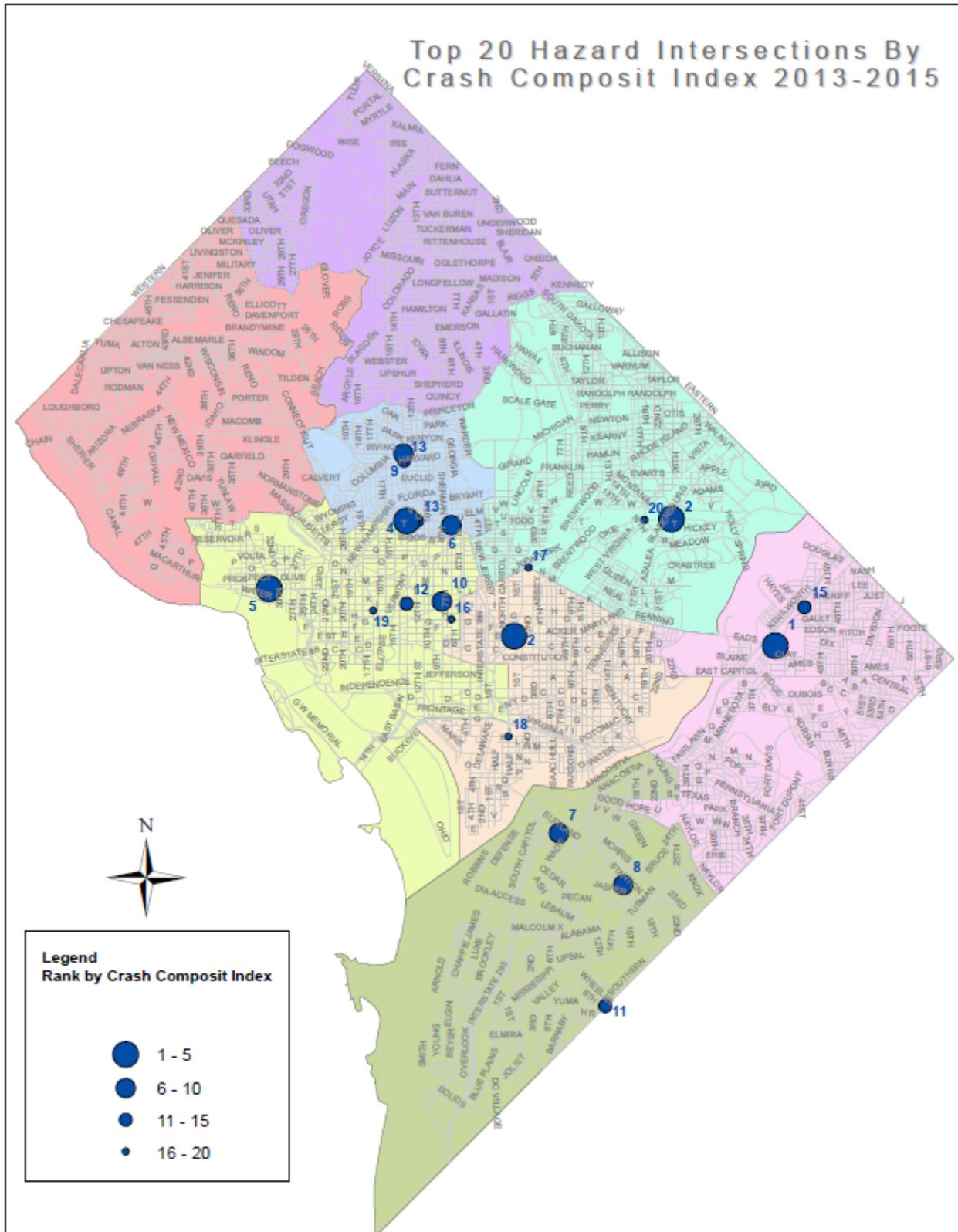


Figure 5.5: Top 20 Hazardous Intersections by Crash Composite Index 2013-2015

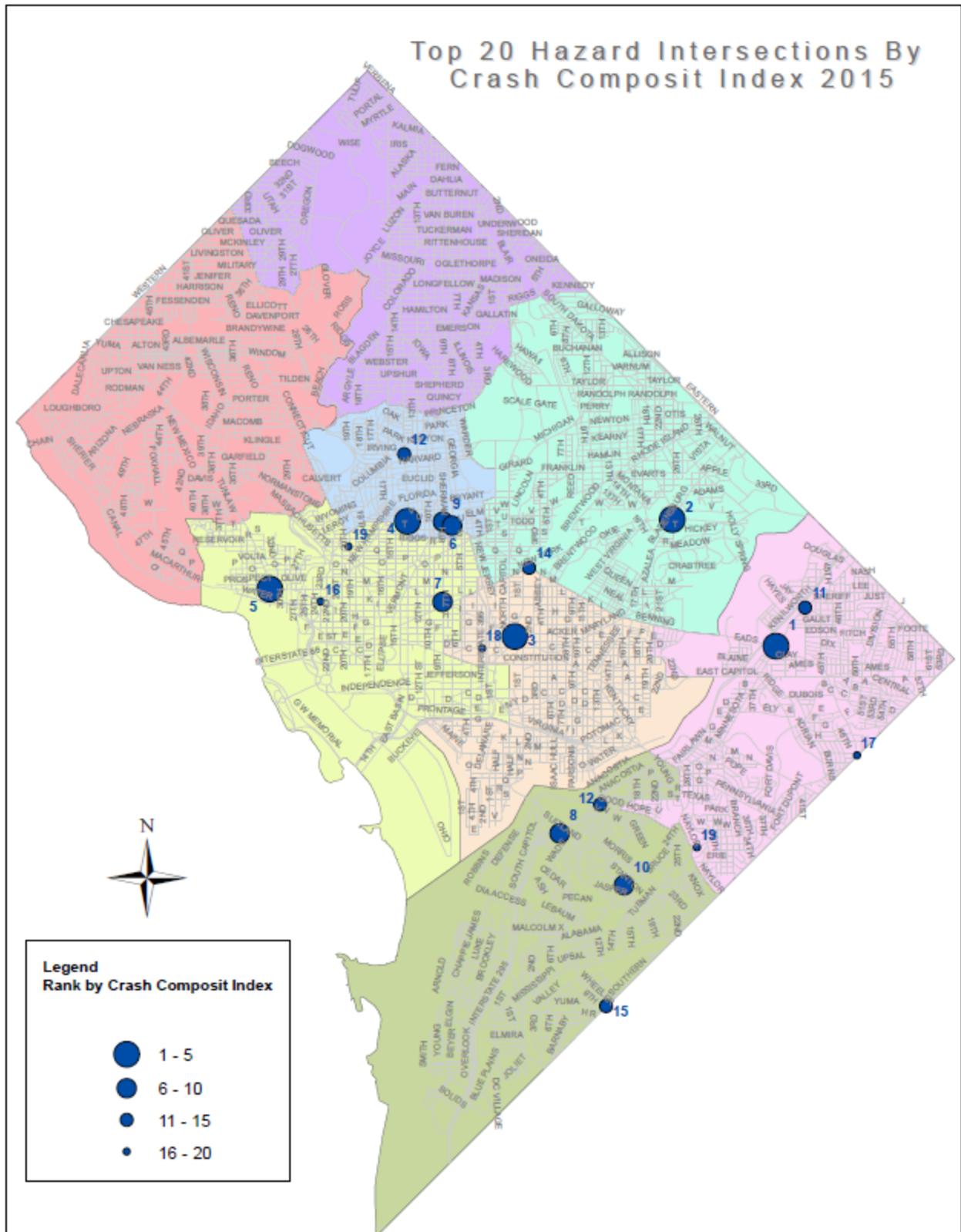


Figure 5.6: Top 20 Hazardous Intersections by Crash Composite Index for 2015

## 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 those locations were further analyzed and are presented in Table 5.9. From the table, in 2015, rear end crashes was the leading crash type for most of the high frequency crash locations, whereas side swiped and right-turn 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 in 2015**

| 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      | 14      | 11           | 7       | 24        | 5             | 10    | 6              | 4               | 94       | 16          | 20         | 74          | 1        | 0        | 45      | 331         |
| 1ST ST AND UNION STATION PLAZA,NE       | 7       | 2            | 0       | 3         | 0             | 13    | 14             | 0               | 15       | 5           | 3          | 128         | 1        | 1        | 11      | 203         |
| NEW YORK AVE AND NORTH CAPITOL ST,BN    | 2       | 1            | 2       | 18        | 0             | 4     | 1              | 0               | 39       | 11          | 16         | 77          | 5        | 1        | 20      | 197         |
| 14TH ST AND U ST,NW                     | 11      | 3            | 2       | 13        | 1             | 2     | 5              | 0               | 31       | 7           | 14         | 78          | 3        | 0        | 19      | 189         |
| MINNESOTA AVE AND BENNING RD,NE         | 6       | 6            | 4       | 17        | 2             | 4     | 4              | 0               | 42       | 4           | 10         | 53          | 7        | 0        | 23      | 182         |
| FLORIDA AVE AND NEW YORK AVE,NE         | 1       | 2            | 1       | 7         | 1             | 7     | 0              | 1               | 45       | 9           | 7          | 79          | 0        | 0        | 11      | 171         |
| NEW YORK AVE AND SOUTH DAKOTA AVE,NE    | 0       | 18           | 5       | 2         | 0             | 2     | 1              | 8               | 61       | 0           | 2          | 49          | 0        | 0        | 5       | 153         |
| WISCONSIN AVE AND M ST,NW               | 11      | 0            | 2       | 17        | 1             | 4     | 3              | 0               | 16       | 5           | 13         | 62          | 2        | 0        | 17      | 153         |
| 1ST ST AND NEW YORK AVE,NE              | 8       | 5            | 2       | 11        | 0             | 3     | 2              | 0               | 29       | 11          | 10         | 51          | 1        | 0        | 12      | 145         |
| MONTANA AVE AND NEW YORK AVE,NE         | 2       | 4            | 2       | 15        | 2             | 3     | 0              | 0               | 41       | 17          | 4          | 34          | 0        | 0        | 16      | 140         |
| 7TH ST AND FLORIDA AVE,NW               | 3       | 3            | 4       | 12        | 0             | 3     | 1              | 1               | 27       | 8           | 9          | 50          | 5        | 0        | 10      | 136         |
| FIRTH STERLING AVE AND SUITLAND PKWY,SE | 0       | 1            | 11      | 31        | 1             | 2     | 1              | 1               | 34       | 8           | 4          | 17          | 0        | 0        | 21      | 132         |
| STANTON RD AND SUITLAND PKWY,SE         | 4       | 6            | 9       | 2         | 1             | 8     | 2              | 6               | 57       | 2           | 6          | 14          | 1        | 1        | 12      | 131         |
| I ST AND S CAPITOL ST,BN                | 4       | 3            | 1       | 12        | 1             | 4     | 1              | 2               | 43       | 14          | 1          | 26          | 1        | 0        | 14      | 127         |
| 14TH ST AND K ST,NW                     | 5       | 1            | 2       | 5         | 0             | 4     | 2              | 1               | 28       | 4           | 13         | 47          | 4        | 0        | 10      | 126         |
| 9TH ST AND MASSACHUSETTS AVE,NW         | 4       | 8            | 1       | 4         | 0             | 0     | 2              | 2               | 18       | 5           | 6          | 59          | 0        | 0        | 15      | 124         |
| FAIRLAWN AVE AND PENNSYLVANIA AVE,SE    | 1       | 6            | 1       | 6         | 0             | 3     | 0              | 1               | 52       | 2           | 1          | 35          | 0        | 0        | 14      | 122         |
| MINNESOTA AVE AND PENNSYLVANIA AVE,SE   | 3       | 3            | 1       | 6         | 0             | 4     | 3              | 0               | 38       | 11          | 2          | 37          | 5        | 0        | 8       | 121         |
| 14TH ST AND IRVING ST,NW                | 9       | 0            | 1       | 3         | 0             | 5     | 3              | 0               | 15       | 3           | 3          | 61          | 1        | 0        | 16      | 120         |
| 4TH ST AND NEW YORK AVE,NW              | 0       | 5            | 2       | 5         | 0             | 4     | 3              | 0               | 48       | 2           | 9          | 26          | 1        | 0        | 10      | 115         |

\*The type of collision information is not available after 08/23/2015

## 5.3 Identification of High Frequency Crash Corridors

### 5.3.1 Summary of Crashes on Corridors

Table 5.10 presents the high frequency crash corridors in the District. The summary table shows that Pennsylvania Avenue, New York Avenue, and Georgia Avenue are the corridors with the highest crash frequencies in the District from 2013 through 2015.

**Table 5.10: High Frequency Crash Corridors for 2013-2015**

| Corridor         | 2013       |            |          | 2014       |            |          | 2015       |            |          | Total |
|------------------|------------|------------|----------|------------|------------|----------|------------|------------|----------|-------|
|                  | Collisions | Fatalities | Injuries | Collisions | Fatalities | Injuries | Collisions | Fatalities | Injuries |       |
| PENNSYLVANIA AVE | 797        | 0          | 287      | 839        | 3          | 300      | 843        | 1          | 284      | 2479  |
| NEW YORK AVE     | 724        | 1          | 270      | 762        | 0          | 341      | 864        | 1          | 312      | 2350  |
| GEORGIA AVE      | 619        | 1          | 259      | 679        | 1          | 268      | 703        | 0          | 271      | 2001  |
| NORTH CAPITOL ST | 492        | 0          | 248      | 585        | 0          | 267      | 697        | 0          | 268      | 1774  |
| CONNECTICUT AVE  | 456        | 1          | 154      | 526        | 1          | 138      | 643        | 0          | 180      | 1625  |
| SIXTEENTH ST     | 534        | 0          | 191      | 529        | 0          | 170      | 653        | 2          | 231      | 1716  |
| WISCONSIN AVE    | 448        | 1          | 126      | 454        | 0          | 117      | 507        | 1          | 141      | 1409  |
| FLORIDA AVE      | 476        | 1          | 188      | 540        | 0          | 218      | 630        | 0          | 212      | 1646  |
| RHODE ISLAND AVE | 469        | 0          | 203      | 516        | 0          | 238      | 579        | 0          | 255      | 1564  |
| BENNING RD       | 453        | 2          | 245      | 466        | 0          | 225      | 533        | 1          | 253      | 1452  |
| SOUTHERN AVE     | 353        | 1          | 224      | 369        | 0          | 204      | 427        | 3          | 244      | 1149  |
| BLADENSBURG RD   | 280        | 0          | 111      | 323        | 0          | 145      | 366        | 1          | 136      | 969   |
| CONSTITUTION AVE | 204        | 1          | 61       | 181        | 0          | 63       | 206        | 0          | 61       | 591   |
| NEW JERSEY AVE   | 146        | 0          | 56       | 191        | 0          | 83       | 170        | 0          | 91       | 507   |

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 those corridors.

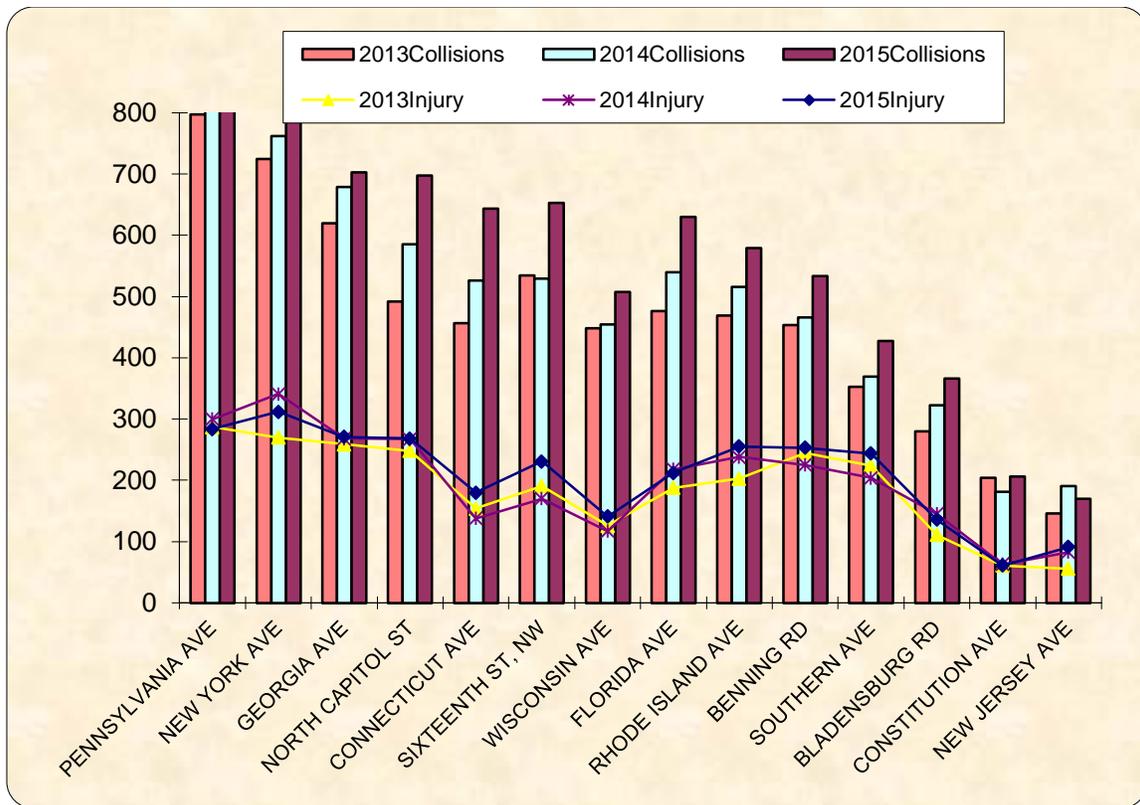


Figure 5.7: High Frequency Crash Corridors for 2013-2015

Table 5.11: Summary of High Frequency Crash Corridors for 2013-2015

| Corridor         | Length(miles) | No. of Intersections | No. of Crashes | Average Crashes per Mile | Average Crashes per Intersection |
|------------------|---------------|----------------------|----------------|--------------------------|----------------------------------|
| PENNSYLVANIA AVE | 5.48          | 89                   | 2479           | 452.37                   | 27.85                            |
| NEW YORK AVE     | 5.08          | 46                   | 2350           | 462.60                   | 51.09                            |
| GEORGIA AVE      | 4.76          | 65                   | 2001           | 420.38                   | 30.78                            |
| NORTH CAPITOL ST | 3.85          | 73                   | 1774           | 460.78                   | 24.30                            |
| CONNECTICUT AVE  | 5.01          | 73                   | 1625           | 324.35                   | 22.26                            |
| SIXTEENTH ST     | 6.39          | 89                   | 1716           | 268.54                   | 19.28                            |
| WISCONSIN AVE    | 4.87          | 65                   | 1409           | 289.32                   | 21.68                            |
| FLORIDA AVE      | 5.46          | 80                   | 1646           | 301.47                   | 20.58                            |
| RHODE ISLAND AVE | 4.56          | 49                   | 1564           | 342.98                   | 31.92                            |
| BENNING RD       | 3.39          | 45                   | 1452           | 428.32                   | 32.27                            |
| SOUTHERN AVE     | 5.4           | 122                  | 1149           | 212.78                   | 9.42                             |
| BLADENSBURG RD   | 2.65          | 45                   | 969            | 365.66                   | 21.53                            |
| CONSTITUTION AVE | 3.9           | 52                   | 591            | 151.54                   | 11.37                            |
| NEW JERSEY AVE   | 2.79          | 38                   | 507            | 181.72                   | 13.34                            |

### 5.3.2 High Frequency Crash Corridors by Average Number of Crashes per Mile

Table 5.12 presents the summary of the average number of crashes per mile on each corridor from 2013 to 2015. From the table, Pennsylvania Avenue, New York Avenue, and Georgia Avenue are the three highest ranked corridors based on the average number of crashes per mile.

**Table 5.12: High Frequency Crash Corridors by Number of Crash Occurrences per Mile in 2013-2015**

| Corridor         | 2013   | 2014   | 2015   |
|------------------|--------|--------|--------|
| PENNSYLVANIA AVE | 145.44 | 153.10 | 153.83 |
| NEW YORK AVE     | 142.52 | 150.00 | 170.08 |
| GEORGIA AVE      | 130.04 | 142.65 | 147.69 |
| NORTH CAPITOL ST | 127.79 | 151.95 | 181.04 |
| CONNECTICUT AVE  | 91.02  | 104.99 | 128.34 |
| SIXTEENTH ST     | 83.57  | 82.79  | 102.19 |
| WISCONSIN AVE    | 91.99  | 93.22  | 104.11 |
| FLORIDA AVE      | 87.18  | 98.90  | 115.38 |
| RHODE ISLAND AVE | 102.85 | 113.16 | 126.97 |
| BENNING RD       | 133.63 | 137.46 | 157.23 |
| SOUTHERN AVE     | 65.37  | 68.33  | 79.07  |
| BLADENSBURG RD   | 105.66 | 121.89 | 138.11 |
| CONSTITUTION AVE | 52.31  | 46.41  | 52.82  |
| NEW JERSEY AVE   | 52.33  | 68.46  | 60.93  |

Figures 5.8 and 5.9 show the GIS maps for the top 20 hazardous intersections by crash frequency index for 2013 to 2015, and the top 20 hazardous intersections by crash frequency index for 2015 only respectively.

### 5.3.3 Number of Crashes per Intersecting 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 based on the number of crashes per intersecting on corridors.

**Table 5.13: Average Number of Crashes per Intersection on Corridors in 2013 - 2015**

| Corridors        | 2013  | 2014  | 2015  |
|------------------|-------|-------|-------|
| PENNSYLVANIA AVE | 8.96  | 9.43  | 9.47  |
| NEW YORK AVE     | 15.74 | 16.57 | 18.78 |
| GEORGIA AVE      | 9.52  | 10.45 | 10.82 |
| NORTH CAPITOL ST | 6.74  | 8.01  | 9.55  |
| CONNECTICUT AVE  | 6.25  | 7.21  | 8.81  |
| SIXTEENTH ST     | 6.00  | 5.94  | 7.34  |
| WISCONSIN AVE    | 6.89  | 6.98  | 7.80  |
| FLORIDA AVE      | 5.95  | 6.75  | 7.88  |
| RHODE ISLAND AVE | 9.57  | 10.53 | 11.82 |
| BENNING RD       | 10.07 | 10.36 | 11.84 |
| SOUTHERN AVE     | 2.89  | 3.02  | 3.50  |
| BLADENSBURG RD   | 6.22  | 7.18  | 8.13  |
| CONSTITUTION AVE | 3.92  | 3.48  | 3.96  |
| NEW JERSEY AVE   | 3.84  | 5.03  | 4.47  |

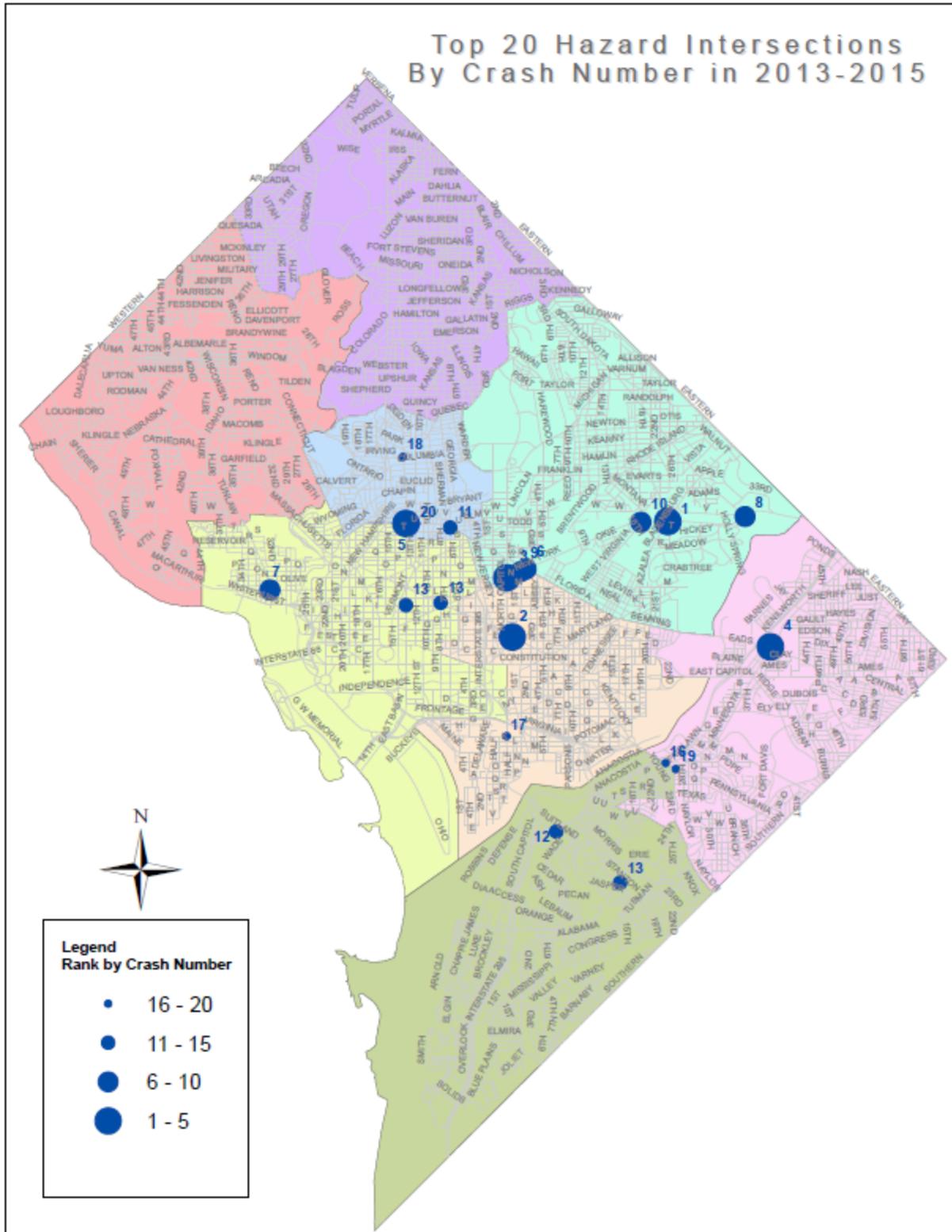


Figure 5.8: Top 20 Hazardous Intersections by Crash Frequency Index in 2013-2015

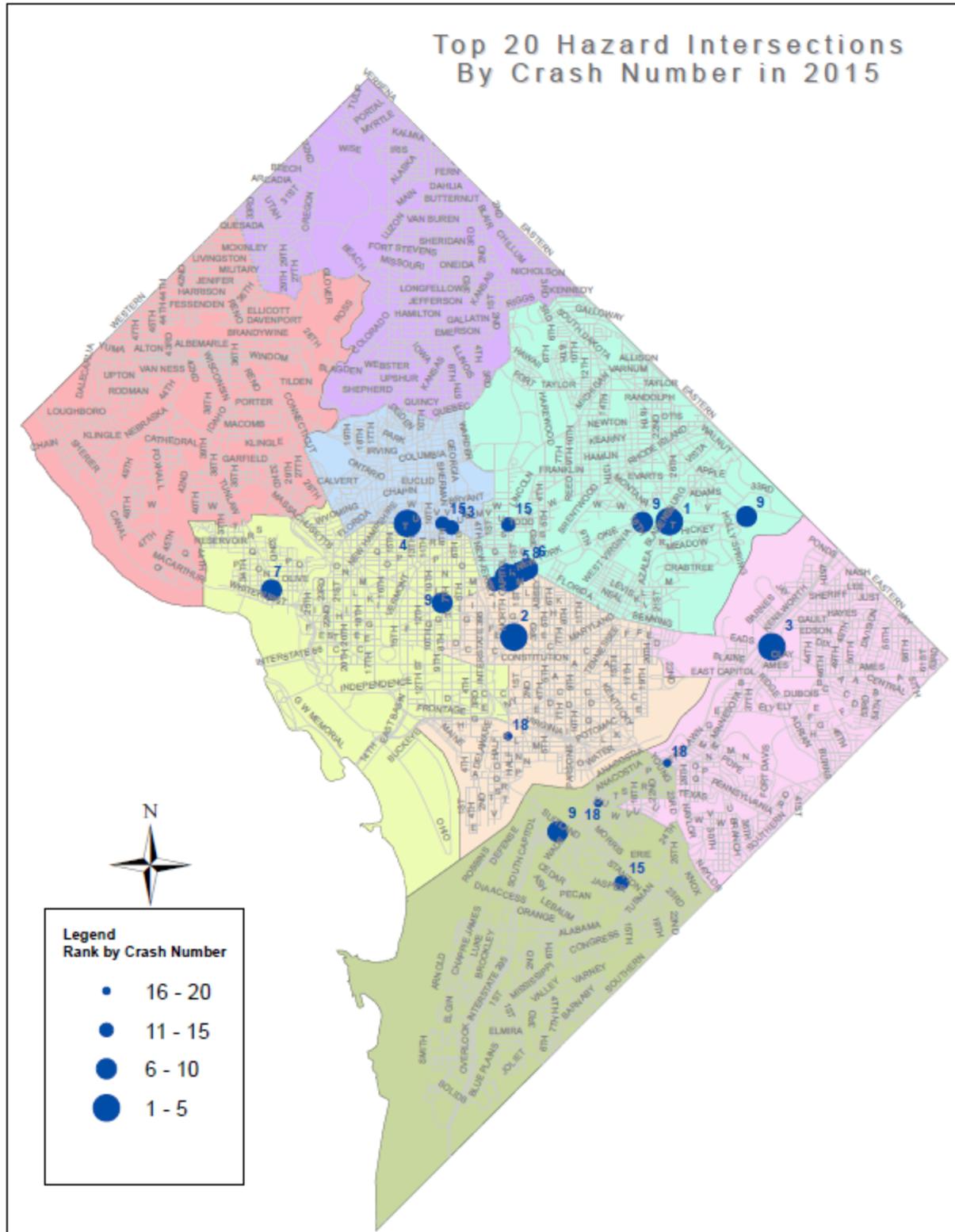


Figure 5.9: Top 20 Hazardous Intersections by Crash Frequency in 2015

## CHAPTER 6: EXPOSURE

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

Using the exposure data, the fatality rates per 100 million vehicle miles traveled (VMT) were 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 with the national rate from 2007 to 2015.

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 2007 to 2015 were substantially lower than the national rate. Overall, the number of fatalities per 100 million VMT for Washington, DC is considerably lower than the national rate.

**Table 6.1: Fatality Rate from 2007 through 2015**

| Year/State | Fatalities       | Total Vehicle Miles | Fatalities Per 100 Million | Total Population | Fatalities Per 100,000 |       |
|------------|------------------|---------------------|----------------------------|------------------|------------------------|-------|
|            |                  | Traveled (Millions) | Vehicle Miles Traveled     |                  | Population             |       |
| 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 |
| 2013       | Dist of Columbia | 29                  | 3,651                      | 0.79             | 646,449                | 4.49  |
|            | US               | 32,719              | 2,972,287                  | 1.10             | 315,091,138            | 10.38 |
| 2014       | Dist of Columbia | 26                  | 3,699                      | 0.70             | 658,893                | 3.95  |
|            | US               | 32,675              | 3,015,620                  | 1.08             | 320,282,544            | 10.20 |
| 2015       | Dist of Columbia | 26                  | 3,720                      | 0.70             | 672,228                | 3.87  |
|            | US               | 38,300              | 3,147,848                  | 1.22             | 321,773,631            | 11.90 |

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

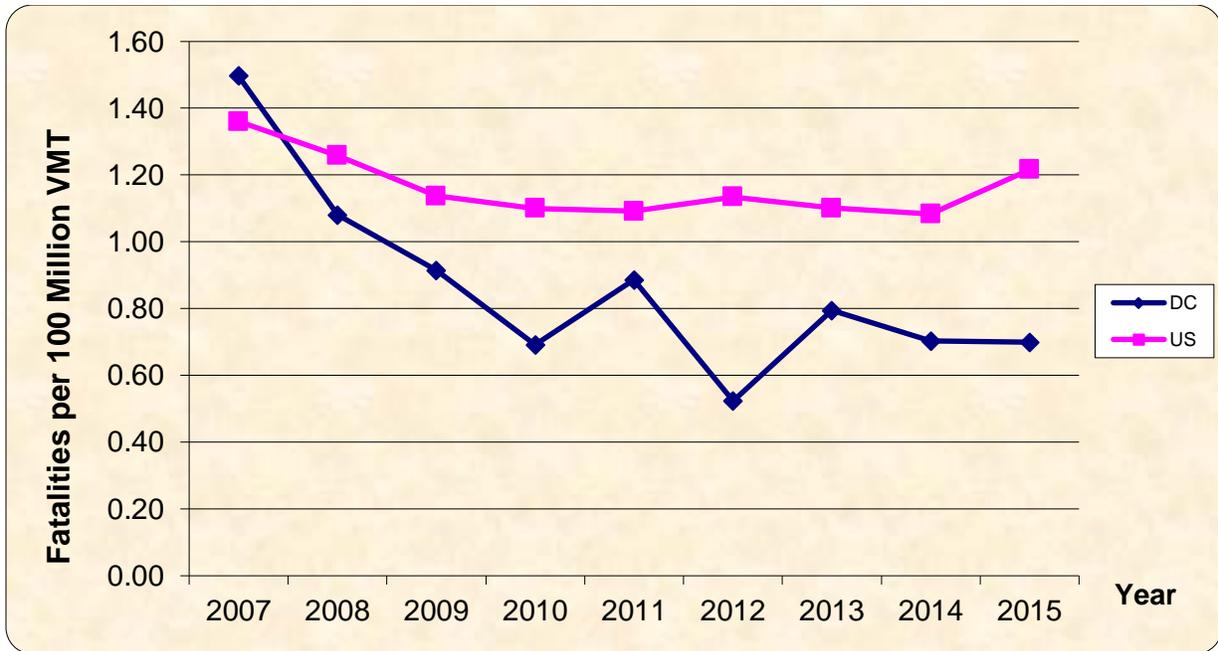


Figure 6.1: Fatality Rate per 100 Million VMT from 2007 through 2015

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

The injury rate per 100 million vehicle miles traveled (VMT) information from 2007 to 2015 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 2007 to 2015 is considerably higher than the national values.

Table 6.2: Injury Rate from 2007 to 2015

| Year/State | Injuries         | Total Vehicle Miles | Injuries Per 100 Million | Total Population | Injuries Per 100,000 |         |
|------------|------------------|---------------------|--------------------------|------------------|----------------------|---------|
|            |                  | Traveled (Millions) | Vehicle Miles Traveled   |                  | Population           |         |
| 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  |
| 2013       | Dist of Columbia | 7,505               | 3,651                    | 205.56           | 646,449              | 1160.96 |
|            | US               | 2,313,000           | 2,972,287                | 77.82            | 315,091,138          | 734.07  |
| 2014       | Dist of Columbia | 8,030               | 3,699                    | 217.09           | 658,893              | 1218.71 |
|            | US               | 2,338,000           | 3,015,620                | 77.53            | 320,282,544          | 729.98  |
| 2015       | Dist of Columbia | 8,341               | 3,720                    | 224.22           | 672,228              | 1240.80 |
|            | US               | 2,338,000           | 3,147,848                | 74.27            | 321,773,631          | 726.60  |

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.

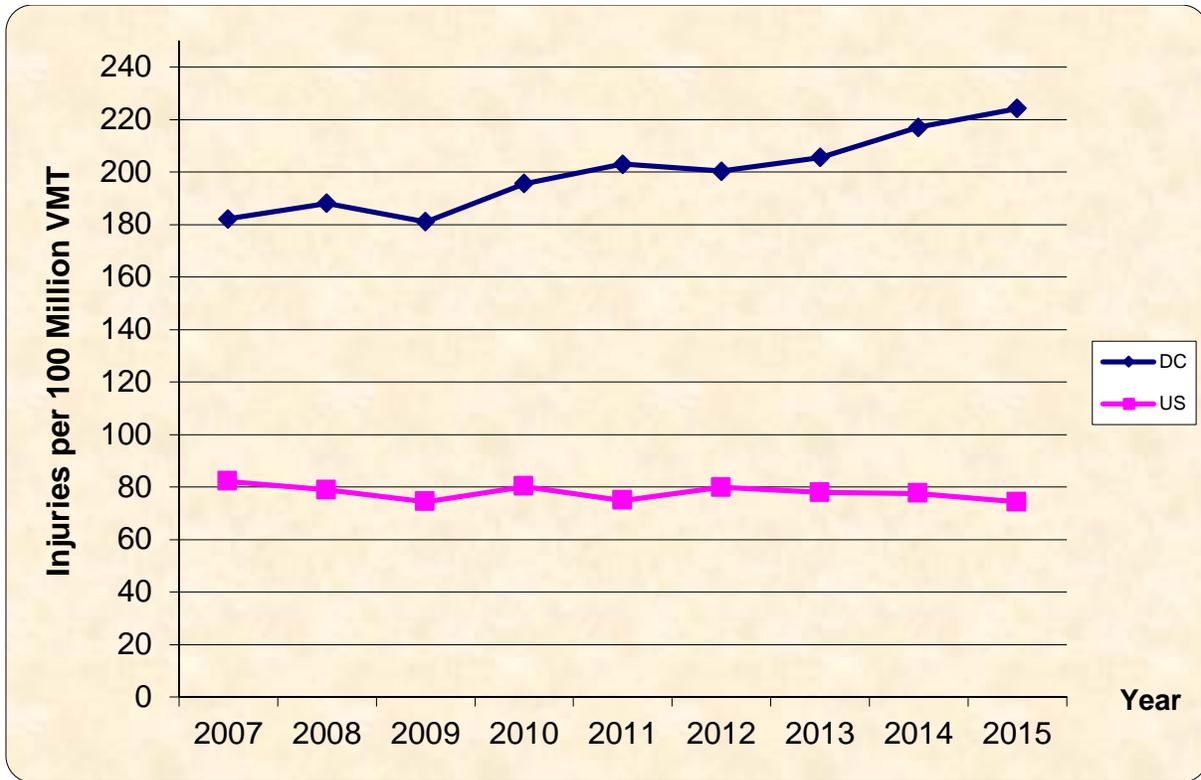


Figure 6.2: Injury Rate per 100 Million VMT from 2007 through 2015

## CHAPTER 7: APPENDICES

## 7.1 Top 100 Hazardous Intersections

## 7.1.1 Rank by Crash Frequency

Table 7.1: Intersection Rank by Crash Frequency for 2013- 2015 (Rank 1~35)

| INTERSECTION NAME                            | Quad | 2013 |      | 2014 |      | 2015 |      |
|--|------|------|------|------|------|------|------|
|  |      | Freq | Rank | Freq | Rank | Freq | Rank |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 83   | 1    | 119  | 1    | 133  | 1    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 52   | 7    | 67   | 3    | 84   | 2    |
| MINNESOTA AVE AND BENNING RD                 | NE   | 56   | 3    | 50   | 10   | 78   | 3    |
| 14TH ST AND U ST                             | NW   | 53   | 5    | 60   | 4    | 69   | 4    |
| NEW YORK AVE AND NORTH CAPITOL ST            | BN   | 57   | 2    | 68   | 2    | 66   | 5    |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 55   | 4    | 47   | 13   | 64   | 6    |
| WISCONSIN AVE AND M ST                       | NW   | 49   | 8    | 48   | 12   | 58   | 7    |
| 1ST ST AND NEW YORK AVE                      | NE   | 48   | 9    | 49   | 11   | 55   | 8    |
| NEW YORK AVE AND SOUTH DAKOTA AVE            | NE   | 53   | 5    | 53   | 6    | 47   | 9    |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 41   | 14   | 39   | 19   | 47   | 9    |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 35   | 24   | 53   | 6    | 47   | 9    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 39   | 17   | 44   | 15   | 47   | 9    |
| 7TH ST AND FLORIDA AVE                       | NW   | 38   | 19   | 51   | 9    | 45   | 13   |
| 1ST ST AND NEW YORK AVE                      | NW   | 32   | 31   | 22   | 96   | 44   | 14   |
| RHODE ISLAND AVE AND NORTH CAPITOL ST        | BN   | 28   | 42   | 36   | 24   | 42   | 15   |
| 9TH ST AND U ST                              | NW   | 28   | 42   | 23   | 82   | 42   | 15   |
| STANTON RD AND SUITLAND PKWY                 | SE   | 40   | 15   | 45   | 14   | 42   | 15   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD      | SE   | 15   | 185  | 22   | 96   | 39   | 18   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE            | SE   | 39   | 17   | 44   | 15   | 39   | 18   |
| I ST AND S CAPITOL ST                        | BN   | 43   | 11   | 39   | 19   | 39   | 18   |
| 14TH ST AND IRVING ST                        | NW   | 42   | 12   | 40   | 17   | 38   | 21   |
| KENILWORTH AVE AND EAST CAPITOL ST           | BN   | 33   | 29   | 33   | 31   | 35   | 22   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 25   | 56   | 33   | 31   | 35   | 22   |
| 14TH ST AND CONSTITUTION AVE                 | NW   | 25   | 56   | 30   | 40   | 35   | 22   |
| 16TH ST AND NEW HAMPSHIRE AVE                | NW   | 20   | 96   | 27   | 50   | 35   | 22   |
| 14TH ST AND K ST                             | NW   | 40   | 15   | 52   | 8    | 35   | 22   |
| 9TH ST AND NEW YORK AVE                      | NW   | 28   | 42   | 30   | 40   | 34   | 27   |
| 17TH ST AND H ST                             | NW   | 9    | 445  | 15   | 223  | 33   | 28   |
| CONNECTICUT AVE AND R ST                     | NW   | 26   | 55   | 21   | 104  | 33   | 28   |
| 3RD ST AND D ST                              | NW   | 22   | 81   | 16   | 193  | 33   | 28   |
| BENNING RD AND BLADENSBURG RD                | NE   | 24   | 62   | 38   | 22   | 32   | 31   |
| H ST AND NORTH CAPITOL ST                    | BN   | 35   | 24   | 26   | 57   | 32   | 31   |
| 15TH ST AND K ST                             | NW   | 24   | 62   | 34   | 27   | 32   | 31   |
| CONNECTICUT AVE AND N ST                     | NW   | 12   | 277  | 20   | 118  | 32   | 31   |
| 16TH ST AND K ST                             | NW   | 24   | 62   | 36   | 24   | 31   | 35   |

**Table 7.2: Intersection Rank by Crash Frequency for 2013-2015(Rank: 35~72)**

| INTERSECTION NAME                             | Quad | 2013 |      | 2014 |      | 2015 |      |
|---|------|------|------|------|------|------|------|
|   |      | Freq | Rank | Freq | Rank | Freq | Rank |
| 24TH ST AND PENNSYLVANIA AVE                  | NW   | 30   | 32   | 26   | 57   | 31   | 35   |
| 1ST ST AND FLORIDA AVE                        | NE   | 11   | 331  | 15   | 223  | 31   | 35   |
| KENILWORTH AVE AND BENNING RD                 | NE   | 36   | 23   | 33   | 31   | 30   | 38   |
| MINNESOTA AVE AND PENNSYLVANIA AVE            | SE   | 33   | 29   | 55   | 5    | 30   | 38   |
| 31ST ST AND M ST                              | NW   | 38   | 19   | 34   | 27   | 30   | 38   |
| SOUTHERN AVE AND WHEELER RD                   | SE   | 27   | 49   | 26   | 57   | 30   | 38   |
| 13TH ST AND SOUTHERN AVE                      | SE   | 16   | 159  | 13   | 278  | 30   | 38   |
| 13TH ST AND U ST                              | NW   | 42   | 12   | 37   | 23   | 30   | 38   |
| 17TH ST AND BLADENSBURG RD                    | NE   | 29   | 36   | 17   | 162  | 30   | 38   |
| 7TH ST AND H ST                               | NW   | 34   | 26   | 31   | 38   | 30   | 38   |
| 14TH ST AND RHODE ISLAND AVE                  | NW   | 27   | 49   | 33   | 31   | 29   | 46   |
| 14TH ST AND COLUMBIA RD                       | NW   | 34   | 26   | 35   | 26   | 29   | 46   |
| K ST AND NORTH CAPITOL ST                     | BN   | 23   | 70   | 26   | 57   | 29   | 46   |
| BRANCH AVE AND PENNSYLVANIA AVE               | SE   | 19   | 111  | 24   | 71   | 29   | 46   |
| SOUTH DAKOTA AVE AND BLADENSBURG RD           | NE   | 23   | 70   | 25   | 63   | 28   | 50   |
| 14TH ST AND P ST                              | NW   | 21   | 88   | 21   | 104  | 28   | 50   |
| 16TH ST AND I ST                              | NW   | 18   | 121  | 16   | 193  | 28   | 50   |
| KENILWORTH AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 18   | 121  | 5    | 1043 | 28   | 50   |
| 16TH ST AND NEW YORK AVE                      | NE   | 29   | 36   | 25   | 63   | 28   | 50   |
| 18TH ST AND MASSACHUSETTS AVE                 | NW   | 23   | 70   | 20   | 118  | 27   | 55   |
| 6TH ST AND H ST                               | NW   | 23   | 70   | 17   | 162  | 27   | 55   |
| MICHIGAN AVE AND NORTH CAPITOL ST             | BN   | 25   | 56   | 30   | 40   | 27   | 55   |
| 19TH ST AND M ST                              | NW   | 30   | 32   | 19   | 132  | 27   | 55   |
| 5TH ST AND RHODE ISLAND AVE                   | NE   | 17   | 136  | 18   | 147  | 27   | 55   |
| 21ST ST AND K ST                              | NW   | 23   | 70   | 21   | 104  | 27   | 55   |
| SOUTHERN AVE AND BENNING RD                   | SE   | 23   | 70   | 20   | 118  | 27   | 55   |
| CONNECTICUT AVE AND M ST                      | NW   | 16   | 159  | 19   | 132  | 26   | 62   |
| 14TH ST AND L ST                              | NW   | 30   | 32   | 22   | 96   | 26   | 62   |
| 1ST ST AND H ST                               | NW   | 3    | 1452 | 16   | 193  | 26   | 62   |
| CONNECTICUT AVE AND K ST                      | NW   | 28   | 42   | 32   | 37   | 26   | 62   |
| ALABAMA AVE AND GOOD HOPE RD                  | SE   | 19   | 111  | 18   | 147  | 26   | 62   |
| 15TH ST AND H ST                              | NW   | 11   | 331  | 28   | 48   | 26   | 62   |
| NORTH CAPITOL ST AND RIGGS RD                 | BN   | 34   | 26   | 30   | 40   | 25   | 68   |
| 36TH ST AND BENNING RD                        | NE   | 20   | 96   | 21   | 104  | 25   | 68   |
| 36TH ST AND M ST                              | NW   | 9    | 445  | 24   | 71   | 25   | 68   |
| 17TH ST AND I ST                              | NW   | 29   | 36   | 39   | 19   | 25   | 68   |
| 33RD PL AND SOUTH DAKOTA AVE                  | NE   | 15   | 185  | 25   | 63   | 24   | 72   |
| 6TH ST AND NEW YORK AVE                       | NW   | 25   | 56   | 23   | 82   | 24   | 72   |
| 4TH ST AND NEW YORK AVE                       | NW   | 37   | 21   | 33   | 31   | 24   | 72   |
| MONTANA AVE AND NEW YORK AVE                  | NE   | 10   | 377  | 12   | 330  | 24   | 72   |
| 18TH ST AND M ST                              | NW   | 12   | 277  | 25   | 63   | 24   | 72   |
| IRVING ST AND KENYON ST                       | NW   | 20   | 96   | 23   | 82   | 24   | 72   |
| 14TH ST AND INDEPENDENCE AVE                  | SW   | 19   | 111  | 24   | 71   | 24   | 72   |
| CLAY PL AND MINNESOTA AVE                     | NE   | 0    | 4113 | 3    | 1578 | 24   | 72   |

**Table 7.3: Intersection Rank by Crash Frequency for 2013-2015 (Rank: 72~86)**

| INTERSECTION NAME                      | Quad | 2013 |      | 2014 |      | 2015 |      |
|--|------|------|------|------|------|------|------|
|  |      | Freq | Rank | Freq | Rank | Freq | Rank |
| FIRTH STERLING AVE AND HOWARD RD       | SE   | 29   | 36   | 24   | 71   | 24   | 72   |
| 23RD ST AND I ST                       | NW   | 28   | 42   | 21   | 104  | 24   | 72   |
| BLADENSBURG RD AND QUEENS CHAPEL RD    | NE   | 18   | 121  | 15   | 223  | 24   | 72   |
| 1ST ST AND MICHIGAN AVE                | NW   | 30   | 32   | 23   | 82   | 24   | 72   |
| RHODE ISLAND AVE AND REED ST           | NE   | 28   | 42   | 33   | 31   | 24   | 72   |
| 15TH ST AND PENNSYLVANIA AVE           | SE   | 20   | 96   | 11   | 384  | 24   | 72   |
| MINNESOTA AVE AND AMES ST              | NE   | 7    | 629  | 18   | 147  | 23   | 86   |
| FLORIDA AVE AND NORTH CAPITOL ST       | BN   | 22   | 81   | 20   | 118  | 23   | 86   |
| 14TH ST AND F ST                       | NW   | 16   | 159  | 26   | 57   | 23   | 86   |
| WISCONSIN AVE AND UPTON ST             | NW   | 20   | 96   | 22   | 96   | 23   | 86   |
| 7TH ST AND INDEPENDENCE AVE            | SW   | 15   | 185  | 12   | 330  | 23   | 86   |
| 9TH ST AND H ST                        | NW   | 15   | 185  | 13   | 278  | 23   | 86   |
| CONNECTICUT AVE AND I ST               | NW   | 11   | 331  | 11   | 384  | 23   | 86   |
| 18TH ST AND BELMONT RD                 | NW   | 14   | 215  | 23   | 82   | 23   | 86   |
| CONNECTICUT AVE AND DEVONSHIRE PL      | NW   | 6    | 779  | 8    | 595  | 23   | 86   |
| 17TH ST AND BENNING RD                 | NE   | 22   | 81   | 24   | 71   | 23   | 86   |
| CONNECTICUT AVE AND L ST               | NW   | 10   | 377  | 14   | 247  | 23   | 86   |
| 19TH ST AND INDEPENDENCE AVE           | SE   | 22   | 81   | 12   | 330  | 23   | 86   |
| MISSOURI AVE AND NEW HAMPSHIRE AVE     | NW   | 18   | 121  | 11   | 384  | 23   | 86   |
| 30TH ST AND NAYLOR RD                  | SE   | 6    | 779  | 17   | 162  | 23   | 86   |
| MASSACHUSETTS AVE AND NORTH CAPITOL ST | BN   | 12   | 277  | 21   | 104  | 23   | 86   |

**Table 7.4: Intersection Rank by Crash Frequency for 3-Year Periods  
(Rank: 1~37)**

| INTERSECTION NAME                               | Quad | 2012-2014 |      | 2013-2015 |      |
|---|------|-----------|------|-----------|------|
|   |      | Freq      | Rank | Freq      | Rank |
| NEW YORK AVE AND BLADENSBURG RD                 | NE   | 282       | 1    | 335       | 1    |
| 1ST ST AND UNION STATION PLAZA                  | NE   | 158       | 6    | 203       | 2    |
| NEW YORK AVE AND NORTH CAPITOL ST               | BN   | 187       | 2    | 191       | 3    |
| MINNESOTA AVE AND BENNING RD                    | NE   | 161       | 5    | 184       | 4    |
| 14TH ST AND U ST                                | NW   | 163       | 4    | 182       | 5    |
| FLORIDA AVE AND NEW YORK AVE                    | NE   | 158       | 6    | 166       | 6    |
| WISCONSIN AVE AND M ST                          | NW   | 165       | 3    | 155       | 7    |
| NEW YORK AVE AND SOUTH DAKOTA AVE               | NE   | 133       | 10   | 153       | 8    |
| 1ST ST AND NEW YORK AVE                         | NE   | 133       | 10   | 152       | 9    |
| MONTANA AVE AND NEW YORK AVE                    | NE   | 124       | 16   | 135       | 10   |
| 7TH ST AND FLORIDA AVE                          | NW   | 127       | 13   | 134       | 11   |
| FIRTH STERLING AVE AND SUITLAND PKWY            | SE   | 125       | 15   | 130       | 12   |
| 9TH ST AND MASSACHUSETTS AVE                    | NW   | 101       | 23   | 127       | 13   |
| 14TH ST AND K ST                                | NW   | 129       | 12   | 127       | 13   |
| STANTON RD AND SUITLAND PKWY                    | SE   | 127       | 13   | 127       | 13   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE               | SE   | 142       | 8    | 122       | 16   |
| I ST AND S CAPITOL ST                           | BN   | 113       | 20   | 121       | 17   |
| 14TH ST AND IRVING ST                           | NW   | 115       | 17   | 120       | 18   |
| MINNESOTA AVE AND PENNSYLVANIA AVE              | SE   | 136       | 9    | 118       | 19   |
| 13TH ST AND U ST                                | NW   | 114       | 18   | 109       | 20   |
| RHODE ISLAND AVE AND NORTH CAPITOL ST           | BN   | 87        | 32   | 106       | 21   |
| 31ST ST AND M ST                                | NW   | 100       | 24   | 102       | 22   |
| KENILWORTH AVE AND EAST CAPITOL ST              | BN   | 96        | 26   | 101       | 23   |
| KENILWORTH AVE AND BENNING RD                   | NE   | 98        | 25   | 99        | 24   |
| BENNING RD AND EAST CAPITOL ST                  | BN   | 106       | 21   | 98        | 25   |
| 14TH ST AND COLUMBIA RD                         | NW   | 96        | 26   | 98        | 25   |
| 1ST ST AND NEW YORK AVE                         | NW   | 84        | 37   | 98        | 25   |
| 7TH ST AND H ST                                 | NW   | 95        | 29   | 95        | 28   |
| BENNING RD AND BLADENSBURG RD                   | NE   | 88        | 31   | 94        | 29   |
| 4TH ST AND NEW YORK AVE                         | NW   | 96        | 26   | 94        | 29   |
| MINNESOTA AVE AND NANNIE HELEN<br>BURROUGHS AVE | NE   | 75        | 50   | 93        | 31   |
| H ST AND NORTH CAPITOL ST                       | BN   | 114       | 18   | 93        | 31   |
| 9TH ST AND U ST                                 | NW   | 85        | 35   | 93        | 31   |
| 17TH ST AND I ST                                | NW   | 84        | 37   | 93        | 31   |
| 9TH ST AND NEW YORK AVE                         | NW   | 82        | 43   | 92        | 35   |
| 16TH ST AND K ST                                | NW   | 84        | 37   | 91        | 36   |
| 14TH ST AND CONSTITUTION AVE                    | NW   | 87        | 32   | 90        | 37   |

**Table 7.5: Intersection Rank by Crash Frequency for 3-Year Periods  
(Rank: 37~74)**

| INTERSECTION NAME                       | Quad | 2012-2014 |      | 2013-2015 |      |
|---|------|-----------|------|-----------|------|
|   |      | Freq      | Rank | Freq      | Rank |
| 15TH ST AND K ST                        | NW   | 87        | 32   | 90        | 37   |
| 14TH ST AND RHODE ISLAND AVE            | NW   | 74        | 53   | 89        | 39   |
| NORTH CAPITOL ST AND RIGGS RD           | BN   | 102       | 22   | 89        | 39   |
| 24TH ST AND PENNSYLVANIA AVE            | NW   | 76        | 49   | 87        | 41   |
| CONNECTICUT AVE AND K ST                | NW   | 82        | 43   | 86        | 42   |
| 14TH ST AND PARK RD                     | NW   | 85        | 35   | 86        | 42   |
| RHODE ISLAND AVE AND REED ST            | NE   | 89        | 30   | 85        | 44   |
| SOUTHERN AVE AND WHEELER RD             | SE   | 70        | 63   | 83        | 45   |
| 16TH ST AND NEW HAMPSHIRE AVE           | NW   | 75        | 50   | 82        | 46   |
| MICHIGAN AVE AND NORTH CAPITOL ST       | BN   | 72        | 58   | 82        | 46   |
| 16TH ST AND NEW YORK AVE                | NE   | 70        | 63   | 82        | 46   |
| CONNECTICUT AVE AND R ST                | NW   | 65        | 78   | 80        | 49   |
| 14TH ST AND L ST                        | NW   | 78        | 45   | 78        | 50   |
| K ST AND NORTH CAPITOL ST               | BN   | 74        | 53   | 78        | 50   |
| FIRTH STERLING AVE AND HOWARD RD        | SE   | 72        | 58   | 77        | 52   |
| 1ST ST AND MICHIGAN AVE                 | NW   | 83        | 40   | 77        | 52   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD | SE   | 46        | 175  | 76        | 54   |
| SOUTH DAKOTA AVE AND BLADENSBURG RD     | NE   | 72        | 58   | 76        | 54   |
| 19TH ST AND M ST                        | NW   | 71        | 62   | 76        | 54   |
| ALABAMA AVE AND PENNSYLVANIA AVE        | SE   | 72        | 58   | 76        | 54   |
| 17TH ST AND BLADENSBURG RD              | NE   | 69        | 69   | 76        | 54   |
| 4TH ST AND NEW YORK AVE                 | NE   | 83        | 40   | 75        | 59   |
| 24TH ST AND M ST                        | NW   | 83        | 40   | 73        | 60   |
| 23RD ST AND I ST                        | NW   | 65        | 78   | 73        | 60   |
| 6TH ST AND NEW YORK AVE                 | NW   | 74        | 53   | 72        | 62   |
| BRANCH AVE AND PENNSYLVANIA AVE         | SE   | 65        | 78   | 72        | 62   |
| 3RD ST AND D ST                         | NW   | 56        | 108  | 71        | 64   |
| 14TH ST AND I ST                        | NW   | 74        | 53   | 71        | 64   |
| 17TH ST AND PENNSYLVANIA AVE            | NW   | 69        | 69   | 71        | 64   |
| MARTIN LUTHER KING AVE AND HOWARD RD    | SE   | 70        | 63   | 71        | 64   |
| 21ST ST AND K ST                        | NW   | 61        | 90   | 71        | 64   |
| KENILWORTH AVE AND LEE ST               | NE   | 66        | 75   | 71        | 64   |
| 12TH ST AND U ST                        | NW   | 66        | 75   | 70        | 70   |
| 18TH ST AND MASSACHUSETTS AVE           | NW   | 55        | 112  | 70        | 70   |
| 14TH ST AND P ST                        | NW   | 70        | 63   | 70        | 70   |
| SOUTHERN AVE AND BENNING RD             | SE   | 62        | 87   | 70        | 70   |
| EASTERN AVE AND KENILWORTH AVE          | NE   | 78        | 45   | 69        | 74   |

**Table 7.6: Intersection Rank by Crash Frequency for 3-Year Periods  
(Rank: 74~99)**

| INTERSECTION NAME                      | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | Freq      | Rank | Freq      | Rank |
| 17TH ST AND BENNING RD                 | NE   | 61        | 90   | 69        | 74   |
| 11TH ST AND M ST                       | SE   | 75        | 50   | 69        | 74   |
| 12TH ST AND CONSTITUTION AVE           | NW   | 68        | 73   | 68        | 77   |
| 6TH ST AND H ST                        | NW   | 64        | 84   | 67        | 78   |
| IRVING ST AND KENYON ST                | NW   | 51        | 133  | 67        | 78   |
| NORTH CAPITOL ST AND P ST              | BN   | 78        | 45   | 67        | 78   |
| 14TH ST AND INDEPENDENCE AVE           | SW   | 62        | 87   | 67        | 78   |
| 36TH ST AND BENNING RD                 | NE   | 53        | 119  | 66        | 82   |
| MALCOLM X AVE AND S CAPITOL ST         | BN   | 69        | 69   | 66        | 82   |
| PENNSYLVANIA AVE AND ANACOSTIA FRWY    | SE   | 69        | 69   | 66        | 82   |
| 14TH ST AND F ST                       | NW   | 70        | 63   | 65        | 85   |
| 15TH ST AND H ST                       | NW   | 59        | 97   | 65        | 85   |
| FLORIDA AVE AND NORTH CAPITOL ST       | BN   | 56        | 108  | 65        | 85   |
| WISCONSIN AVE AND UPTON ST             | NW   | 53        | 119  | 65        | 85   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE | NE   | 59        | 97   | 65        | 85   |
| CONNECTICUT AVE AND N ST               | NW   | 51        | 133  | 64        | 90   |
| 33RD PL AND SOUTH DAKOTA AVE           | NE   | 52        | 126  | 64        | 90   |
| ALABAMA AVE AND GOOD HOPE RD           | SE   | 51        | 133  | 63        | 92   |
| 16TH ST AND I ST                       | NW   | 49        | 148  | 62        | 93   |
| 20TH ST AND K ST                       | NW   | 59        | 97   | 62        | 93   |
| 29TH ST AND M ST                       | NW   | 52        | 126  | 62        | 93   |
| 5TH ST AND RHODE ISLAND AVE            | NE   | 48        | 156  | 62        | 93   |
| 2ND ST AND H ST                        | NW   | 74        | 53   | 62        | 93   |
| NEW JERSEY AVE AND NEW YORK AVE        | NW   | 63        | 85   | 62        | 93   |
| CONNECTICUT AVE AND M ST               | NW   | 62        | 87   | 61        | 99   |
| 14TH ST AND PENNSYLVANIA AVE           | NW   | 78        | 45   | 61        | 99   |
| 18TH ST AND M ST                       | NW   | 48        | 156  | 61        | 99   |

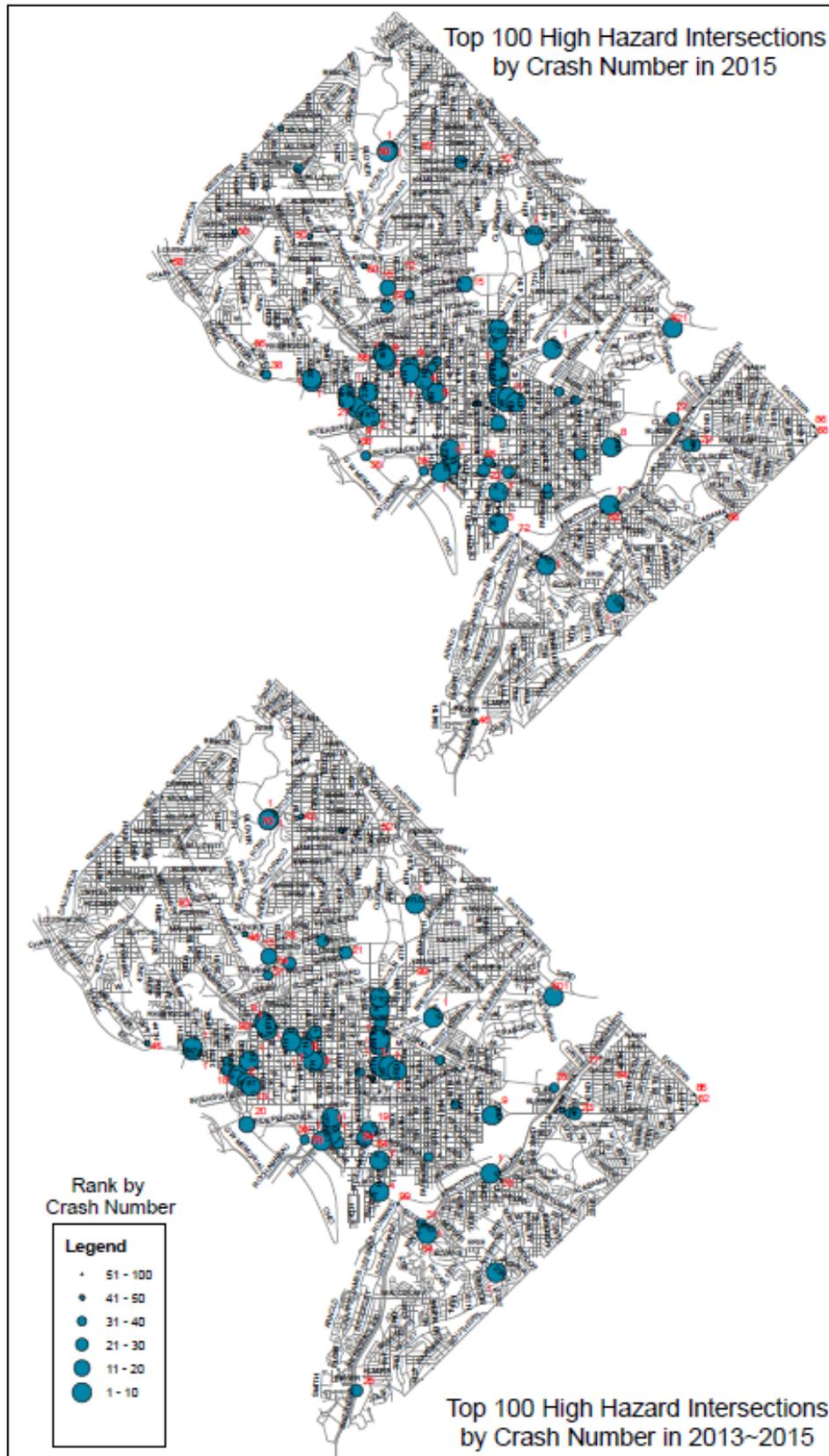


Figure 7.1: Top 100 Hazardous Intersections by Crash Number in 2013-2015

## 7.1.2 Rank by Crash Rate

Table 7.7: Intersection Rank by Crash Rate for 2013-2015 (Rank: 1~36)

| INTERSECTION NAME                            | Quad | 2013    |      | 2014    |      | 2015    |      |
|--|------|---------|------|---------|------|---------|------|
|  |      | RATE    | RANK | RATE    | RANK | RATE    | RANK |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD      | SE   | 3.34113 | 17   | 4.90032 | 3    | 8.68694 | 1    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 5.31589 | 2    | 6.84932 | 1    | 8.5872  | 2    |
| 14TH ST AND U ST                             | NW   | 4.98988 | 4    | 5.64892 | 2    | 6.49626 | 3    |
| MINNESOTA AVE AND BENNING RD                 | NE   | 3.54329 | 12   | 3.16366 | 27   | 4.9353  | 4    |
| 3RD ST AND D ST                              | NW   | 3.27576 | 19   | 2.38237 | 65   | 4.91364 | 5    |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 4.06443 | 8    | 3.91389 | 12   | 4.51603 | 6    |
| WISCONSIN AVE AND M ST                       | NW   | 3.5991  | 10   | 3.52565 | 19   | 4.26016 | 7    |
| ALABAMA AVE AND GOOD HOPE RD                 | SE   | 2.93266 | 29   | 2.77831 | 46   | 4.01312 | 8    |
| 1ST ST AND MISSISSIPPI AVE                   | SE   | 1.48093 | 172  | 2.96187 | 38   | 3.94915 | 9    |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 2.45569 | 44   | 3.52081 | 20   | 3.93503 | 10   |
| 7TH ST AND G ST                              | NW   | 1.93807 | 99   | 4.75708 | 5    | 3.87614 | 11   |
| SOUTHERN AVE AND BENNING RD                  | SE   | 3.25652 | 21   | 2.83176 | 42   | 3.82287 | 12   |
| 8TH ST AND D ST                              | NW   | 1.82648 | 108  | 1.82648 | 127  | 3.65297 | 13   |
| 7TH ST AND FLORIDA AVE                       | NW   | 3.04414 | 25   | 4.08556 | 11   | 3.6049  | 14   |
| FIRTH STERLING AVE AND HOWARD RD             | SE   | 4.34164 | 6    | 3.59308 | 18   | 3.59308 | 15   |
| 14TH ST AND IRVING ST                        | NW   | 3.96788 | 9    | 3.77893 | 14   | 3.58999 | 16   |
| 9TH ST AND U ST                              | NW   | 2.36402 | 49   | 1.94187 | 114  | 3.54602 | 17   |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 2.99145 | 27   | 2.84552 | 41   | 3.42922 | 18   |
| 6TH ST AND G ST                              | NW   | 2.77171 | 35   | 2.98492 | 37   | 3.41133 | 19   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE       | NE   | 4.73046 | 5    | 4.73046 | 6    | 3.35074 | 20   |
| 24TH ST AND PENNSYLVANIA AVE                 | NW   | 3.2359  | 22   | 2.80444 | 43   | 3.34376 | 21   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 2.38652 | 48   | 3.15021 | 30   | 3.34113 | 22   |
| EASTERN AVE AND MINNESOTA AVE                | NE   | 2.22355 | 59   | 2.38237 | 65   | 3.33532 | 23   |
| 8TH ST AND H ST                              | NW   | 2.09406 | 81   | 2.09406 | 94   | 3.31559 | 24   |
| 14TH ST AND W ST                             | NW   | 2.41096 | 46   | 2.84932 | 39   | 3.28767 | 25   |
| 19TH ST AND INDEPENDENCE AVE                 | SE   | 3.13927 | 23   | 1.71233 | 142  | 3.28196 | 26   |
| NEW YORK AVE AND H ST                        | NW   | 1.17297 | 262  | 2.84864 | 40   | 3.18378 | 27   |
| POMEROY RD AND SHERIDAN RD                   | SE   | 1.54351 | 161  | 1.54351 | 181  | 3.08702 | 28   |
| 14TH ST AND COLUMBIA RD                      | NW   | 3.5486  | 11   | 3.65297 | 17   | 3.02674 | 29   |
| 17TH ST AND I ST                             | NW   | 3.46196 | 14   | 4.65574 | 7    | 2.98445 | 30   |
| 10TH ST AND MASSACHUSETTS AVE                | NW   | 2.03523 | 87   | 2.66145 | 50   | 2.97456 | 31   |
| ATLANTIC ST AND BARNABY ST                   | SE   | 0       | 1106 | 1.48093 | 196  | 2.96187 | 32   |
| 14TH ST AND V ST                             | NW   | 4.29761 | 7    | 3.49181 | 22   | 2.95461 | 33   |
| 7TH ST AND H ST                              | NW   | 3.34473 | 16   | 3.04961 | 35   | 2.95123 | 34   |
| 1ST ST AND CHESAPEAKE ST                     | SE   | 0.48924 | 722  | 0.97847 | 409  | 2.93542 | 35   |
| 14TH ST AND P ST                             | NW   | 2.19596 | 65   | 2.19596 | 83   | 2.92795 | 36   |

**Table 7.8: Intersection Rank by Crash Rate for 2013-2015 (Rank: 37~73)**

| INTERSECTION NAME                    | Quad | 2013    |      | 2014    |      | 2015    |      |
|--------------------------------------|------|---------|------|---------|------|---------|------|
|                                      |      | RATE    | RANK | RATE    | RANK | RATE    | RANK |
| 7TH ST AND F ST                      | NW   | 2.90189 | 31   | 2.21909 | 81   | 2.90189 | 37   |
| CENTRAL AVE AND SOUTHERN AVE         | SE   | 1.53271 | 162  | 2.10748 | 91   | 2.87384 | 38   |
| 6TH ST AND H ST                      | NW   | 2.44713 | 45   | 1.80875 | 130  | 2.87272 | 39   |
| 14TH ST AND SPRING RD                | NW   | 2.04457 | 85   | 2.24903 | 79   | 2.8624  | 40   |
| 14TH ST AND RHODE ISLAND AVE         | NW   | 2.61387 | 40   | 3.19473 | 26   | 2.80749 | 41   |
| 14TH ST AND MARYLAND AVE             | NE   | 1.50416 | 167  | 1.28928 | 257  | 2.79345 | 42   |
| 24TH ST AND L ST                     | NW   | 1.94208 | 98   | 2.35825 | 69   | 2.77441 | 43   |
| SOUTHERN AVE AND NAYLOR RD           | SE   | 3.28767 | 18   | 3.83562 | 13   | 2.73973 | 44   |
| 11TH ST AND COLUMBIA RD              | NW   | 2.2214  | 60   | 2.2214  | 80   | 2.71504 | 45   |
| 6TH ST AND D ST                      | NW   | 0.76636 | 482  | 0.38318 | 848  | 2.68225 | 46   |
| 12TH ST AND BUCHANAN ST              | NE   | 0.2978  | 906  | 1.19119 | 298  | 2.68017 | 47   |
| FIRTH STERLING AVE AND SUITLAND PKWY | SE   | 2.21679 | 62   | 2.50099 | 56   | 2.67152 | 48   |
| 15TH ST AND E ST                     | NW   | 0.84671 | 414  | 1.08863 | 346  | 2.6611  | 49   |
| 25TH ST AND M ST                     | NW   | 1.32263 | 221  | 1.51157 | 189  | 2.64525 | 50   |
| 23RD ST AND I ST                     | NW   | 3.02017 | 26   | 2.26513 | 77   | 2.58872 | 51   |
| CONNECTICUT AVE AND R ST             | NW   | 2.00374 | 90   | 1.6184  | 161  | 2.54321 | 52   |
| STANTON RD AND SUITLAND PKWY         | SE   | 2.39801 | 47   | 2.69776 | 49   | 2.51791 | 53   |
| NEW HAMPSHIRE AVE AND T ST           | NW   | 2.90944 | 30   | 0.96981 | 416  | 2.42454 | 54   |
| 1ST ST AND FLORIDA AVE               | NE   | 0.85616 | 409  | 1.1675  | 315  | 2.41283 | 55   |
| 5TH ST AND H ST                      | NW   | 0.79909 | 458  | 1.25571 | 274  | 2.39726 | 56   |
| 25TH ST AND ALABAMA AVE              | SE   | 0.87173 | 403  | 0.7472  | 563  | 2.36613 | 57   |
| 1ST ST AND MICHIGAN AVE              | NW   | 2.95654 | 28   | 2.26668 | 76   | 2.36523 | 58   |
| 7TH ST AND P ST                      | NW   | 1.56556 | 155  | 0.39139 | 834  | 2.34834 | 59   |
| 17TH ST AND H ST                     | NW   | 0.64046 | 592  | 1.06743 | 358  | 2.34834 | 59   |
| 9TH ST AND F ST                      | NW   | 1.16584 | 267  | 2.04022 | 104  | 2.33168 | 61   |
| 12TH ST AND ALLISON ST               | NE   | 0.32811 | 872  | 0.65622 | 618  | 2.29678 | 62   |
| ALABAMA AVE AND WHEELER RD           | SE   | 1.1348  | 283  | 1.62114 | 159  | 2.2696  | 63   |
| 6TH ST AND M ST                      | NW   | 2.67793 | 37   | 1.23597 | 284  | 2.26594 | 64   |
| 19TH ST AND M ST                     | NW   | 2.51736 | 42   | 1.59433 | 169  | 2.26562 | 65   |
| 1ST ST AND M ST                      | NE   | 5.02702 | 3    | 4.77567 | 4    | 2.26216 | 66   |
| 11TH ST AND G ST                     | NW   | 2.2542  | 56   | 1.5606  | 177  | 2.2542  | 67   |
| 24TH ST AND M ST                     | NW   | 2.61519 | 39   | 4.23412 | 10   | 2.24159 | 68   |
| 4TH ST AND D ST                      | NW   | 1.39782 | 193  | 2.51607 | 55   | 2.23651 | 69   |
| BRENTWOOD RD AND W ST                | NE   | 1.85117 | 106  | 1.85117 | 125  | 2.2214  | 70   |
| BLADENSBURG RD AND QUEENS CHAPEL RD  | NE   | 1.66605 | 138  | 1.38837 | 230  | 2.2214  | 70   |
| MARTIN LUTHER KING AVE AND HOWARD RD | SE   | 3.51414 | 13   | 3.51414 | 21   | 2.21261 | 72   |
| 13TH ST AND U ST                     | NW   | 3.09324 | 24   | 2.725   | 48   | 2.20946 | 73   |

**Table 7.9: Intersection Rank by Crash Rate for 2013-2015 (Rank: 74~100)**

| INTERSECTION NAME                     | Quad | 2013    |      | 2014    |      | 2015    |      |
|---------------------------------------|------|---------|------|---------|------|---------|------|
|                                       |      | RATE    | RANK | RATE    | RANK | RATE    | RANK |
| 14TH ST AND MONROE ST                 | NW   | 2.71428 | 36   | 1.1875  | 300  | 2.20535 | 74   |
| 14TH ST AND FLORIDA AVE               | NW   | 2.8342  | 33   | 1.73201 | 137  | 2.20438 | 75   |
| 9TH ST AND H ST                       | NW   | 1.43441 | 182  | 1.24316 | 279  | 2.19943 | 76   |
| 15TH ST AND H ST                      | NW   | 0.93015 | 367  | 2.36766 | 68   | 2.19855 | 77   |
| 15TH ST AND RHODE ISLAND AVE          | NW   | 1.01943 | 328  | 1.65658 | 155  | 2.16629 | 78   |
| 16TH ST AND NEW HAMPSHIRE AVE         | NW   | 1.2355  | 247  | 1.66793 | 152  | 2.16213 | 79   |
| 17TH ST AND S ST                      | NW   | 0.9235  | 371  | 0.9235  | 445  | 2.15484 | 80   |
| GEORGIA AVE AND BARRY PL              | NW   | 2.82724 | 34   | 2.55798 | 54   | 2.15408 | 81   |
| 9TH ST AND NEW YORK AVE               | NW   | 1.76757 | 114  | 1.89382 | 121  | 2.14633 | 82   |
| 2ND ST AND D ST                       | SE   | 1.28425 | 236  | 1.71233 | 142  | 2.14041 | 83   |
| 14TH ST AND H ST                      | NE   | 1.37515 | 204  | 1.58671 | 171  | 2.11562 | 84   |
| 21ST ST AND PENNSYLVANIA AVE          | NW   | 2.32673 | 51   | 1.86138 | 123  | 2.09406 | 85   |
| NEW JERSEY AVE AND E ST               | NW   | 0.69802 | 548  | 2.44307 | 61   | 2.09406 | 85   |
| BOWEN RD AND RIDGE RD                 | SE   | 0.83656 | 429  | 0.41828 | 814  | 2.09139 | 87   |
| 10TH ST AND FLORIDA AVE               | NW   | 0.81783 | 443  | 0       | 1129 | 2.04457 | 88   |
| 16TH ST AND I ST                      | NW   | 1.30291 | 229  | 1.15814 | 322  | 2.02675 | 89   |
| 11TH ST AND U ST                      | NW   | 2.13208 | 75   | 2.13208 | 89   | 2.02548 | 90   |
| FLORIDA AVE AND NEW YORK AVE          | NE   | 1.736   | 122  | 1.48349 | 194  | 2.02007 | 91   |
| IRVING ST AND KENYON ST               | NW   | 1.6834  | 135  | 1.9359  | 115  | 2.02007 | 91   |
| NEW HAMPSHIRE AVE AND S ST            | NW   | 0.28688 | 918  | 2.29506 | 74   | 2.00818 | 93   |
| 6TH ST AND FLORIDA AVE                | NW   | 2.21392 | 63   | 2.21392 | 82   | 1.99253 | 94   |
| H ST AND NORTH CAPITOL ST             | BN   | 2.17439 | 69   | 1.61526 | 162  | 1.98801 | 95   |
| ALABAMA AVE AND RANDLE PL             | SE   | 0.43836 | 774  | 0.65753 | 614  | 1.9726  | 96   |
| 2ND ST AND E ST                       | NW   | 0.89242 | 389  | 3.74816 | 16   | 1.96332 | 97   |
| 17TH ST AND PENNSYLVANIA AVE          | NW   | 1.95378 | 97   | 2.39782 | 64   | 1.95378 | 98   |
| WISCONSIN AVE AND Q ST                | NW   | 2.04839 | 84   | 1.53629 | 184  | 1.94597 | 99   |
| WEST VIRGINIA AVE AND MOUNT OLIVET RD | NE   | 1.29691 | 230  | 1.51306 | 188  | 1.94537 | 100  |

**Table 7.10: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 1~37)**

| INTERSECTION NAME                            | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | RATE      | RANK | RATE      | RANK |
| 1ST ST AND UNION STATION PLAZA               | NE   | 5.38404   | 1    | 6.91747   | 1    |
| 14TH ST AND U ST                             | NW   | 5.11541   | 2    | 5.71169   | 2    |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD      | SE   | 3.41538   | 11   | 5.6428    | 3    |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE       | NE   | 3.87635   | 6    | 4.27056   | 4    |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 3.51247   | 9    | 4.16478   | 5    |
| 1ST ST AND M ST                              | NE   | 4.35675   | 4    | 4.02162   | 6    |
| MINNESOTA AVE AND BENNING RD                 | NE   | 3.39566   | 12   | 3.88075   | 7    |
| FIRTH STERLING AVE AND HOWARD RD             | SE   | 3.59308   | 8    | 3.8426    | 8    |
| WISCONSIN AVE AND M ST                       | NW   | 4.03981   | 5    | 3.79497   | 9    |
| 14TH ST AND IRVING ST                        | NW   | 3.62148   | 7    | 3.77893   | 10   |
| 17TH ST AND I ST                             | NW   | 3.34259   | 14   | 3.70072   | 11   |
| 14TH ST AND V ST                             | NW   | 4.47668   | 3    | 3.58134   | 12   |
| 7TH ST AND FLORIDA AVE                       | NW   | 3.39128   | 13   | 3.5782    | 13   |
| 3RD ST AND D ST                              | NW   | 2.77943   | 28   | 3.52392   | 14   |
| 7TH ST AND G ST                              | NW   | 3.17139   | 17   | 3.52376   | 15   |
| 14TH ST AND COLUMBIA RD                      | NW   | 3.33986   | 15   | 3.40944   | 16   |
| SOUTHERN AVE AND FITCH ST                    | SE   | 3.15484   | 18   | 3.32088   | 17   |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 2.78115   | 27   | 3.30385   | 18   |
| SOUTHERN AVE AND BENNING RD                  | SE   | 2.92615   | 23   | 3.30372   | 19   |
| SOUTHERN AVE AND NAYLOR RD                   | SE   | 3.19635   | 16   | 3.28767   | 20   |
| ALABAMA AVE AND GOOD HOPE RD                 | SE   | 2.62396   | 32   | 3.24137   | 21   |
| 24TH ST AND PENNSYLVANIA AVE                 | NW   | 2.73254   | 29   | 3.12803   | 22   |
| 7TH ST AND H ST                              | NW   | 3.11519   | 19   | 3.11519   | 23   |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 2.45639   | 40   | 3.08873   | 24   |
| MARTIN LUTHER KING AVE AND HOWARD RD         | SE   | 3.03691   | 22   | 3.08029   | 25   |
| 6TH ST AND G ST                              | NW   | 2.5585    | 38   | 3.05598   | 26   |
| 24TH ST AND M ST                             | NW   | 3.44541   | 10   | 3.0303    | 27   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 2.38652   | 45   | 2.95929   | 28   |
| 14TH ST AND RHODE ISLAND AVE                 | NW   | 2.38798   | 44   | 2.87203   | 29   |
| 14TH ST AND W ST                             | NW   | 2.26484   | 55   | 2.84932   | 30   |
| 1ST ST AND MISSISSIPPI AVE                   | SE   | 1.97458   | 74   | 2.79732   | 31   |
| 19TH ST AND INDEPENDENCE AVE                 | SE   | 3.0917    | 20   | 2.71119   | 32   |
| 13TH ST AND U ST                             | NW   | 2.79864   | 26   | 2.6759    | 33   |
| 7TH ST AND F ST                              | NW   | 2.38979   | 43   | 2.67429   | 34   |
| EASTERN AVE AND MINNESOTA AVE                | NE   | 2.1706    | 58   | 2.64708   | 35   |
| 23RD ST AND I ST                             | NW   | 2.33704   | 48   | 2.62467   | 36   |
| 9TH ST AND U ST                              | NW   | 2.39216   | 42   | 2.6173    | 37   |

**Table 7.11: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 38~75)**

| INTERSECTION NAME                    | Quad | 2012-2014 |      | 2013-2015 |      |
|--------------------------------------|------|-----------|------|-----------|------|
|                                      |      | RATE      | RANK | RATE      | RANK |
| 18TH ST AND KALORAMA RD              | NW   | 2.87447   | 24   | 2.57504   | 38   |
| 10TH ST AND MASSACHUSETTS AVE        | NW   | 1.87867   | 85   | 2.55708   | 39   |
| STANTON RD AND SUITLAND PKWY         | SE   | 2.53789   | 39   | 2.53789   | 40   |
| 1ST ST AND MICHIGAN AVE              | NW   | 2.72659   | 30   | 2.52948   | 41   |
| GEORGIA AVE AND BARRY PL             | NW   | 2.64773   | 31   | 2.5131    | 42   |
| 8TH ST AND H ST                      | NW   | 2.32673   | 49   | 2.50124   | 43   |
| FIRTH STERLING AVE AND SUITLAND PKWY | SE   | 2.36837   | 46   | 2.4631    | 44   |
| SOUTHERN AVE AND S CAPITOL ST        | BN   | 3.06237   | 21   | 2.46083   | 45   |
| 14TH ST AND P ST                     | NW   | 2.43996   | 41   | 2.43996   | 46   |
| 8TH ST AND D ST                      | NW   | 1.62354   | 128  | 2.43531   | 47   |
| NEW YORK AVE AND H ST                | NW   | 1.67567   | 116  | 2.4018    | 48   |
| 11TH ST AND COLUMBIA RD              | NW   | 1.8923    | 83   | 2.38595   | 49   |
| 14TH ST AND SPRING RD                | NW   | 2.18088   | 57   | 2.38533   | 50   |
| 6TH ST AND H ST                      | NW   | 2.26981   | 54   | 2.3762    | 51   |
| 24TH ST AND L ST                     | NW   | 2.31201   | 50   | 2.35825   | 52   |
| 3RD ST AND C ST                      | NW   | 2.80998   | 25   | 2.28311   | 53   |
| 14TH ST AND K ST                     | NW   | 2.30094   | 51   | 2.26527   | 54   |
| 14TH ST AND FLORIDA AVE              | NW   | 1.99444   | 72   | 2.25686   | 55   |
| 7TH ST AND S ST                      | NW   | 2.57581   | 36   | 2.22456   | 56   |
| 2ND ST AND E ST                      | NW   | 1.96332   | 75   | 2.2013    | 57   |
| 5TH ST AND D ST                      | NW   | 1.91781   | 79   | 2.19178   | 58   |
| CENTRAL AVE AND SOUTHERN AVE         | SE   | 1.59658   | 136  | 2.17134   | 59   |
| 1ST ST AND K ST                      | NE   | 2.61606   | 33   | 2.14041   | 60   |
| 6TH ST AND FLORIDA AVE               | NW   | 2.14012   | 61   | 2.14012   | 61   |
| 19TH ST AND M ST                     | NW   | 1.98592   | 73   | 2.12577   | 62   |
| GEORGIA AVE AND PARK RD              | NW   | 2.2885    | 52   | 2.11579   | 63   |
| 17TH ST AND PENNSYLVANIA AVE         | NW   | 2.04258   | 68   | 2.10179   | 64   |
| NEW HAMPSHIRE AVE AND T ST           | NW   | 1.29309   | 227  | 2.10126   | 65   |
| 11TH ST AND U ST                     | NW   | 1.77674   | 100  | 2.09655   | 66   |
| 21ST ST AND PENNSYLVANIA AVE         | NW   | 1.93894   | 78   | 2.09406   | 67   |
| 12TH ST AND K ST                     | NW   | 2.06772   | 66   | 2.06772   | 68   |
| 6TH ST AND M ST                      | NW   | 2.19727   | 56   | 2.05994   | 69   |
| ROCK CREEK CHURCH RD AND SPRING RD   | NW   | 2.57251   | 37   | 2.05801   | 70   |
| POMEROY RD AND SHERIDAN RD           | SE   | 1.28626   | 231  | 2.05801   | 70   |
| CONNECTICUT AVE AND R ST             | NW   | 1.66978   | 117  | 2.05512   | 72   |
| 4TH ST AND D ST                      | NW   | 1.30463   | 221  | 2.05014   | 73   |
| 14TH ST AND MONROE ST                | NW   | 2.1488    | 60   | 2.03571   | 74   |
| 11TH ST AND G ST                     | NW   | 1.7918    | 97   | 2.023     | 75   |

**Table 7.12: Intersection Rank by Crash Rate for 3-Year Periods (Rank: 76~100)**

| INTERSECTION NAME                | Quad | 2012-2014 |      | 2013-2015 |      |
|----------------------------------|------|-----------|------|-----------|------|
|                                  |      | RATE      | RANK | RATE      | RANK |
| 7TH ST AND I ST                  | NW   | 1.96279   | 76   | 2.01731   | 76   |
| GEORGIA AVE AND BRYANT ST        | NW   | 2.61594   | 34   | 2.00867   | 77   |
| 33RD ST AND N ST                 | NW   | 1.99532   | 71   | 1.99532   | 78   |
| 4TH ST AND NEW YORK AVE          | NW   | 2.03414   | 69   | 1.99176   | 79   |
| VERMONT AVE AND U ST             | NW   | 1.76899   | 101  | 1.99012   | 80   |
| 19TH ST AND N ST                 | NW   | 2.08457   | 64   | 1.98531   | 81   |
| BRENTWOOD RD AND W ST            | NE   | 1.81003   | 92   | 1.97458   | 82   |
| I ST AND S CAPITOL ST            | BN   | 1.82004   | 90   | 1.94889   | 83   |
| 9TH ST AND NEW YORK AVE          | NW   | 1.72548   | 108  | 1.9359    | 84   |
| ALABAMA AVE AND STANTON RD       | SE   | 2.01599   | 70   | 1.93535   | 85   |
| 10TH ST AND F ST                 | NW   | 2.60926   | 35   | 1.92859   | 86   |
| H ST AND NORTH CAPITOL ST        | BN   | 2.36076   | 47   | 1.92588   | 87   |
| ALABAMA AVE AND PENNSYLVANIA AVE | SE   | 1.81639   | 91   | 1.9173    | 88   |
| 23RD ST AND ALABAMA AVE          | SE   | 1.66489   | 118  | 1.90973   | 89   |
| 14TH ST AND S ST                 | NW   | 1.868     | 86   | 1.90951   | 90   |
| 18TH ST AND ADAMS MILL RD        | NW   | 2.27094   | 53   | 1.88164   | 91   |
| IRVING ST AND KENYON ST          | NW   | 1.43089   | 176  | 1.87979   | 92   |
| 20TH ST AND NEW HAMPSHIRE AVE    | NW   | 1.67839   | 115  | 1.87585   | 93   |
| 14TH ST AND MARYLAND AVE         | NE   | 1.8623    | 87   | 1.8623    | 94   |
| 21ST ST AND F ST                 | NW   | 1.75425   | 104  | 1.85744   | 95   |
| 5TH ST AND K ST                  | NW   | 2.07183   | 65   | 1.85374   | 96   |
| GALVESTON ST AND S CAPITOL ST    | BN   | 1.72387   | 109  | 1.84701   | 97   |
| 9TH ST AND F ST                  | NW   | 1.89449   | 82   | 1.84591   | 98   |
| 11TH ST AND K ST                 | NW   | 1.74876   | 106  | 1.84591   | 98   |
| WISCONSIN AVE AND Q ST           | NW   | 1.84355   | 88   | 1.84355   | 100  |

## 7.1.3 Rank by Crash Cost

**Table 7.13: Intersection Rank by Crash Severity Cost for 3-Year Periods  
(Rank: 1~35)**

| INTERSECTION NAME                            | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COST      | RANK | COST      | RANK |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 2988      | 1    | 3704      | 1    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 2332      | 2    | 2240      | 2    |
| MINNESOTA AVE AND BENNING RD                 | NE   | 2046      | 3    | 2232      | 3    |
| NEW YORK AVE AND NORTH CAPITOL ST            | BN   | 1914      | 4    | 1958      | 4    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 1866      | 5    | 1851      | 5    |
| NEW YORK AVE AND SOUTH DAKOTA AVE            | NE   | 1577      | 10   | 1734      | 6    |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 1781      | 6    | 1697      | 7    |
| 14TH ST AND U ST                             | NW   | 1463      | 13   | 1680      | 8    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 1374      | 15   | 1635      | 9    |
| RHODE ISLAND AVE AND NORTH CAPITOL ST        | BN   | 1254      | 19   | 1547      | 10   |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 1605      | 8    | 1523      | 11   |
| KENILWORTH AVE AND EAST CAPITOL ST           | BN   | 1454      | 14   | 1520      | 12   |
| MINNESOTA AVE AND PENNSYLVANIA AVE           | SE   | 1697      | 7    | 1494      | 13   |
| WISCONSIN AVE AND M ST                       | NW   | 1556      | 11   | 1472      | 14   |
| FAIRLAWN AVE AND PENNSYLVANIA AVE            | SE   | 1539      | 12   | 1464      | 15   |
| 7TH ST AND FLORIDA AVE                       | NW   | 1596      | 9    | 1427      | 16   |
| 1ST ST AND NEW YORK AVE                      | NE   | 1322      | 17   | 1403      | 17   |
| I ST AND S CAPITOL ST                        | BN   | 1269      | 18   | 1367      | 18   |
| 14TH ST AND K ST                             | NW   | 1200      | 21   | 1254      | 19   |
| PENNSYLVANIA AVE AND ANACOSTIA FRWY          | SE   | 1216      | 20   | 1156      | 20   |
| 4TH ST AND NEW YORK AVE                      | NW   | 1167      | 24   | 1145      | 21   |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 923       | 44   | 1133      | 22   |
| KENILWORTH AVE AND BENNING RD                | NE   | 1164      | 25   | 1127      | 23   |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 1025      | 34   | 1122      | 24   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 893       | 52   | 1118      | 25   |
| 14TH ST AND IRVING ST                        | NW   | 1050      | 31   | 1112      | 26   |
| 13TH ST AND U ST                             | NW   | 1121      | 29   | 1106      | 27   |
| 1ST ST AND NEW YORK AVE                      | NW   | 1001      | 35   | 1097      | 28   |
| BENNING RD AND BLADENSBURG RD                | NE   | 1137      | 27   | 1067      | 29   |
| H ST AND NORTH CAPITOL ST                    | BN   | 1367      | 16   | 1058      | 30   |
| BENNING RD AND EAST CAPITOL ST               | BN   | 1172      | 23   | 1052      | 31   |
| SOUTH DAKOTA AVE AND BLADENSBURG RD          | NE   | 1001      | 35   | 1023      | 32   |
| 31ST ST AND M ST                             | NW   | 923       | 44   | 1005      | 33   |
| 14TH ST AND COLUMBIA RD                      | NW   | 998       | 38   | 1005      | 33   |
| MICHIGAN AVE AND NORTH CAPITOL ST            | BN   | 1156      | 26   | 990       | 35   |

**Table 7.14: Intersection Rank by Crash Severity Cost for 3-Year Periods  
(Rank: 36~71)**

| INTERSECTION NAME                      | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COST      | RANK | COST      | RANK |
| CONNECTICUT AVE AND K ST               | NW   | 957       | 42   | 987       | 36   |
| 36TH ST AND BENNING RD                 | NE   | 593       | 138  | 981       | 37   |
| 7TH ST AND H ST                        | NW   | 1032      | 33   | 978       | 38   |
| RHODE ISLAND AVE AND REED ST           | NE   | 1136      | 28   | 977       | 39   |
| NORTH CAPITOL ST AND RIGGS RD          | BN   | 1194      | 22   | 977       | 39   |
| 16TH ST AND NEW HAMPSHIRE AVE          | NW   | 1051      | 30   | 972       | 41   |
| 15TH ST AND K ST                       | NW   | 1040      | 32   | 963       | 42   |
| 14TH ST AND PARK RD                    | NW   | 962       | 40   | 962       | 43   |
| 14TH ST AND CONSTITUTION AVE           | NW   | 893       | 52   | 924       | 44   |
| 16TH ST AND NEW YORK AVE               | NE   | 705       | 88   | 924       | 44   |
| 16TH ST AND K ST                       | NW   | 887       | 54   | 915       | 46   |
| MALCOLM X AVE AND S CAPITOL ST         | BN   | 962       | 40   | 909       | 47   |
| SOUTHERN AVE AND BENNING RD            | SE   | 896       | 50   | 908       | 48   |
| 17TH ST AND I ST                       | NW   | 797       | 67   | 902       | 49   |
| FIRTH STERLING AVE AND HOWARD RD       | SE   | 840       | 59   | 900       | 50   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE | NE   | 776       | 69   | 888       | 51   |
| ALABAMA AVE AND PENNSYLVANIA AVE       | SE   | 851       | 56   | 881       | 52   |
| 14TH ST AND RHODE ISLAND AVE           | NW   | 698       | 90   | 878       | 53   |
| 4TH ST AND NEW YORK AVE                | NE   | 938       | 43   | 870       | 54   |
| 9TH ST AND U ST                        | NW   | 894       | 51   | 855       | 55   |
| BRANCH AVE AND PENNSYLVANIA AVE        | SE   | 813       | 65   | 851       | 56   |
| 9TH ST AND NEW YORK AVE                | NW   | 767       | 71   | 842       | 57   |
| 24TH ST AND PENNSYLVANIA AVE           | NW   | 767       | 71   | 842       | 57   |
| 19TH ST AND M ST                       | NW   | 845       | 58   | 837       | 59   |
| 6TH ST AND NEW YORK AVE                | NW   | 818       | 64   | 827       | 60   |
| 17TH ST AND BENNING RD                 | NE   | 660       | 105  | 825       | 61   |
| 1ST ST AND MICHIGAN AVE                | NW   | 923       | 44   | 818       | 62   |
| 4TH ST AND MASSACHUSETTS AVE           | NW   | 884       | 55   | 816       | 63   |
| K ST AND NORTH CAPITOL ST              | BN   | 758       | 73   | 795       | 64   |
| KENILWORTH AVE AND LEE ST              | NE   | 758       | 73   | 795       | 64   |
| CONNECTICUT AVE AND CALVERT ST         | NW   | 771       | 70   | 794       | 66   |
| EASTERN AVE AND KENILWORTH AVE         | NE   | 909       | 48   | 789       | 67   |
| 33RD PL AND SOUTH DAKOTA AVE           | NE   | 617       | 123  | 789       | 67   |
| CONNECTICUT AVE AND R ST               | NW   | 593       | 138  | 788       | 69   |
| 24TH ST AND M ST                       | NW   | 797       | 67   | 776       | 70   |
| MARTIN LUTHER KING AVE AND HOWARD RD   | SE   | 903       | 49   | 773       | 71   |

**Table 7.15: Intersection Rank by Crash Severity Cost for 3-Year Periods  
(Rank: 71~99)**

| INTERSECTION NAME                      | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COST      | RANK | COST      | RANK |
| NEW JERSEY AVE AND NEW YORK AVE        | NW   | 819       | 63   | 773       | 71   |
| IRVING ST AND KENYON ST                | NW   | 503       | 194  | 765       | 73   |
| 36TH ST AND M ST                       | NW   | 713       | 86   | 762       | 74   |
| 13TH ST AND SOUTHERN AVE               | SE   | 527       | 175  | 753       | 75   |
| 17TH ST AND BLADENSBURG RD             | NE   | 653       | 111  | 750       | 76   |
| MASSACHUSETTS AVE AND NORTH CAPITOL ST | BN   | 734       | 81   | 740       | 77   |
| POTOMAC AVE AND S CAPITOL ST           | BN   | 669       | 99   | 737       | 78   |
| 3RD ST AND D ST                        | NW   | 654       | 109  | 737       | 78   |
| 9TH ST AND PENNSYLVANIA AVE            | NW   | 612       | 125  | 734       | 80   |
| MINNESOTA AVE AND AMES ST              | NE   | 596       | 133  | 731       | 81   |
| 15TH ST AND MASSACHUSETTS AVE          | NW   | 836       | 60   | 731       | 81   |
| FLORIDA AVE AND NORTH CAPITOL ST       | BN   | 639       | 116  | 729       | 83   |
| 11TH ST AND M ST                       | SE   | 827       | 61   | 728       | 84   |
| GEORGIA AVE AND NEW HAMPSHIRE AVE      | NW   | 687       | 92   | 725       | 85   |
| ALABAMA AVE AND GOOD HOPE RD           | SE   | 671       | 98   | 722       | 86   |
| 12TH ST AND U ST                       | NW   | 746       | 75   | 722       | 86   |
| 14TH ST AND PENNSYLVANIA AVE           | NW   | 993       | 39   | 722       | 86   |
| ALABAMA AVE AND BRANCH AVE             | SE   | 729       | 82   | 722       | 86   |
| FLORIDA AVE AND RHODE ISLAND AVE       | NW   | 807       | 66   | 716       | 90   |
| NORTH CAPITOL ST AND P ST              | BN   | 849       | 57   | 714       | 91   |
| 21ST ST AND K ST                       | NW   | 669       | 99   | 705       | 92   |
| 29TH ST AND M ST                       | NW   | 573       | 151  | 701       | 93   |
| 6TH ST AND FLORIDA AVE                 | NW   | 684       | 94   | 699       | 94   |
| WISCONSIN AVE AND UPTON ST             | NW   | 564       | 154  | 692       | 95   |
| MONTANA AVE AND RHODE ISLAND AVE       | NE   | 725       | 83   | 687       | 96   |
| 4TH ST AND MICHIGAN AVE                | NE   | 510       | 188  | 684       | 97   |
| 17TH ST AND PENNSYLVANIA AVE           | NW   | 698       | 90   | 683       | 98   |
| SOUTHERN AVE AND S CAPITOL ST          | BN   | 914       | 47   | 678       | 99   |
| 12TH ST AND INDEPENDENCE AVE           | SW   | 740       | 79   | 678       | 99   |

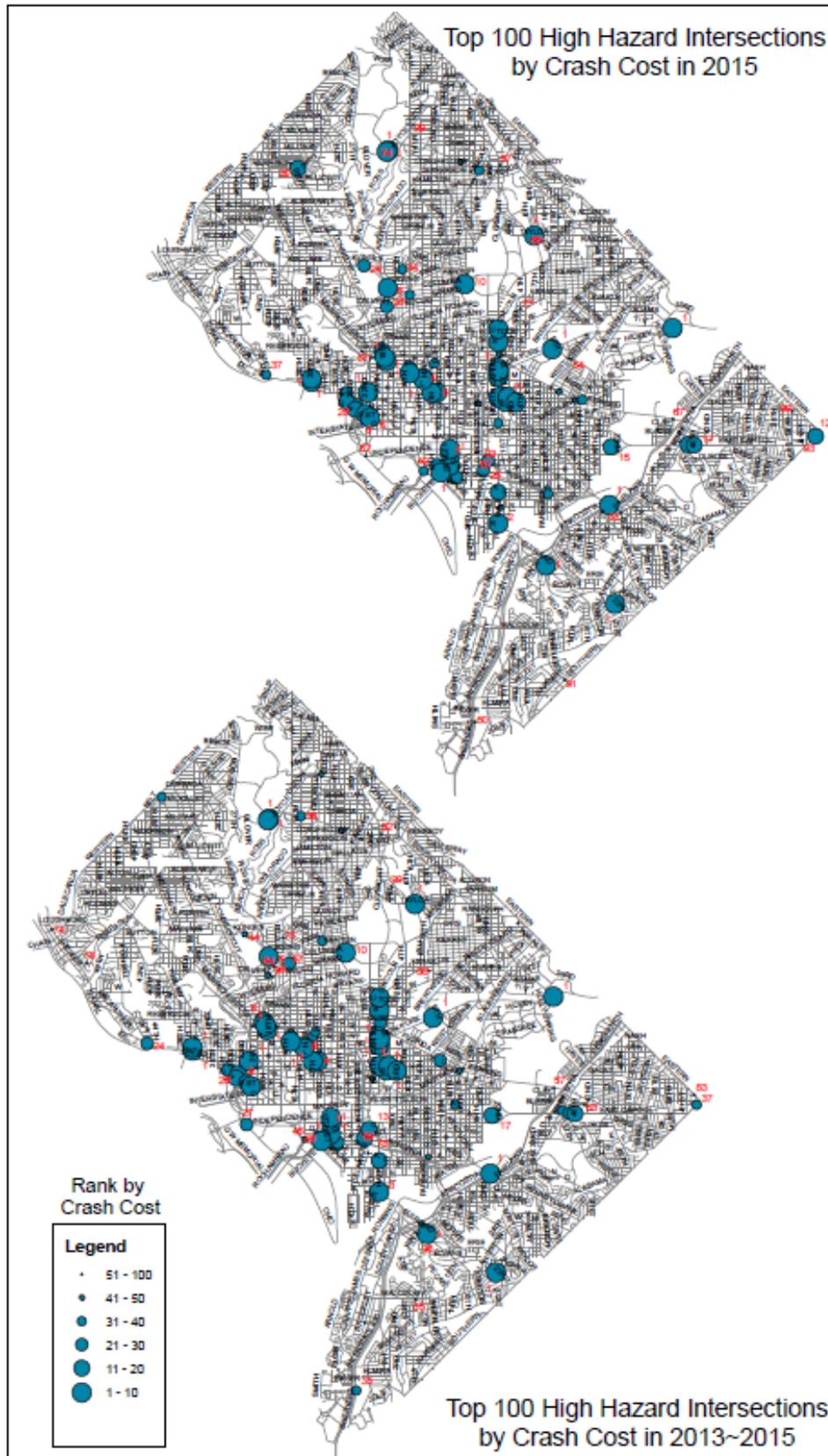


Figure 7.2: Top 100 Hazardous Intersections by Crash Cost in 2013-2015

## 7.1.4 Rank by Crash Composite Index

**Table 7.16: Intersection Rank by Crash Composite Index for 2013-2015  
(Rank: 1~35)**

| INTERSECTION NAME                            | Quad | 2013   |      | 2014   |      | 2015  |      |
|--|------|--------|------|--------|------|-------|------|
|  |      | COMP   | RANK | COMP   | RANK | COMP  | RANK |
| MINNESOTA AVE AND BENNING RD                 | NE   | 5.25   | 1    | 11.25  | 5    | 2.75  | 1    |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 12.25  | 5    | 5.75   | 1    | 3.25  | 2    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 11.75  | 4    | 7      | 2    | 3.5   | 3    |
| 14TH ST AND U ST                             | NW   | 8.75   | 2    | 7.5    | 3    | 3.75  | 4    |
| WISCONSIN AVE AND M ST                       | NW   | 9.5    | 3    | 18.75  | 7    | 9     | 5    |
| 7TH ST AND FLORIDA AVE                       | NW   | 21.5   | 13   | 10.5   | 4    | 15.25 | 6    |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 28.75  | 15   | 34     | 18   | 17.25 | 7    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 20.25  | 9    | 21.25  | 9    | 18.75 | 8    |
| 9TH ST AND U ST                              | NW   | 66.25  | 37   | 136    | 86   | 19.5  | 9    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 21     | 12   | 17.75  | 6    | 20    | 10   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 55     | 33   | 31.25  | 15   | 20.5  | 11   |
| 14TH ST AND IRVING ST                        | NW   | 19.75  | 8    | 26.75  | 13   | 23.25 | 12   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD      | SE   | 190.5  | 128  | 111.75 | 72   | 23.25 | 12   |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 34.5   | 21   | 56.75  | 33   | 27.75 | 14   |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 18.25  | 7    | 57.25  | 34   | 29.5  | 15   |
| 24TH ST AND PENNSYLVANIA AVE                 | NW   | 51.5   | 30   | 83.5   | 49   | 30.5  | 16   |
| SOUTHERN AVE AND BENNING RD                  | SE   | 47.25  | 28   | 103.5  | 63   | 31.75 | 17   |
| 3RD ST AND D ST                              | NW   | 59     | 34   | 200    | 147  | 34.75 | 18   |
| CONNECTICUT AVE AND R ST                     | NW   | 90.25  | 54   | 144.75 | 100  | 35.5  | 19   |
| ALABAMA AVE AND GOOD HOPE RD                 | SE   | 154.5  | 106  | 106.75 | 67   | 35.5  | 19   |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 74.75  | 41   | 31.25  | 15   | 37.75 | 21   |
| 1ST ST AND FLORIDA AVE                       | NE   | 377    | 289  | 292.5  | 219  | 39.5  | 22   |
| 14TH ST AND RHODE ISLAND AVE                 | NW   | 68.75  | 40   | 40.75  | 22   | 42.25 | 23   |
| I ST AND S CAPITOL ST                        | BN   | 32.25  | 19   | 43.25  | 25   | 43.25 | 24   |
| 1ST ST AND NEW YORK AVE                      | NW   | 85.25  | 49   | 200.25 | 148  | 45.5  | 25   |
| NEW YORK AVE AND NORTH CAPITOL ST            | BN   | 52.5   | 31   | 39.25  | 21   | 46    | 26   |
| 14TH ST AND K ST                             | NW   | 42.5   | 26   | 20     | 8    | 47    | 27   |
| 16TH ST AND NEW HAMPSHIRE AVE                | NW   | 111.75 | 70   | 68.5   | 37   | 47.75 | 28   |
| 14TH ST AND COLUMBIA RD                      | NW   | 29.75  | 17   | 27.25  | 14   | 48.75 | 29   |
| H ST AND NORTH CAPITOL ST                    | BN   | 41.75  | 25   | 69.25  | 39   | 54    | 30   |
| 7TH ST AND H ST                              | NW   | 20.5   | 11   | 51.25  | 27   | 55    | 31   |
| 17TH ST AND H ST                             | NW   | 599.25 | 535  | 280.75 | 211  | 55.25 | 32   |
| 15TH ST AND K ST                             | NW   | 113    | 71   | 46     | 26   | 57.75 | 33   |
| IRVING ST AND KENYON ST                      | NW   | 126.75 | 85   | 117.25 | 76   | 57.75 | 33   |
| 19TH ST AND INDEPENDENCE AVE                 | SE   | 110    | 69   | 357.5  | 275  | 58    | 35   |

**Table 7.17: Intersection Rank by Crash Composite Index for 2013-2015  
(Rank: 36~71)**

| INTERSECTION NAME                      | Quad | 2013   |      | 2014   |      | 2015   |      |
|--|------|--------|------|--------|------|--------|------|
|  |      | COMP   | RANK | COMP   | RANK | COMP   | RANK |
| 14TH ST AND P ST                       | NW   | 115.25 | 74   | 125.25 | 80   | 58.5   | 36   |
| 9TH ST AND NEW YORK AVE                | NW   | 66     | 36   | 85.25  | 53   | 60.75  | 37   |
| 13TH ST AND U ST                       | NW   | 17     | 6    | 33.25  | 17   | 61.25  | 38   |
| RHODE ISLAND AVE AND NORTH CAPITOL ST  | BN   | 100.75 | 64   | 79.25  | 45   | 61.5   | 39   |
| FIRTH STERLING AVE AND HOWARD RD       | SE   | 29     | 16   | 55.25  | 31   | 63.75  | 40   |
| 16TH ST AND K ST                       | NW   | 119.5  | 78   | 51.5   | 28   | 64     | 41   |
| 6TH ST AND H ST                        | NW   | 82.75  | 47   | 219.5  | 162  | 65.5   | 42   |
| 1ST ST AND MICHIGAN AVE                | NW   | 44     | 27   | 92.5   | 57   | 66     | 43   |
| BRANCH AVE AND PENNSYLVANIA AVE        | SE   | 183.5  | 122  | 77.75  | 44   | 70.25  | 44   |
| 17TH ST AND BLADENSBURG RD             | NE   | 67.75  | 39   | 263.5  | 191  | 71.75  | 45   |
| BLADENSBURG RD AND QUEENS CHAPEL RD    | NE   | 141.75 | 99   | 181.25 | 133  | 74     | 46   |
| 17TH ST AND I ST                       | NW   | 38     | 23   | 25.5   | 12   | 75     | 47   |
| 19TH ST AND M ST                       | NW   | 34.5   | 21   | 137.25 | 88   | 76.5   | 48   |
| 15TH ST AND H ST                       | NW   | 473.5  | 391  | 82     | 46   | 76.75  | 49   |
| 21ST ST AND K ST                       | NW   | 113    | 71   | 146    | 101  | 81.25  | 50   |
| K ST AND NORTH CAPITOL ST              | BN   | 117.75 | 76   | 120.5  | 78   | 85     | 51   |
| 16TH ST AND I ST                       | NW   | 216.5  | 152  | 286.75 | 216  | 85.25  | 52   |
| 7TH ST AND G ST                        | NW   | 380.5  | 293  | 35.25  | 19   | 88     | 53   |
| 6TH ST AND NEW YORK AVE                | NW   | 91.5   | 55   | 107.75 | 68   | 88.75  | 54   |
| 15TH ST AND RHODE ISLAND AVE           | NW   | 694.75 | 667  | 266.25 | 197  | 88.75  | 54   |
| SOUTH DAKOTA AVE AND BLADENSBURG RD    | NE   | 101.75 | 65   | 82     | 46   | 89.5   | 56   |
| MISSOURI AVE AND NEW HAMPSHIRE AVE     | NW   | 168.25 | 116  | 585.5  | 521  | 90     | 57   |
| 18TH ST AND MASSACHUSETTS AVE          | NW   | 130.75 | 90   | 143.5  | 99   | 91.5   | 58   |
| ALABAMA AVE AND PENNSYLVANIA AVE       | SE   | 76.75  | 42   | 57.75  | 35   | 92.75  | 59   |
| 14TH ST AND CONSTITUTION AVE           | NW   | 159    | 110  | 137.5  | 89   | 93.75  | 60   |
| 15TH ST AND E ST                       | NW   | 739.75 | 713  | 624    | 571  | 97.5   | 61   |
| MINNESOTA AVE AND PENNSYLVANIA AVE     | SE   | 80.75  | 46   | 25.25  | 11   | 98.5   | 62   |
| BRENTWOOD RD AND W ST                  | NE   | 139.25 | 96   | 262.5  | 190  | 100    | 63   |
| MICHIGAN AVE AND FRANKLIN ST           | NE   | 431.5  | 336  | 215    | 158  | 100.25 | 64   |
| MICHIGAN AVE AND NORTH CAPITOL ST      | BN   | 126    | 84   | 92.75  | 58   | 101    | 65   |
| 4TH ST AND MICHIGAN AVE                | NE   | 233.5  | 167  | 150.5  | 106  | 104.75 | 66   |
| 9TH ST AND H ST                        | NW   | 270.75 | 199  | 353.25 | 270  | 108    | 67   |
| 8TH ST AND H ST                        | NE   | 259.75 | 191  | 279    | 208  | 108.75 | 68   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE | NE   | 30.75  | 18   | 56.25  | 32   | 109.25 | 69   |
| EASTERN AVE AND MINNESOTA AVE          | NE   | 152.5  | 105  | 198    | 146  | 109.5  | 70   |
| 4TH ST AND NEW YORK AVE                | NW   | 25.75  | 14   | 41     | 23   | 111    | 71   |

**Table 7.18: Intersection Rank by Crash Composite Index for 2013-2015  
(Rank: 72~100)**

| INTERSECTION NAME                      | Quad | 2013   |      | 2014   |      | 2015   |      |
|--|------|--------|------|--------|------|--------|------|
|  |      | COMP   | RANK | COMP   | RANK | COMP   | RANK |
| 23RD ST AND I ST                       | NW   | 67.5   | 38   | 161.75 | 118  | 113.75 | 72   |
| 18TH ST AND M ST                       | NW   | 340.75 | 260  | 108.25 | 69   | 115.75 | 73   |
| 14TH ST AND L ST                       | NW   | 76.75  | 42   | 151.5  | 109  | 117.25 | 74   |
| 14TH ST AND F ST                       | NW   | 289.25 | 218  | 84     | 51   | 118.5  | 75   |
| 24TH ST AND L ST                       | NW   | 319.75 | 247  | 233.25 | 172  | 118.5  | 75   |
| 24TH ST AND M ST                       | NW   | 134.25 | 92   | 23.25  | 10   | 123.5  | 77   |
| CONNECTICUT AVE AND M ST               | NW   | 314    | 241  | 268.75 | 201  | 124.25 | 78   |
| NEW YORK AVE AND SOUTH DAKOTA AVE      | NE   | 87.25  | 51   | 104.5  | 64   | 124.5  | 79   |
| 5TH ST AND H ST                        | NW   | 653.25 | 605  | 404    | 323  | 124.75 | 80   |
| 17TH ST AND PENNSYLVANIA AVE           | NW   | 116    | 75   | 68.5   | 37   | 125.75 | 81   |
| 14TH ST AND H ST                       | NE   | 198.75 | 136  | 141.5  | 96   | 128.75 | 82   |
| 17TH ST AND BENNING RD                 | NE   | 152    | 104  | 169.5  | 124  | 130.5  | 83   |
| 16TH ST AND M ST                       | NW   | 86     | 50   | 319.5  | 238  | 133.25 | 84   |
| 17TH ST AND L ST                       | NW   | 360.75 | 271  | 244.5  | 177  | 136.75 | 85   |
| 10TH ST AND MASSACHUSETTS AVE          | NW   | 297    | 228  | 150    | 105  | 137.25 | 86   |
| WISCONSIN AVE AND ALBEMARLE ST         | NW   | 211.25 | 145  | 306.25 | 228  | 138.5  | 87   |
| 14TH ST AND PARK RD                    | NW   | 34.25  | 20   | 83     | 48   | 141.75 | 88   |
| MASSACHUSETTS AVE AND NORTH CAPITOL ST | BN   | 213.75 | 150  | 166    | 122  | 144.75 | 89   |
| 36TH ST AND M ST                       | NW   | 342.5  | 261  | 148.5  | 103  | 145    | 90   |
| 22ND ST AND L ST                       | NW   | 351.75 | 265  | 143    | 98   | 145.5  | 91   |
| CONNECTICUT AVE AND K ST               | NW   | 84.5   | 48   | 83.5   | 49   | 148.75 | 92   |
| WEST VIRGINIA AVE AND MOUNT OLIVET RD  | NE   | 318.75 | 246  | 182.75 | 135  | 149    | 93   |
| 14TH ST AND I ST                       | NW   | 80.25  | 45   | 181.75 | 134  | 150    | 94   |
| 7TH ST AND INDEPENDENCE AVE            | SW   | 204.75 | 139  | 393    | 313  | 151.75 | 95   |
| 6TH ST AND FLORIDA AVE                 | NW   | 93.75  | 57   | 89     | 56   | 153.5  | 96   |
| 4TH ST AND M ST                        | SW   | 409.75 | 321  | 280.25 | 210  | 154.25 | 97   |
| 8TH ST AND H ST                        | NW   | 388.5  | 306  | 372    | 292  | 156    | 98   |
| NEW YORK AVE AND H ST                  | NW   | 701.75 | 672  | 157.5  | 113  | 156.75 | 99   |
| CENTRAL AVE AND SOUTHERN AVE           | SE   | 415.75 | 324  | 254.25 | 187  | 157.5  | 100  |

**Table 7.19: Intersection Rank by Crash Composite Index for 3-Year Periods  
(Rank: 1~37)**

| INTERSECTION NAME                            | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COMP      | RANK | COMP      | RANK |
| MINNESOTA AVE AND BENNING RD                 | NE   | 5.75      | 1    | 4.25      | 1    |
| 1ST ST AND UNION STATION PLAZA               | NE   | 9.25      | 5    | 5.25      | 2    |
| NEW YORK AVE AND BLADENSBURG RD              | NE   | 7.5       | 2    | 5.25      | 2    |
| 14TH ST AND U ST                             | NW   | 8         | 4    | 5.75      | 4    |
| WISCONSIN AVE AND M ST                       | NW   | 7.5       | 2    | 11        | 5    |
| 7TH ST AND FLORIDA AVE                       | NW   | 11        | 6    | 14        | 6    |
| FIRTH STERLING AVE AND SUITLAND PKWY         | SE   | 16.25     | 8    | 15        | 7    |
| STANTON RD AND SUITLAND PKWY                 | SE   | 15.5      | 7    | 15.75     | 8    |
| 14TH ST AND IRVING ST                        | NW   | 21.5      | 9    | 20        | 9    |
| 9TH ST AND MASSACHUSETTS AVE                 | NW   | 37.75     | 20   | 20.25     | 10   |
| SOUTHERN AVE AND WHEELER RD                  | SE   | 35        | 17   | 24.5      | 11   |
| 14TH ST AND K ST                             | NW   | 26.25     | 12   | 26.25     | 12   |
| 14TH ST AND COLUMBIA RD                      | NW   | 29.25     | 14   | 26.75     | 13   |
| 13TH ST AND U ST                             | NW   | 25.5      | 11   | 26.75     | 13   |
| MINNESOTA AVE AND NANNIE HELEN BURROUGHS AVE | NE   | 49.75     | 30   | 27.25     | 15   |
| 7TH ST AND H ST                              | NW   | 28.5      | 13   | 31.75     | 16   |
| FLORIDA AVE AND NEW YORK AVE                 | NE   | 34.5      | 16   | 33.25     | 17   |
| I ST AND S CAPITOL ST                        | BN   | 36.5      | 19   | 34        | 18   |
| 17TH ST AND I ST                             | NW   | 46.25     | 29   | 35        | 19   |
| MONTANA AVE AND NEW YORK AVE                 | NE   | 41.25     | 24   | 35.75     | 20   |
| 4TH ST AND NEW YORK AVE                      | NW   | 35.75     | 18   | 37.5      | 21   |
| FIRTH STERLING AVE AND HOWARD RD             | SE   | 46        | 27   | 40        | 22   |
| NEW YORK AVE AND NORTH CAPITOL ST            | BN   | 40.25     | 22   | 40.75     | 23   |
| 14TH ST AND RHODE ISLAND AVE                 | NW   | 69.25     | 43   | 43.5      | 24   |
| 24TH ST AND PENNSYLVANIA AVE                 | NW   | 55        | 33   | 44.25     | 25   |
| H ST AND NORTH CAPITOL ST                    | BN   | 24.25     | 10   | 44.5      | 26   |
| 9TH ST AND U ST                              | NW   | 44.75     | 25   | 44.5      | 26   |
| SOUTHERN AVE AND BENNING RD                  | SE   | 52.5      | 32   | 46.25     | 28   |
| 44TH ST AND NANNIE HELEN BURROUGHS AVE       | NE   | 60.25     | 36   | 47.75     | 29   |
| MINNESOTA AVE AND PENNSYLVANIA AVE           | SE   | 29.75     | 15   | 50.25     | 30   |
| 1ST ST AND MICHIGAN AVE                      | NW   | 39.5      | 21   | 54.25     | 31   |
| BENNING RD AND EAST CAPITOL ST               | BN   | 40.25     | 22   | 55        | 32   |
| 15TH ST AND K ST                             | NW   | 51.75     | 31   | 56.5      | 33   |
| 24TH ST AND M ST                             | NW   | 46        | 27   | 56.75     | 34   |
| MARTIN LUTHER KING AVE AND HOWARD RD         | SE   | 45.75     | 26   | 57.75     | 35   |
| 9TH ST AND NEW YORK AVE                      | NW   | 73.25     | 46   | 58.25     | 36   |
| 19TH ST AND M ST                             | NW   | 62.75     | 37   | 58.5      | 37   |

**Table 7.20: Intersection Rank by Crash Composite Index for 3-Year Periods  
(Rank: 38~74)**

| INTERSECTION NAME                       | Quad | 2012-2014 |      | 2013-2015 |      |
|---|------|-----------|------|-----------|------|
|   |      | COMP      | RANK | COMP      | RANK |
| 3RD ST AND D ST                         | NW   | 88.5      | 56   | 58.5      | 37   |
| ALABAMA AVE AND PENNSYLVANIA AVE        | SE   | 65.25     | 40   | 61.5      | 39   |
| 16TH ST AND K ST                        | NW   | 71.5      | 45   | 62.25     | 40   |
| 16TH ST AND NEW HAMPSHIRE AVE           | NW   | 64.5      | 38   | 63        | 41   |
| CONNECTICUT AVE AND R ST                | NW   | 117.75    | 81   | 64.75     | 42   |
| MARTIN LUTHER KING AVE AND GOOD HOPE RD | SE   | 195       | 146  | 65.75     | 43   |
| 14TH ST AND PARK RD                     | NW   | 59.75     | 35   | 65.75     | 43   |
| ALABAMA AVE AND GOOD HOPE RD            | SE   | 90.25     | 57   | 71.25     | 45   |
| RHODE ISLAND AVE AND NORTH CAPITOL ST   | BN   | 100.5     | 67   | 72.75     | 46   |
| SOUTH DAKOTA AVE AND BLADENSBURG RD     | NE   | 81.5      | 52   | 77.25     | 47   |
| IRVING ST AND KENYON ST                 | NW   | 174.25    | 125  | 79        | 48   |
| 1ST ST AND NEW YORK AVE                 | NW   | 102.75    | 70   | 79        | 48   |
| 14TH ST AND P ST                        | NW   | 64.5      | 38   | 80.5      | 50   |
| 17TH ST AND PENNSYLVANIA AVE            | NW   | 79.25     | 50   | 81        | 51   |
| 7TH ST AND G ST                         | NW   | 99.5      | 66   | 81.75     | 52   |
| 6TH ST AND NEW YORK AVE                 | NW   | 75.75     | 47   | 81.75     | 52   |
| BRANCH AVE AND PENNSYLVANIA AVE         | SE   | 98        | 64   | 83.5      | 54   |
| 23RD ST AND I ST                        | NW   | 109.5     | 78   | 89        | 55   |
| 6TH ST AND FLORIDA AVE                  | NW   | 88        | 54   | 90.5      | 56   |
| CONNECTICUT AVE AND K ST                | NW   | 97.75     | 63   | 91.25     | 57   |
| K ST AND NORTH CAPITOL ST               | BN   | 98.75     | 65   | 92        | 58   |
| 6TH ST AND H ST                         | NW   | 106.5     | 74   | 92.25     | 59   |
| 17TH ST AND BLADENSBURG RD              | NE   | 119.75    | 82   | 93.25     | 60   |
| MICHIGAN AVE AND NORTH CAPITOL ST       | BN   | 106.25    | 72   | 93.75     | 61   |
| 14TH ST AND L ST                        | NW   | 77.5      | 49   | 94.5      | 62   |
| 21ST ST AND K ST                        | NW   | 117.25    | 80   | 96.75     | 63   |
| NORTH CAPITOL ST AND RIGGS RD           | BN   | 68.25     | 42   | 102       | 64   |
| NEW YORK AVE AND SOUTH DAKOTA AVE       | NE   | 120.75    | 84   | 103.5     | 65   |
| ALABAMA AVE AND BRANCH AVE              | SE   | 104.25    | 71   | 105       | 66   |
| 18TH ST AND MASSACHUSETTS AVE           | NW   | 170       | 121  | 105.5     | 67   |
| 19TH ST AND INDEPENDENCE AVE            | SE   | 96.5      | 62   | 105.75    | 68   |
| BLADENSBURG RD AND QUEENS CHAPEL RD     | NE   | 197.75    | 149  | 106.25    | 69   |
| 12TH ST AND K ST                        | NW   | 101.25    | 68   | 106.5     | 70   |
| 14TH ST AND I ST                        | NW   | 95.5      | 59   | 108.75    | 71   |
| SOUTHERN AVE AND S CAPITOL ST           | BN   | 55.75     | 34   | 109.25    | 72   |
| 11TH ST AND U ST                        | NW   | 126.25    | 91   | 109.5     | 73   |
| 13TH ST AND H ST                        | NE   | 145.75    | 100  | 112       | 74   |

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

| INTERSECTION NAME                      | Quad | 2012-2014 |      | 2013-2015 |      |
|--|------|-----------|------|-----------|------|
|  |      | COMP      | RANK | COMP      | RANK |
| 4TH ST AND NEW YORK AVE                | NE   | 88        | 54   | 114       | 75   |
| 15TH ST AND H ST                       | NW   | 148       | 101  | 118       | 76   |
| 18TH ST AND ADAMS MILL RD              | NW   | 67.5      | 41   | 119       | 77   |
| 14TH ST AND F ST                       | NW   | 79.25     | 50   | 119.5     | 78   |
| 1ST ST AND M ST                        | NE   | 95.5      | 59   | 120.25    | 79   |
| 14TH ST AND CONSTITUTION AVE           | NW   | 120.25    | 83   | 121.25    | 80   |
| GEORGIA AVE AND BARRY PL               | NW   | 76.5      | 48   | 124       | 81   |
| EASTERN AVE AND MINNESOTA AVE          | NE   | 162.5     | 111  | 127.25    | 82   |
| 21ST ST AND PENNSYLVANIA AVE           | NW   | 131.75    | 93   | 127.75    | 83   |
| 14TH ST AND H ST                       | NE   | 107.25    | 75   | 129.5     | 84   |
| CONNECTICUT AVE AND CALVERT ST         | NW   | 125       | 90   | 129.75    | 85   |
| BRENTWOOD RD AND W ST                  | NE   | 176.5     | 129  | 130.25    | 86   |
| 15TH ST AND MASSACHUSETTS AVE          | NW   | 95.75     | 61   | 130.25    | 86   |
| 16TH ST AND M ST                       | NW   | 140.75    | 97   | 130.5     | 88   |
| VERMONT AVE AND U ST                   | NW   | 149.25    | 103  | 131.5     | 89   |
| ALABAMA AVE AND STANTON RD             | SE   | 121.25    | 86   | 132       | 90   |
| 19TH ST AND L ST                       | NW   | 150.5     | 104  | 133.25    | 91   |
| 4TH ST AND MICHIGAN AVE                | NE   | 213.75    | 162  | 135.5     | 92   |
| 2ND ST AND H ST                        | NW   | 70        | 44   | 137.5     | 93   |
| 18TH ST AND M ST                       | NW   | 224       | 170  | 137.5     | 93   |
| 4TH ST AND MASSACHUSETTS AVE           | NW   | 109.25    | 77   | 139.25    | 95   |
| 17TH ST AND BENNING RD                 | NE   | 174.75    | 127  | 139.5     | 96   |
| 7TH ST AND NEW YORK AVE                | NW   | 151.25    | 107  | 140       | 97   |
| MASSACHUSETTS AVE AND NORTH CAPITOL ST | BN   | 164.25    | 115  | 140.5     | 98   |
| 1ST ST AND FLORIDA AVE                 | NE   | 344       | 260  | 141.25    | 99   |
| 30TH ST AND M ST                       | NW   | 184.25    | 135  | 142.5     | 100  |

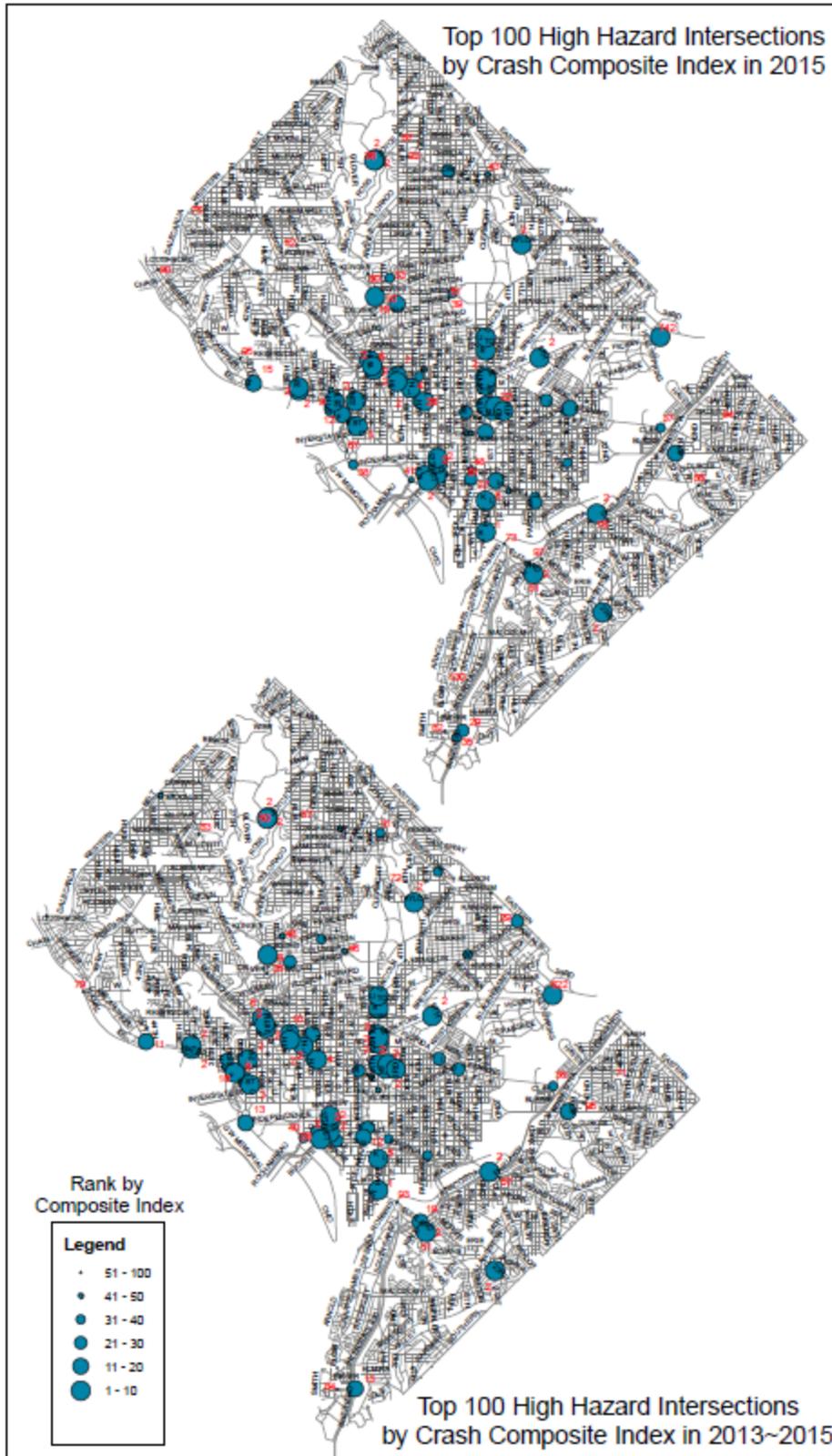


Figure 7.3: Top 100 Hazard Intersections by Crash Composite Index in 2013-2015

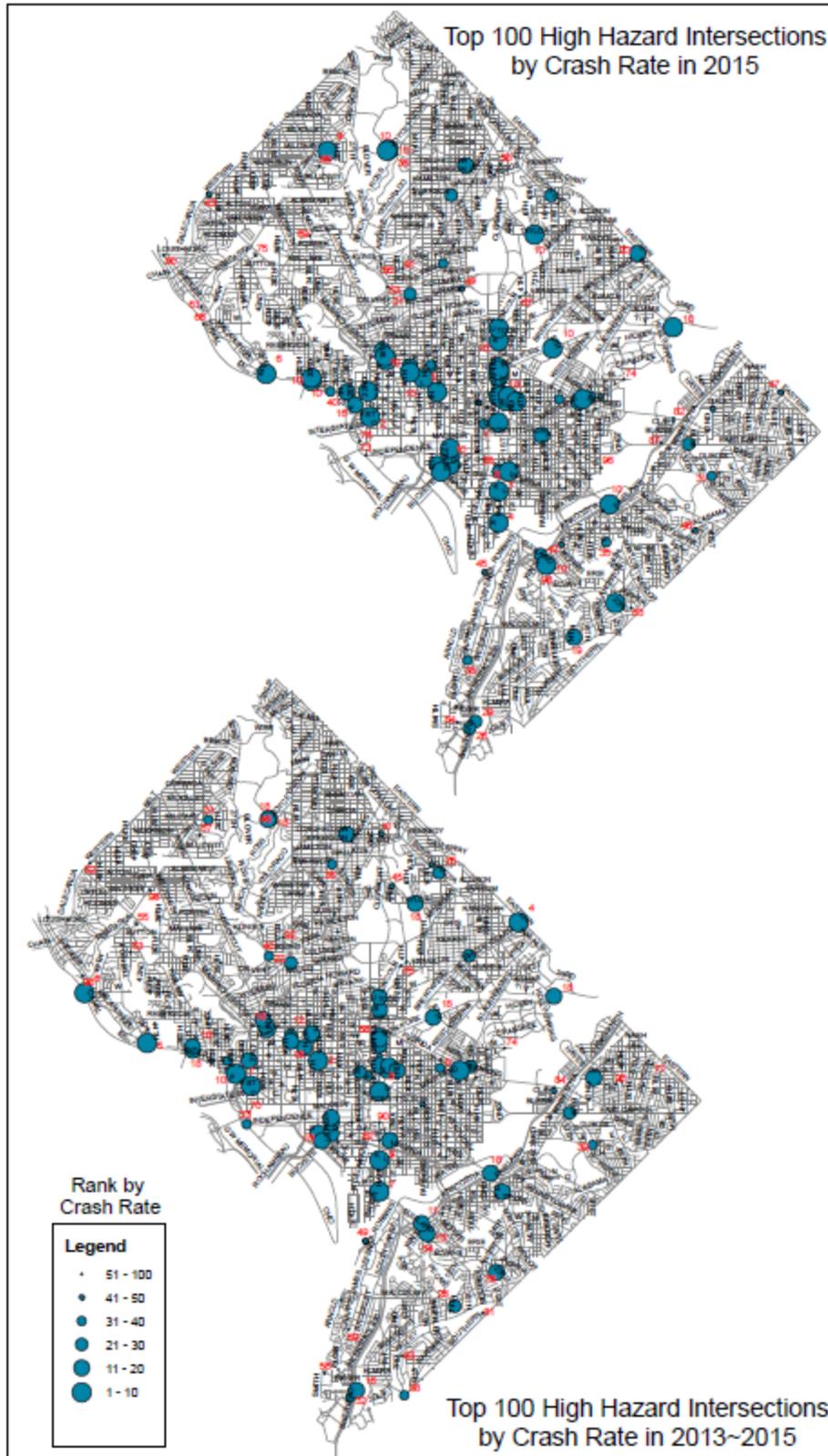


Figure 7.4: Top 100 Hazardous Intersections by Crash Rate Index in 2013-2015

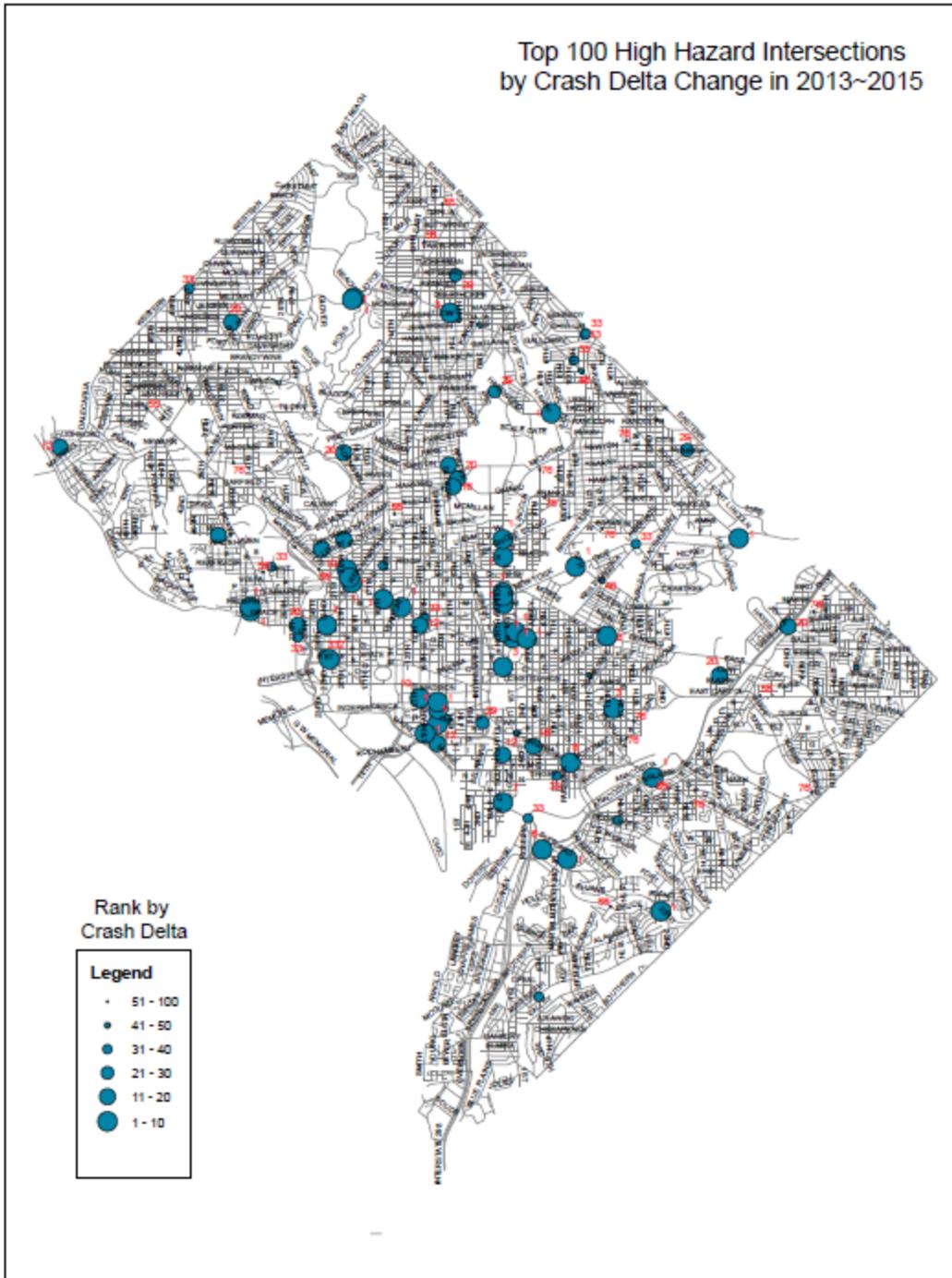


Figure 7.5: Top 100 Hazardous Intersections by Crash Rate Index in 2013-2015

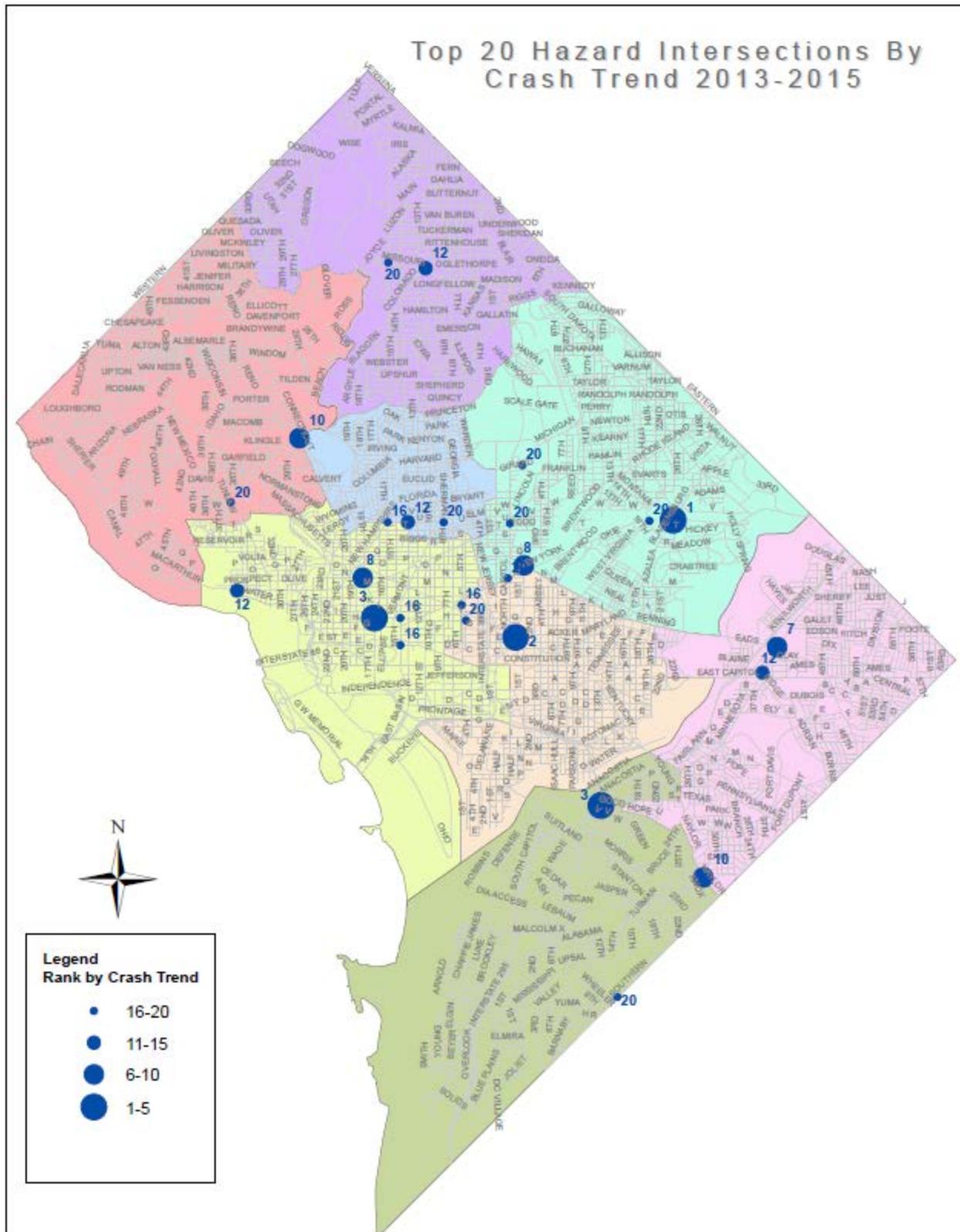


Figure 7.6: Top 20 Hazardous Intersections by Crash Trend through 2013-2015

**7.2 PD-10 Form**



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

All dates should be formatted as mm/dd/yyyy

Explain any "other" responses in narrative.

190 (Road Surface)

1 Date of Crash, 2 Time of Crash (Use military), 3 Day of Week, 4 Date of Report, 5 Complaint Number (CCN), 6 UCC Number

191 (Road Type)

7 Type of Crash (Check all that apply), 8 Location (Street/bridge/tunnel name & quadrant), 9 District, 10 PSA

Enter the number of feet, in whatever direction, from the nearest intersection or block (0 feet if at an exact location). On freeways, enter the number of feet from the nearest mile post or PEPCO pole no., etc. Indicate if accident occurred on exit ramp, bridge, tunnel or other. Finally, circle the city quadrant.

192 (Road Condition)

11 Location Type and Name, PEPCO Pole No., Exit Ramp, Bridge, Tunnel, Circle Quadrant: NW SW NE SE

193 (Street Lighting)

12 Construction Zone?, 13 On-Street Location, 14 Off-Street Location, 15 Report taken on scene?

194 (Light Condition)

16 Photos taken?, 16a If yes, # photos, 17 # Vehicles Involved, 18 # Injured Persons, 19a-d # Occupants (Incl. driver), 20 # Fatalities

195 (Weather)

21 OBJECT TYPE, 50 OBJECT TYPE

196 (Traffic Condition)

22 Last Name, 23 Sex, 24 DOB, 51 Last Name, 52 Sex, 53 DOB

197 (Roadway Type)

25 Street Address, 26 City, State, Zip, 54 Street Address, 55 City, State, Zip

198 (Traffic Controls)

27 Home/Cell Number, 28 Work Number, 56 Home/Cell Number, 57 Work Number

199 (Pedestrian Action)

29 License Number, 30 State, 31 Class, 32 Ins Exp Date, 58 License Number, 59 State, 60 Class, 61 Ins Exp Date

200a-h (Sequence)

33 Driver's Insurance Co. Name, 34 Policy #, 62 Insurance Co. Name, 63 Policy #

35 Make, 36 Model, 37 Year, 38 Body, 39 Color, 64 Make, 65 Model, 66 Year, 67 Body, 68 Color

40 Vehicle ID Number (VIN), 69 Vehicle ID Number (VIN)

41 Tag Number, 42 State, 43 Year, 70 Tag Number, 71 State, 72 Year

44 Owner's Last Name, 45 Owner Notified?, 73 Owner's Last Name, 74 Owner Notified?

46 Owner's Street Address, 47 City, State, Zip, 75 Owner's Street Address, 76 City, State, Zip

48 Owner's Telephone #, 49 Veh. Insurance Co. (if different from #33), 77 Owner's Telephone #, 78 Veh. Insurance Co. (if different from #62)

STRIKING OBJECT (TYPE, CONTACT INFO, INSURANCE, ETC.)

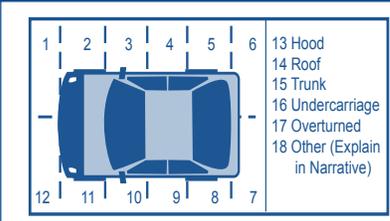
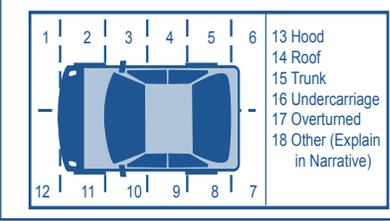
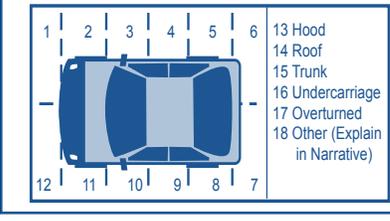
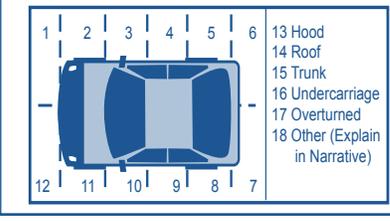
VEHICLE #2 (TYPE, CONTACT INFO, INSURANCE, ETC.)



# TRAFFIC CRASH REPORT



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

|  |  |  |   |  |  |
|--|--|--|---|--|--|
| VEHICLE CONDITION  | <b>158 STRIKING OBJECT/VEHICLE #1: Direction of Travel and Street Before Crash (must match narrative and diagram)</b><br><input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B<br><input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A<br><input type="checkbox"/> 99 Other _____ | <b>160 Skid Marks</b><br>To Impact: _____<br>After Impact: _____<br><input type="checkbox"/> N/A   | <b>161 Circle All Areas With Damage:</b><br> 13 Hood<br>14 Roof<br>15 Trunk<br>16 Undercarriage<br>17 Overturned<br>18 Other (Explain in Narrative) | <b>162 Vehicle Was . . .</b><br><input type="checkbox"/> 01 Left on Scene<br><input type="checkbox"/> 02 Towed By: _____<br>Towed to: _____<br>Towing Control #: _____<br><input type="checkbox"/> 03 Driven Away By: _____<br><input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other |  |
|  | <b>159 Vehicle Disabled?</b><br><div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Y   <input type="checkbox"/> N                 </div>   | <b>163 VEHICLE #2: Direction of Travel and Street Before Crash (must match narrative and diagram)</b><br><input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B<br><input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A<br><input type="checkbox"/> 99 Other _____ | <b>165 Skid Marks</b><br>To Impact: _____<br>After Impact: _____<br><input type="checkbox"/> N/A  | <b>166 Circle All Areas With Damage:</b><br> 13 Hood<br>14 Roof<br>15 Trunk<br>16 Undercarriage<br>17 Overturned<br>18 Other (Explain in Narrative)  | <b>167 Vehicle Was . . .</b><br><input type="checkbox"/> 01 Left on Scene<br><input type="checkbox"/> 02 Towed By: _____<br>Towed to: _____<br>Towing Control #: _____<br><input type="checkbox"/> 03 Driven Away By: _____<br><input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other |
|  | <b>164 Vehicle Disabled?</b><br><div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Y   <input type="checkbox"/> N                 </div>   | <b>168 VEHICLE #3: Direction of Travel and Street Before Crash (must match narrative and diagram)</b><br><input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B<br><input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A<br><input type="checkbox"/> 99 Other _____ | <b>170 Skid Marks</b><br>To Impact: _____<br>After Impact: _____<br><input type="checkbox"/> N/A  | <b>171 Circle All Areas With Damage:</b><br> 13 Hood<br>14 Roof<br>15 Trunk<br>16 Undercarriage<br>17 Overturned<br>18 Other (Explain in Narrative)  | <b>172 Vehicle Was . . .</b><br><input type="checkbox"/> 01 Left on Scene<br><input type="checkbox"/> 02 Towed By: _____<br>Towed to: _____<br>Towing Control #: _____<br><input type="checkbox"/> 03 Driven Away By: _____<br><input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other |
|  | <b>169 Vehicle Disabled?</b><br><div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Y   <input type="checkbox"/> N                 </div>   | <b>173 VEHICLE #4: Direction of Travel and Street Before Crash (must match narrative and diagram)</b><br><input type="checkbox"/> 01 N/B <input type="checkbox"/> 02 E/B <input type="checkbox"/> 03 S/B<br><input type="checkbox"/> 04 W/B <input type="checkbox"/> 97 N/A<br><input type="checkbox"/> 99 Other _____ | <b>175 Skid Marks</b><br>To Impact: _____<br>After Impact: _____<br><input type="checkbox"/> N/A  | <b>176 Circle All Areas With Damage:</b><br> 13 Hood<br>14 Roof<br>15 Trunk<br>16 Undercarriage<br>17 Overturned<br>18 Other (Explain in Narrative)  | <b>177 Vehicle Was . . .</b><br><input type="checkbox"/> 01 Left on Scene<br><input type="checkbox"/> 02 Towed By: _____<br>Towed to: _____<br>Towing Control #: _____<br><input type="checkbox"/> 03 Driven Away By: _____<br><input type="checkbox"/> 97 N/A <input type="checkbox"/> 99 Other |
| <b>174 Vehicle Disabled?</b><br><div style="display: flex; justify-content: space-around;"> <input type="checkbox"/> Y   <input type="checkbox"/> N                 </div> |  |  |   |  |  |

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

